

Progressive Architecture

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Just how far has the idea of historic preservation come in the U.S.? Is it still only the domain of a few, or is it a truly popular concept?

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Cover: Main waiting room of Daniel H. Burnham's 1908 Union Station in Washington, DC (p. 58). Photo: Robert C. Lautman.



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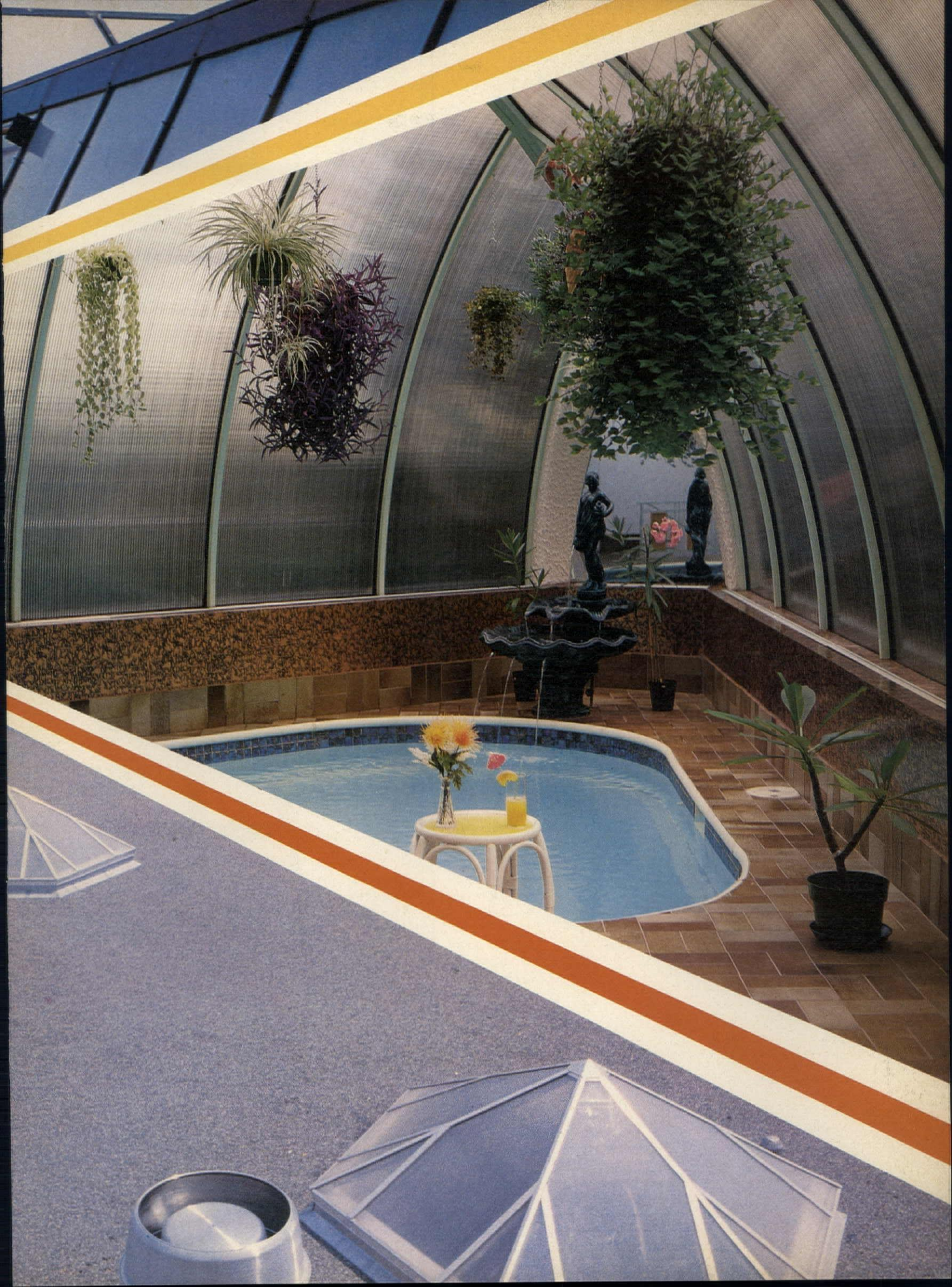
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It's what you do with it

November 1977

It used to be praiseworthy merely to save an old building if necessary finding a new use for it. But it's no longer enough just to maintain identifiable shells, reworking them to meet today's perceived needs.

Adaptive re-use remains a powerful device for reclaiming the economic value of existing structures, retaining some social and aesthetic values in the process. It has even become more acceptable—both architecturally and politically—to re-use a structure for its original purpose—i.e., recycling an old city hall as a new one (p. 76) rather than erecting another monument. If the original function seems to have departed for good—as with so many railroad stations and movie houses—we can only hope to salvage the structure and make the best of it.

But what is the best? We now have enough experience with architectural recycling to make some discriminating judgments.

Too often, recent remodeling has meant exposed brick, sand-blasted marble, rerouting of circulation, and manipulation of existing floor levels to yield "modern" spatial drama. The social critic Calvin Trillin speaks tellingly of "overexposure to exposed brick" (see Introduction, p. 51). The urge to expose common brick has gotten totally out of hand; what started as a funky way for unskilled tenants to deal with crumbling plaster—by removing it—led in the 1960s to the removal of many square miles of sound plaster merely for effect. But more prudent attitudes were developing at the grass roots: the November 1973 issue of *The Old House Journal*, a nuts-and-bolts monthly for owners (199 Berkeley Place, Brooklyn, NY 11217) thoughtfully cautioned against "The Bare-Brick Mistake," citing loss of thermal and sound insulation, as well as aesthetic damage. Homeowners have been rediscovering plaster repair techniques. The same journal also explained the risks involved in removing paint from exterior brick, in an article by Theodore H.M. Prudon, who has given P/A some of his observations on the restoration of terra cotta (p. 98).

Exposed brick is but one manifestation of an attitude of nostalgia, which prompts us to equate the old with the primitive—an error architects should be immune to, but obviously are not. The same urge leads to the retention of a few elements as camp counterpoint to our own sleek (if all goes well) insertions into the fabric.

Of course, there is the possibility of brilliant juxtapositions of old and new elements; Hardy, Holzman, Pfeiffer & Associates, Michael Graves, Gwathmey/Siegel Associates, and others have achieved this in diverse ways. But this is a risky, very sensitive process that can turn out something merely eccentric or instantly dated.

A safer rule is the time-tested one: never do anything that cannot be undone. This is one of the great virtues of the remodeling of Union Station, Washington (p. 58). The program for it may have been poorly conceived—an open question, since it has never been fully carried out—but a superb building has been saved, its quality powerfully confirmed. The possibility remains open of giving it a *real* use, even refilling the gratuitous well in its main floor.

The examples in this issue are meant to demonstrate a deepening appreciation of buildings from times past, not just as economic assets or as pretexts for architectural tricks. Without retreating into Williamsburg-style "restoration," we can find out what the original colors were and how they enhanced the design; we can avoid puncturing fine ceilings with down-lights and design more effective alternatives; we can reconsider standard details, developing better ones to complement the existing work.

Obviously, the goal in every case need not be reconstruction of the original designer's intent. The creative contributions of our own generation, too, should be evident to varying degrees. But we should develop *respectful* adaptations, based on appreciation of the existing fabric.

John Morris Diefen

Views

Suspension suit

The issues involved in the anti-trust suit (P/A, Sept. 1977, p. 21) against the American Institute of Architects and Seymour Auerbach, filed by my attorney and Ralph Nader's Public Citizen's Litigation Group, are important to the architectural profession and the Institute.

The facts concerning the AIA's proceedings, Mr. Auerbach's actions as the architect under contract to the Railroad Owners for the design of a new railroad terminal, the National Visitor Center Parking Garage and the conversion of Union Station, and my actions as architectural consultant to the National Park Service for the National Visitor Center since 1972 should be completely and accurately reported to the public. I am certain *Progressive Architecture* will want to carefully investigate and accurately re-

port the facts concerning this case.

It would seem reasonable to begin by correcting the errors in the News Report section of the September issue. For your information:

1 The AIA proceedings concerning this case have been dragged out over two years, not one, in spite of my requests for a speedy resolution of the questions, and, the proceedings have been leaked to the press in such a way as to create an incomplete and false impression of what has been involved.

2 My membership in the AIA was not suspended on July 31, 1977, and I am currently a member in good standing. On October 5, 1977, the U.S. District Court will be holding a hearing on my motion to enjoin the suspension and further disciplinary proceedings of the AIA on the grounds they violated the Sherman Anti-trust Act and that there are no facts to support my violation of the ethical rules.

3 The anti-trust suit is against both the AIA and Seymour Auerbach.

4 I did not "negotiate for the Union Station work" while the work was "being handled by Auerbach." The government in 1975 after the receipt of bids on Mr. Auerbach's completed plans, informed the Railroad Owners that it could not proceed with construction based on Mr. Auerbach's plans for the National Visitor Center; that it would assume responsibility for determining what, if any, construction would be accomplished based on Mr. Auerbach's plans, and would assume responsibility for the design of the project. The government requested that I undertake, under the terms of my existing contract (since 1972) as Architectural Consultant to the National Park Service for the project, responsibility for advising the government on a minimum construction program responsive to budget and schedule limitations of the project by July 4, 1976, including the design requirements for the restoration of Union Station and the construction of temporary visitor facilities and for the coordination of the many design and construction needs of the project.

5 I never "used Auerbach's work without giving Auerbach credit." (In fact, I insisted that my government contract provide that I *not be responsible for Auerbach's work.*)

6 The Justice Department investigation, which was unrelated to the AIA proceedings or issues involved there, was initiated only because as a result of the incomplete and false leak of the AIA's investigation of me, the National Park Service desired a full and complete investigation of my government contracts. After a full investigation, the Justice Department found no evidence of wrongdoing and closed its files.

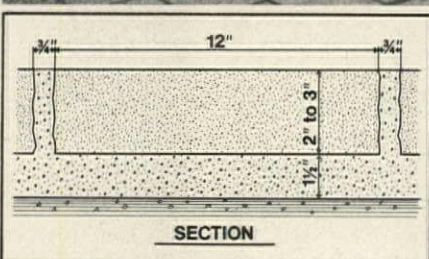
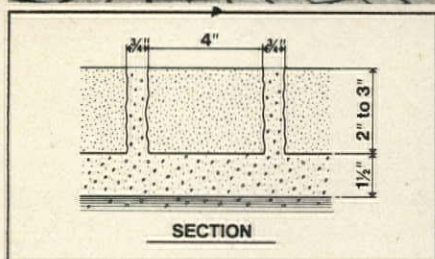
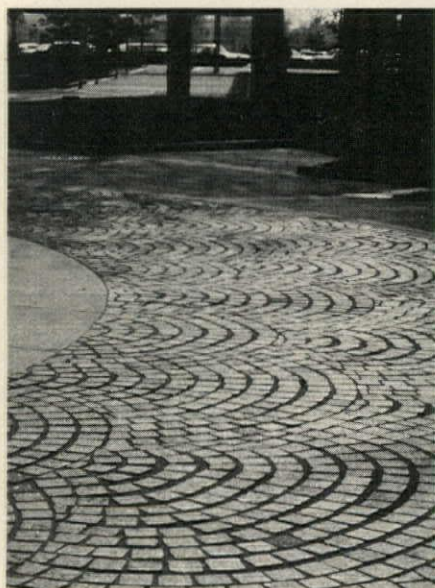
7 The correct spelling of my name is Aram Mardirosian.

Aram H. Mardirosian
The Potomac Group
Washington, DC.

[Our article was based on reports in the *Washington Post*. We made an effort to confirm these facts with both Mr. Mardirosian and the AIA, establishing to our satisfaction that these reports were not inaccurate. We appreciate Mardirosian's amplification of the situation, printed above. We regret the inadvertent misspelling of his name.—Editors]

[continued on page 14]

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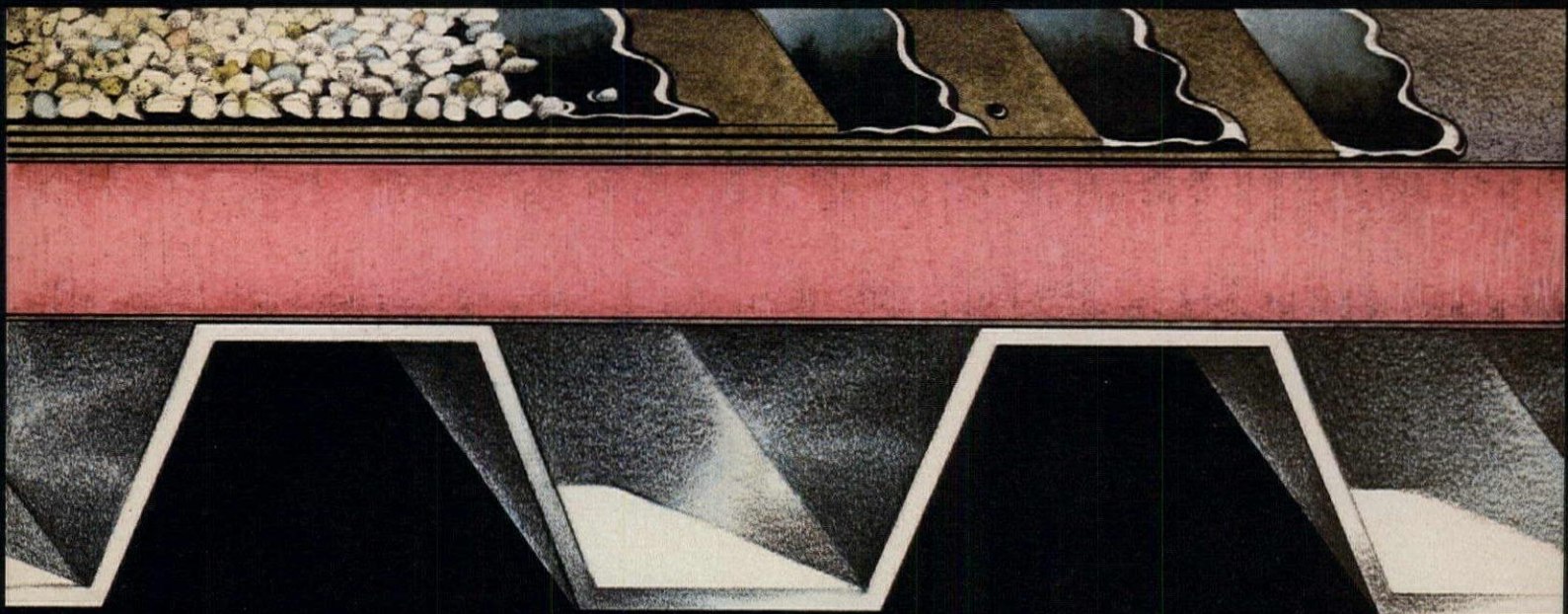
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11.1	1.6"	1.6"		2-7/16"	
12.5	1.8"		2.2"		
14.3	2.0"	2.0"	2.5"		
16.7	2.3"	2.3"	2.8"		
20.0		2.8"	3.2"		
25.0		3.0"			

*In two layers.

†NOTE: Under normal use, Thermax and Tempchek Roof Insulations will retain an average of 80% of their thermal resistance (R factor) values.

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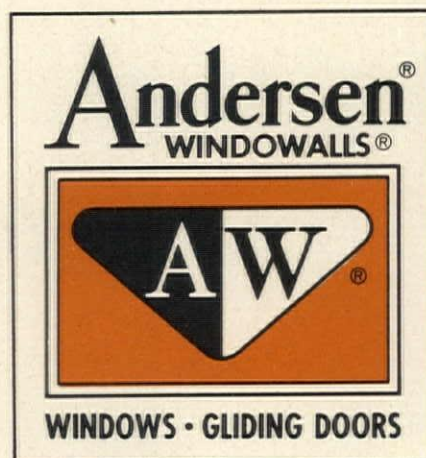
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Views continued from page 8

Credit due

Perhaps there is no embarrassment at B&B America over richness but there should be a sense of embarrassment about the distorted facts that were given to *Progressive Architecture* regarding the design of their showroom (P/A, Sept. 1977, p. 74).

Inasmuch as B&B America included my name this time, I feel compelled to set the record straight as to the design credit. To say that Afra and Tobia Scarpa and Enrico Trabacchi designed the showroom is not exactly true and to publicly give them all the credit is unfair. They should be credited with the graphic image of the showroom and no more. They had very little to do with the architecture of the showroom and

absolutely nothing to do with the elevator lobby. I planned the space and my architectural drawings were used for the construction and they included the details, the elevator lobby and the conference room.

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Four ways good

I've enjoyed your quality publication for years but feel compelled to praise your September issue on "The plain, the fancy, the real and the unreal" as superb. Congratulations.

David D. Edwards
Special Projects Editor
Hudson Publishing Company
Palo Alto, Ca.

Bronx state overexposed?

Looking at the July 1977 P/A this week, it occurred to me how *tired* I am of seeing pictures of the Bronx Developmental Center. What is the big deal about this building? Architects for generations have been building monuments to their own extremely narrow and sterile egos; How fortunate for the architect that the pictures did not have to be cluttered with furniture and people, or anything else that reflects the texture and color of humanity. At least we could live comfortably in the Beaux-Arts palaces.

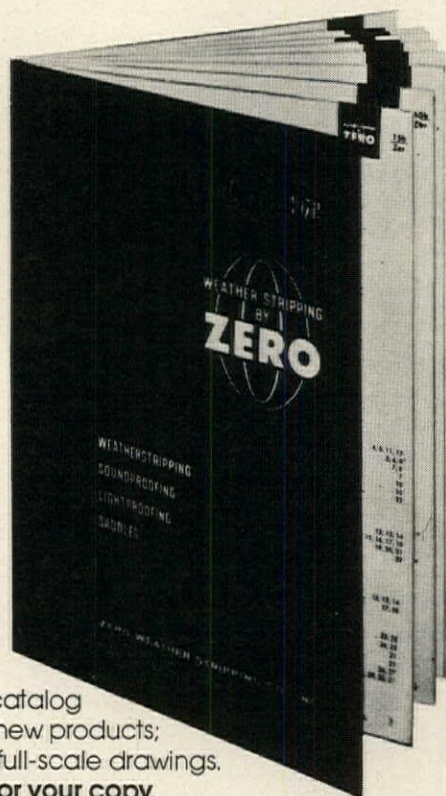
Gary P. Turpening, AIA
Susquehanna Design Studio
Mechanicsburg, Pa

[If numerous photos of this building were seen previously, that is largely because it won several awards in the spring of 1977. Our P/A feature was the first full publication of the completed building. We, too, were frustrated over the long delay in occupancy of the building—for reasons not directly related to its design, which are spelled out in the article itself. Our preference is to see and show the building as occupied.

—Editors]

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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

Baltimore City Hall (p. 76). Architects: Architectural Heritage-Baltimore, Inc. and Meyers, D'Aleo & Patton, Inc., Baltimore, associated architects. New materials: Structural steel: Dietrich Bros., and Lambert Fabricators. Gypsum board: United States Gypsum. Marble: Hilgartner Stone Co. Carpet: Stratton Industries. Acoustical tile: United States Gypsum. Slate: Buckingham-Virginia Slate Corp. Built-up roof: Celotex. Insulation: W. R. Grace & Co. Interior roof drains: Zurn. Interior windows: Hope's Windows, Inc. Exterior windows: John J. Bruns, Inc. Interior doors: Eggers Hardwood Products (wood), Williamsburg Steel Products (steel). Elevator doors: Elevator Doors, Inc. Hardware: Rixson, Russwin, Stanley. Paint: PPG. Kitchen units: Acme National Refrigeration. Auditorium seating: JG Furniture. Elevators: General Elevator Co., Inc. Plumbing: Kohler, Sloan. Sprinklers: Star Sprinkler Corp. HVAC: Carrier.

Restoration Plaza Shopping Center, Brooklyn, NY (p. 80). Architects: Arthur Cotton Moore/Associates, Washington, DC. Steel bar joist and steel deck with concrete fill floors: Granco Steel Products. Face brick and brick pavers: Merritt. Vinyl asbestos floor tile and acoustic lay-in ceiling tile: Armstrong Cork Co. Built-up roof: Johns-Manville. Batten seam terne metal roof: Follansbee Steel Corp. Polyurethane elastic waterproofing: Robson Corp. Resinous coatings: Coatings and Adhesives Corp. Blanket insulation: U.S. Gypsum Co. Board insulation: PPG Industries. Cast iron dome drains: Josam. Gypsum board on steel stud partitions: U.S. Gypsum Co. Window glass: PPG Industries. Window gaskets: F.H. Maloney Co.

[continued on page 128]

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The International Space Hall of Fame,
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Architect: Charles Nolan,
Alamogordo, New Mexico
General Contractor: Frank Tatsch,
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DOVER

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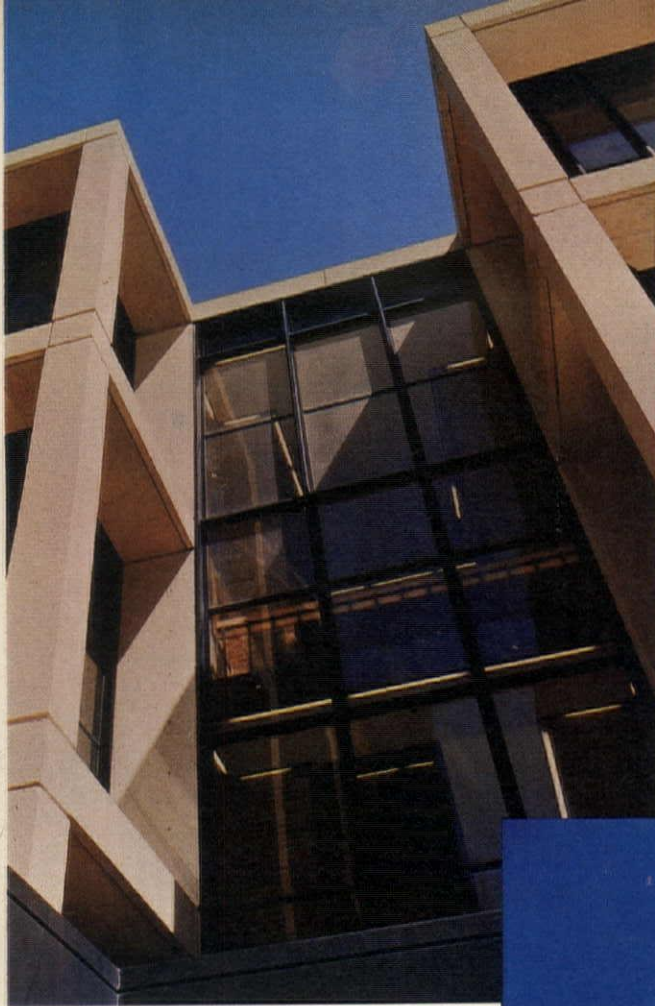
Photo: Nashville House
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Architect: Robert Lamb Hart/HKS

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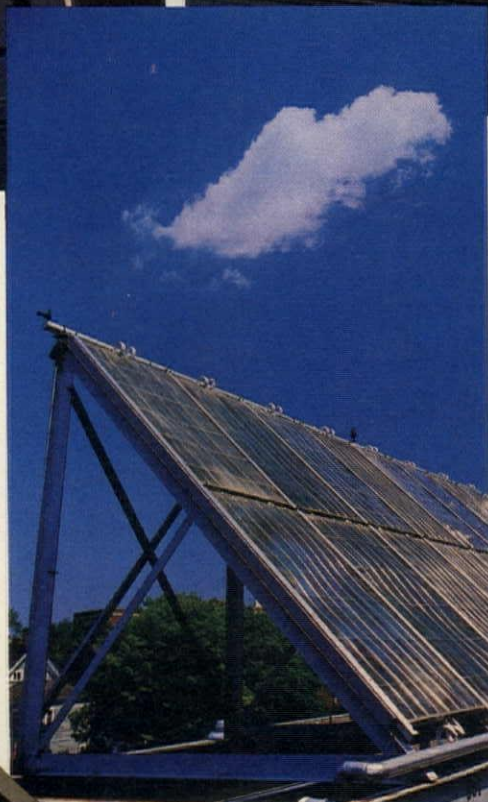
Photo: Walt Disney Magnet School
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Architect: Perkins & Will



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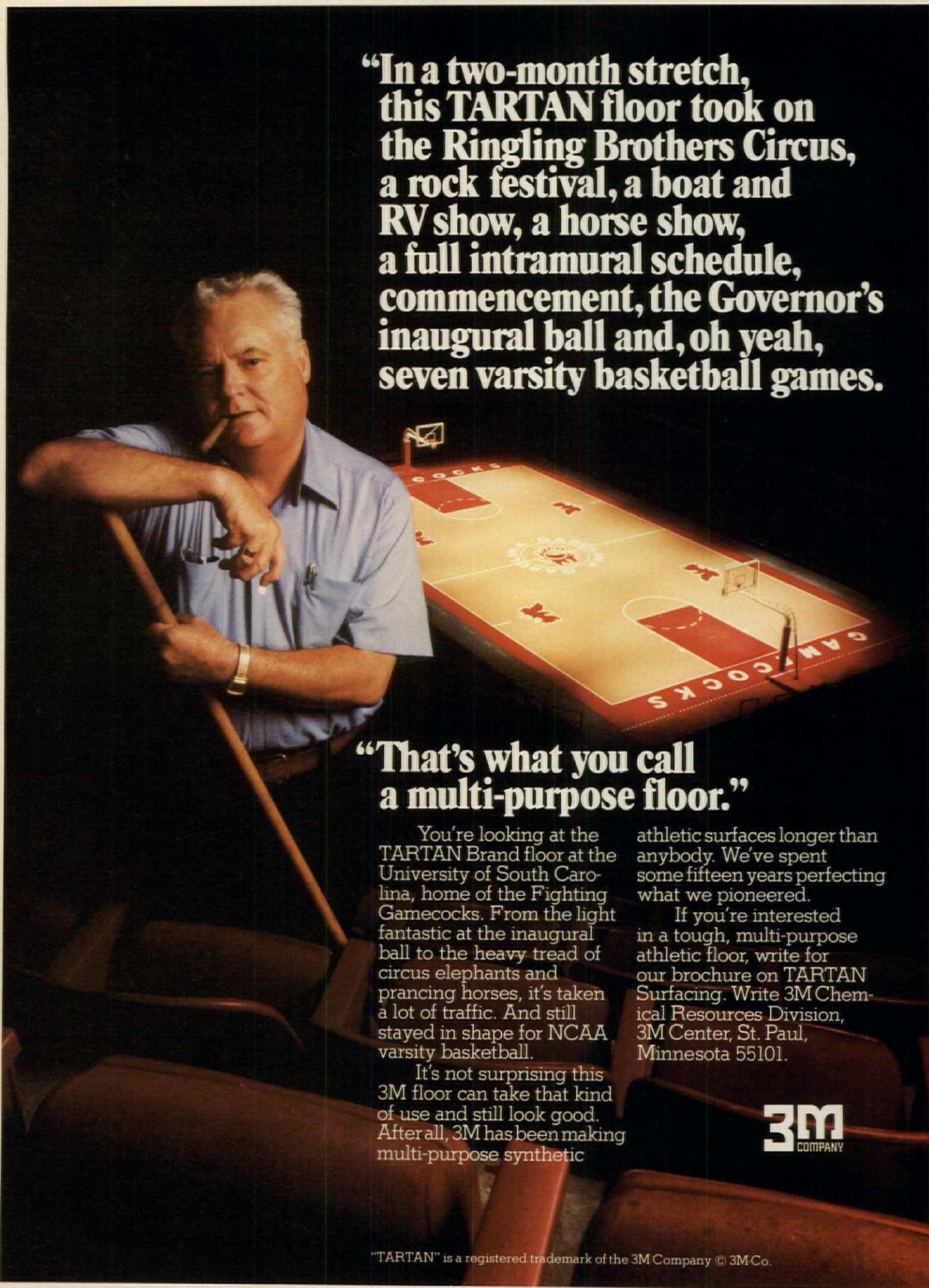
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A man with grey hair, wearing a light blue short-sleeved button-down shirt, is leaning on a wooden pole. He has a cigarette in his mouth and is looking towards the camera. In the background, there is a basketball court with a yellow and red TARTAN floor. The court has "GAMECOCKS" written on the side. A basketball hoop is visible on the right side of the court.

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News report



Good-bye Beaux-Arts: Robert Burnside townhouse of 1905 (left) and Hunt & Hunt townhouse (right) of 1902 are to be replaced by Museum of Modern Art expansion.

City okays MOMA's controversial plan

After three weeks of deliberation, New York's City Planning Commission on Sept. 26 approved the zoning variances needed by the Museum of Modern Art to undertake its controversial apartment tower and museum expansion plan (P/A, Sept. 1977, p. 7). The commission vote, while unanimous, was accompanied by an extensive statement debating the urban design, architectural, legal, and economic issues. In contrast, the Board of Estimate passed these zoning (land-use) related variances in one day.

The variances waive the 15-ft setback and allow the museum tower to exceed the aggregate area limitation of 1875 sq ft per floor, by 3025 sq ft per floor, within 50 ft of this street line. The next hurdle is the Board of Standards & Appeals' decision on variances on property encroachments belonging to the Dorset and St. Thomas Church. This too, is expected to occur with the same dispatch.

If all goes as planned, numbers 21 through 35 West 53 St will come down for the Cesar Pelli-designed museum addition and the Pelli/Jacquelin Robertson-designed tower. Gone will be the 1951 museum addition by Philip Johnson, the 1902 Beaux-Arts townhouse by Hunt & Hunt next door, and another townhouse by Robert Burnside. (While the New York Landmark Preservation Commission considers some of these historically or architecturally significant, it had not yet actually designated them singly or

as an historic district, when MOMA's plans were announced).

Other "background" buildings—brownstones and low-rise buildings—housing shops, galleries, small museums, including the Museum of Contemporary Crafts will go too. As it turns out, the Museum's Trust for Cultural Resources has condemnation powers over a large part of this property. Although the Trust has munificently chosen not to exercise those powers they nevertheless have given it a hefty leverage in its acquisitions. Involved in the assemblage are two *more* buildings (nos. 37 and 39) that the Museum says it had to purchase as part of the settlement with Aeon Realty, owner of nos. 33 and 35 over which the Trust has condemnation powers. According to the architects, a second phase museum expansion is planned on that site in the future.

Retained along 53 St will be the International Style 1939 Philip Goodwin/Edward Durell Stone façade of the Museum proper (but only the façade) and the 1964 Johnson wing façade. The MOMA sculpture garden will still lose about 30 percent of its area although the restaurant building at the east end of the garden will be three stories instead of the original five.

Despite these above changes in the scheme originally presented, which were made as a result of opposition, opposition still weighs heavy in the air. The New York Chapter of the AIA accepted the tower concept on financial grounds, but argues, in the words of chapter president Peter Samton, that the museum should "protect the variety of scale and significant historic

buildings along the mid-block portion." The scheme does not reflect today's architectural thinking, he states, "which recognizes more than ever the desirability of adaptive reuse."

In the Board of Estimate hearing William Hubbard of the City Club of New York wondered "What has happened with the aesthetics of the city with the destruction of a beautiful and irreplaceable Beaux-Arts building by an Institution whose purpose is to maintain our cultural heritage. It is ironic and strange. The erection of an overwhelming 44- to 50-story mid-block tower defies the zoning regulation's setback rules and the efforts by many of us to enhance the quality of life in the city by preserving livable human-scale neighborhoods."

Other critics warn of the insidious destructiveness of the commercial trade-off. This desperate move to build the tower sacrifices too much in urbanistic quality, a specially acquired identity of the museum and sense of place, for what it gets: For according to economic evidence, the museum will only receive for certain \$7 million for the air rights (after the apartments are sold and rented) along with tax equivalency payments (low for a ten-year abatement) which will go towards paying debt service on the financing of the gallery construction.

There are still other obstacles to the museum's moving quickly. The Dorset Hotel on 54 St—from where there will soon be direct views of the tower—is suing the Trust for Cultural Resources and the City on the ground that the legislation serves only special interests, and therefore is unconstitutional.

News Report

The Trust and the City are currently attempting to get the case dismissed or have the judge issue a summary judgment, a decision without trial. Considering that its legislation gave the Trust powers to override local zoning and codes, it seems the Dorset lawyers have a good point in pressing for such an examination. Meanwhile the Trust generously decided to submit to city zoning and code approvals anyway. But considering its legal set-up, this entire city approval process was a bit of a charade. [SS]

Matrix design for Galveston's Strand

Even a project as modest as an exhibition system can have significant architectural content. The Texas Society of Architects recently cited Taft Architects of Houston with special commendation for the firm's solution to the exhibit needs of the Galveston Historical Foundation. GHF is one of the organizations rehabilitating The Strand, Galveston's cast-iron district (P/A, Dec. 1976, p. 26) and its exhibit was not only to explain activities but also to engage citizens in the idea of preservation and adaptive re-use as a continuing process.

Initially the exhibit was to be in the north lobby of the "newest" Strand building, the Art Deco Santa Fe Station. A constraint was the anticipated renovation of the building by the Moody Foundation; this would necessitate a change of venue by the Historical Foundation within a year. (In fact, GHF only recently has decided to relocate to the oldest Strand building, the 1859 Hendley Building, and again has retained Taft Architects for adapting the exhibition system to the new space.)

The exhibit was designed to be demountable and movable. Aside from solving the problem of flexibility through detailing, the design additionally was conceptually open-ended, thereby encouraging expansion and change as the activities of GHF developed. The concept was a matrix of time versus location. In the context of the Santa Fe building, one part was a linear spine leading from



Exhibit matrix for Santa Fe Building

The Strand entrance, through the interior, and out to the railroad platform. This "arcade" had a ragged edge in plan both to create nodes denoting a particular area of Galveston and to articulate the cross-circulation intersection creating the matrix. The cross-circulation, underscored by color and graphic treatment, is in the form of "streets" progressively organized to reflect the past, present, and future.

The system was designed to maximize the number of "columns" and "lintels" which could be cut from standard plywood sheets. The entire structure was shop-fabricated and painted, trucked to the site, and assembled with simple hand tools; the total cost was \$1.92 per sq ft.

'Poor man's' cultural center

Ten years ago the city of Milwaukee, owner of the Pabst Theater, which was built in 1895 for the Pabst Brewing Company, was seriously considering tearing down the venerable but under-used Victorian theater. The new performing arts center in town surely would complete what years of neglect had begun on the old hall. But a year ago after a \$2.5 million renovation, people stood in lines out to the street to buy tickets for the grand re-opening of the theater: a tribute to the mayor who led the drive to restore the hall as a kind of "poor man's"—or counter-

culture—performing arts center.

Mark F. Pfaller Associates of Milwaukee was the architectural firm which undertook the restoration. Structural systems had to be reinforced and new heating and ventilation installed as well as decor refurbished—true to the period, since Conrad Schmitt Studios, a firm of designers, had been maintaining files on the Pabst for nearly half a century.

The number of seats were reduced from the original 1665 to 1388. Research took an ample three months, and produced one of the major restorations: an exact duplication of the canopy, at a cost of \$25,000.



Milwaukee's Pabst Theater.

The theater was rebuilt in 1895 after it burned down. The architect was Otto Strack of Milwaukee who had experience designing plants for the Pabst brewery but not theaters. However, when the hall opened six months after groundbreaking, it was an immediate success and was praised by both patrons and critics. Today it's on the National Register of Historic Places, and restoration money included funds from HUD's Open Space Program.

IAUS celebrates tenth anniversary

The Institute for Architecture and Urban Studies, New York, celebrates its tenth anniversary this year with a series of events beginning with an open forum and reception Dec. 12

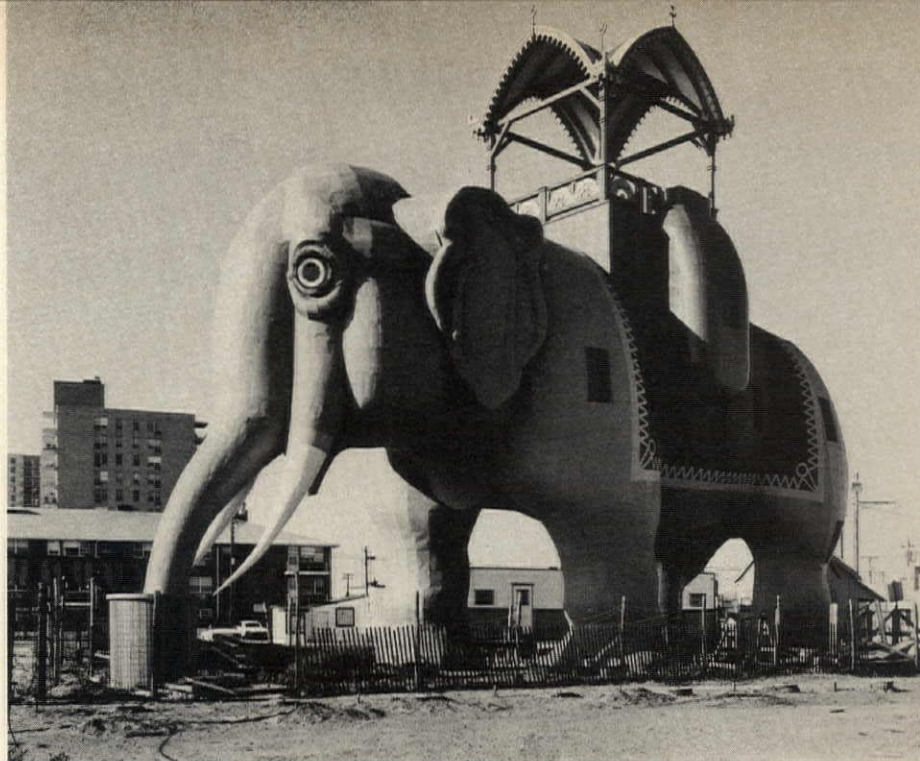
and the opening Dec. 15 of an exhibition series. An international conference will be held in the spring addressing the theme "Realism versus Formalism." This year the Institute launched a three-year educational program entitled "Open Plan" which is funded by a \$357,000 grant from the National Endowment for the Humanities. The Institute also publishes *Oppositions*, a journal of architectural criticism and theory, and *October*, a journal discussing the arts and general culture. Among the Institute's programs are a high school introductory architectural course held on weekends and the creation of 647 experimental living units in Brooklyn for the New York State Urban Development Corporation.



Rodale Theatre in former church, Allentown.

Allentown church becomes a theater

A 75-year-old church and parsonage in downtown Allentown, Pa, have become a 270-seat theater for year-round professional productions. Brown, Zajacek & Roth of Bethlehem, Pa, were architects for the \$500,000 project turning the interior into a centrally air conditioned and fully sprinkled theater with a proscenium stage that can be converted into a thrust stage. Interior design was by George Werner of Allentown. The Romanesque-style exterior was preserved with the exception of a horizontal 18-in. steel beam arched at one end; the beam unifies the two buildings and serves as a canopy while relating to the architectural theme of the city's Hamilton Mall (P/A, April 1974, p. 42). The J.I. Rodale Theatre is named after the founder of Rodale Press; his widow commissioned the project, and the city cooperated in the development.



Jack Boucher

Elephant building in Margate, NJ, enters a new life as a museum and community center.

'Lucy' forgets not nor is forgotten

A six-story-high elephant built by an enterprising real estate developer in 1881 on the south New Jersey shore, has been moved and restored and made into a museum and community center. "Lucy's" memories include the time she received a U.S. Patent in 1882; the summer in 1902 when she was a beach cottage; her stint around 1904 when she was a tavern and later a bath house. In 1966 she was placed on both the state and national Register of Historic Landmarks. In 1970, condemned by the building inspector of Margate, NJ, Lucy was the center attraction of the Save Lucy Committee and moved to a beachfront site two blocks south of her original post. With \$61,750 in federal grants Lucy was restored—National Heritage of Philadelphia (now John Milner Associates), a historic preservation firm, serving as architects.

Mixed-use buildings in downtown Denver

An area near a razed urban renewal district of downtown Denver began revitalization when it was re-zoned for multiple uses, including residential, to preserve a number of notable old buildings. Wazee Design & Development and architects Decker & Associates, both of Denver, took a block of old buildings that once were resi-



Blake Street Bath & Racquet Club, Denver, front view (above) and rear (below).



dential but had been gutted to make warehouses, and turned them into nine condominium living units with adjoining commercial space, tennis court, and swimming pool with a sauna and lounge. Wooden store fronts were removed and original cast iron columns exposed. The roof was insulated; aluminum door and window frames installed as well as new plumbing and heating. The Blake Street Bath & Racquet Club was completed for \$19.32 per sq ft, total construction cost.



Chicago Public Library Cultural Center.

Chicago library goes cultural

The 80-year-old Chicago Public Library, designed in the Beaux-Arts style by the Boston firm of Shepley, Rutan & Coolidge, architects of the Art Institute of Chicago, has for years been deemed inadequate for the expanding needs of the library system, and a 1967 report called for demolishing the building. This fall, after four years of extensive renovation, the library has re-opened as the Chicago Public Library Cultural Center. The \$12-million project was by architects Holabird & Root of Chicago. Included was restoration of interior decoration: Tiffany-style domes and mosaic murals. Heating and ventilating systems were replaced and air conditioning installed; new furnishings and lighting were brought in. A new addition enabled the third- and fourth-floor wings of the library to be connected for the first time.

While most of the library functions have been relocated, the central library, located downtown facing Grant Park and Lake Michigan, still houses a popular library, children's collection, and audiovisual center. A 295-seat auditorium has been installed in the richly ornamented Grand Army of the Republic Civil War Memorial Hall.

In 1970 an architectural competition for the library to find a solution for expansion as well as preservation of the landmark was won by a joint entry of two Wisconsin firms. The winning scheme reportedly was not implemented due to substantial structural alterations proposed.

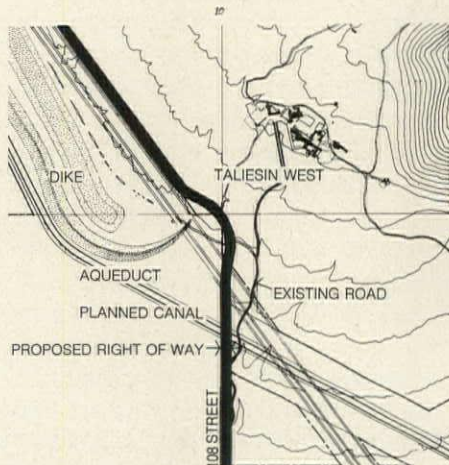
F. L. Wright's hotel sold

The Arizona Biltmore in Phoenix, designed by Frank Lloyd Wright and built in 1929, has been sold to the Rostland Corporation, a group of Canadian investors, which has arrangements with Western International Hotels to run the property. The purchase price was in excess of \$20 million. Recently a \$5 million free-standing wing of luxury accommodations was added to the structure (P/A, Oct. 1975, p. 52). The addition was designed by the Frank Lloyd Wright Foundation at Taliesin.

James Norris



Wright's Arizona Biltmore, Phoenix.



Proposed road through Taliesin West.

Taliesin West worried over road

Proceedings are going forward, although slowly, for a new road across a portion of the property connected with Frank Lloyd Wright's Taliesin West compound near Scottsdale, Az. The road was requested by Herberger Enterprises of Scottsdale, which wishes more direct access to property beyond the Taliesin land. The Scottsdale City Council, approving the developer's request a year ago, stipulated that the road be two-lane—not four—as the developer wished.

The road design has not been established, but a scenic parkway type is being considered. Taliesin is altogether opposed to encroachment on the land, which it leases from the state; observing that the property is on the National Register of Historic Places. A Taliesin statement cites support from the National Trust for Historic Preservation and the Committee on Historic Resources of the American Institute of Architects. The present road was planned and built by Wright. Final approval for the new road must come from the State Land Department.

Seattle center in can factory



Seattle Trade Center.

The \$15-million Seattle Trade Center opened this year in the former American Can Company plant on the waterfront in downtown Seattle. The Center is by Ralph D. Anderson & Partners and has a five-story interior court created by breaking through the floors; 340,000 sq ft of showroom and office space were created, and an additional 265,000 sq ft on the renovated Pier 69 provided for specialty shops and restaurants. James D. Braman was the urban planning consultant, and the site-use concept and development were coordinated by the Waisman Architectural Group. The developer is the Seattle Trade Center, a closed corporation of developer, real estate, architectural, and apparel manufacturing and retail concerns. [News report continued on page 26]



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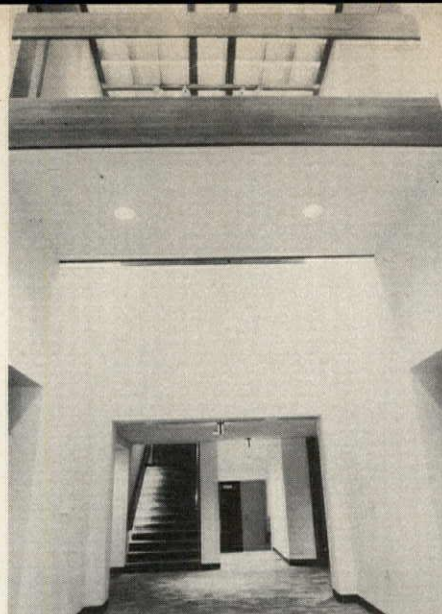
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In perspective

The chemistry here is good design

Several visits to the "new" Museum of Art and Archaeology at the University of Missouri, Columbia, prove the building to be an excellent instance of adaptive reuse. This is the old Chemistry Building on the main, or "Red," campus—so called because of its quangular plan of red brick buildings of the late 19th Century. The exterior remains almost exactly as it has appeared since completion in 1894, with tall main tower and a subsidiary tower.

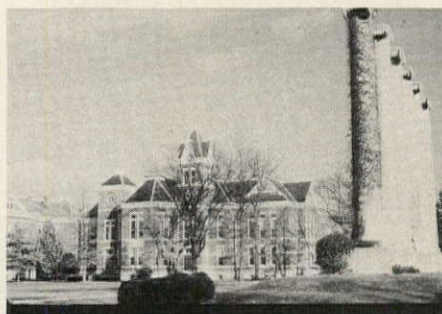
Art & Archaeology formerly occupied the west-end attic space of the main building on this campus, Jesse Hall. As the art and archaeology collections grew the collections were



Museum entrance hall.



Old Masters Gallery (above); exterior of former chemistry building (below).



displayed in dispersed quarters. The removal of the chemistry department made its building available, and St. Louis architects Hoffman/Saur & Associates were asked to plan its renovation within a budget of \$742,000.

The renovation converted high-ceilinged laboratories on the first and second floors into exhibition galleries and a small auditorium. One of the spectacular features is the opening of the old entrance corridor into a two-story space, crossed by a second-floor walkway.

The generous scale of the old building has been exploited to give the interior a fresh, contemporary feeling, with some walls in warm reds and brown, others in off white and cool blue-gray. The building has its own environmental control systems. It has been found by its regular occupants and by visitors to work very well as a coherent, efficient arrangement of its diverse facilities for public exhibition and scholarly business.

Pat Spector, who was the H/S designer for this project, is now with SRT Architects/Planners (Pat L. Spector, Donald C. Royse, Andrew J. Trivers) formed after the H/S dissolution. SRT has continued as consultants for this project. The building is now the John Pickard building, named for the founder of the university's first art museum and also founder of the *College Art Journal*. [George McCue]

Yarn factory goes contract

A 365,000-sq-ft yarn mill on the Shetucket River in Taftville, Ct, outside Norwich has been taken over by Helikon, makers of contract office furniture, which spent \$1.5 million purchasing and renovating the 107-year-old buildings. New construction for equiv-

alent space would have cost an estimated \$3 to \$4 million. In charge of the retrofit was Helikon's own chief designer and vice-president, Robert Becker, who created administrative offices by partitioning space formerly used for storage. Paint 50 layers deep (by Becker's count) was sandblasted

to the first coat; floors were carpeted and the carpet extended partially up the walls in the corridors. The trussed roof of light pine was accentuated by lighting fixtures under the beams, which reflected the illumination and created a soft yellow glow.

The main building with bell towers is 700' x 70'; it makes a perfect wood-working/assembly line for the furniture fabrication. Originally, a cafeteria was planned, but employees said they preferred to eat in their own work areas, picnic style. Additional space in the vast complex of six buildings is leased to other concerns. The economy of the effort goes unquestioned: "We couldn't reproduce that kind of factory space for four times the amount we actually put into it," said Becker. "And the upkeep is nil," added the company's business manager, approvingly. [Ann Carter]

[News report continued on page 30]

Helikon executive office (left) and lobby/showroom (right) reclaimed from a mill.



Photos: Alexandre Georges



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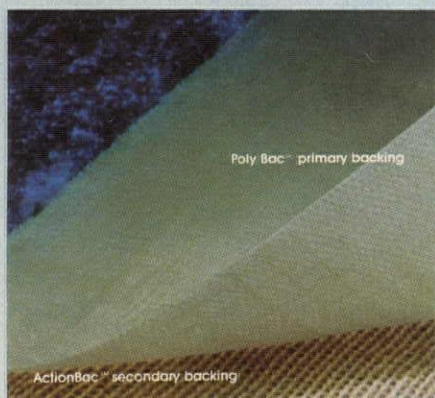
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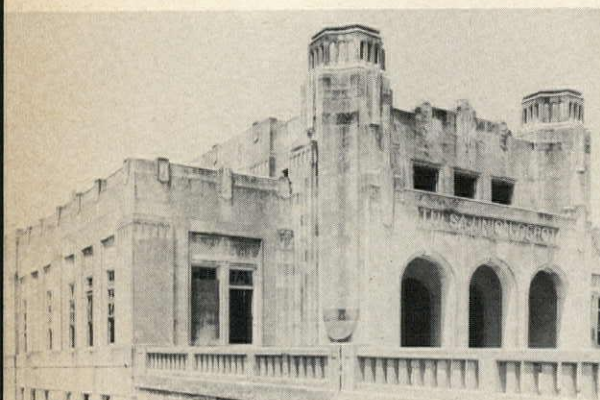




Grand Central Station, Tacoma.



Union Station, Los Angeles.



Tulsa Union Depot.



Union Station, Dallas (above)
Union Station, St. Louis (below).



others; six structures have been acquired through the revolving fund only months after it was established.

Activities of the Conservancy, which has 1200 members, includes reversing the clearance program for the Charter Oak-South Green urban renewal area, which contains 100 buildings, many of Victorian splendor. The group also offers a design consultant service at \$40 per day. It is conducting the citywide architectural survey, required by law, and has researched buildings and nominated areas subsequently listed on the National Register of Historic Places. [Ann Carter]

Saving America's living textbook

"A textbook of American architecture," is how a study describes railroad stations across the United States. The report, "Reusing Railroad Stations," by Educational Facilities Laboratories, New York, discusses as a group the rise and fall of 40,000 stations built since 1830, of which approximately 20,000 remain today. Their presence in most American city centers—stations underused but still presenting a stoic dignity—probably has done as much as any one kind of building to spark the preservation movement. Because of the complexities of reuse (see p. 58), stations largely remain an untried type for recycling. The following examples show the diversity—and similarities—of projects in various stages of realization.

Spanish Colonial architecture reached a high point in Los Angeles

with the completion in 1934 of Union Station, now a National Historic Landmark. Reuse plans will make the building a transportation center, including a terminal for a proposed people mover system, as well as a civic and cultural meeting place, shopping and eating center, and railroad museum. The project has remained at the planning stage, pending funding, but the firm of Daniel Mann Johnson & Mendenhall, which provided the original study, recently has been selected by the city's redevelopment agency for further design study of the buildings.

Neo-Baroque is the rare railroad style of the copper-domed station in Tacoma, Wa, by Reed & Stem, famous as architects of Grand Central Station, New York. The Burlington Northern is developer, planning to add two wings which will contain glass arcades for commercial uses. The architects for the new work are Seifert Forbes & Berry of Tacoma. The historic landmark station, built in 1911, will be the focal point of anticipated additional preservation development across the street as blocks of late 19th-Century warehouses are converted to mixed uses. The project is awaiting final approval pending relocation of a planned highway spur.

The Tulsa Union Depot in Oklahoma is in the process of acquiring landmark status. Dedicated in 1931, the quasi-armory/Art Deco building is owned by the Tulsa Urban Renewal Authority, and an option to buy is held by developers of the adjacent Williams Center.

In Dallas, Union Station is being renovated to open in the spring as the Dallas Transportation Terminal, a project incorporated in the multi-million Re-union development (P/A, May 1976, p. 45). The city's architectural division of the Building Services Department is designing the interior renovation which will house Amtrak and local transportation services on the ground floor and offices, restaurants, and shops on the top two floors. The exterior is being restored to the 1914 character as are major interior spaces, such as the waiting room with its 50-ft-high ceilings.

The St. Louis Union Station, a Romanesque building with obvious potential for recycling, once again has sparked a developer's interest. A pre- [News report continued on page 42]



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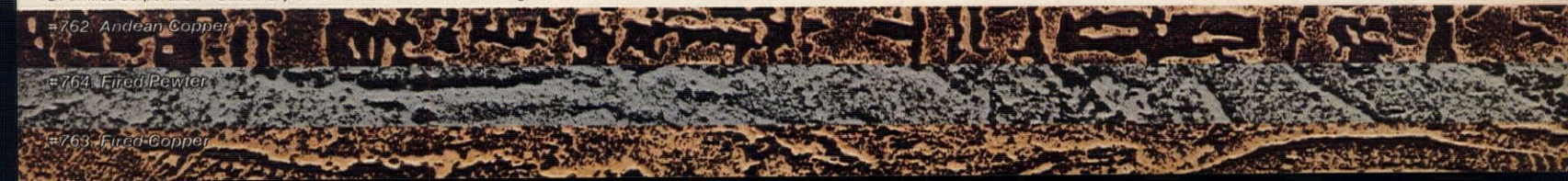
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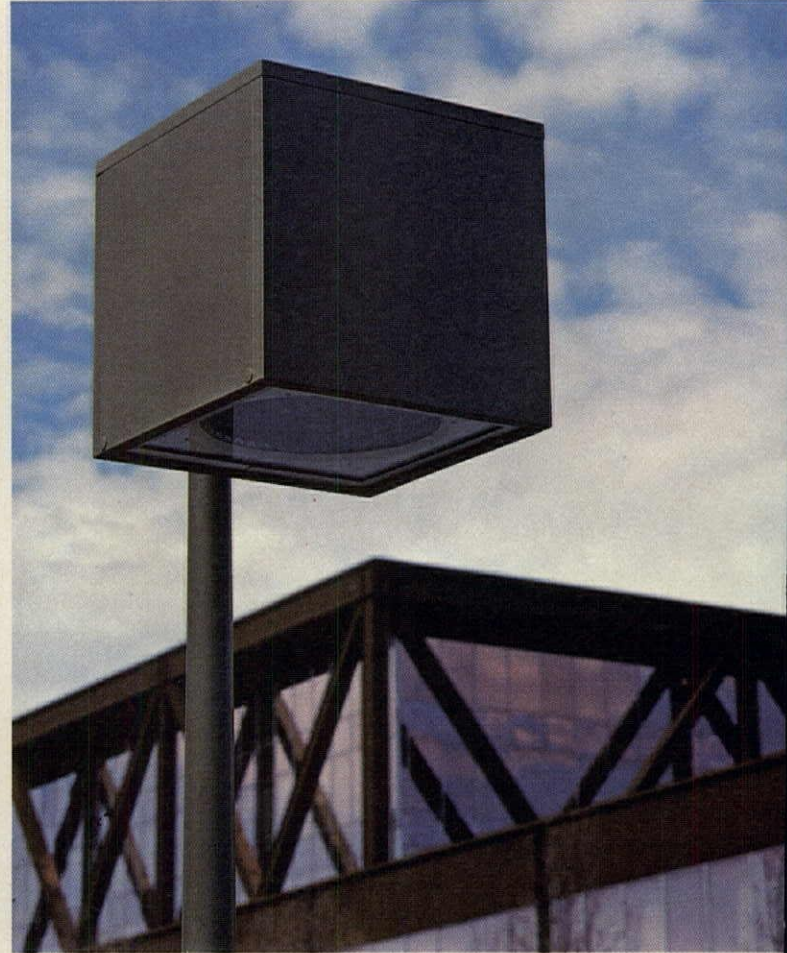
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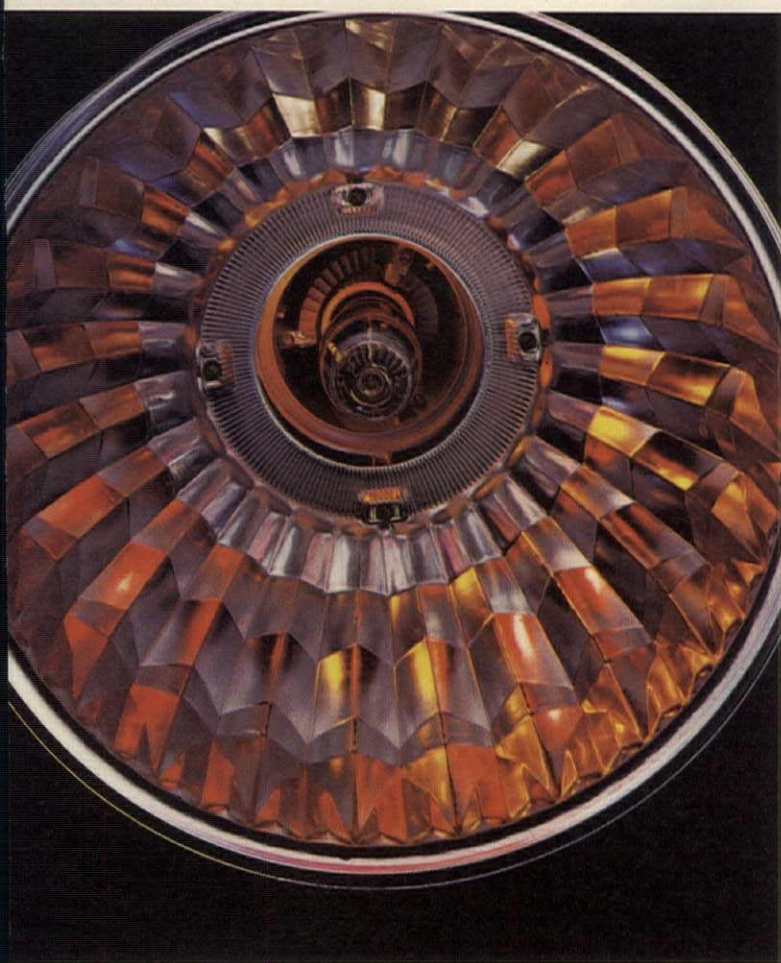
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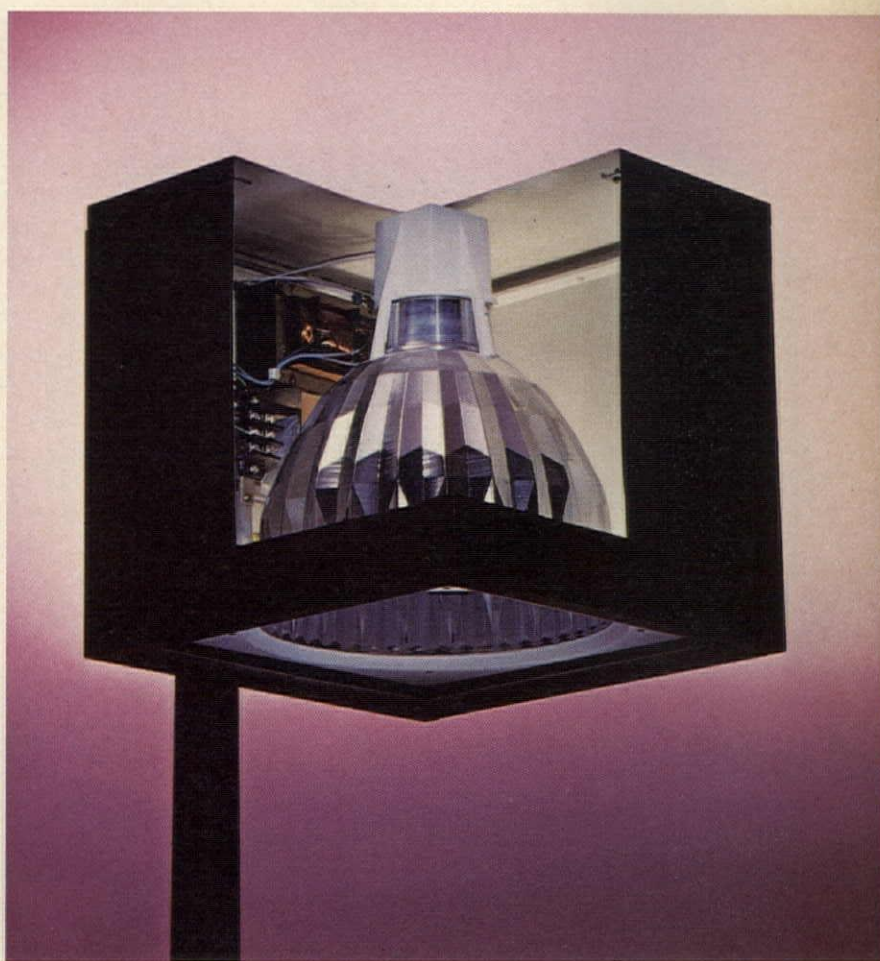
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vious plan (P/A, May 1974, p. 44), launched during economic hard times, won few backers. The station will be transformed into a hotel, office, and commercial complex to be called Union Center. The owners are Walter Wright of Salt Lake City, known for his development of Trolley Square, Bruce Paul of Denver, and St. Louis attorney Charles Tureen. Project architect, planner, and manager is Robert Moore. First phase construction will include a \$5.4-million "turn key" facility for Amtrak. The mammoth train shed will house such activities as an entertainment park and a tennis and racquet ball club; a mail handling structure will become an atrium office building. The terminal itself will be converted into a luxury hotel. The castlelike building was designed by Theodore Link and opened in 1894.

The hub of new construction and preservation activity in Chicago south of the Loop is the Dearborn Street station, built in 1883, oldest of Chicago's several railroad facilities. To the south of the station is the "Dearborn Park"

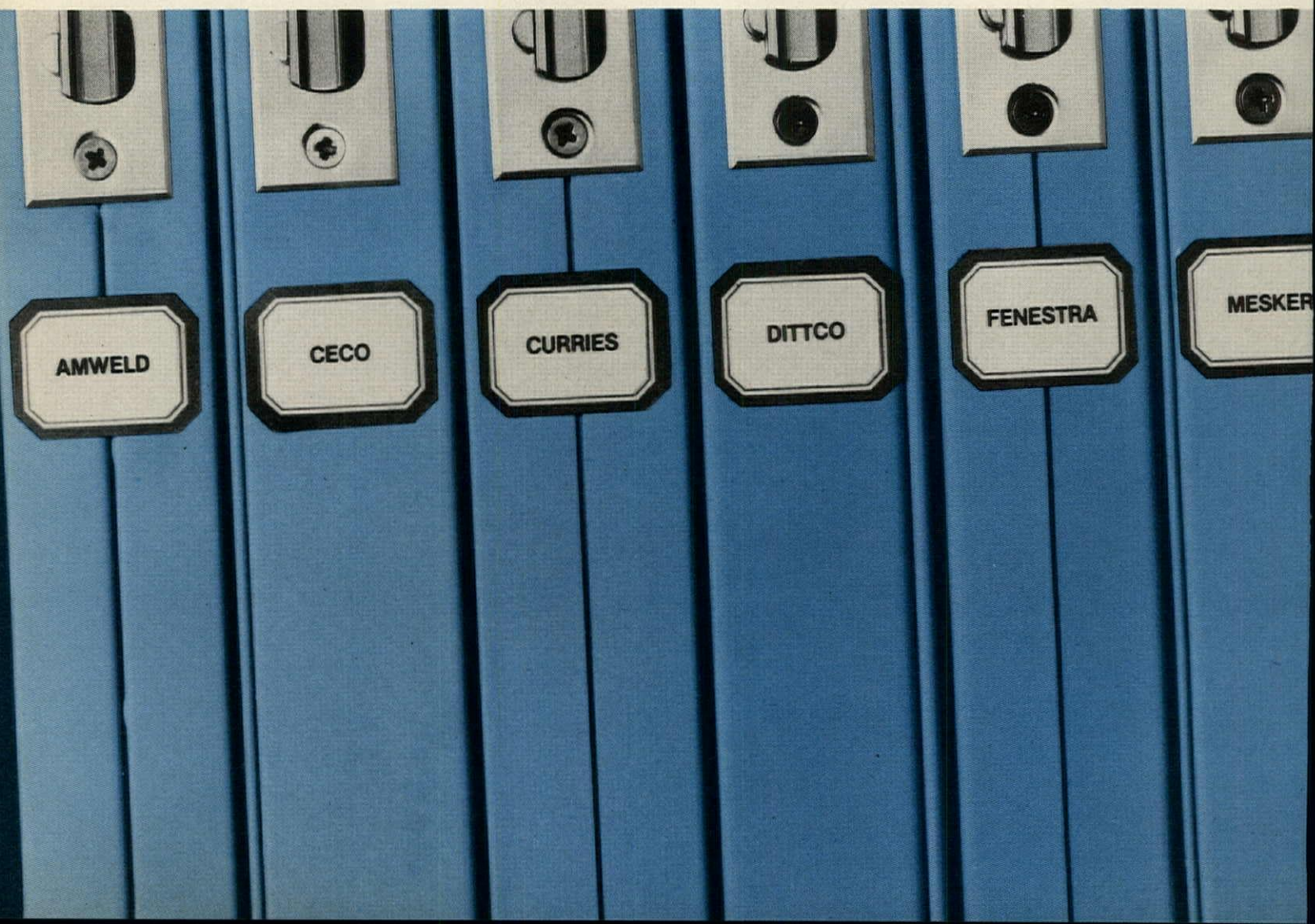
town-in-town, first phase of the South Loop New Town projected in the comprehensive *Chicago 21* recommendations. To the north of the station is a project designated "Printing House Row" proposed by a group of Chicago architect/developers—John Baird/Laurence Booth/Theodore Gaines/Ivan Himmel/Harry Weese—known as the South Dearborn Street Renovation Association. Low-rise brick structures, used for light industry in some cases, would be converted into housing aimed at the singles and college student market. The Dearborn Street station would be converted into multiple uses to add interest and activity: restaurants, a branch library, flower market, sports complex. "Printing House Row" is not seen in competition with its new town neighbor, but as a "wedge" bringing activity from the Loop.

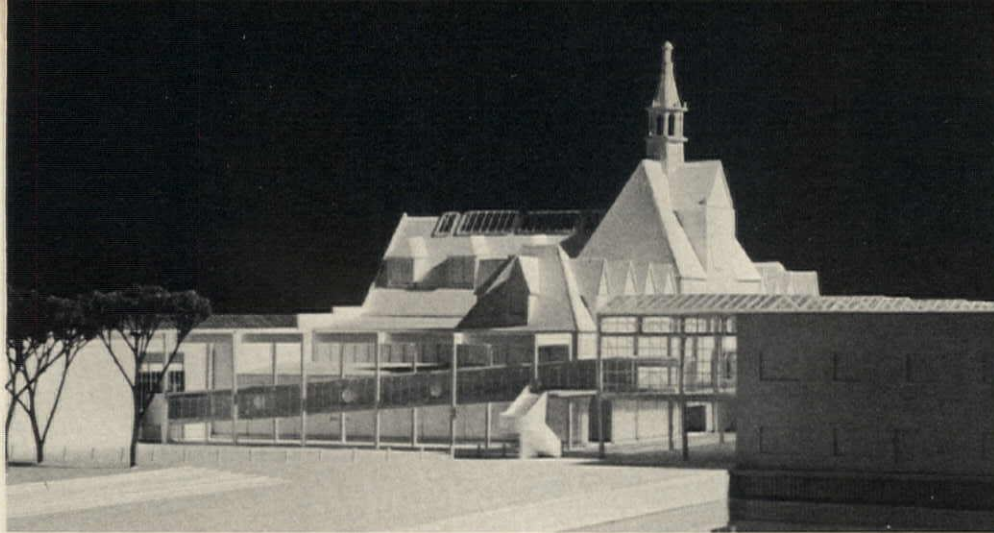
Following the cessation of train and ferry service at the Railroad Maritime Terminal in Jersey City, just opposite lower Manhattan, the property went to the State of New Jersey and plans were formulated for a recreational park. The design team is led by Geddes Brecher Qualls Cunningham of Princeton and includes landscape



Printing House Row, Chicago.

and site planners Zion & Breen Associates of Imlaystown, NJ, and transportation planner Alan M. Voorhees & Associates of McLean, Va. A \$2.4-million federal grant under Title 10 of the Economic Development Act paid for initial park improvements including emergency stabilization repairs on the terminal. Future conversion of the terminal includes a glazed concourse between the 1889 station and the 1914 boat terminal. When completed, the buildings will provide a park information center, restaurants, a gala Festival Hall for social events, and a boat terminal. Consultant on the station is Milner Associates of Westchester, Pa,





Railroad Maritime Terminal, Jersey City.



Union Station, Hartford.

architectural restoration specialists. The New Jersey state agencies involved are the Division of Buildings and Construction, Department of the Treasury, and Division of Parks and Forestry, Department of Environmental Protection.

The Romanesque Union Station, Hartford, Ct, designed by Shepley, Rutan & Coolidge and built in 1889, was sold by Penn Central to local developer Clayton Gengras who in turn leased space back to the railroad and to other tenants including The Hartford Design Group, architects for the station's comprehensive reuse design. Work on an individual per-tenant basis

has been done, but the major work will go out to bid in early 1978. The overall plan utilizes the waiting room as a circulation area with a mezzaninelike addition for shops; the "attic" will be converted into more office space; and one of the train platforms will be turned into a glassed-in restaurant. Funding for both the design and construction phases has been on an 80-20 basis from the Urban Mass Transportation Administration—the federal government contributing the major share. Matching funds will be furnished by the Greater Hartford Transportation District and some other grants. Construction costs are \$4.5 million.

Supporters rally to Sullivan building

The Prudential Building (1894-95) in Buffalo, NY, designed by Louis Sullivan, has been the center of a mounting campaign to save the building (P/A, June 1977, p. 24; this issue p. 53). One enthusiast is Sen. Daniel Patrick Moynihan (D-NY) who has a personal interest in architecture and plans to move his office into the building. His staff is encouraging other federal agencies to lease space and is facilitating preservation grant appli- [News report continued on page 47]

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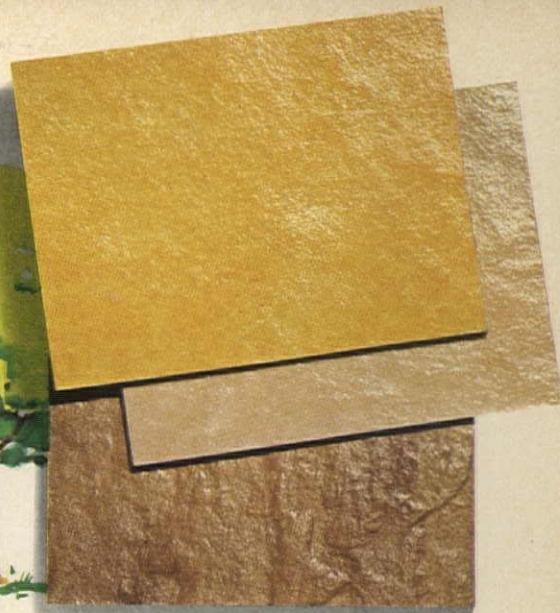
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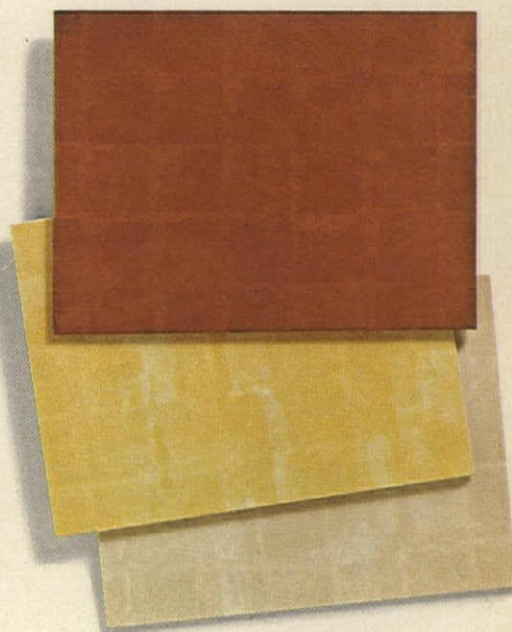


New patterns, textures too

New to the Nevamar Abstracts and Marbles this year are new ideas in both pattern and dimension. For instance: new Nevamar Batik (below), a tone-on-tone abstract pattern in three colors...new Nevamar Glaze dimensionals (above), with the look and *feel* of vitreous china...and Nevamar Stonehenge (above), its marble-like beauty now accented by Nevamar Slate finish.

New high fidelity woodgrains

There are four brand new additions to the Nevamar offering, including two with the special waxable, low-luster look and feel of Nevamar Natural Finish. Shown here are Nara Planked Oak and Heritage Walnut, both with Velvet Textured finish. Rustic Quartered Oak and Hallmark Walnut are the Natural Finish woodgrains. The pattern fidelity of all four is exceptional in both coloring and detail.



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cations. A task force of business leaders—members of the Greater Buffalo Development Foundation—also has formed to help locate equity investors and potential tenants. At present, occupancy is below 20 percent. The Prudential owners, United Founders Life Insurance Company, bought the building for \$200,000; further upkeep has brought United's investment to \$700,000—theoretically the asking price. Noting that in architecture the United States followed European design until Sullivan introduced the skyscraper, Sen. Moynihan declared: "Buffalo has a treasure: of scale, of form, and notably of ornamentation. Sullivan's Prudential Building is the soul of that great city of ours, and we're going to save it!"

Personalities

Edward McClure has been named associate dean for planning of the University of Texas School of Architecture and director of the school's Community and Regional Planning Program.

The Association of University Architects has elected the following officers for the coming year: **Gae P. Russo**, University of California—Berkeley, president; **Robert D. Wilson**, University of Michigan—Flint, vice president; **Clifton J. Marshall**, University of Kentucky, secretary-treasurer.

Kerwin Kettler has been appointed academic dean and chairman of the New York School of Interior Design's design program.

Calendar

Through Dec. 4. "A View of California Architecture: 1960–1976," La Jolla Museum of Contemporary Art, La Jolla, Ca.

Through Jan. 8. "An American Architecture: Its Roots, Growth, and Horizons," Milwaukee Art Center.

Nov. 14–17. "Toward Arcology—Works in Progress," exhibit of work of Cosanti Foundation and of its director, Paolo Soleri, at Ohio State University, Columbus. Subsequent showings: **Nov. 23–26**, Student AIA Convention, Charleston, SC; **Nov. 29–Dec. 2**,

Plymouth State College, Plymouth, NH; **Dec. 7–9**, Conservation Development International, Winnipeg, Manitoba, Canada; **Dec. 13–16**, Lawrence Institute of Technology, Southfield, Mi.

Nov. 17–19. Society of American Registered Architects national convention, Whitehall Hotel, Houston, Tx. Theme: Business of Architecture.

Nov. 22–Dec. 10. Exhibit of winning entries in "Playground for All Children" competition, sponsored by City of New York, at Cooper Union.

Dec. 1. Deadline for entries in the American Plywood Association's Plywood Design Awards Program, Tacoma, Wa.

Dec. 1–3. Conference on the design and planning of psychiatric facilities, sponsored by The Design Department and the Psychiatric Institutes of America, Hyatt Regency Hotel, Washington, DC.

Dec. 1–3. Conference on "Old and New Architecture: Design Relationship," cosponsored by the National Trust for Historic Preservation and the Washington, DC chapters of the American Institute of Architects and the Society of Architectural Historians.

Dec. 1–23. Exhibit of Charles Pollock sculptures and drawings sponsored by Thonet Industries, at their New York showroom in the Decorative Arts Center. Subsequent exhibits: **Jan. 18–31**, Thonet showroom, Dallas World Trade Center; **Mar. 16–31**, Thonet Showroom, Merchandise Mart, Chicago.

Dec. 7–9. Workshop on developing an accessible campus for the handicapped, sponsored by the National Center for a Barrier Free Environment and the Association of Physical Plant Administrators of Universities and Colleges, New Orleans.

Jan. 16–19. First International Symposium on Community Crime Prevention, sponsored by the National Crime Prevention Association, El Paso, Tx.

Jan. 22–25. National Association of Home Builders annual convention/exposition, Dallas Convention Center.

Jan. 22–26. International Concrete & Aggregates Show, Las Vegas, Nv.

Mar. 9–11. National Home Improvement Council convention, Atlanta.

Mar. 16–18. Second National Passive Solar Heating and Cooling Conference and Workshop, sponsored by the Mid-Atlantic Solar Energy Association, Philadelphia.

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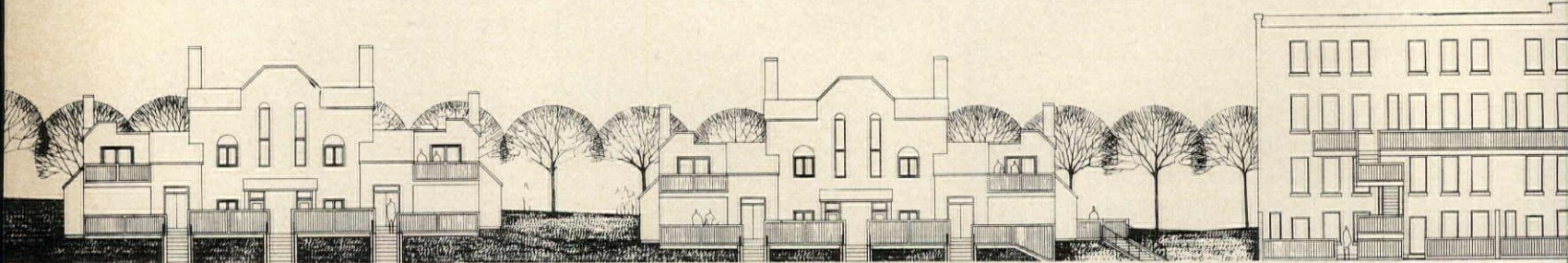
Dropped Prismatic (7270) lens is ideal for stores. The sparkling lens says: "We're open."



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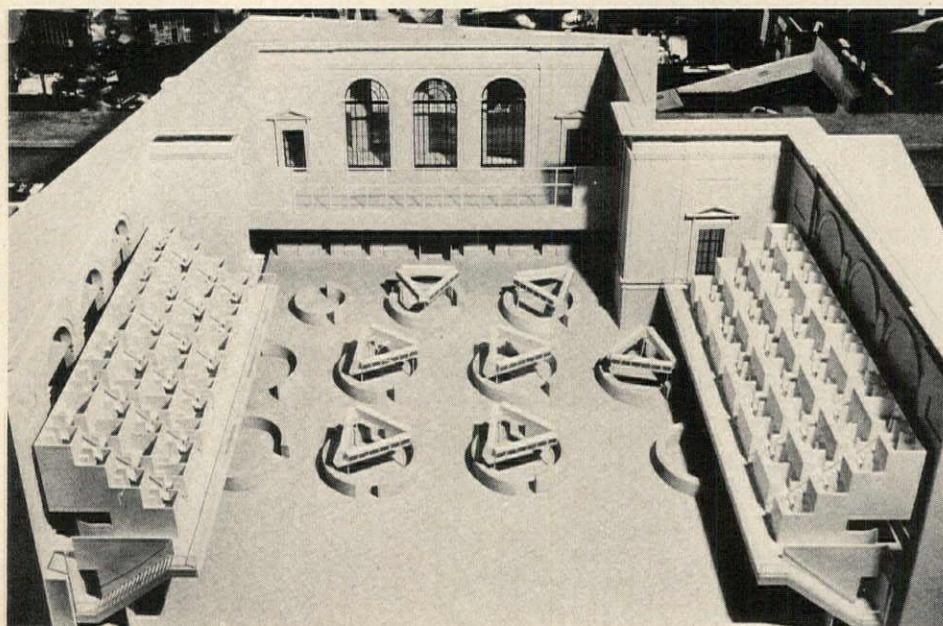
In progress



1a



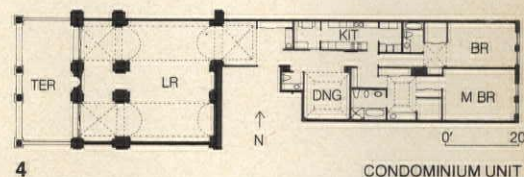
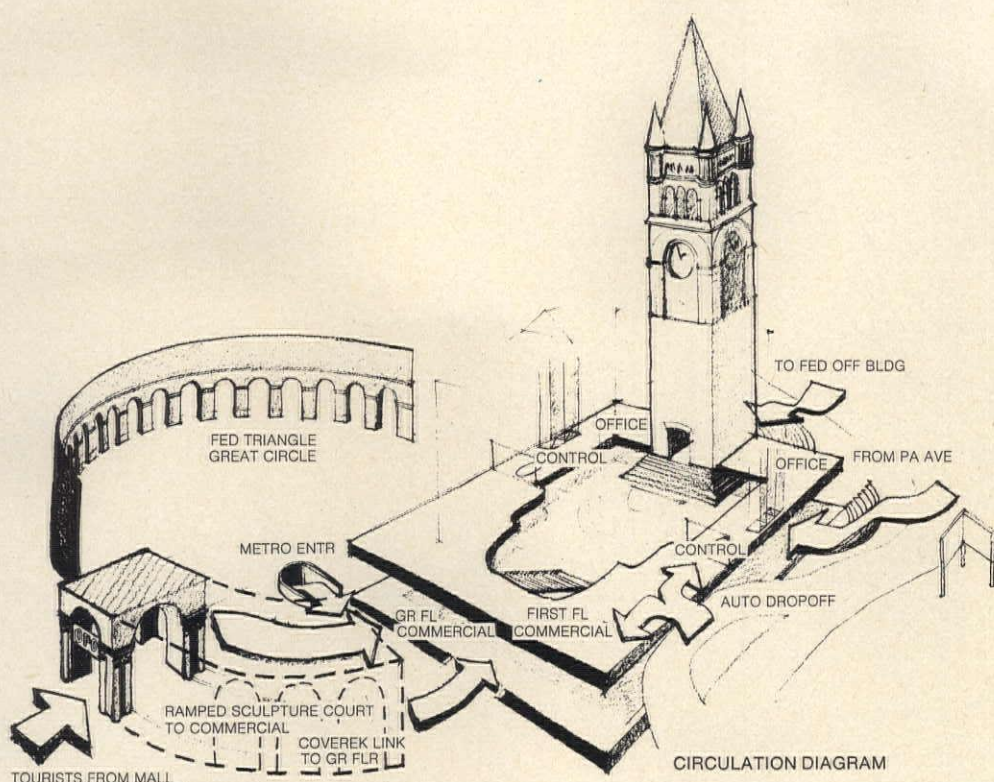
1 Minneapolis/St. Paul—Two restoration projects are underway in this architecturally progressive area: (a) the St. Anthony Main development along the Mississippi River is in construction, converting several 19th-Century manufacturing buildings into a variety of retail establishments. The architect is Benjamin Thompson & Associates of Cambridge, Ma, the same firm that worked on the acclaimed Faneuil Hall Markets restoration in Boston (P/A, Oct. 1976, p. 35). (b) "Panama Flats" in St. Paul is a luxury condominium project that will include the restoration of 10 residential units dating from 1886 along with construction of 24 new units. Architect is the Hill District Design Company. The restored units will have options for solar heating. Models will be ready by January.



2 American Stock Exchange—The Ehrenkrantz Group of New York is architect for an alteration of the American Stock Exchange trading floor in which tiered booths for the 112 member firms will be replaced by booths on newly constructed balconies, one story high, supported by columns along the north and south walls. Scheduled for completion in late summer, the project budget is \$2.5 million.

3 Old Post Office—Funding of \$18 million and congressional approval have been secured for the re-use of the Old Post Office in Washington, DC. Construction is expected to begin in the fall of 1978, and completion is due in mid-1980. The joint venture of McCaughy, Marshall & McMillan, Arthur Cotton Moore/Associates, Associated Space Design, and Stewart Daniel Hoban & Associates of Washington, DC is the winning architectural/engineering concern selected through competition (P/A, Aug. 1977, p. 44). The project gives the General Services Administration a precedent-setting problem: how

Marty Cobin

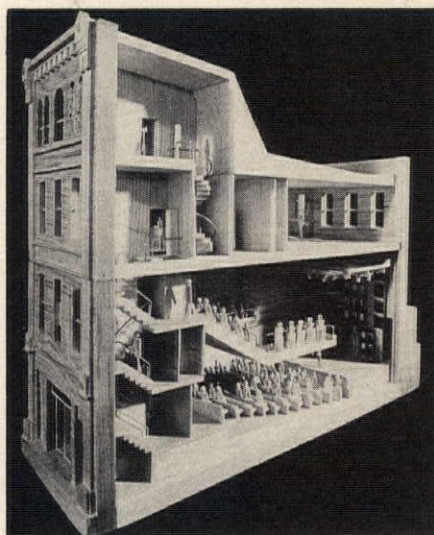


to handle the leasing of commercial space in a federal building. Ways are being explored.

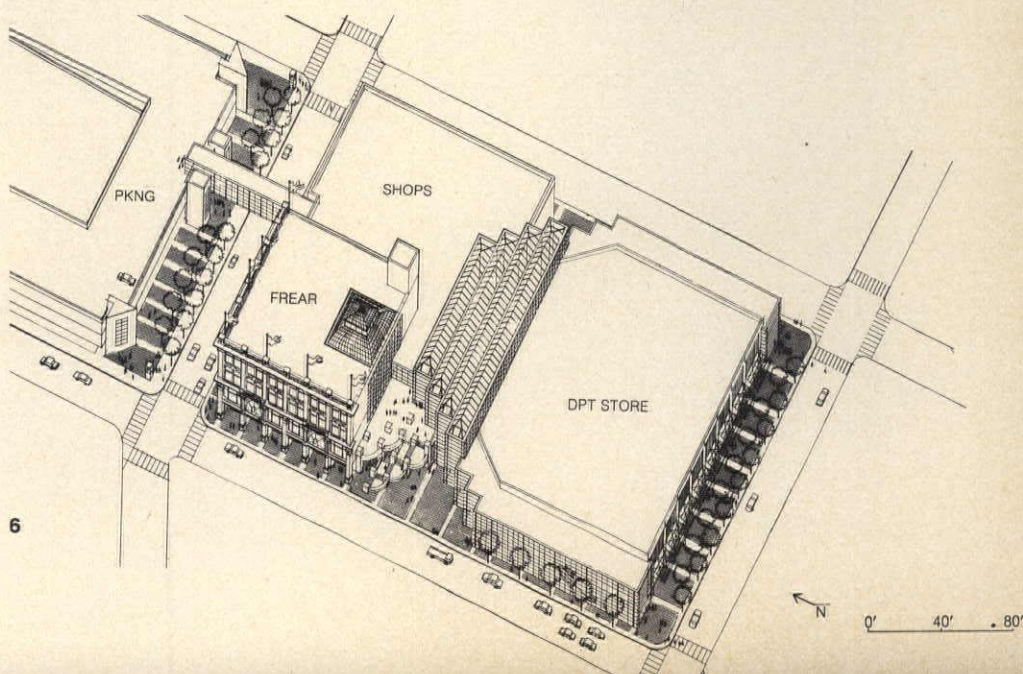
4 Palm Beach Biltmore—The 51-year-old Biltmore hotel in Palm Beach, FL, is under renovation to convert the building into 128 condominium units of 26 different apartment types including one of 6229 sq ft with its own private gardens and elevator. Lawrence-Irwin Chartered Architects of Palm Beach are architects; Harte Biltmore Limited, the owner/developer. The Spanish style exterior will be maintained, but the interior will be completely renovated. Shown is a unit in what once was the hotel dining room with vaulted ceiling.

5 Puerto Rican Traveling Theater—Conversion of an 80-year-old firehouse in New York into a 200-seat theater has been planned by the architectural firm Peter Blake & Brian Smith of New York. Removal of one floor of the existing structure, designed by Napoleon Le Brun, will leave a 28-ft-high space to accommodate the open stage, raked orchestra, and balcony. Funding for the theater is provided by a challenge grant from the National Endowment for the Arts. Construction is expected to begin when matching funds are secured.

6 Troy Shopping Mall—The Frear Cash Bazaar built in 1895, Troy, NY, as a department store is being restored into a multi-level store of boutiques around a skylit interior court. Private developer Carl Grimm is backing the renovation and is building an additional 130,000 sq ft of new shopping space. The city of Troy is building a 550-car parking garage and a glass-enclosed multi-use space. The entire complex is by architects Elbasani Logan Severin Freeman of New York, and associated architects Harrison & Mero of Troy.



Ann Carter



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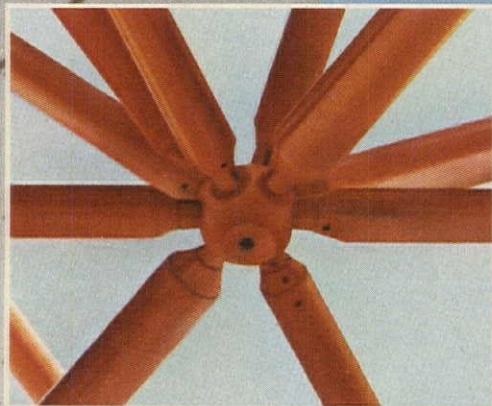
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Is preservation pop?

Just how far has the idea of historic preservation come in the United States? Is it still only the domain of a few, or is it a truly popular concept?

There was a time, not too long ago, when ideas about historic preservation in this country did not extend much beyond an occasional thought for a particular isolated site or structure. Other than a handful of individuals who worried about a few historically important battlefields, imposing public buildings, and houses of the rich, little concern was given to preservation.

Until quite recently, the idea of historic preservation could not have been considered part of the mainstream of popular thinking. And even if it is now, there could be problems in that, too. In a recent *New Yorker* article, Calvin Trillin discusses the current proliferation of "old town" rejuvenations across America. He tells how "we traveling people accepted them . . . at first marveling at their presence, and then grumbling that they all looked alike." The problem is pinpointed when he quotes Andrew Kopkind's prediction in the *Real Paper* that the Boston waterfront may some day be "one vast stack of exposed bricks, a forest of butcher block, a jungle of asparagus ferns."

However, there still may be a question of whether the idea of historic preservation has taken hold of the popular mind. After all, the \$17.5 million Congress appropriated in 1977 under the National Historic Preservation Act for community preservation programs was only about as much as it costs to build four miles of interstate highway. It was only five years ago that the Chicago Stock Exchange (p. 62) was demolished to make way for a (subsequently troubled) new office tower. This year, even with new federal legislation designed to help protect historic properties, Cincinnati's Albee Theater was demolished. It was listed on the National Register of Historic Places as "one of the few surviving opulent cinema palaces in the United States." And, if New York's Museum of Modern Art has its way, many of the old low-scale buildings on its side of 53rd Street, which contribute to the special ambience of the block, will come down to make way for MOMA's museum expansion and new residential tower (P/A, Sept. 1977, p. 7). Sadly, though, these problems and those of the 11 endangered structures discussed on the following five



Main Street America: Washington St, Medina, Ohio. Photo: Dodge Trucks.

pages represent only a small handful of the problems still facing preservationists.

But even while the destruction continues, there are encouraging signs for a bright future of historic preservation that seem to indicate that the tide has turned. A recent P/A survey revealed that 87.6 percent of the nation's private architecture firms will be involved in remodeling projects during 1977-78. In addition, the firms sampled report that over one-third of their total volume will be concerned with remodeling projects, as compared with only one-fifth in 1975. Another encouraging sign can be seen in the phenomenal growth in membership of the National Trust for Historic Preservation, which has now grown to 116,000 from only 50,000 as recently as mid-1974.

There are encouraging signs in Congress, too. If the federal government cannot appropriate enough funds needed for preservation, it seems it can enact legislation to further the cause. Three new laws of 1976 and one of

Introduction

1977 are of great significance to preservation. Together, these laws give new and much-needed strength to preservation efforts by authorizing new sources of income and higher levels of spending. They also give added incentives to retain old buildings and discourage demolition.

In 1976 an amendment to the National Historic Preservation Act and the Land and Water Conservation Fund Act established a new National Historic Preservation Fund in the U.S. Treasury. The fund's income, which will come from sales and leases of Outer Continental Shelf oil and gas rights, will be used as the source for the matching grants to the states, which previously came from general Treasury revenues. The law also authorizes higher levels of matching grants—\$100 million annually for fiscal years

tural significance and convert them into federal office space. It requires the GSA to use space in such buildings unless the use "would not prove feasible and prudent compared with available alternatives." Significantly, the law does not limit itself only to buildings listed or eligible for listing on the National Register.

This year, the Public Works Employment Act provided \$4 billion to continue and expand the emergency public works program begun in 1976 to generate employment through federally funded construction and renovation projects. The law could provide a great boost to preservation since it allows 100 percent federal funding for locally initiated public works projects concerned with the repair or renovation of such structures as municipal offices, courthouses, libraries, schools, museums, and play facilities.

Even with these encouraging signs and new laws, there still remains the question of whether or not the concept of



Washington St in Medina, Ohio, is the setting for a national advertising campaign for Dodge Trucks currently appearing in major newsweeklies.

1978 and 1979 vs. \$24 million for 1977—but whether appropriations will be made at those levels (they were not for 1977) is another question.

The Tax Reform Act of 1976 is designed to aid in the protection of historic properties through disallowing an income deduction to an owner of a certified historic structure for its demolition, or for any losses incurred because of its demolition. However, as William Lebovich of the National Register of Historic Places has recently pointed out to P/A, "the property owner can capitalize the demolition costs, thereby reducing his taxable profit when the new building is sold." On the other hand, the law allows fast write-offs for the costs of rehabilitating certified historic structures, while at the same time it prohibits use of the accelerated method of depreciation for any property on or partly on a site once occupied by such a structure.

The Public Buildings Cooperative Use Act of 1976 authorizes the General Services Administration to lease or purchase and rejuvenate buildings of historic or architec-

historic preservation has finally taken hold of the popular imagination. The history of preservation law began in this country in 1906 with the passage of the Antiquities Act. Its growth has been slow, but the concept of preservation has endured over the years. Its increasing strength is surely evidence that it is representative of the popular will, since no idea that is not can succeed for very long under a representative government.

You need not read the laws for proof of this point. You can look instead at something that has nothing to do with preservation law. You can look at something close to the heart of every American—his personal motor vehicle and the methods used to sell it to him. Look at the picture on this page. It is used in a current national advertisement for Dodge trucks. The vehicles parked on that street are not Cadillac Sevilles for the few; they're trucks. And if you don't think Detroit knew what it was doing by putting those trucks on *that* street then you don't know where America's head is at. [David Morton]

Endangered buildings

Eleventh hour

The historic preservation movement gains momentum daily, but important public and private buildings of the past still must fight for their survival.

Pension Building

The danger to the Pension Building at Judiciary Square in Washington, DC, is its imminent lack of a use. The building, designed in 1882 by Montgomery C. Meigs, is now occupied by the District of Columbia courts. They are scheduled to move to new quarters in about another year and when they do the building will become surplus property to be disposed of by the General Services Administration. Don't Tear It Down, a local preservation group, believes that the National Register building may actually be demolished in favor of new development.

There is one ray of sunshine, however, a proposal for a National Museum of the Building Arts. A year-long study by architecture critic Wolf Von Eckardt is nearly complete. His scheme for recycling the building as a museum would be ideal because the building is basically a huge court surrounded by four levels of galleries. The skylighted roof is supported by eight massive 75-ft-high columns. The AIA had a party there during its 1974 annual convention in Washington.

The problem is an economic one. Who will fund the proposed museum? It could be a part of the Smithsonian Institution, but given their current monetary difficulties with Congress, that is not a certainty.

Prudential (Guaranty) Building

The Prudential (Guaranty) Building in Buffalo, NY, by Adler & Sullivan, was completed in 1895 and has been called "the first formal skyscraper in the world." That, however, has not been enough to pay the rent. The 13-story building suffered a \$300,000 fire in 1973 shortly after it had

Photo: Carleton Knight III

Pension Building, Washington, DC (above). Prudential Building, Buffalo, NY (below).



Photo: Stephen S. Mangione

Endangered buildings

been offered for sale for \$1 with a lease commitment of \$1.25 million over 12 years. It languished until last April when United Founders Life Insurance Company of Oklahoma City acquired it under a mortgage foreclosure.

United Founders Life immediately inquired about the procedures to be followed in securing a demolition permit, and preservationists rallied. The building is protected by a local preservation ordinance, and after the city took a strong interest in its future, the owners backed down. They are now willing to sell the National Historic Landmark to someone willing to preserve it. They have hired a local attorney to assist with the building's preservation, and preservationists report that several developers from outside the area have expressed interest in the structure.

Olmsted home

Fairsted, the home and office of landscape architect Frederick Law Olmsted in Brookline, Ma, is for sale. The entire property including the land and buildings as well as the drawings, photographs, and records of the Olmsted firm from the 1850s to the present day is being offered by the firm's current owner. Olmsted's personal and professional papers are in the Library of Congress, and together with the material at Fairsted they constitute the single most important source of information on the history of environmental design in the U.S.

Sen. Edward M. Kennedy (D-Mass.) has offered one solution; he introduced legislation that would make Fairsted a National Historic Site under the control of the National Park Service. It is currently a National Historic Landmark, but a private owner may dispose property at any time.

Fairsted was built in 1810. The Greek Revival farmhouse and barn had extensive additions after Olmsted moved there from New York City in 1874. The documents are kept in a large vault, but archivists are concerned that they are deteriorating.

Florida State Capitol

The State Capitol in Tallahassee, Fl, is one of the oldest operating Capitols in the United States. The Greek Revival structure was completed in 1845 and there were major alterations in 1902, 1923, 1936, and 1947. Because of the increasing need for more space, the state decided a decade ago to build a new Capitol. Edward Durrell Stone was commissioned and his \$43-million, 22-story edifice is nearly complete.

The new building almost literally touches the old one, which was to have been demolished. Preservationists had objected to its demolition, but there was little real concern until the new building was finished. At a hearing in April, the Florida Cabinet, over the opposition of Governor Reubin Askew and his education commissioner, formally



Photo: William Alex

Olmsted home, Brookline, Ma (above); Florida State Capitol, Tallahassee, (below).



Photo: Florida News Bureau

First Baptist Church, Richmond, Va (below).



Photo: Carleton Knight III

endorsed a plan that would preserve the Capitol as it was in 1923. Secretary of State Bruce Smathers led the support.

There is a legitimate question, when a building has grown with the times, as to which period should be preserved. Experts agreed that the 1923 plan would do the least harm to the architectural fabric of the National Register building. The Florida legislature, which is split on the issue—the Senate favors restoration, the House is opposed), recessed for the year without deciding the issue. Thus the building will be around until next year at least.

First Baptist Church, Richmond

"Arguing with doctors is like arguing with God," says Calder Loth of the Virginia Historic Landmarks Commission. "They're saying, 'We're saving lives and need the space.' " The space they say they need in Richmond is now occupied by Thomas U. Walter's old First Baptist Church (1839–41). The Greek Revival church in downtown is surrounded by buildings occupied by the Medical College of Virginia, part of the Virginia Commonwealth University.

Therein lies the problem. A year ago, Virginia Governor Mills E. Godwin, Jr., issued an executive order protecting state-owned landmarks and specifically including the church. The university wants to construct a new \$18 million health education building there and has so far refused to comply with the order, which requires all plans to be submitted to the landmarks commission for review.

Preservationists have suggested an alternate site but the university feels compelled to proceed with its original plans since they have spent so much money (\$750,000) already. Writing in the university newspaper, Edwin Slipek said, "Some would argue that it is better to admit a \$750,000 mistake than to commit an \$18 million act of urban vandalism." The state legislature has yet to appropriate money for construction, and that is all that is saving the National Register church now.

City of Paris store

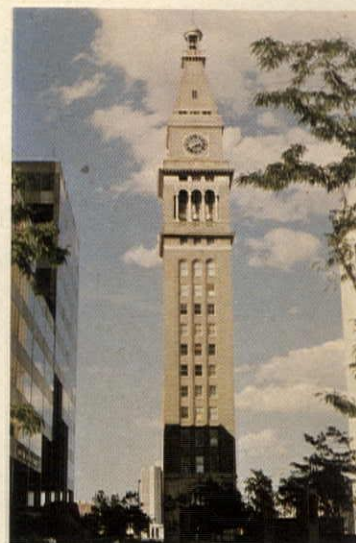
The City of Paris Building on San Francisco's Union Square is one of America's most endangered landmarks. Built in 1896, it survived the great earthquake and fire of 1906, and it was in use as a department store until recently. Neiman-Marcus, the Texas retailer, announced several years ago, however, that it wanted to demolish the building and replace it with a new store. With the apparent loss of the Fitzhugh Building (1920), diagonally across the square, to Saks Fifth Avenue for a new store, preservationists led by the Citizens Committee to Preserve the City of Paris Building are ready to fight.

The National Register property is perhaps best known for its six-story central rotunda topped by an art glass dome. The original building was designed by Clinton

Day and altered and enlarged by Arthur Brown, Jr. Neiman-Marcus had hired John Carl Warnecke to design the new store, but dropped him earlier this year in favor of Philip Johnson, who was reportedly more in favor of preservation. Johnson's plan, announced this summer, left preservationists aghast. He would dismantle the dome and rotunda and reassemble them behind a glass wall at the corner entrance to the new store. Architectural critic John Pastier likened that to "Saving the vocal cords of a soprano while killing off the rest of the body because it is deemed undistinguished."

D and F Tower

The 330-ft Daniels & Fisher Tower is all that remains of the historic D&F Department



Photos: Carleton Knight III

D and F Tower, Denver, Co (above); City of Paris rotunda, San Francisco, Ca (below).



Endangered buildings

Store (1911) in Denver. Under urban renewal, the two wings of the tower were demolished (one in the dead of the night) in 1970–71. The tower was apparently spared because it was a downtown landmark. As is the case with so many urban renewal projects around the country, the land is still vacant. The tower alone is hardly viable economically; it is 40 ft square with a central elevator core.

In recent years the 21-story tower has been the subject of extensive preservation litigation, most of it favorable to preservation. The Denver Urban Renewal Authority was sued by the state historic preservation officer who challenged DURA's plans for development. The tower is listed in the National Register and HUD funds were to be used. The agency has now agreed to follow the proper procedures and has offered the tower and adjacent land as a package to interested developers.

United States Capitol

The U.S. Congress is particularly good at one thing—putting off decisions. That is exactly what has happened every year with proposals to extend or restore the West Front of the U.S. Capitol. In July, the decision was delayed one more year, after the House of Representatives had narrowly approved the extension and the Senate had overwhelmingly rejected it.

The extension would cover over the last remaining visible original fabric of the 177-year-old Capitol. The wall in the center section would be brought forward about 22 ft while the adjacent areas on the sides would be extended about 60 ft, filling in courtyards. The terraces designed by Frederick Law Olmsted would be affected. There seems to be no question that something needs to be done to preserve the crumbling wall (it is now held up by wood bracing). Many, including the AIA, believe the wall can be restored, but the congressional leadership sees the extension as a way of gaining space.

Union Terminal, Cincinnati

The Cincinnati Union Terminal by Fellheimer & Wagner, completed in 1933, was the last great American railroad station. The Art Deco structure costs \$8.6 million. With the decline in railroad passenger traffic the terminal fell into disuse and was finally abandoned in 1972. Later the terminal's 400-ft-long concourse was demolished (the Winold Reiss/Pierre Bourdelle murals that lined the concourse were reinstalled at the Cincinnati airport).

Over the last several years a number of innovative ideas have been suggested for the terminal's reuse. New York City architects Hardy Holzman Pfeiffer Associates redesigned the upper levels of the National Register property as a school



Photo: David Morton

United States Capitol, Washington, DC (above); Union Terminal, Cincinnati, Oh (below).



Photos: Courtesy Hardy Holzman Pfeiffer Associates

for the creative arts. The lower level was to become a bus storage and maintenance facility. This imaginative plan died after more than a year of extended debate (in which cost went from \$18 to \$24 million).

A year ago, the city, which bought the terminal for \$1 million from its railroad owners, offered it to a sympathetic developer for \$1 per year. There were several proposals but the city selected one called "Oz," a recreational mall. Some preservationists who were opposed to the school/garage have enthusiastically endorsed this idea, but the yellow brick road appears to be a very long one.

Taliesin East

The rolling hills that surround Frank Lloyd Wright's Taliesin East (1925) in Spring Green, Wi, are part of what makes the property beautiful as well as threatened. The buildings, on 700 lush green acres, are in use only three months of the year and in some disrepair. The land is heavily taxed, and as development pressures increase, the taxes are bound to go even higher. Right now there is an unusual alliance between the neighboring farmers and the architects; the farmers, who make up the zoning commission, are not interested in higher values for their land (and higher taxes) and thus are trying to keep the open space. But the day will come when the pressure is too intense.

According to the Wright Foundation's Charles Montooth, consideration is being given to finding ways to increase the use of the property, perhaps in conjunction with another group. They are also considering opening the National Historic Landmark to the public regularly (it has been partially open on occasion) and charging an admission fee that would help fund restoration. They also hope to interest a foundation in underwriting the \$75,000 cost of restoring the 1896 windmill.

LA Central Library

It appears now that the Los Angeles Central Library will be saved, but there are serious doubts about how it will look. Designed by Bertram Goodhue and completed in 1926, the structure has a central tower with a glazed tile, pyramid-shaped roof. It is one of the finest buildings in Southern California, and it is listed in the National Register.

In spite of this, the city has been discussing its demolition for the last ten years. One proposal was to build a new library elsewhere and sell the downtown site for development. Architect Charles Luckman, whose Ogden Development Corporation proposed a 62-story tower on the library site in 1971, was commissioned to study the matter. His 1976 report said that restoration and expansion of the library was "impractical" and would cost \$38 million. After the City Council rejected this view and asked that a report be submitted from another source, Luckman offered his services at no extra cost. One city councilman

referred to this as "an intellectual conflict of interest," but Luckman's offer was accepted. He apparently got religion; his 1977 report said that the same plan for restoration and expansion made economic sense and would cost \$22 million. The plan would remove the east wing and add banks of escalators to the domed central rotunda. Questions were also raised about the textures and details in the additions, but the plan was approved by the City Council in June, and in August the Los Angeles Redevelopment Agency agreed to finance the project with tax increment funds from the neighboring Bunker Hill urban renewal project. Under Luckman's scheme, the total space would be increased from 162,000 sq ft to 195,000 sq ft by a new basement and new wings.

[Carleton Knight III]



Photo: Carleton Knight III

Taliesin East, Spring Green, Wi (below); Los Angeles Central Library, Ca (above).



Photo: Hedrich Blessing



Photo: The Frank Lloyd Wright Foundation



A terminal case?

In the 1960s it seemed like a good idea to convert Washington's old, magnificent Union Station into a new visitor center. Restored, it has never had a fair test.

In 1968 Congress approved a plan to convert Washington, DC's Union Station into a National Visitor Center. Five years later, at the groundbreaking of the project, Interior Secretary Rogers Morton called it "A showcase for all America." After years of delays, construction strikes, lawsuits, counter lawsuits, cost overruns, and investigations by the AIA, the Justice Department, and even the FBI (P/A, July 1976, p. 24; Sept. 1977, p. 21; also restoration architect Mardirosian's letter of Sept. 29, 1977 reprinted in the "Views" section of this issue). The new Visitor Center opened last July in time for the Bicentennial celebrations. Whether or not it is a "showcase" depends on one's point of view.

To most people the 120' x 50' hole for audiovisual presentations that was cut in the middle of the floor of the ten-story-high barrel-vaulted main waiting room is the worst part. Others are upset by the amputation (for a parking garage entrance ramp) of the once 760-ft-long concourse that stretches under a graceful arched vault across the back of the station. Amtrak is probably the most upset of all, since it had wanted to return its business to the terminal even before the Visitor Center conversion was completed.

Union Station was designed by Daniel H. Burnham and completed in 1908 as one of the first major structures following the rash of enthusiasm for Roman Beaux-Arts architecture popularized by Chicago's 1893 Columbian Exposition. With little modesty, Burnham spoke of his station as being "so planned as to make this station superior to any structure ever erected for railway purpose." If the station is not actually superior to the great stations built around its time (St. Louis's Union Station, New York's Pennsylvania Station and Grand Central Terminal), it is certainly very much on equal footing. Its "entrance loggia, the main waiting room and the con-



In Washington DC's Union Station (above), the old ticket booth area is now the Hall of States (facing page); the former waiting room (below) has information service and audiovisual shows.



Photos: Robert C. Lautman

Union Station

course . . . are among Washington's truly monumental interior spaces," notes the *AIA Guide to the Architecture of Washington, D.C.*

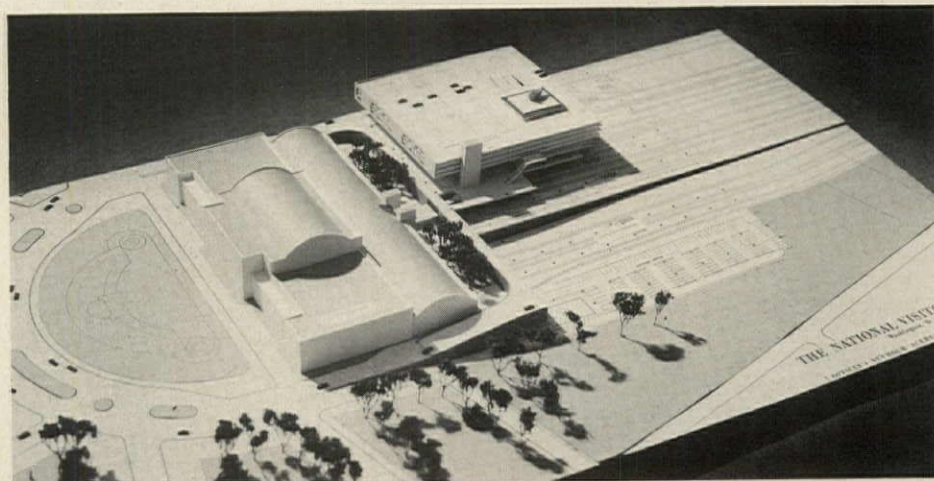
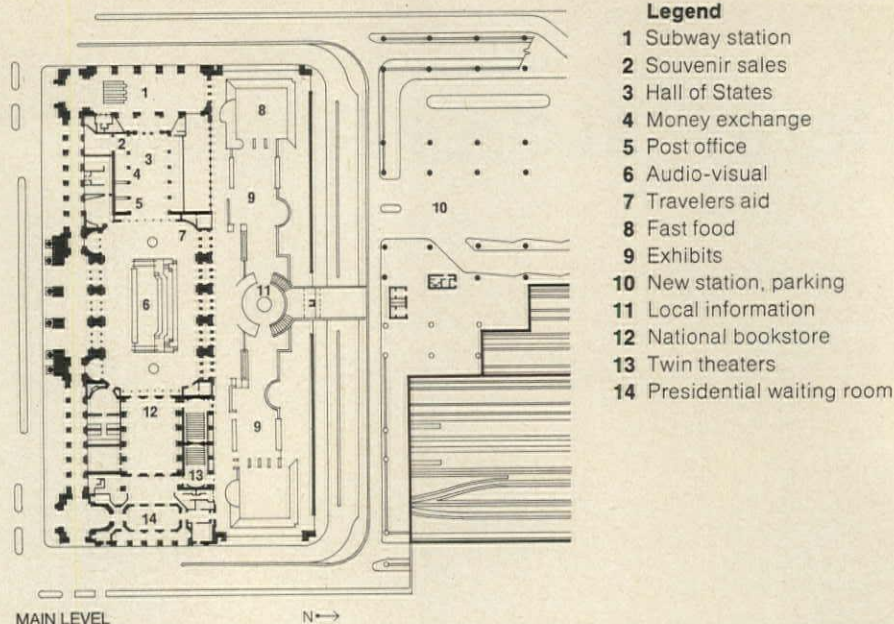
The problem with Union Station now, though, is that it is neither a train station nor an adequate visitor center. How it got that way is a long and extremely complex story. Briefly, the events leading up to it go something like this:

In the mid-1960s when the rail passenger business had bottomed out and seemed to have no future, the railroad companies that owned Union Station proposed to tear it down and redevelop with a new office building its choice site close to the Capitol. This scheme came only shortly after the demolition of New York's Pennsylvania Station, and preservationists were ready to challenge it.

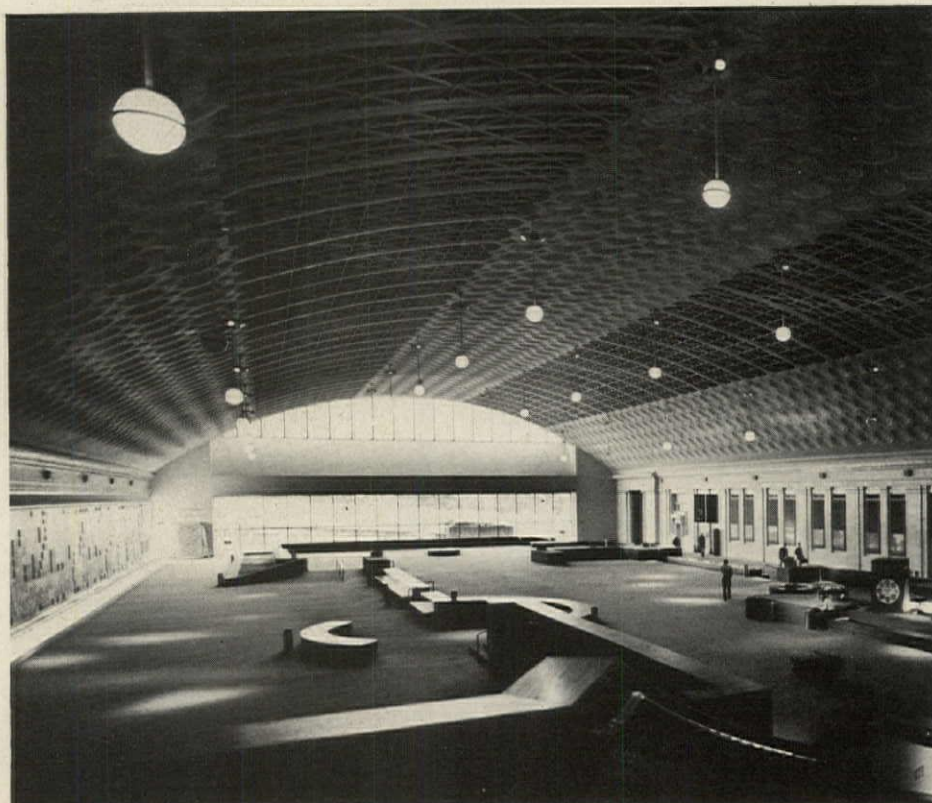
Several proposals were made to save the building, but the one that seemed most workable at the time, which was ultimately approved, was presented by a committee headed by former Interior Secretary Stuart Udall. It called for a \$16 million investment by the owners to convert the station into a national visitors center and build a 4000-car parking garage in the back over the tracks. A new and much smaller train station would be built at the lower level of the garage. It would be financed partly with money from Washington's subway system, which would rent the west end of the basement of the old terminal. When this lucrative, functioning complex was finished and ready to make money through its concessions and parking, the federal government would rent it for about \$3.5 million annually for 25 years, and at the end of the lease would have the option to buy it for one dollar. It was not to cost the people of America one cent. To date, the project has cost \$42 million: \$20 million from the National Park Service, \$6 million from the federal Mass Transit Authority, and \$16 million from the railroads, according to *The Washington Post*.

The original plan was that the visitor center, railroad station, and parking garage were to become one huge "inter-modal" complex where thousands of visitors arriving by car, train, subway from the city and airport, commuter trains, buses and tourmobiles would filter through the complex for information about Washington and the U.S. All of this was planned before Penn Central Railroad, an owning partner in the station, went bankrupt. It was before the success of the Metroliner project and the later creation of Amtrak, before inflation and recession, the establishment of the Environmental Protection Agency, and the energy crunch.

The project went ahead and conversion of the old station was completed, but as of June 1976 construction was stopped on the parking garage because of an expected \$4.9 million cost overrun. Now, without even the 950 parking spaces that were in construction out of the 4000 planned, there is no parking at all available



Model (above) shows the one-fourth portion of the new parking garage that was in construction over new station until work was stopped. Old train concourse (below) is now dining and exhibit space.



at the center (the previously existing parking had been removed to clear the way for a ramp leading to the new garage). Without parking, the future of the entire complex comes into serious question; it cannot function as a visitor center, and it certainly cannot operate as an "intermodal" or any other kind of transportation center.

The logical move now seems for Amtrak to move back into the station and vacate its small "shed" under the unfinished garage. That new station was only intended to accommodate a few passengers until the passenger business was phased out, at which time it would then function only for the freight operation. Amtrak would like to move back to Union Station, and there is talk in Washington now that the ticket-purchase function may at least return to the west wing, where ticket offices remain. That would be an easy move, and it would certainly bring some much-needed activity into the visitor center. If the railroad were to reoccupy all of the old building, the move would be a little more difficult, but not much more.

The hole in the middle of the main waiting room floor could always be covered, says Aram Mardirosian of the Potomac Group, which was called in to restore and refurbish the building in place of Seymour Auerbach, the original architect for the entire project, who is now responsible only for the parking garage, the new station, and the earlier permanent changes to the old station (P/A, July 1976, p. 24; Sept. 1977, p. 21). The demolished east and west wings of the concourse could not be rebuilt, and something would have to be done about the unfinished parking garage and ramps leading to it.

Mardirosian's work in the old station has been sensitive and intelligent; the building has been cleaned and restored inside and out, and everything added to the interior has been made of a (deceptively) temporary nature, partly due to budget concerns, but also so it could be easily removed later if desired. But is it Mardirosian's work? Auerbach claims it is not, that Mardirosian used his design ideas without giving him credit. Mardirosian claims otherwise.

Whatever the truth, it bears little on the problems of the complex today. Until something is done for it, the center will be of little use to anyone. It is sad that something that seemed like such a good idea in the 1960s has turned so sour in the 1970s. But even though its wings have been clipped, we can be grateful that Union Station has been saved. All it needs now is a real use. [David Morton]

The Presidential waiting room (top) has been repainted with yellow walls; white moulding matches the coffered ceiling. The new National Bookstore was not part of the overall Visitors Center scheme; it was designed by Hartman-Cox Architects for the Parks and History Association of the National Park Service. The bookshelves are red, but painted black on the outsides. The audiovisual show (right) is in the "hole" in the middle of the main waiting room floor, which was to lead to another, lower level.



Update

After this article was written, *The Washington Post* announced on Oct. 6 that the secretaries of Transportation and Interior have decided that two-thirds of Union Station will be returned to transportation purposes, and the rest will remain a visitors center. The newspaper noted that the National Visitor Center would continue to occupy the central area in the old building; that is, as shown in plan, facing page, 6, 12, 13, 14. The rest of the building would be reconstructed for ticketing, baggage handling, and other railroad purposes.



National Park Service Photo.

Out of time, out of place

Donald Hoffmann

When Adler & Sullivan's famous Stock Exchange was torn down, two key remains were salvaged—the arch and the trading room. A critical review assesses the merits of its preservation.

Editor's note: In the interest of the concerns we are addressing in this issue about the pitfalls that well-intended preservation, reconstruction, and remodeling efforts may encounter, we are running the following critique by architectural historian Donald Hoffmann, which appeared in the Kansas City Star. While we endorse efforts to save our past architectural heritage, even if only in bits and pieces, such efforts are not without painful side effects. The danger of ludicrous juxtapositions or inappropriate placements of such fragments is ever present. The preservation of our architectural heritage must be approached with an understanding that bits and pieces cannot be taken out of time and place, given some polishing or mending and still have the same kind of meaning for us that they once had. Architecture benefits from growing old gracefully and integrally with the everyday life that goes on around it. We all know too well, however, that this possibility does not occur too often—and unfortunately not with Adler & Sullivan's old Stock Exchange in Chicago.

In this particular situation PIA itself is torn. The trading room has not been visible since a 1940s remodeling job blocked windows, concealed Louis Sullivan's stenciling with a hung ceiling, painted or boarded over the glass skylights, removed the mahogany wainscoting and divided up the approximately 63' x 97' space with partitions. The decision by the Art Institute of Chicago that it was necessary not only to save this room, but to reconstruct it, taking it back to its original splendid state, was exemplary of the role museums can play in salvaging something of our architectural past for public view.

And of course the reconstruction efforts guided by John Vinci and Lawrence Kenny are staggeringly impressive. The salvaging of the canvas-backed stencils, the

gilded plaster capitals, the inventorying and packaging of all these items as the building was being demolished were not done without tremendous effort. Much of the building was documented in photographs by architectural photographer Richard Nickel, who lost his life in the process.

The incorporation of the reconstructed room in the new wing of the Art Institute required additional money and cooperation, including the efforts by the museum expansion architect, Walter Netsch of Skidmore, Owings & Merrill, to give the room the same orientation of the original placement for natural lighting through skylights and east windows. Then came the process of new stenciling with 52 different colors, the recreation of the scagliola, the artificial marble finish on the columns, plus the recasting of the column capitals and friezes, the replacing of missing mullions and glass in the skylights, and the recasting of the cast iron column bases, all made possible by the Walter & Heller Foundation.

Strange things are happening in the name of "historic preservation." It's now almost a dilettante's game, and the results are beginning to show it. Surely one of the strangest things has happened here, in a city where such nonsense is least expected. Two remnants of Adler & Sullivan's old Chicago Stock Exchange Building have been rebuilt at the new Columbus Drive entrance to the Art Institute.

This enterprise was complex, very costly and no doubt well-intentioned. Results, however, speak for themselves. Should we weep, or should we somehow silently applaud?

The old Chicago Stock Exchange Building, designed and built during an economic depression in 1893–94, stood until 1972 at the southwest corner of Washington and La Salle. Neither the owners nor the city of Chicago wished to have the building legally designated a landmark. And it wasn't. To the business community, landmark designation amounts to an unconstitutional "taking" of private property.



Restraints intended to protect a city's visible history can be seen also as restraints on an owner's "freedom" to exploit real estate values—particularly in a place such as the Loop.

So down came the old building and up went a new building—with very little financial success, it should be noted—and the two remnants vanished from the Loop and all its business hustle, to reappear rather near the lake.

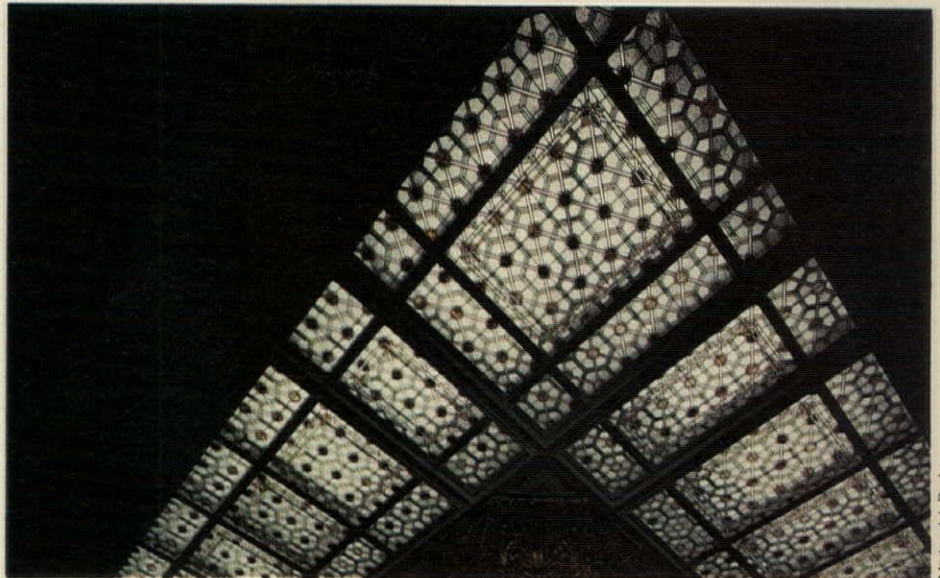
The first is the entrance arch of the old building, now freestanding with its blank back (once part of a living and breathing building) facing Monroe Street. Isolated, rendered puny by the backdrop of tall buildings to the north and west and by the spreading open space of Grant Park, the arch is a travesty in the eyes of anyone concerned with architecture or with preservation. It is a pitiful headstone at the north end of a paltry sunken garden, a marker of death rather than a celebration of life.

The arch now serves as "a great triumphal entry for the East Garden," writes John Maxon, an art historian [since deceased] who is vice-president of the Art Institute for collections and exhibitions. In the face of such balderdash one can do little more than fall silent by the lakeshore, musing on human folly. Not only is a freestanding arch almost always meaningless, in this instance the act of "preservation" does Louis Sullivan's memory a double disservice: It sends all interested parties back to photographs of the old building, which show the arch alive and functioning but also show Sullivan's very awkward integration of this feature with the rest of the structure. (Sullivan liked to preach against ornament being "stuck on" a building, but that is exactly what he himself did, many times, with ornament and with entire building elements.)

One last word about the arch. A close student of Adler & Sullivan's architecture

Author: Donald Hoffman is the art critic for the *Kansas City Star* and author of *The Architecture of John Wellborn Root*.

The reconstruction of the stenciling on the ceiling was guided by conservator Robert Furhoff. Fifteen stencils with 52 different colors applied on canvas or on plaster had missing pieces. New patterns were put on canvas with the help of German stencil cutters and by photographing the pattern drawings onto plastic then cutting it for stencils. Only the ceiling bay at the west end of the room has original stencil work. Though boarded over or painted, the original skylights were found still in place. Ninety percent of the cast-iron mullions were saved, with the remainder replaced by aluminum ones, while 75 percent of the glass skylights were left. Much of the plaster frieze was saved, so that south and west faces of truss beams are original; rest are plaster copies. Honduras mahogany wainscoting replaces that removed long ago; window frames are also mahogany while floor is red oak. New aluminum moldings replace cast-iron ones missing from column bases.



Michael J. Pado



Old Stock Exchange Trading Room

told me that his plan was to erect the arch in the Art Institute's sculpture court, then knock it over and cement the pieces into place as a lasting testimonial to Chicago's chronicle of historic demolition. Bitter, yes, but at least expressive.

Now the very fact that a stock market trading room has been reconstructed in an art museum is something of an anomaly in itself. This must be the largest "period room" in the history of museums. It measures about 63 by 97 feet (when the gallery level is included) and the ceiling is 30 feet above the floor. The double-hung windows on the east—the trading hall has been reconstructed with the same orientation as it originally had—are the widest I've ever seen, and they add to the peculiarly gargantuan scale of the space.

Apart from sentiment (which is a quantity hard to escape in Sullivan's architecture), the space of the room as reconstructed is not particularly interesting or engaging; it's simply big and barnlike. The reason this room has been reconstructed as an appendage to the Art Institute is that it is intensely decorated on the upper walls and especially the ceiling with lush and rather exotic patterns realized through stenciling, sometimes involving as many as 52 colors. Well, this was Sullivan, all right, letting himself go as if a bursting pod of seedlife—not so much an American parallel to the Art Nouveau of Europe but rather the tail end of the Aesthetic Movement of the 1870s and 1880s, with a particular leaning toward the "Moorish" or "Mooresque."

It is beautiful ornament, and it calls on much originality, but what was it doing on the ceiling of a stock exchange trading hall? I suppose that Sullivan was trying to raise the traders' sights higher than the slate boards, above the panting breath of Mammon into some clearly more spiritual realm of beauty and light and gorgeous color somehow signaling Democracy. But already in Sullivan's best years members of the public and his profession were questioning whether his decorative effusions were appropriate for hardheaded places such as LaSalle Street. What was the effect of this room in its original state, as part of an office skyscraper?

I talked with an architect who had seen it not while it was in use—for the trading hall was mutilated many years ago by modifications that included a false and much-lowered ceiling—but while the building was undergoing demolition. He said it impressed him as one of the greatest aesthetic experiences of his life, and he compared the space to that of the little "playroom" of Frank Lloyd Wright's house in Oak Park, Ill., which dates from only a few years later.

The reconstructed trading hall, he continued, suffered from its very perfection; the stenciling, for one thing, was done with a hard-edged tidiness that works against the spontaneous richness of the original work, which was more reminiscent of an



Richard Nickel

In place: the great terra cotta portal frames the arched entrance to original building.



John Dixon

Out of place: The entrance arch now sits at the entry to the East Garden of the Art Institute with its original inner side refaced to blend with the new wing (below).



John Dixon



Two capitals of the large octagonal columns were kept and installed in the southeast and southwest corners; others are new.

Photos: Richard Nickel



Scagliola on the columns survived in part; new artisans were found to recreate the artificial marble finish.

Photos: Michael J. Pado

oriental rug. The space of the room now seemed dead, he said, its windows no longer let on other buildings and the bustle of commercial life.

Without belaboring the point, the trading hall as reconstructed can hardly support all of Maxon's inflated claims—"the most celebrated interior of the First Chicago School of Architecture"; "the most successful interior of its time created in the United States"; "once more to be the grandest interior in the entire Middle West" and so on—and in fact looks devoid of purpose. A statement from the Art Institute, which is busily engaged in a \$46-million fund campaign for improvements to mark its centenary in 1979, describes the rebuilt trading hall as a reception area and lounge. But this vast room is not on the way to anywhere; it's off to the left and down

some steps, like an oversized washroom. Perhaps it will function as a ballroom for black-tie events. Who knows?

As it looks now, the trading hall is presented as a room from the past. But because it looks as if it had never been used, never occupied, it is not an experience retained from the past. (The woodwork is patently new, the columns were freshly fake, the slate is out of place because its function has vanished.)

If the trading hall was intended to be an impressively decorated and commodious reception hall—as the Art Institute says—then why wasn't it rebuilt where it could serve every hour as a public foyer, a grand vestibule to the collections of the museum? The decoration is high on the walls and ceiling, thus safe from wear and tear, and the space, too, is of dimensions that large

crowds could have been handled without worry. So why tuck a false-looking "period room" into a blind corner, as though it's a private club?

Finding a Sullivanian room inside a clean, white, and uninteresting building by Walter Netsch of Skidmore, Owings & Merrill is not an aesthetic experience. The feeling is not at all right.

Preservation through reconstruction is not going to be the way. Nor will it be enough to save the exterior walls of old buildings while tearing out the insides and replacing them with jazzy white walls, gay colors, glass-topped tables and chrome furniture. Someday there will have to be a basic change in attitude toward the visual past. If things worked then, why can't they work now? When did age become a crime? □

Conversion in a candy factory

A manufacturing space in an 1870s building has been put to new use; its high ceilings and sturdy timber frame make it ideal for live-in lofts.

The conversion of old buildings designed for nonresidential uses has created a minor revolution in city dwelling in the last decade. In places like New York City where new apartments are cramped and expensive, industrial loft buildings, fallen into disrepair, are yielding heretofore hidden supplies of flexible cheap space. For years artists have been transforming lofts into living and working quarters out of strict necessity, often on a piecemeal and illegal basis. Now, however, through New York's zoning and code amendments and even a tax incentive program for developers, a comprehensive recycling effort is under way. (For additional details see pages 68-71).

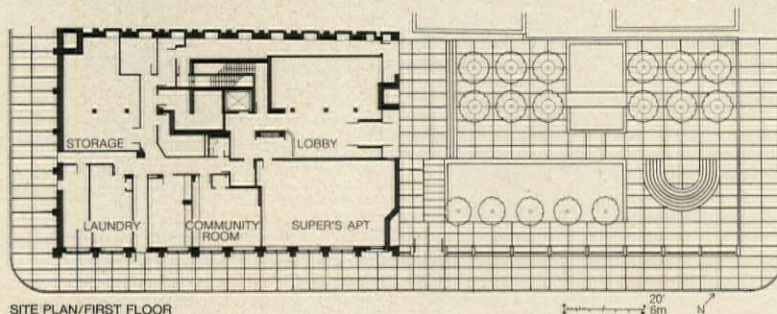
One such effort, the adaptation of a candy factory for artist housing in Brooklyn was proposed as far back as 1962. Designed by architect Lee Pomeroy who won a P/A Design Award citation for the scheme in 1963, this conversion can now be seen as historic in its prototypical character. But bureaucratic entanglements and other obstacles prevented its going ahead until 1974. Today the building is fully occupied, and is successfully spurring the regeneration of this small area at the edge of Brooklyn Heights.

In the early 1960s, Pomeroy first became aware of the 1870 warehouse, which had been the home of Peaks Mason Mints. Slated for demolition as part of the Cadman Plaza Urban Renewal program, the building was to be replaced by a parking lot. At the time the shortage of housing for artists was well known to the city, but it had yet to grapple with the legalities of loft living. Because of growing awareness of artists' needs, Pomeroy's suggestion met city acceptance. But that was only the beginning. Mayors were to change over the years, sponsors were to change, and even the design changed.

Finally in 1970 the Frederick Richmond

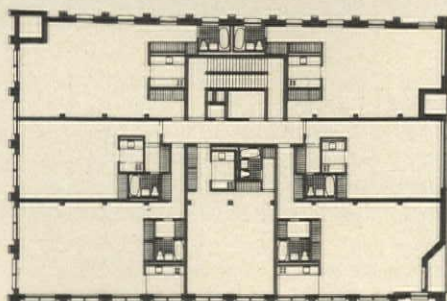


The old Peaks Mason Mints building (above) renovated for artists' housing.





The back wall was opened up for windows and entrance door facing sculpture court (left); loft interiors permit varied designs.



TYPICAL FLOOR PLAN

Foundation assumed sponsorship, the project was given Mitchell-Lama financing for 42 rental units designated specifically for artist/tenants. Still, certain accommodations had to be made for the limited-profit financing program: For example, the typical unit proposed by Pomeroy and partner John Lebduska (in association with architects Martyn and Don Weston) contained essentially a large volume of space, approximately 800 sq ft in area, penetrated by a freestanding kitchen/bath and closet core. The city's Housing Development Administration needed to assess equivalent room counts, so the architects were required to draw up hypothetical plans proving one- and two-bedroom apartments could be fit into their units. In order to keep the sturdy timber frame of the 19th-Century mill-type construction, Pomeroy had to obtain variances allowing multi-family occupancy in this type of structure. Variances were required even to permit the projection of several feet above the 75-ft-height limit for six-story buildings, and the substitution of internal fire stairs for fire escapes.

Since the area was declared a historic district in the mid-1960s, the building was subject to approval by the Landmark Preservation Commission which sought the retention of such elements as parts of the old cornice. The architects left the outside of the building intact on three elevations, installing steel-framed windows in place of wooden ones, and repainting the original sign on the parapet. The only "new" elevation replaces the windowless party wall facing north. Here the architects opened up the old masonry wall with large windows, retaining the steel channels required for shoring as part of the exterior design.

The entrance has been located on this side, opening onto an enclosed outdoor sculpture garden also designed by Pomeroy Lebduska Associates. Sculpture executed by residents may be displayed here or in the building's lobby; additional spaces downstairs provide community meeting rooms, darkrooms, and storage for the benefit of this artist's enclave.

Within the dwelling units white dry-wall kitchen/bath and closet cores, exposed sandblasted timber, exposed brick walls, new plank flooring, and steel-framed windows form the basic architectural elements in cubiform spaces of 12 to 14 ft heights. Residents have responded to the undifferentiated volumes with a variety of individual design expressions like sleeping lofts, balcony-type studies, louvered partitions, etc. While spaces are still on the small side, rental manager, Frank Greenberg reports waiting lists for tenants. He himself operates the nearby Candy Factory Art Gallery that displays (you guessed it) art by the building's residents, while a café and other galleries have opened down the street to cater to this clientele. Slowly an artist community is emerging in this urban renewal area, a community that illustrates the way an area should be renewed—through maintaining the character of the existing neighborhood, building on that matrix and using architecture as a generating force in social and cultural life. [Suzanne Stephens]

Data

Project: Henry Street Studios (Peaks Studios) Brooklyn, NY.

Architects: Pomeroy, Lebduska Associates; Lee Pomeroy, John Lebduska, Barbara Chimacoff and Oscar Jobmann, design team. Associated architects: Martyn and Don Weston.

Site: one-third block in designated urban landmark area near end of Brooklyn Bridge.

Program: 42 rental live-in studios for artists; communal work space and gallery space.

Structural system: timber frame on 8'-6" x 20' bays, masonry walls; concrete plank floors with steel framing at core area.

Major materials: masonry, concrete plankwood plank drywall.

Mechanical system: hot water radiators and individual unit air conditioning.

Consultants: Howard Brandston, Lighting.

General contractor: John Mee, Inc.

Cost: \$1.1 million overall; approx. \$25 per sq ft.

Client: Frederick Richmond Foundation.

Photographs: David Hirsch.

The only game in town

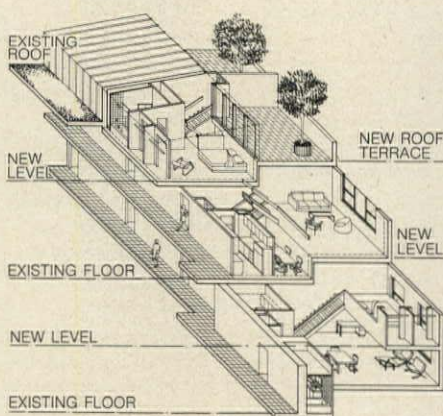
With little new construction activity in New York City, both renovation and rehabilitation of housing are gaining momentum—and tax laws are helping.

Ask almost any New York architect these days what he or she is working on and the answer is likely to be "J-51" as if it were a new building type. Actually, in a sense J-51 is a building type. In this case the epithet refers to housing converted from commercial and hotel structures. Many call it "the only game in town."

Section J-51-2.5 of the administrative code of the City of New York allows abatement and exemption of real estate taxes for property converted into multiple dwellings. But it stands for more than an indirect governmental subsidy. The law signals the recognition of at least two important factors in urban life: first, that old buildings in declining commercial areas can be imaginatively reused to generate new economic vitality; and second, that the public will provide a strong market for larger and more uncommon apartment spaces, sometimes at the cost of convenience. If architects were beginning to think that the public's passive acceptance of eight-foot-high cookie-cutter apartments in high-rise towers might actually result from some deep wish on their part for that kind of space, the response to these conversions says otherwise.

This particular governmental sanction of the transformation of commercial buildings to housing has a certain historical context. For the past two decades, conversion of all types of buildings—warehouses, factories, churches—has been occurring in various cities such as San Francisco, Philadelphia, Boston, and Savannah—even in rural areas—as a reaction to the higher cost/lower amenity syndrome of new housing. In New York the situation has been dramatized by the infiltration of artists into light industrial areas in their need to find inexpensive work space that could be transformed on a piecemeal—and often illegal—basis.

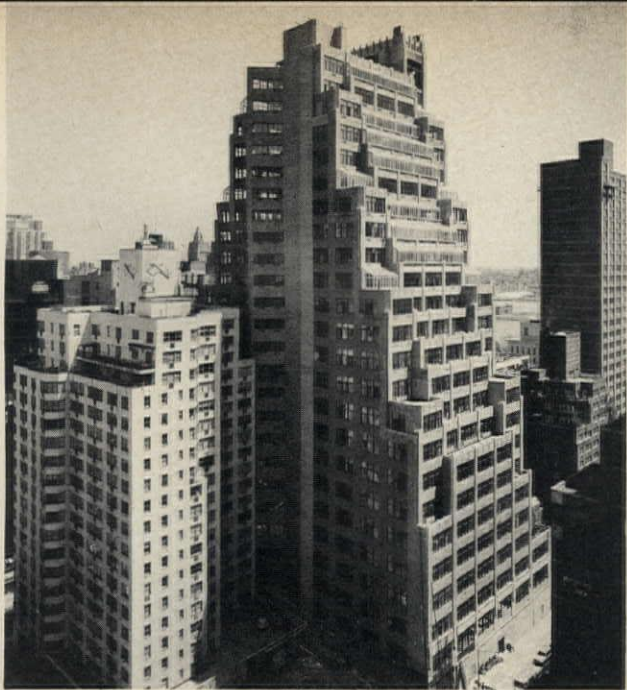
The J-51 law actually first appeared in



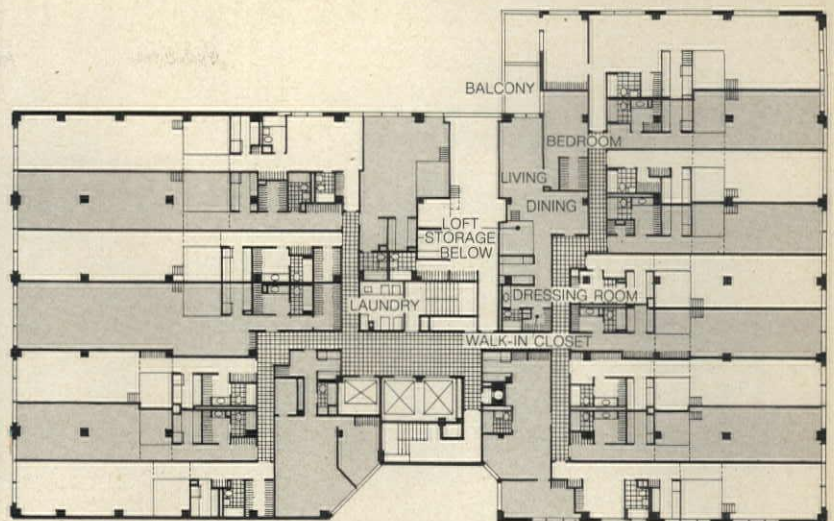
The Albert: This J-51 project comprises four separate buildings including the Old Albert Hotel designed in 1883 by Henry Hardenbergh, architect of The Plaza Hotel. Differences in architectural styles and structure between the four buildings have caused some amount of effort to make the whole thing work. A six-story steel frame with concrete slab floors had to be merged with a 12-story steel frame and terra cotta arch structure, an eight-story masonry



bearing wall and wood joist building, and five-story heavy timber building in order for architects Bernard Rothzeit & Partners to create 205 units for Rockrose Associates. Some of the apartment layouts are quite nice; some are peculiar. The high costs of renovation and rehabilitation, along with the different costs of relocating tenants of the old hotel, jacked up the average cost per unit to \$33,650.



Bill Rothchild



PLAN FOURTH FLOOR

1955 to encourage improvement of existing apartment buildings, for which the owner received a reduction in the real estate taxes instead of the usual increase in line with the higher valuation. In 1976 the law was broadened to include nonresidential buildings that could be converted to apartments, co-ops, and condominiums. Subject to New York's own rental laws and eligible for Mitchell-Lama limited profit financing, the program prompted the creation of 3580 units of housing city-wide between March 1976 and March 1977.

Despite the latitude in the city program, however, illegal conversion still goes on. The J-51 law requires owners to conform to local zoning laws and codes before qualifying for J-51 abatements. The abatement can only be awarded after the conversion is 90 percent completed. Furthermore, the building has to provide bedrooms equal in number to 50 percent of the number of units created, although the minimum bedroom requirements might be suspended if the building provides open loft spaces of 1000 sq ft. Only certain construction costs qualify for abatements: air conditioning, carpeting, or kitchen cabinets don't count.

Nevertheless the program exemptions are very tempting: exemption from the tax increase due to higher assessed valuation of improved property can last 12 years. The abatement is based on the annual rate of 8½ percent of reasonable construction costs for the conversion. As Alexander Garvin, New York's Deputy Commissioner of Rehabilitation for Housing and Development, explains, the abatement can go against the tax bill until 90 percent of the reasonable costs are exhausted or 20 years have expired.

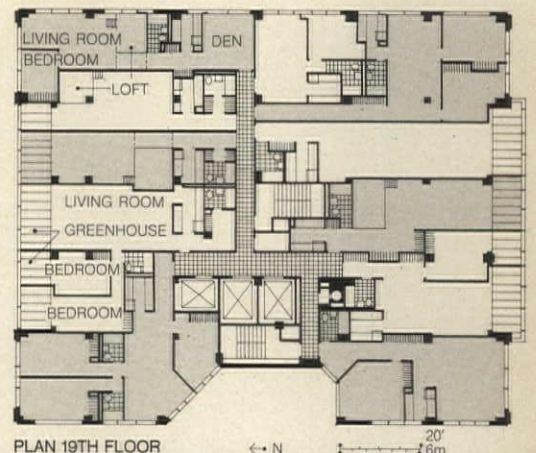
Loosening legal constraints

One zoning move the city made several years ago that helps J-51 conversions was to create a Special Lower Manhattan Mixed-Use Zoning District that allows office buildings to be recycled for residential buildings. Another legislative change on the state level should open up more possible J-51 conversions. The new article 7B of the state's multiple dwelling law now fea-

tures special options addressing the 30-ft rear yard requirement. The law now allows apartment windows to open onto a 20-ft rear yard, a 20-ft interior space, or onto the street. The ten percent ratio of windows-to-floor area in the living room now shifts gradually to 5 percent in 1000 ft spaces.

Still, as architect-developers Peter Nelson and David Solomon point out, tracking down good J-51 buildings isn't that easy. The right kind of dimensions and orientation of the existing building are needed for units that will be competitive with other housing. The structural system of loft buildings more frequently yields long dark bowling-alley-type apartments that may not prove to be very marketable. (Although in New York the axiom is "anything rents.")

Location considerations for the renovated building further complicate the issue: the bank giving the mortgage obviously has to be assured of the economic



PLAN 19TH FLOOR

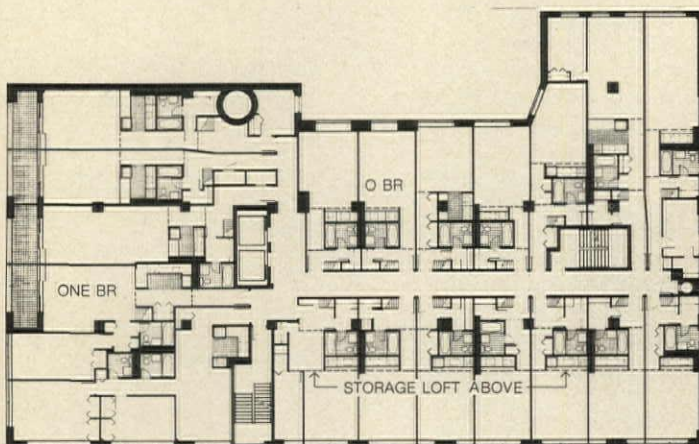
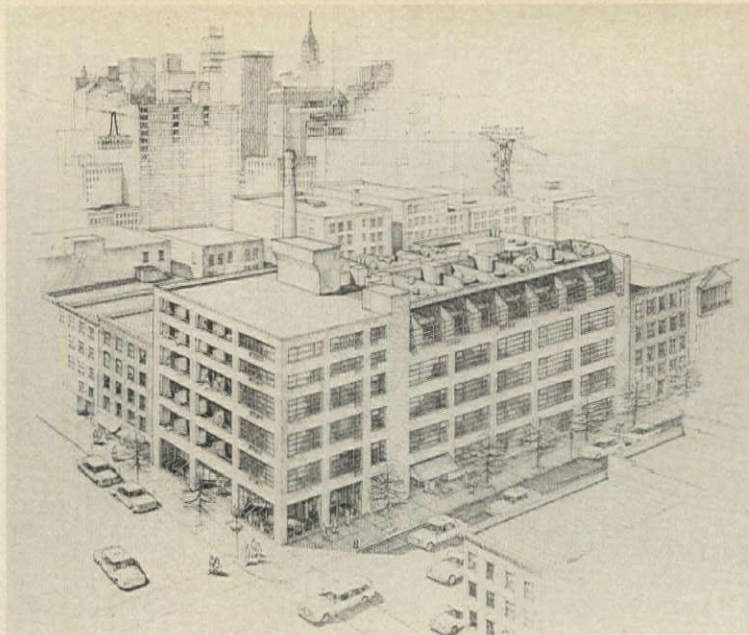


Photos: Norman McGrath

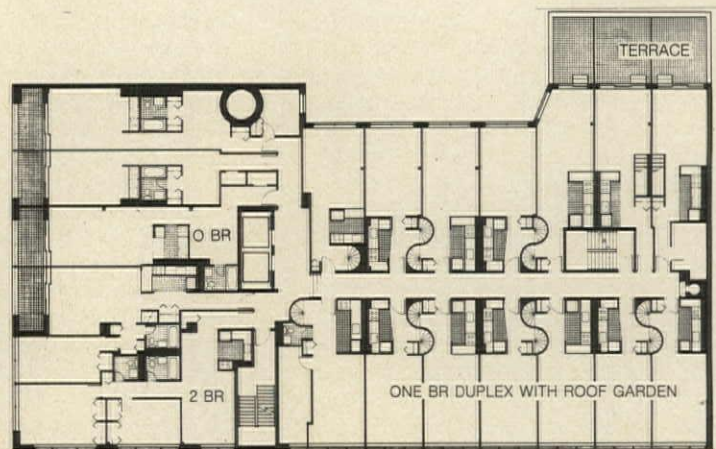


Turtle Bay Towers: This just-completed project on East 46th St occupies a 24-story factory built in 1929 that was damaged by a severe gas explosion in 1974. Designed by Bernard Rothzeit & Partners for Rockrose Associates, this is the largest loft building to be recycled for residential use under the J-51 program. It will provide 341 luxury apartments and two floors of stores plus a parking garage. Where the building is set back skylights have been installed to form greenhouse-like solariums. The segment of the building ripped open by the gas explosion (where elevators were located) was left carved out: diagonal walls now enclose an open court to allow more light into the apartment units. Because windows are generally 8 ft high and ceiling heights 11 ft most apartments appear spacious. Still the lower floors do present serious problems where apartments are long (60 to 80 ft) and dark, and columns occasionally fall in the middle of the narrow (14-ft-wide) living room. And tenants pay well for their space—from \$475 to \$750 for a studio and \$2000 a month for a three-bedroom duplex. Average cost per unit was \$40,000.

Conversions



TYPICAL FLOOR (2, 3, 4)

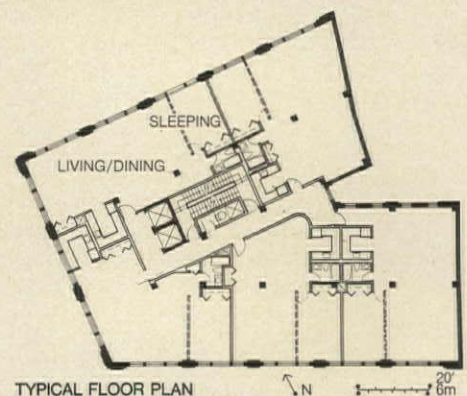


FIFTH FLOOR

The Laundry: At 62nd St and First Ave, in New York this J-51 conversion currently in the works by Beyer Blinder Belle, was (you guessed it) formerly a laundry. The 1916 concrete loft structure has been owned by the same firm, Beekman Estate, since its construction. When the tenant consolidated operations with a laundry plant in Brooklyn, the owners decided to convert the four-story building to rental housing. In order to get 94 apartments (56 studio, 30 one-bedroom, seven two-bedroom and one three-bedroom units) into the building Beyer Blinder Belle added two steel-framed stories. They then chopped off a piece of the back to get more light and air into the residential spaces, installed new window frames in the 12'-6" x 14'-wide windows, and skylights in the roof's duplex units. Although the apartments are long and

narrow, their 14-ft ceiling height is high enough for a storage (or sleeping) loft. The completion date is expected to be January 1978 with the costs for converting each apartment averaging \$30,000 to \$32,000 a unit.

100 Hudson St: One of two J-51 conversions for Austin Laber/Jerome Kretchmer planned by Davis Brody Associates involves a 1909 office building at 100 Hudson St. The 10-ft ceilings, exposed concrete beams, and large office windows will be retained for the 47 loft-type apartments, which feature units with 1000 sq ft of open space. These square-footages are part of the Special Lower Manhattan Mixed-Use zoning that waives bedroom requirements usually mandatory in residential housing.



TYPICAL FLOOR PLAN

feasibility of the proposal in terms of the condition of the existing building and its potential for attracting tenants. The best possibilities are buildings in fringe areas where "secondary" office space often stands vacant. At the same time the neighborhood should support housing by offering services residents will need. Since rents usually soar beyond the range the area has been used to, it is best if the area is already beginning to turn around economically. You can't charge luxury rents in a slum setting.

In the September issue of the Municipal

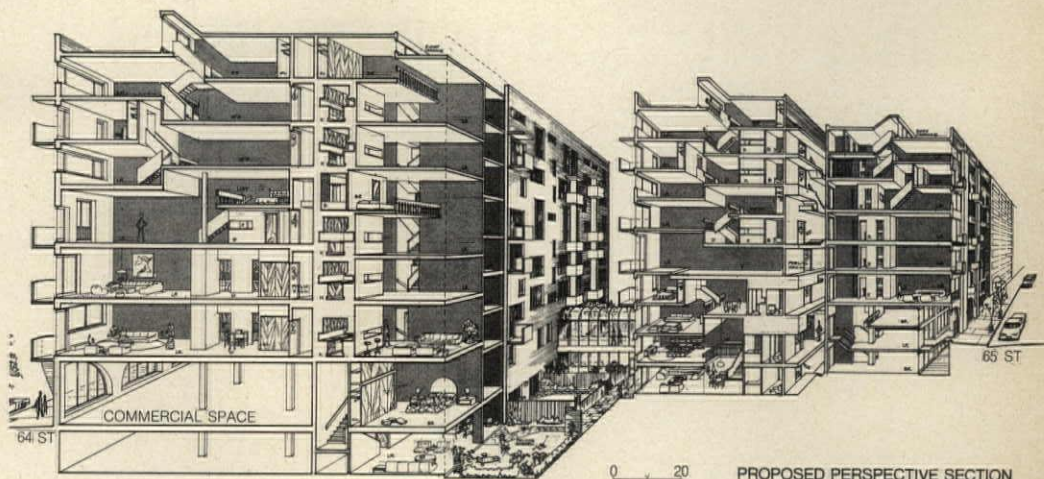
Arts Society publication *The Livable City*, Robert Jensen has pointed to one dramatic example of such an area undergoing a tremendous revitalization. In a small section of New York City east of Fifth Ave and south of 14 St, six rehabilitation projects resulting from the J-51 program have injected a new residential character into a neighborhood. Best known for antique shops and used-book stores, the neighborhood surrounding Grace Church has two things going for it—its proximity to Greenwich Village, and a surplus of old loft buildings and department stores with thriv-



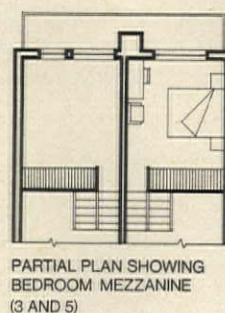
The New York Times

The Bakery: A series of buildings on East 64th and 65th Sts off Second Ave will soon contain 158 rental apartments. In designing the units for the 320 East 64th Street Realty Company, architect Stephen Jacobs merged the five industrial buildings into two buildings fronting each side street. They are connected by a glazed bridge that traverses a commonly shared landscaped court. Built between 1890 and 1910, some of the buildings are mill construction with timber beams and timber or cast iron columns; others, masonry bearing wall structures. While Jacobs had to make certain modifications to create the courtyard, most of the existing structure will remain.

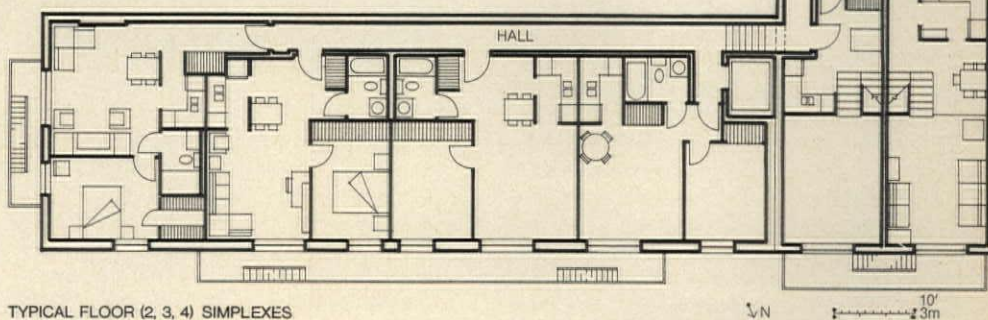
James Brett



158-160 East 26th St: Two single-room-occupancy hotels in a fringe area north of Gramercy Park built in the 1880s were converted into rental apartments by Stephen Jacobs & Associates for developer Jack Rosenthal. In order to insert 42 dwelling units (37 of which are duplexes) into the two buildings, Jacobs added three floors onto the five-story structure. Fire escapes in the masonry bearing wall and wood joist structure were sheathed with stucco to match the rest of the remodeled façade. The conversion costs were about \$18,000 a unit for basic construction when the project was built two years ago.



PARTIAL PLAN SHOWING
BEDROOM MEZZANINE
(3 AND 5)



TYPICAL FLOOR (2, 3, 4) SIMPLEXES

ing businesses on the ground floors and vacant floors above. The kick-off housing project in this area came even before the J-51 law—when the Cast Iron Building on 11th St and Broadway was converted in 1974 by architect Stephen Jacobs for Rockrose. (P/A, Feb. 1975, p. 64).

Drawbacks in design

Despite the potential that J-51 conversions offer for urban areas, they have their unsettling aspects. Architects involved will find themselves spending inordinate amounts of time meeting with zoning and building code officials and mediating between them and developers. Many of the architects tend to have small practices and find the best jobs are done when they perform most of the drudgery themselves. In some cases shoddy materials and construction are used to cut corners on items that can't qualify for the abatement. Some of the apartments created have "interesting" spaces, but are almost unworkable with their abundance of niches and crannies given names like "master bedroom" or "dining room." The bowling-alley syndrome (and oddly placed columns) pre-

dominate in loft buildings as the lower floors of Turtle Bay Towers illustrate. On the other hand, a few developers report, spaces split into multiple levels initially attract tenants, but after awhile may wear on them. The turnover rate will reflect this situation.

One of the basic problems with J-51 concerns the rents, and the get-in-fast-to-make-a-buck nature of the enterprise. The rents tend to be high: over \$500 for a studio is not unusual, or over \$600 for a one-bedroom apartment. The initial lure of J-51 seemed to be the provision of *additional* housing—not just higher-priced housing. Similarly if small manufacturing firms are forced out of cheap loft buildings by J-51 developers, the city loses not only

property taxes but also employment opportunities.

An additional problem concerns the place of one particular labor group in New York—artists. When conversion of lofts in decaying commercial areas takes place on a piecemeal and illegal basis, artists can obtain working and living space for little money. Now, with the developers rushing in, this supply is beginning to diminish, particularly if artists find themselves in the "desirable" loft buildings or industrial areas near residential ones. Competition isn't too stiff—yet. But the sardonic line goes that artists in search for cheap space may find themselves looking at eight-ft-high apartments in Upper East Side high-rises. [Suzanne Stephens]

In a little Spanish town

Restoration of a Santa Barbara landmark is also a reaffirmation of a shared vision that has prevailed there for over 50 years.

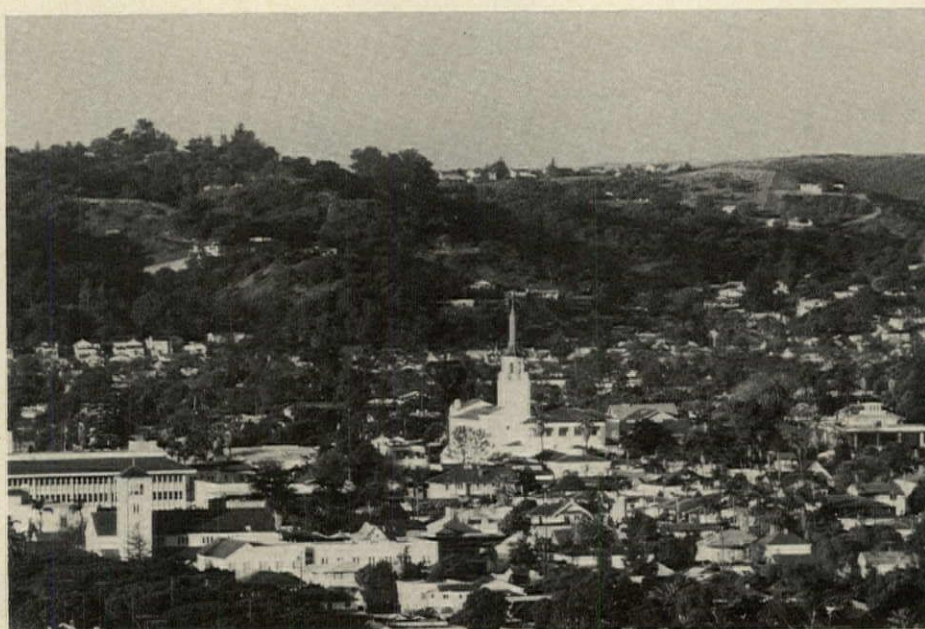
"Overhead, above the flickering light of a movie, incandescent stars glow brighter than smog would ever allow. On either side of the cinema screen is the façade of an Andalusian village. Its windows, doors, and balconies, its stairs and loggias seem as though they were about to be peopled by throngs dancing to the festive rhythms of old Spain.

"The matinee ends, the stars are flicked off, and we walk outside into the arcades of the Fox Arlington Theater and the benign breezes of Southern California. . . ."
—Charles Moore *The Place of Houses*
(Copyright © 1974 by Charles Moore, Gerald Allen, and Donlyn Lyndon)

Thus has one of the chief celebrators of the charms of Santa Barbara described one of that city's most beloved buildings, the old Fox Arlington Theater, now into its second life as the Arlington Center for the Performing Arts. The theater first opened in 1931, six years after the earthquake that virtually leveled the city, and its name derived from the old Arlington Hotel which occupied the site prior to the 1925 disaster. The reconstruction of Santa Barbara coincided with the crest of the Spanish craze which swept the country in the 1920s, when fringed Spanish shawls draped pianos, couples glided to the sinuous rhythms of the tango, and the popular song of the day ran "Rio Rita/Life is sweet-a/Rita, with you."

Such stuff as dreams

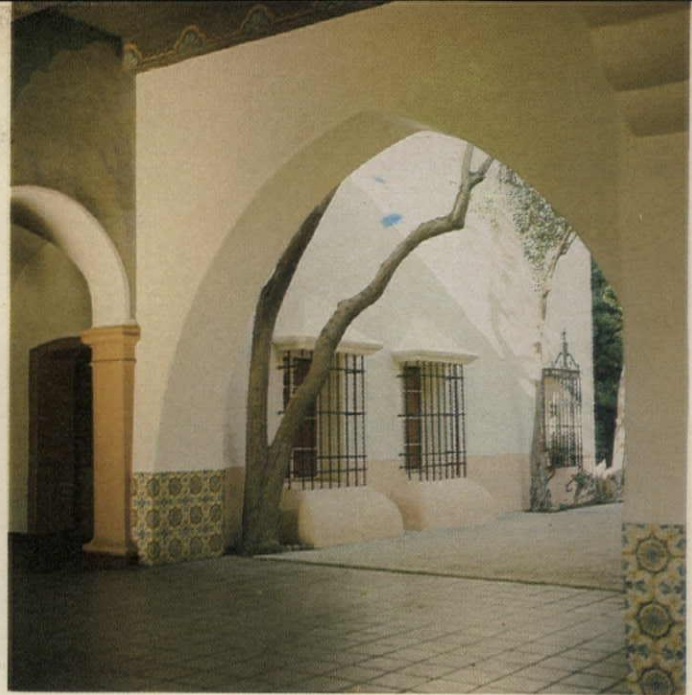
A remarkable group of architects—among them, James Osborne Craig, William Mooser, Lulah Maria Riggs, and George Washington Smith—created after 1925 a remarkably coherent ensemble of structures and spaces that succeeding generations of Santa Barbarans have cherished with understandable affection and have maintained with an inspiring degree of civic commitment. It was a supremely



romantic notion, this evocation of a past at once more fictional and yet more real than had ever existed before in Santa Barbara. Much like Helen Hunt Jackson's *Ramona* (the novel which evoked a colonial California far richer and more glamorous than it really was) the rebuilding of Santa Barbara was architectural revisionism that incorporated dreams as avidly as it incorporated the design vocabulary of another time and place.

And what more appropriate place for the full play of those dreams than the quintessential dream machine of the day, the movie palace, which in the 1920s and 1930s reached its apogee of architectural fantasy? Across America theaters rose in every conceivable style (and many inconceivable ones), though few with the contextual appropriateness of the Fox Arlington. This theater was dedicated (so the opening night program proclaimed) "to you who love the fine things of life; who respond with warm eagerness to the appeal of beauty. . . . Into your life, this new Santa Barbara institution of entertainment will bring moments of joy, hours of delight,





The theater is entered through a series of arcades, culminating in a courtyard (below) that leads into the lobby. A festive mural above the arches is where a religious scene would have been in an early Christian church. Side areas (above) are as thoughtfully designed as main spaces.



Arlington Center for the Performing Arts

The theater lobby, with its wrought iron chandelier (below) and richly carved furniture continues the Spanish theme. Rich tile work is used throughout, including a lavish drinking fountain (below right) that is said to be copied from one in Seville. Unfortunately, some beautiful tiles are covered by carpeting (below). The scheme of total design includes such details as the wrought iron window grille (bottom right). The theater's most spectacular feature, though, is the life-size Andalusian village that has been recreated along the sides of the auditorium (right and opposite page), in which the ceiling has been painted dark blue and is set with electric lights to simulate a starry sky. Now carefully restored to its original condition, the theater has been rechristened the Arlington Center for the Performing Arts.





long afternoons of pleasure, and nights of adventure in the land of make-believe," admirable goals for any public building, to be sure.

In the 46 years since it first opened, the Fox Arlington has done just that, and the citizens of Santa Barbara (following the lead of many communities around the country) have recognized their movie palace for the treasure it is, and have preserved and restored it as befits an irreplaceable part of their city's architectural heritage.

It is, actually, a rather chaste structure, quite a bit plainer than the Churrigueresque concoctions that sprouted up from Los Angeles to the Bronx: it bears no resemblance to Loew's Escorial. The Santa Barbara firm of Edwards, Plunkett & Howells were the original architects (their Copper Coffee Pot restaurant remains one of the city's most delightful amenities), and, after the justly reappreciated Santa Barbara County Courthouse, the old Fox is the city's most prominent building. The theater's distinctive campanile, with its rocket-like spire, is visible from afar, above the red-tile roofs of the predominantly low-rise city, against the mountains in the distance.

Nights of tropical splendor

The Arlington is entered through a series of spatial progressions which, in the best Baroque tradition, commence the experience of theater well before the actual performance begins. One first proceeds through two arcades, white stucco bounded by squat pink columns, the inner courtyard centered with a gently splashing fountain, the arched colonnades overlooking growths of sub-tropical foliage. Sturdy overhead beams are picked out with delicate pastel florets, and above the massive doors to the theater's interior, a mural depicts coy señoritas and dashing caballeros abandoning themselves to the strains of an unheard flamenco. These forecourts are singularly pleasant places in which to await the beginning of the next feature, and bespeak the consideration of a more civilized time when theater patrons were not expected, after having bought their

tickets, to be herded like cattle in whatever weather might prevail.

The lobby, white stucco, black wrought iron, and exposed wooden beams, is adorned with some absolutely superb tile work, including a drinking fountain said to have been copied from one in Seville. The furnishings—rich, heavily carved Spanish Renaissance reproductions—shame the "Mediterranean" styles that would be used if the theater were built today. The carpeting provides one of the few jarring notes, for it is regrettably more Ramada than *Ramona*, and in places it hides lustrous tiles that ought to be left uncovered.

Are there stars out tonight?

But the real treat is the auditorium, a classic among the atmospheric theater interiors of its time. For nothing less than a life-size Spanish village is recreated along its sides, the proscenium arch flanked by two towers, a red tile "roof" spanning the space between them. Given the stage-set feeling that pertains throughout Santa Barbara, this is a fascinating acknowledgement of what has been created there, a blurring of fantasy and reality only slightly more illusionistic than that which is perpetrated outside on the streets of the city. The dark blue "sky" overhead is a device harking back to Hellenistic times (with the modern addition of electric "stars")—a "dome of heaven" that in the past had regal or spiritual connotations, interesting in its application here in a building type that had become, for America of the 1920s and 1930s, both palace and shrine.

The restoration, by the Santa Barbara firm of Arendt, Mosher, Grant, Pedersen & Phillips, involved no structural modifications, but it is nevertheless an excellent example of its kind, showing an intelligent understanding of the original architects' intentions. Thus another theater from America's golden age of theater design has been preserved. Lucky Santa Barbara. Movie theaters have not been recognized generally for the endangered species they are, for while some particularly fine examples have been preserved, the demise of many less spectacular old theaters has

gone practically unnoticed. The new twin theater at the shopping mall is much more convenient now than the dingy old Bijou downtown, and so an important part of our architectural, and cultural, heritage is slipping away from us.

Though many newer buildings in Santa Barbara cannot be redeemed by their contextual gestures alone—one thinks of its hideous multi-level Mission style parking garages with Rolls Royce grilles glinting out from behind pierced tiles—the citizenry continues to share the same coherent view of its town that has pertained for the past half century, and which sets it apart from so many other communities. Though Santa Barbara is a rich community, its sense of self is not dependent on money alone. It has not allowed the destruction of one of its best buildings, and it is a place, one feels sure, that will never be lost for want of a nail. [Martin Filler]

Data

Project: Arlington Center for the Performing Arts, Santa Barbara, Ca.

Architects: original building, Edwards, Plunkett & Howells; restoration, Arendt, Mosher, Grant, Pedersen & Phillips, Roger A. Phillips, principal architect.

Client: Metropolitan Theatres Corporation.

Consultants: Strahl Associates, mechanical engineer; Winstrom & Associates, electrical engineer; Peter Ehlen, structural engineer; Grant Castleberg, landscape architect; The Filbert Company, stage rigging.

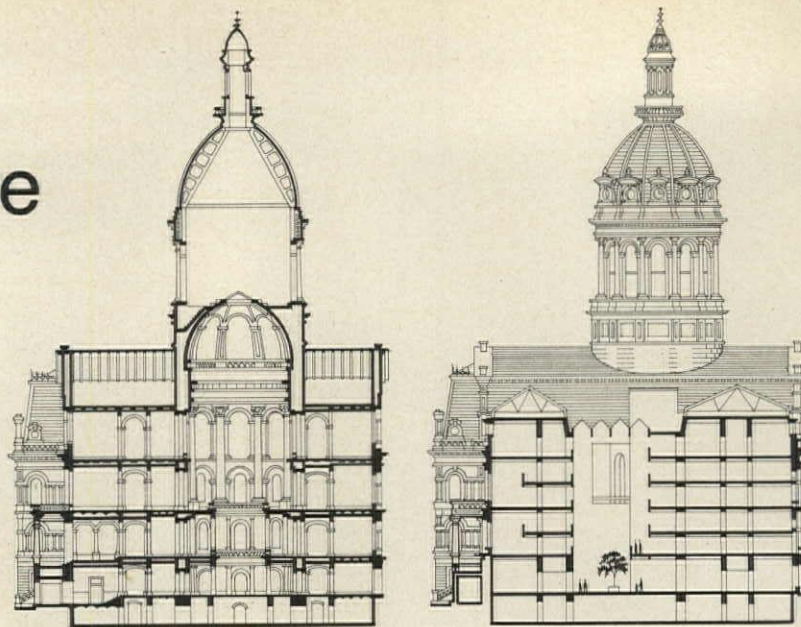
Major materials: steel frame and reinforced concrete structure; Red clay mission tile roof; metal lath and plaster walls and ceilings; tile and carpeted floors.

Contractor: Metropolitan Theatres Corporation.

Costs: withheld.

Photography: Herb Andree.

Laud Baltimore



An admirable restoration doubles space in a century-old city hall, while saving a symbol of a city proud of its heritage.

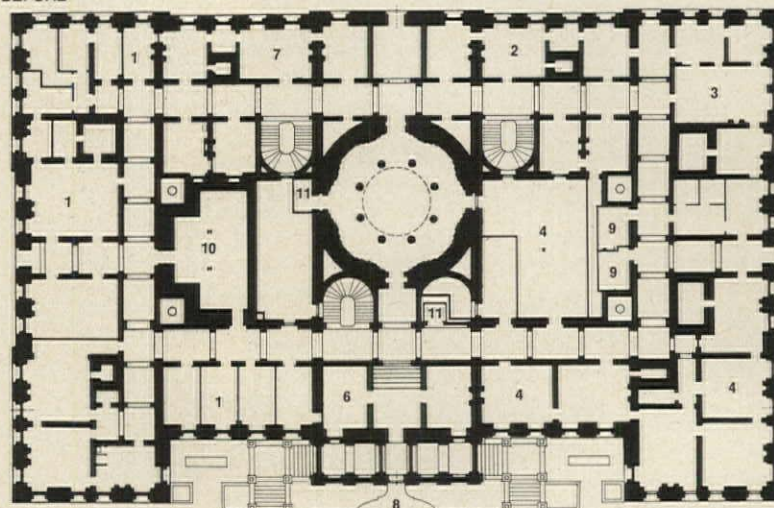
October 25, 1875 was a great day in the life of Baltimore. It was ten years after the end of the Civil War, during which Maryland—whose mind was with the North but whose heart was with the South—kept an uneasy allegiance between the Union and the Confederacy. The state's main city was dedicating its newly completed city hall, and to celebrate the momentous occasion, Baltimore held one of those vast civic extravaganzas that were so popular in mid-19th-Century America. An official holiday was declared, half the populace assembled to gawk at the new marvel, and parades, illuminations, bonfires, and pyrotechnical displays marked the opening of the domed and noble building. A good time was had by all.

One hundred and two years later, one can be sure that Baltimore City Hall will not rank high on any architectural historian's list of great American buildings of the 19th Century. Its somewhat awkward proportions and learned-by-rote motifs proclaim the hand of its 25-year-old local architect (a certain George A. Frederick), and Baltimore City Hall has none of the big-city slickness of New York's elegant or Philadelphia's stupendous city halls. But to hear the story and see the results of the resurrection of Baltimore City Hall is both a joyful and a distressing experience: joyful to think of a city that cared enough to keep an important part of its heritage, distressing to think of all the other municipal buildings across the country—the city halls, the courthouses, the public libraries, the armories—that deserved, but did not get, the reprieve that was granted in Baltimore.

Vox populi

The plummet of a 15-lb. iron ornament from the dome into the Board of Estimates room in 1959 signaled the dangerous state of disrepair into which the city hall had fallen, and the lack of consensus about what was to be done was probably the

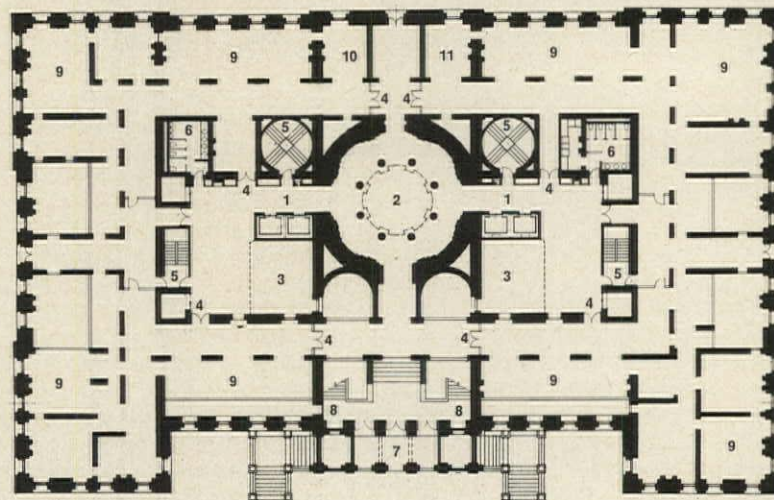
BEFORE



BEFORE Legend

- 1 City Council offices
- 2 Mayor's (complaints)
- 3 Treasurer's office
- 4 Retirement System
- 5 City Solicitor
- 6 Snack bar
- 7 Press Corps
- 8 Entrance
- 9 Restrooms
- 10 Storage
- 11 Elevators

AFTER



AFTER Legend

- 1 Elevator lobby
- 2 Rotunda
- 3 Courtyard
- 4 Potential department entrances
- 5 Stairs
- 6 Restrooms
- 7 Entrance
- 8 New stair to lower level
- 9 Law Department
- 10 Press room
- 11 Off-street parking

building's salvation. For at that time, a more affluent or more image-conscious city might have opted instead for a white travertine civic center, and the old city hall would have been little more than an extremely difficult demolition project. But by the time the city had gotten around to placing a bond-issue referendum for the building's preservation on the ballot in 1974, attitudes toward historic preservation had changed enough to guarantee its passage. Thus Baltimore won a significant victory in the battle against the proponents of

urban removal.

Eight years earlier, Larry Reich, the newly appointed Director of Baltimore's City Planning Commission, got that group to adopt a series of objectives and planning policies designed to preserve the historic character of the city, among them the restoration of the city hall as centerpiece of Baltimore's municipal district. The building's value as part of its urban context was understood above and beyond its specific architectural merits, a fact unfortunately unappreciated in many cases where less

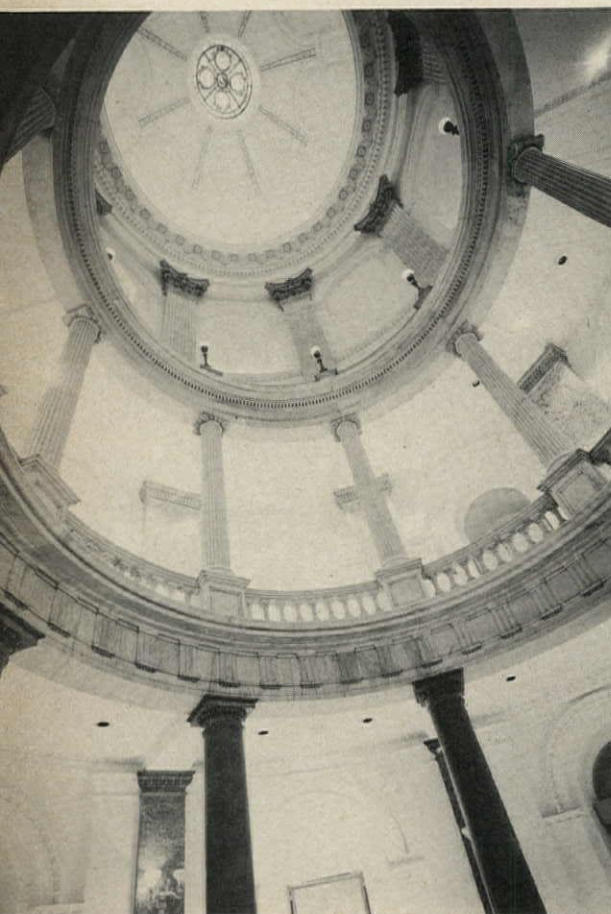
Baltimore City Hall is pictured as it appeared upon completion in 1875 (right) and as it is today (below). Plaza in front of city hall faces the city's war memorial; parking area between city hall and plaza is being redeveloped by the same architects who renovated the building. The sections and plans on the opposite page show before and after versions of city hall.



Baltimore City Hall



New space created from a closed-off light well (above) contrasts with old rotunda (below).



than first-rate buildings are involved.

Before the referendum, the city commissioned Architectural Heritage, Inc. (renovators of the old Boston City Hall) and the Baltimore firm of Meyers, D'Aleo & Patton to undertake an extensive feasibility study to determine whether the structure was sound enough to merit preservation, and whether the physical needs of the bureaucracy (considerably larger than that for which the building was originally designed) could be accommodated in the old building. The firms found the building basically fit, and they came up with a scheme (executed essentially as first proposed) that virtually doubled the existing floor space from the original 54,000 sq ft to the current approximately 100,000 sq ft. Contrary to one's first suspicions, this did not mean gutting the historic fabric and replacing the generous Victorian proportions with 6'-6" ceiling heights. Rather, the building's best rooms, those intended for various group and ceremonial functions, have been kept for the most part intact, with newly double-loaded corridors, new mezzanine levels, and rediscovered and reopened light wells creating the new space.

Something old, something new

So thorough was the preliminary survey of the city hall that the architects, to their amazement, found none of the unwelcome surprises that so often bedevil those who restore old buildings. If anything, they found more good things than bad. From beneath layers of paint covering pilasters that encircle the city hall's grand rotunda emerged the original scagliola, a fake marble made of ground gypsum and glue colored with marble dust, a precursor of today's "cultured marble." Extravagant Corinthian capitals atop pilasters proved to be made of shimmering beaten brass, and the dome's jewellike stained glass oculus bearing the city's seal was cleaned and appreciated for the first time in decades. Every aspect of the restoration was carried out with great discretion and love, and as one steps into the Mayor's Ceremonial Room (as vivid a Victorian chamber as exists in America) one feels that the city's efforts were not in vain.

Would that one could be so unreserved in praising the new alterations. While the additions are well thought out, they are for the most part not so bad as they are banal, all the more so when seen in such close juxtaposition to the imaginative detailing of the original building. The two light wells that were recreated from spaces originally intended to function as such (but which were encroached upon through the years until the wells were sealed off completely) work well enough, but their design is rather tepid, neither here-nor-there Modern. Elevators are excruciatingly framed in a boring brown marble that seems a lot less real than the scagliola employed to such great effect only a few feet away, and the elevator cabs themselves remove one jarringly from the late 19th Century into an atmosphere not unlike that of a night club in a second-rate ski resort.

To turn the tide

The one percent of total construction cost that by city ordinance must be spent on artwork was blown on a series of black-and-white photographic enlargements of historic views of Baltimore and its landmarks, an idea that seems a lot better in theory than it proves to be *in situ*. The blow-ups sacrifice color and scale for the sake of historic appropriateness: who needs blurry photos of history when you are standing in the midst of it? Some of the newly created offices seem small and cramped, but if such was the price for keeping the building as a whole (the project had to prove financially attractive in order to gain the support of those who could care less about historic preservation), then it was not too high a price to pay.

Baltimore is trying desperately to turn the tide against the ebbing away of its population and of its resources to the sprawling suburbs that surround it. The city hall, as nothing less than the hub of a center city revitalization program, the most recent elements of which are a new community college campus and I.M. Pei's new World Trade Center, has reattained an important role in the city's future. No longer the gloomy, grimy pile that it once was, the city hall is now restored not merely physically, but spiritually as well. Civic pride, one of 19th-Century America's most significant characteristics, produced many monuments that equal Baltimore City Hall. Whether grand or modest, they are not very likely to be replaced these days by better new buildings, for the grim futures that face many of our cities would not seem to support much more than the maintenance of that which already exists. To the city of Baltimore, its officials and its citizens, goes the credit of showing us how it might be done. [Martin Filler]

Data

Project: Baltimore City Hall.

Architects: original building, George A. Frederick; restoration, Architectural Heritage—Baltimore, Inc. (Thomas A. Amsler, Charles P. Hagenah, Kenneth MacLean) and Meyers, D'Aleo & Patton, Inc.

Consultants: R.G. Vanderweil Engineers, mechanical engineers; Herosy Associates, Inc., electrical engineer; Brown-Rona, Inc., structural engineer; Beauchamp-Brown, Inc., consulting engineer; Faisant Associates, Inc., dome; Industrial Estimating Service, estimates; Rita St. Clair & Assoc., interiors.

Major materials: steel and concrete structure; marble exterior walls; slate roofs; gypsum board and exposed brick interior walls; plaster and acoustical tile ceilings; marble and carpeted floors. (See Building materials, p. 00).

Contractor: Calvert General Contractors Corp.; Roy Kirby & Sons, Inc., demolition contractor.

Costs: \$9.8 million.

Photography: Otto Baitz.

The Mayor's Ceremonial Room (opposite page) is among the several chambers that have been restored to their original Victorian splendor.



Restoration of confidence

Old buildings of modest distinction have been reused and linked with new construction in a complex aimed at a larger goal: restoring a community.

A 1964 visit by Sen. Robert F. Kennedy—and local response to that visit—set in motion the process that has preserved and restored hundreds of buildings in the Bedford-Stuyvesant section of Brooklyn. Yet a tour of this vast underprivileged area in 1977 still reveals abandonment and decay of awesome dimensions. Among the indications of hope, the most encouraging is Restoration Plaza. Open two years and still awaiting one of its key components—a supermarket—this shopping and community services center seems to be functioning as catalyst in the effort to make Bed-Stuy “a place to live, not a place to leave.”

Bedford-Stuyvesant, a well-defined portion of Brooklyn, is the nation's second largest black community—after Chicago's South Side. In its 653 city blocks, the area houses just under 400,000 people—substantially fewer than in 1970—about 80 percent of them black and most of the remainder Puerto Rican. Though its statistics on education, crime, and unemployment are appalling, Bed-Stuy has a couple of important assets in terms of its buildings: its broad streets are lined mainly with three-or-four-story houses, many divided into several units, 25 to 50 percent of which (depending on who is counting and how) are owner-occupied.

And Bedford-Stuyvesant has a uniquely effective vehicle for saving and revitalizing its assets: the Bedford-Stuyvesant Restoration Corporation, an organization established in 1967 with Sen. Kennedy's collaboration. It has succeeded in combining the management experience of several key white executives with steady, nonpolitical leadership by blacks, operating through a largely—but not exclusively—black staff.

The Restoration Corporation has improved the fabric of Bed-Stuy and raised its hopes through a home improvement

program that has so far restored house fronts on 106 blocks at low cost to owners, a mortgage pool that has made purchase and improvement funds available at fair rates, a job placement program that has served thousands of residents, and many other programs. Its funds have come from the federal government, the Vincent Astor Foundation, the Ford Foundation, some major city banks, and—increasingly—from income of the properties the corporation has restored or constructed. Of these properties, Restoration Plaza is the flagship, which includes the Restoration Corporation's own headquarters. It provides one crucial feature that the community has seriously lacked in recent years: a concentration of modern, attractive retail shopping facilities.

More than a few cash registers

When architects Arthur Cotton Moore/Associates were commissioned to design the new plaza, the full-city-block site included the Sheffield Building, a 100,000-square-foot structure converted in 1968 from an old milk bottling plant, which houses corporation offices, a community theater, and a few street-level shops. The rest of the block included derelict industrial, commercial, and tenement structures. Economic consultants had reported that the site could support only one hardware store.

Working with restoration leaders, Moore's firms came up with a program that included literally dozens of shops, over 100,000 sq ft of additional office space, along with a donated skating rink. The idea was to amass critical services and shopping facilities here to make the block a natural magnet for the roughly 100,000 people who live within walking distance. In addition to serving the community, the plaza supports the equally important goal of providing “an opportunity for private business to make sound economic investments in redevelopment of this inner-city area.”

Moore's firm gained this commission largely on the strength of its impressive Canal Square development in the



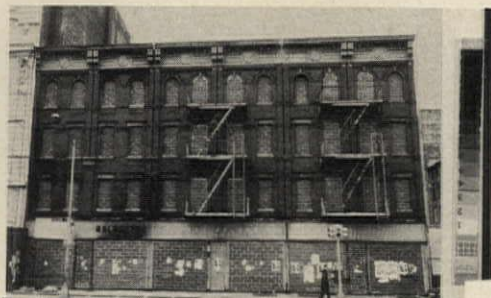
Courtesy architects: David Cox



Georgetown area of Washington, DC (P/A, Apr. 1971, p. 66), where new brick-walled structures were harmoniously combined with old around a focal plaza. Here, the architectural approach is quite similar, but the whole is larger and necessarily more complex.

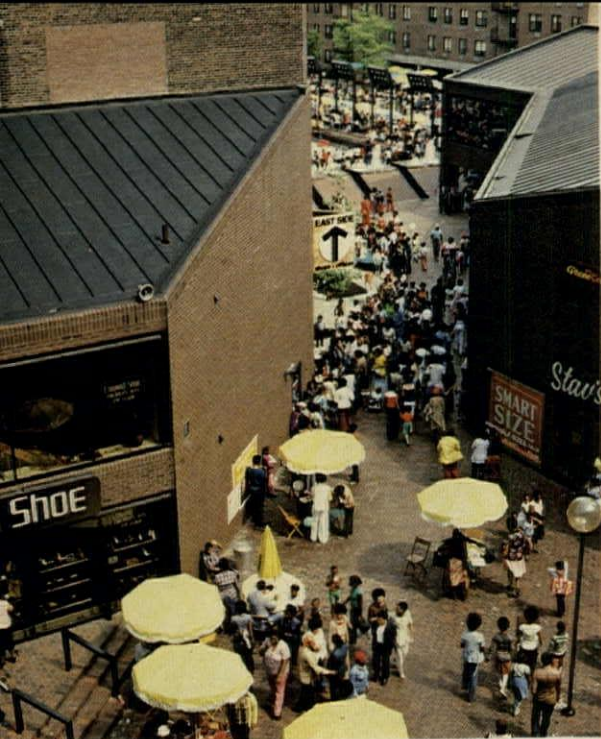
One design objective was to reassert the character of Fulton Street as a shopping street. (Though many shops were abandoned or marginally used, the revitalization of a stretch including a key subway station one block to the west, is envisioned.) A new building at the northwest corner of the site emphatically maintains the sidewalk line. Adjoining the new building, only the façade of another gutted building has been retained to reinforce the street front visually, to serve as a symbolic portal for the project, suggesting—if not assuring—the security of the plaza behind it. This regularly punctured plane—flatter than the structures to either side—does suggest a “signboard” for the plaza, as the architects put it. It is a handsome isolated fragment, but somewhat questionable in two respects: it does not—because of the thickness of street level structural supports and the stairs just behind them—give as clear a view of plaza activity inside as the architects' renderings suggested; and its vacant window openings, with sky behind them, are rather surrealistic reminders of the abandonment and demolition all too

Center is announced from a distance by banners hanging from preserved façade (left, right, and original condition below). Viewed along Fulton St (below left) façade stands between new corner building and old milk plant adapted as corporation headquarters. Concrete buttresses behind old wall (bottom photo) also support portion of second-level walkway.



Courtesy architects, David Cox





Space inside center flows from retail-service plaza (below), through diagonal link (above left) to open skating-entertainment plaza along south side.



Restoration Plaza Shopping Center

common in the area.

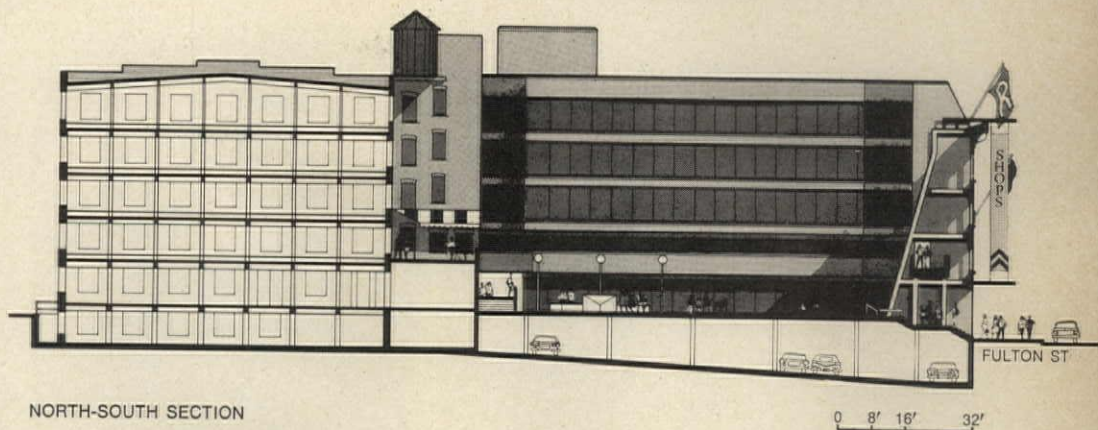
Behind this memorable if enigmatic façade, a series of pleasing plazas—totaling 30,000 sq ft in area—unfolds in a well-calculated sequence. First, there is a tightly contained retail court, with two levels of shops and additional levels of offices facing inward around it. An opening on the diagonal to the southeast leads into the much larger, sunny plaza around the ice rink—a setting for concerts and other entertainment in summer—and also toward the 138-unit low-rise housing development constructed by the corporation on the block to the south. Extending out of this space to the east, another circulation link, with a sunken seating area under the exposed framework of an old loading dock, leads east toward the supermarket site, giving access along the way to shops in other recycled buildings. The whole series of internal public spaces works neatly around the bulk of the old dairy building and integrates its rear façade and entrance with the new complex. One unfortunate side effect is that much pedestrian traffic is drawn away from Fulton Street itself.

The new construction follows very closely in its forms and materials the precedent of the firm's earlier Canal Square project. Here are the same dark brown brick walls folding around the plaza space with angled corners, the same strips of steel-framed windows; the same recessed upper level walkways; the same brick paving. Even the old warehouses, with arched window openings in brick walls, look similar. The new rear façade of the old dairy building, designed by another architect, to replace the deteriorated back walls when that building was remodeled, are of similar brick, though differently detailed. Another element in the design vocabulary here is the timber salvaged from demolished structures, which is used for signs, benches, and other incidental elements; though it is effective as a way to unify most of the shop signs, its texture is not entirely harmonious against the smooth new façades.

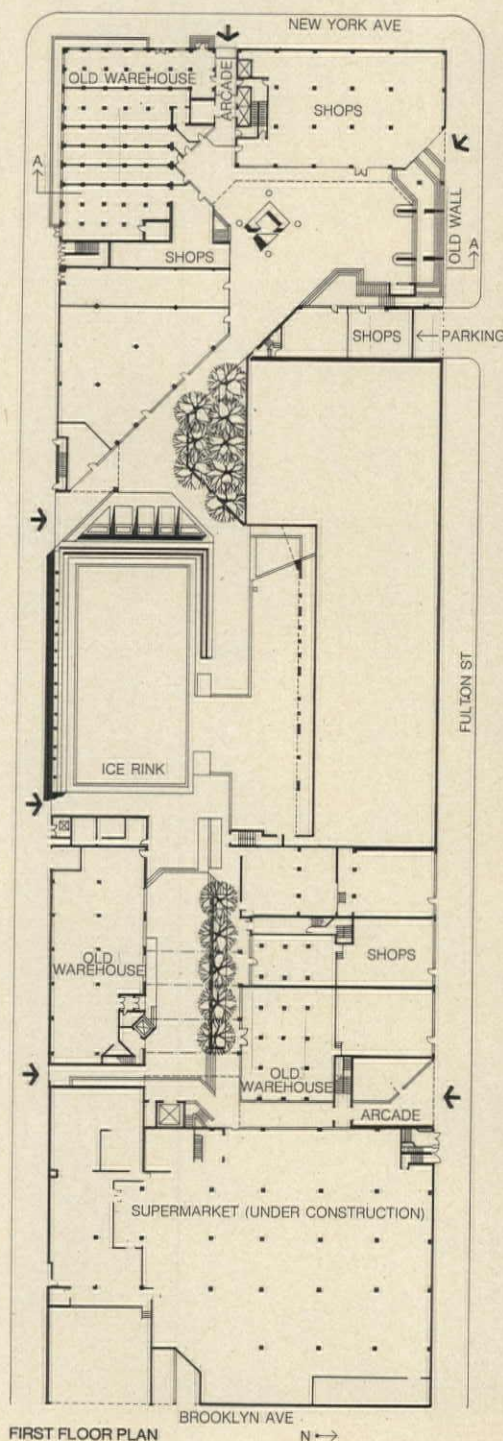
Expanding ripples of restoration

Two years after opening, and before completion of the supermarket or occupancy (still undetermined) of the old warehouse east of the rink, the center seems to be in good economic health. No doubt, the commitment of all the local utilities and a major bank to neighborhood offices here has helped make it a consumer magnet. Office tenants include community health and legal services, private professionals, and two U.S. Congressmen. Two factors favoring the success of the complex are the presence of its landlord on the premises and the even more obvious presence of a 24-hr uniformed security patrol. Remarkably, virtually no graffiti can be seen in the complex.

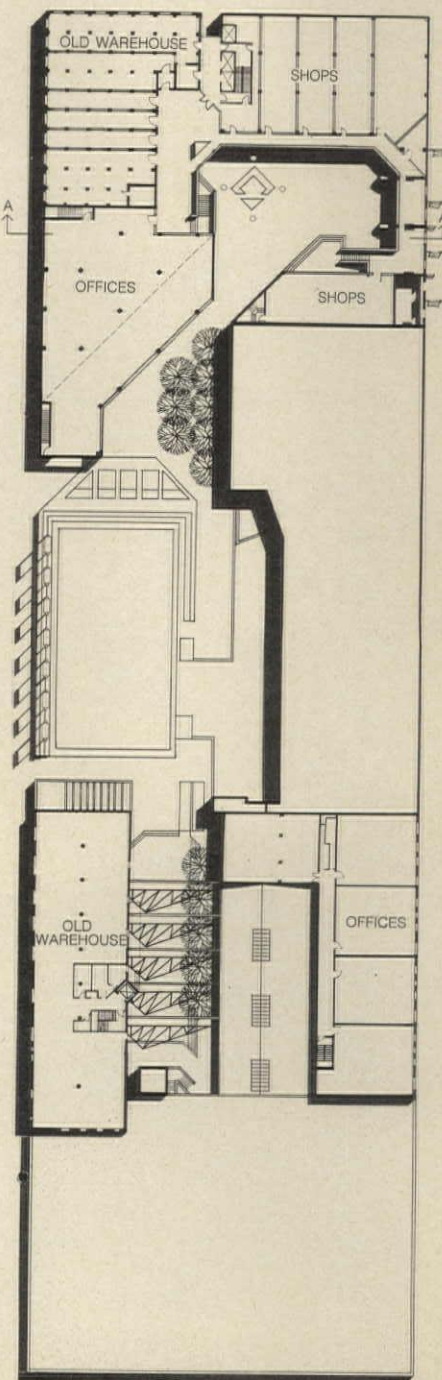
There is no question that Restoration Plaza is serving its intended purpose as an



NORTH-SOUTH SECTION



FIRST FLOOR PLAN



SECOND FLOOR PLAN

50
15m

Restoration Plaza Shopping Center



Beyond fountains and rink (below) is sunken dining plaza under trusses saved from a loading dock.



anchor for further development. Besides the housing development to the south, the corporation has completed the very intelligent restoration (under staff architect David Danois) of one commercial blockfront to the west, totally remodeling the apartments above the shops and giving them new access through a private garden to the rear. Another adjoining block will soon be given similar treatment.

The effect of Restoration Plaza on its community is not, says its well-informed public information director, Ruth Mitchell, to be measured in dollars. Even the millions that the parent Restoration Corporation has drawn into the area in the past decade have not and cannot turn the tide. The plaza is instead a symbol with power to help convince residents and potential new residents—and the banker they will depend on—that Bed-Stuy has economic and social future, and is a livable community with the strength—inside it—to bring funds and expertise from many sources to bear on its problems. [John Morris Dixon]

Data

Project: Restoration Plaza Shopping Center, Brooklyn, NY.

Architects: Arthur Cotton Moore/Associates, Washington DC; David C. Cox, senior associate.

Client: RDC Commercial Center, Inc. (subsidiary of Bedford-Stuyvesant Restoration Corp.)

Site: an entire block in the Bedford-Stuyvesant area, along Fulton Street, a once active, now blighted, commercial street; site included partially abandoned commercial, warehouse, manufacturing and tenement buildings, vacant lots, and one major building, previously restored, to be integrated with new complex.

Program: commercial/community service development including major utilities, clinic, all key retail functions; 75,000 sq ft commercial/retail; 115,000 sq ft commercial and community office space; 30,000 sq ft supermarket (under construction); 8500 sq ft ice skating rink grant-funded; basement parking for 155 cars.

Structural system: new construction, cast-in-place dropped panel flat slab for parking level and plaza; steel frame, bar joists, corrugated steel deck floors with lightweight concrete fill for superstructure.

Major materials: old buildings, existing brick walls (some paint removal), new steel-framed windows, sandblasted brick and timber framing on interiors; new construction, dark brick curtain wall and pavers for plaza and lobbies, steel-framed windows; timber salvaged from demolition used benches, signs, bulletin boards.

Consultants: George I. Worsley, Jr., & Associates, mechanical; LeRoy Callender (phase 1) and Andrew Elliott (phase 2), structural.

General contractor: client, assisted by Blitman Construction Corp.

Cost: \$6.1 million (completed portions, substantially complete Aug. 1975); old buildings, \$16.50 per sq ft; new construction, \$32 per sq ft, both without tenant improvements.

Photographs: Norman McGrath, except as noted.

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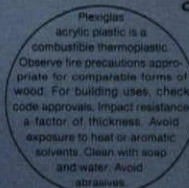
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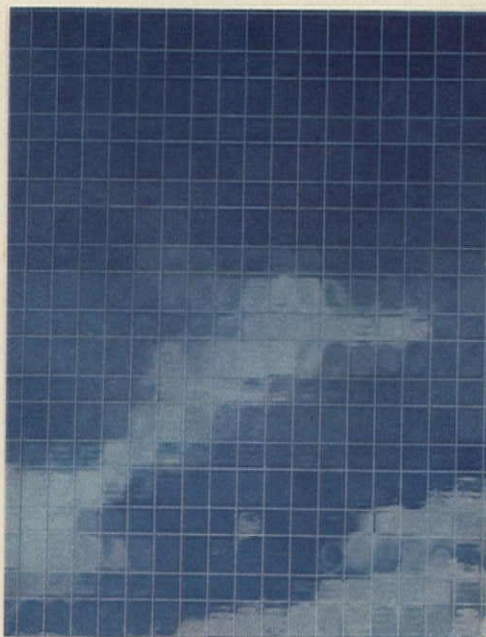
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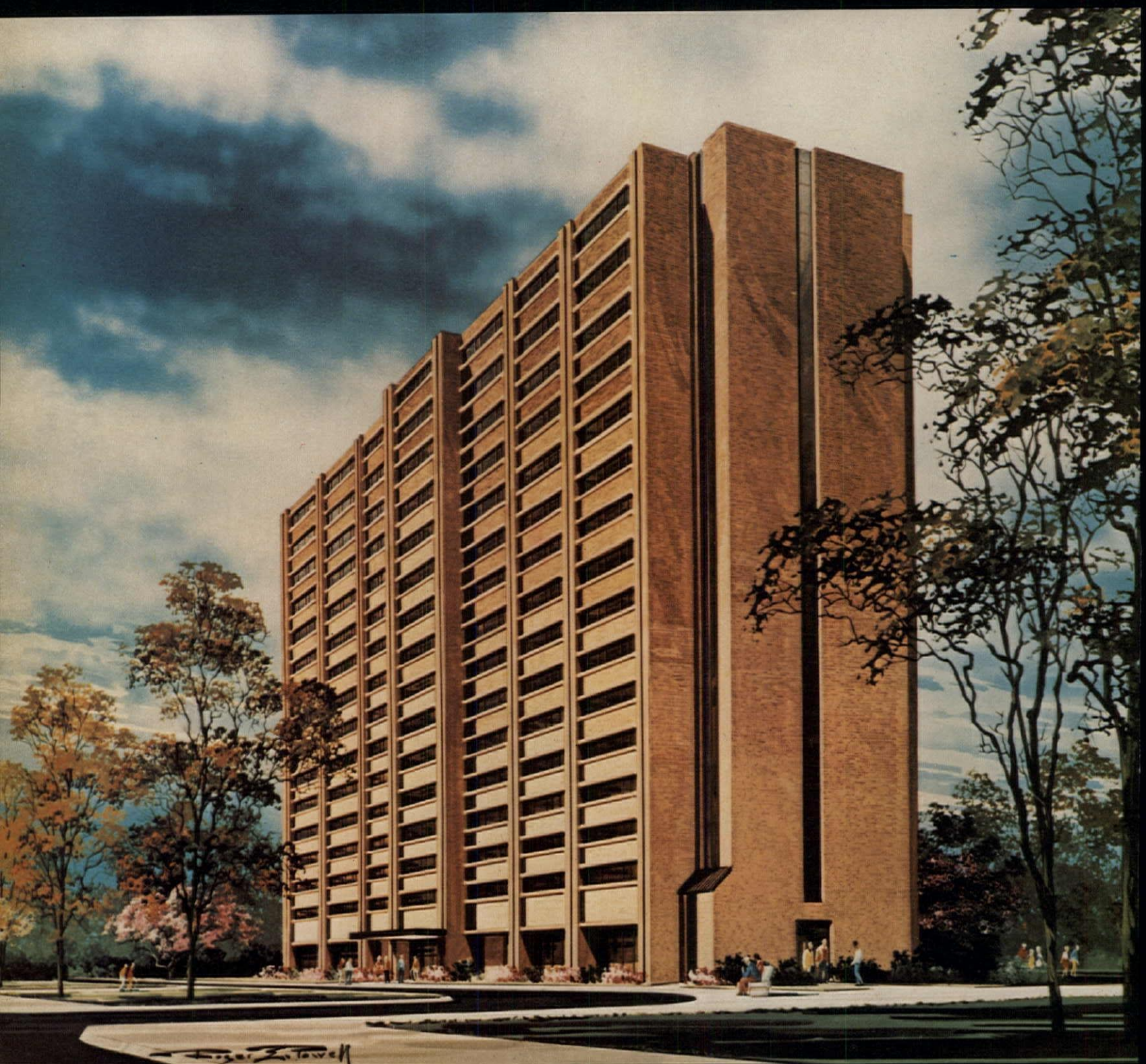
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0.49 Btu/hr-sq. ft-F
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Relative heat gain: 44 Btu/hr-sq ft
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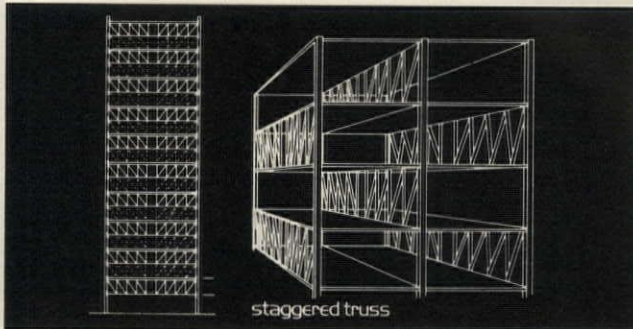
**Residential tower
\$526,300
under budget...**





Interior view during construction shows large, column-free spaces. Typical bays measure 53 ft 6 in. by 22 ft. Bethlehem supplied 700 tons of structural steel for the project.

thanks to a staggered truss steel framing system.



In the staggered truss system, story-high steel trusses, arranged in a staggered pattern, span transversely between exterior columns.

Elm Park Tower, Worcester, Mass., is a 16-level, 195-unit residential building for the elderly. The 153,900 sq ft structure is being constructed at \$24.84 per sq ft.

In 1973, a plan for a similar building on the same site was \$800,000 over budget. For that plan, a conventional concrete framing system was considered.

What key factor made the big difference? Speed of construction: 16 levels erected in 32 days using the staggered truss steel framing system.

Story-high trusses

Developed in 1965, the system consists of story-high steel trusses spanning transversely between exterior columns of the building spaced 22 ft apart and arranged in a staggered pattern.

The big advantage the system offers high-rise apartments or hotel-motel projects is the large clear spaces for complete layout flexibility—in this instance—unobstructed spaces 44 x 54 ft. Clear spaces are defined only by trusses which serve as walls between adjoining living units.

Owners:

Worcester Housing Authority, Worcester, Mass.

Architects:

Masiello & Associates, Architects, Inc., Worcester, Mass.

Structural Engineer:

Theodore/Weaver/Associates, Inc., Boston, Mass.

Fabricator:

Northern Virginia Steel Corporation, Springfield, Va.

General Contractor:

Granger Contracting Co., Inc., Worcester, Mass.

The reinforced concrete floor system, supported on steel open-web joists, acts as a diaphragm, transferring lateral loads in the short direction to the truss chords. Lateral loads are resisted by truss diagonals and are transferred into direct loads to the columns.

Columns, therefore, receive no bending moments in the transverse direction. This allows the designer to orient the columns so that the strong axis is available to help resist bending due to longitudinal wind forces.

The trusses, 54 ft long and 10 ft high, are fabricated in the shop and shipped to the construction site ready for installation.

There's another factor favoring the use of the staggered truss framing system with open-web joist floor-ceiling assemblies: open spaces above the ceilings simplify installation of the mechanical and utilities systems.

Freedom of interior plan

The interior of the first level of the tower is column free and contains no trusses. The entire first floor, therefore, could be one large room, if it did not have to be divided into support areas for the tenants.

The tower office, community room, laundry, and community kitchen, plus an area set aside for a future health clinic, are located on the ground floor. The upper 15 stories house one and two bedroom apartments. Ten percent of each type are designed for the handicapped.

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CSI's Certification program

William T. Lohmann

The Construction Specifications Institute's program for certifying construction specifiers is under way—fifteen years from initial concept to implementation.

On June 18, immediately prior to the opening of the Construction Specifications Institute's 1977 convention in Denver, the Institute Board authorized a nationwide program for examining and certifying construction specifiers. Patterned after similar programs established by other groups in the industry, it promises to demonstrate the qualifications of certified specifiers and raise the minimum level of competence acceptable for preparing today's written construction documents.

The program did not develop overnight. As far back as 1962, CSI discussed the practicability of encouraging "licensing" of specification writers. Quite properly, the Institute Board defeated a proposal suggesting it. Licensing is a governmental function well established in the fields of architecture and engineering, thereby covering the discipline of specification writing. Many specifiers are already licensed as architects and engineers.

A poll conducted among CSI chapters in 1972 again brought the subject up for discussion. Was there a need for an evaluation program administered by CSI? Could it be justified for the comparatively small number of CSI members to which it would apply? How could an acceptable level of expertise be defined?

In February 1975, the CSI Board directed Institute President Larry C. Dean, FCSI, to appoint an ad hoc committee to study the possibilities. The committee's report, prepared under the direction of Chairman Terrell R. Harper, FAIA/FCSI, affirmed the need. In broad strokes, it outlined a program for certifying construction specifiers which could be achieved without cost to CSI and without increasing the Institute staff. The recommendations were accepted by the Institute Board in February 1976. President Dean immediately appointed the initial Board of Examiners, comprising six individuals, each representing one or two of CSI's geographic regions. That group, after further study, prepared the detailed procedures that were adopted by the Institute Board at its June meeting.

To become a certified construction specifier, applicants must qualify in three areas: experience, ability, and knowl-

edge. Membership in CSI is not required.

The initial application form will cover two of the requirements. An applicant must submit satisfactory evidence of at least five years experience in one of the construction design disciplines (architecture, engineering, etc.). Ability must be demonstrated by submitting examples (or testimony from employers or clients) of written construction documents prepared by or under the direct supervision of the applicant and used successfully in actual construction. Applications must be accompanied by a fee of \$20 and be received before January 2, 1978.

If the applicant meets the requirements for experience and ability, his or her general knowledge will then be tested in a written examination. Prepared by the Examiners, the exam will be based on contents of the CSI Manual of Practice including Conditions of the Contract in common use, construction technology with which the applicant should be familiar, and practical preparation of specification sections. It will be given in April 1978 at locations throughout the United States. The examination fee will be \$30.

Upon successful completion of the exam, the applicant will receive a certificate and have his or her name published in the annual roster of certified construction specifiers. Valid for three years, certification will be renewable for additional three-year periods upon payment of a renewal fee and submittal of evidence of continuing competence in the field.

As one of CSI's most recent thrusts, the certification program will give added impetus to the Institute's already impressive continuing education and technical activities. A home study guide for the examination is being prepared. Los Angeles, Chicago, and Jacksonville Chapters, among others, have announced major seminars concentrating on the requirements for certification. The Institute Education Committee is examining the content of its specification writing short course and curriculum recommendations for relevance to certification criteria. Contents of the Manual of Practice will be reviewed and updated by the Technical Documents Committee. Eventually, a coordinated series of seminar outlines will be available for chapter use. In short, the certification program may generate a whole new focus for CSI's efforts to improve construction communications. The entire industry stands to benefit.

For more information on the program, call (202) 833-2160 or write: CSI Certification Program, Construction Specifications Institute, Suite 300, 1150 Seventeenth Street NW, Washington, D.C. 20036. □

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

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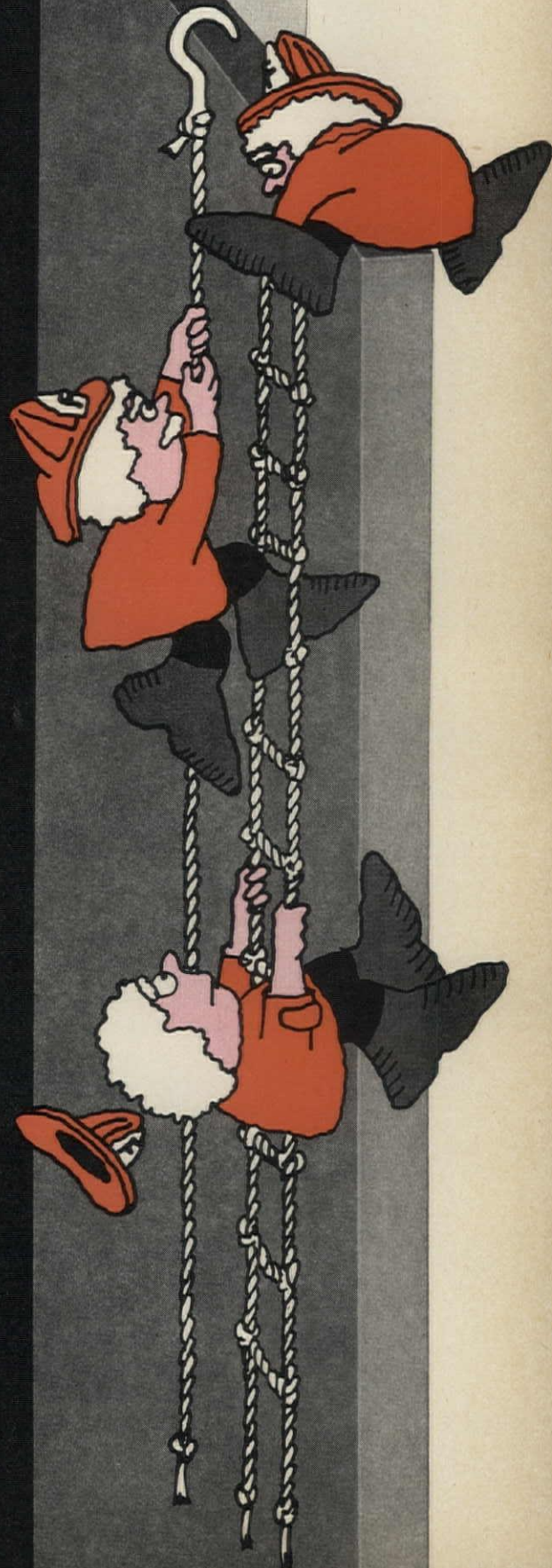
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Care and handling of the Btu

Now coming onto the stage front, a class of materials addressing energy concerns requires more than casual attention; insulation never had a more important role.

Btu's are clever. They have an uncanny ability to escape from, or intrude on, a space we try to make physically comfortable. You know about Btu's, right? And about those alphabet factors, "U," "C," "k," and "R"? We won't make you suffer through the 2000th definition of British thermal units, but we might refresh memories about our alphabet factors. In addition, a review of what industry is doing to help you combat the energy drain is appropriate.

Since any exhaustive analysis of heat gain and loss through the building envelope necessarily involves systems of overlapping pieces, this article is limited to the thermal insulation aspects of those systems. In several instances, upcoming Technics reports will deal with major exterior components which might logically, because of insulative characteristics, be included here. Built-up roofs are an obvious case in point—insulation is only one component, but the overall assembly will be covered thoroughly later on. Similarly, insulated exterior wall systems will get their due in our February article on exterior wall panels.

First, a few basics. Since insulation's purpose, in the context of this article, is to impede the flow of heat from a warm place to a cooler place, the ability of a material to deter or conduct heat is measured. The familiar "U" factor, or overall heat transfer coefficient, is the number of Btu's/hr/sq ft/degree F temperature difference that can flow through a wall or roof assembly and the air films on both sides. Thermal conductivity (k) is a measure of heat flow in one hour/sq ft/degree F temperature difference through one inch of a single material, surface to surface. Thermal conductance (C) is the same as k, but for any thickness of one material. Thermal resistance (R) is the reciprocal of C, or the ability of a material to impede heat transfer. Heat is transferred by conduction, convection, and/or radiation; since different insulation materials allow thermal transmission via varying combinations of the modes, these factors are not strictly measures of an insulator's conductance, but are accepted standards.

Probably the finest reference available to architectural professionals who want to brush up is ASHRAE's *Hand-*

book of Fundamentals. Another must, ASHRAE 90-75, *Energy Conservation in New Building Design*, should be on your shelf already. Requirements in the latter are expressed in terms of U_o , where U_o is the combined thermal transmittance of respective areas of gross exterior wall, roof/ceiling, or floor assemblies. It is expressed as:

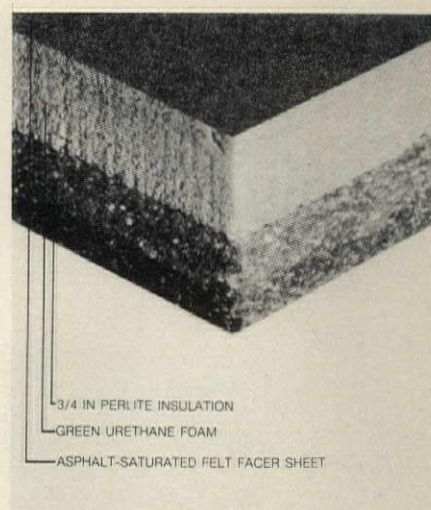
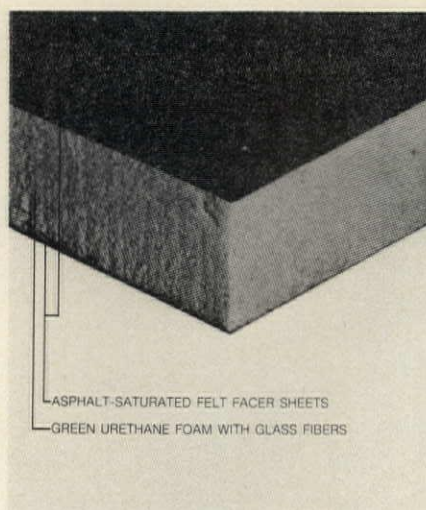
$$U_o = \frac{U_{\text{wall}} A_{\text{wall}} + U_{\text{window}} A_{\text{window}} + U_{\text{door}} A_{\text{door}}}{A_o}$$

the U's being for specific assemblies noted, A's are gross areas (including sash on doors and windows), and A_o is the gross combined area. Naturally, much more is involved than "U," " U_o ," "k," "C," and "R," but these are among the most commonly used terms in insulation literature. Another factor, the "M" factor is proposed for calculating an effective "U" for heavier-mass walls. It will be discussed later, as it relates to masonry walls.

Insulation?

Insulation can be either a thing or an act, according to Webster. As an act, it can clearly involve materials other than those things we commonly know as insulation. Virtually any material can insulate, some are just better at it than others. We will discuss some of those outside the common realm later, but begin with materials normally thought of as insulators. Again going by ASHRAE definitions, basic thermal insulation materials can be divided into roughly three groups. As described in chapter 19 of the *Handbook of Fundamentals*, they are: 1) mineral, fibrous, or cellular materials such as glass, asbestos, rock, or slag wool, calcium silicate, bonded perlite, vermiculite, and ceramic products; 2) organic fibrous materials such as cotton, animal hair, wood, cane, or synthetic fibers, and organic cellular materials such as cork, foamed rubber, polystyrene, and polyurethane; 3) metallic or metalized organic reflective membranes (which must face air, gas-filled, or evacuated spaces).

In physical form, the material may be loose-fill, mixed with water to form cement, flexible or semi-rigid, rigid, reflective, or formed in place. From the discussion above, it should be clear that simply specifying 6 in. of insulation in a wall has about as much meaning as calling for exterior siding without saying what kind. Here the R values tell more than the thickness. It is important to know the basic composition, properties, and capabilities of each. Many



Courtesy The Celotex Corp.

Three types of roof insulation, from left: glass fiber reinforced urethane foam with asphalt-saturated facers; polyurethane core with glass fiber reinforcing and skins of asphalt-impregnated felt; combination of polyurethane core, asphalt-felt skin, and bonded perlite lower layer

manufacturers make several kinds, and can be counted on to help choose the best one for a specific use. But don't let the selection process slip into the "details we'll handle later" category; the importance of proper insulation, with easily recognized energy—and therefore operating cost—implications, can have other less obvious effects. Not only are HVAC designs based on these decisions, but other ramifications will involve wall, roof, ceiling, and floor cross sections, including amounts of plenum space, placement of ducts and pipes, and other considerations.

Within the multitude of insulation types, properties vary widely. The loose-fill and insulating cement varieties are viable materials for applications on irregular surfaces or in inaccessible locations. Some loose-fill materials are more capable of rejecting water than others, and some, placed correctly, will not settle. But there is a greater chance with poured or blown insulation for uneven application, so care is advised.

Flexible and semirigid materials such as blankets, batts, or felt insulations are sold in rolls or sheets, and may be organic or inorganic. They may be faced on one or both sides to provide vapor barrier, reflective, or surface finishes. Many thicknesses are available, so that appropriate R values may be attained. The fibrous material batts are designed to fill the space their thickness indicates, and should not be compressed, as this decreases insulation values. Clearly, this type cannot be used in a compressive load situation. As with some loose-fill materials, the presence of water in these insulations can reduce or eliminate their value as insulators. It is recommended that, where practical, fibrous materials fill the wall cavity to effectively prevent convection currents within the wall itself. Precautions about vapor barriers and dew points will be discussed later.

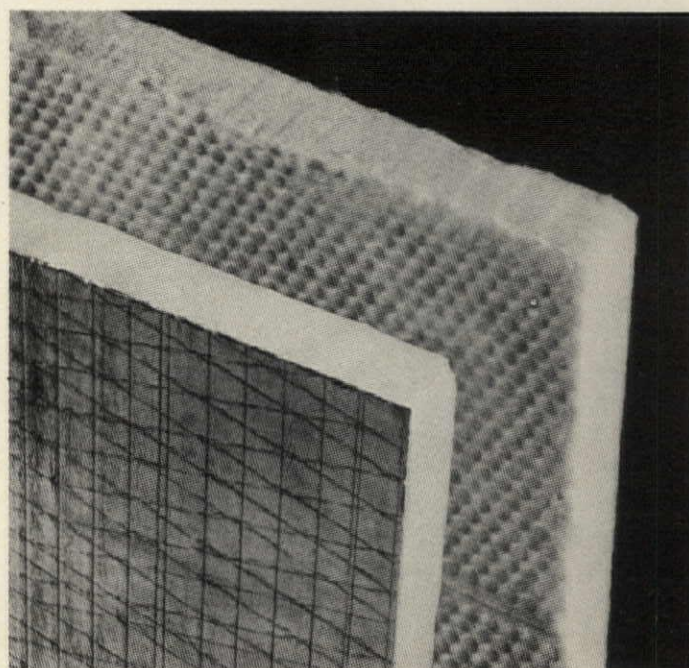
Rigid and formed-in-place products are predominantly foams, although bonded perlite, vermiculite, and other ingredients are also available. Foams for insulation are normally polyurethane, polystyrene, or urea formaldehyde. The latter is most widely used for foaming insulation into difficult-to-reach areas of either new or existing construction, forming fire stops, and isolating exterior components from floor slabs, etc.

Polyurethane and polystyrene make up the bulk of this rigid insulation market. While these materials are some-



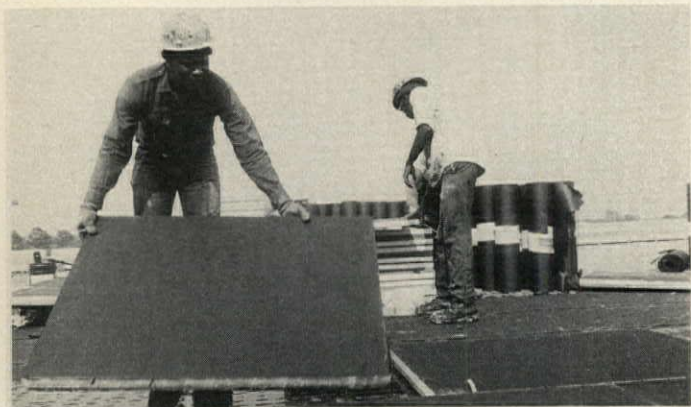
Courtesy United States Gypsum

Two forms of wall insulation. Batt or blanket materials are available with a number of facings. Mineral fiber batts with kraft paper facings give effective fire and vapor protection (above, in steel stud wall). Fire and vapor barrier also are achieved by semi-rigid glass boards (below) also bar fire and vapor.



Courtesy Johns-Manville

Thermal insulation



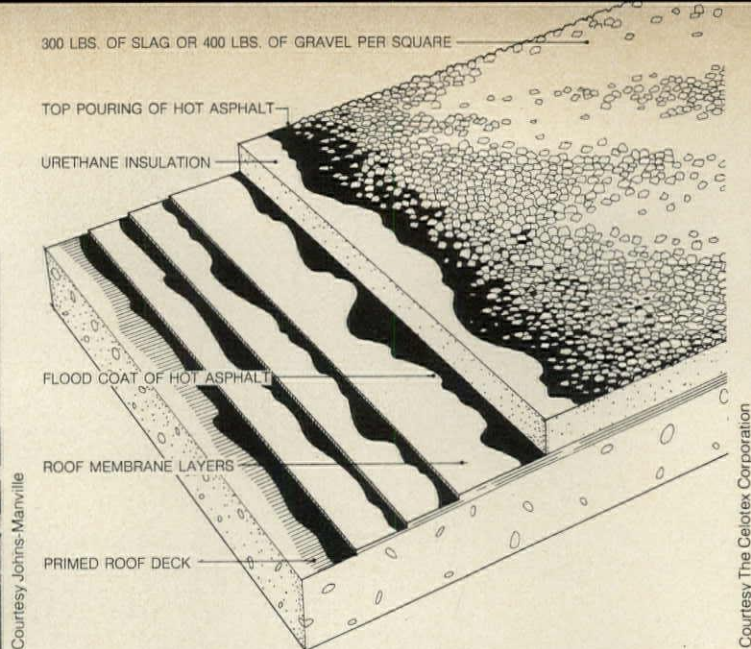
Installation of three-component (asphalted felt, polyurethane, perlite) board below roof membrane, estimated to save this client \$2000 annually.

what higher in initial cost, and can lose a portion of their initial insulating capability (about 20 percent) with age, their strengths are impressive. Their thermal resistance runs from relatively good in molded polystyrene ("beadboard") to good in expanded polyurethane to excellent in extruded polystyrene. Polyurethane and extruded polystyrene also have good to excellent compressive strength and water resistance, valuable in roofing applications. It is possible, therefore, to get high R values in less thickness than with some other insulators. Foam board or sheet is available in a wide variety of types including unfaced, strengthened with glass fibers, laminated with felt and another insulation board such as bonded perlite, with two faces of asphalt impregnated glass fiber skins, and many others. Some manufacturers recommend that, if a roof is to be designed for an insulation R value of 20 (for instance), two layers be specified—one R-17 and one R-3, with joints staggered to avoid moisture paths. Others maintain that only one layer is necessary if the total assembly is arranged in a certain specified way.

Reflective insulation material is offered in rolls and sheets of single layer and multi-layered construction and in shapes with integral air spaces. Reflective surfaces, as noted, must face air, gas-filled, or evacuated spaces to be effective in the thermal sense. Such surfaces may or may not constitute a vapor barrier.

On the subject of vapor barriers, it is crucial that the location of the barrier with respect to the insulation be carefully thought out, and its dew point known. Water in any form (vapor, liquid, or ice) is unwelcome in insulation, as we said. If the vapor barrier is closer to the temperature outside on a cold day, vapor from inside may condense and/or freeze. If the insulation is located in such a position that the resulting moisture can either fall on it or be transmitted to it, permanent insulation damage may occur. This is especially worth noting when retrofit plans call for adding more insulation.

Many scenarios could unfold. For instance, a small commercial or office structure built circa 1950 has a new owner who asks his architect to upgrade his building. Both owner and architect agree that one must is to save on the fuel bills, and that insulation levels be brought in line with current and future accepted standards. Unless the owner is either going to dump the building in a year or two, or is



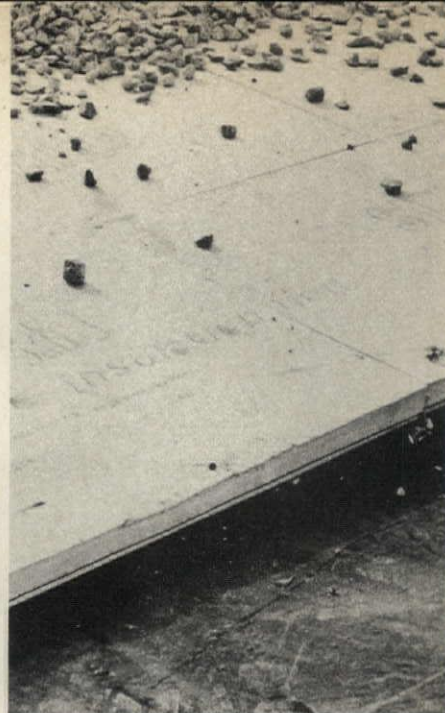
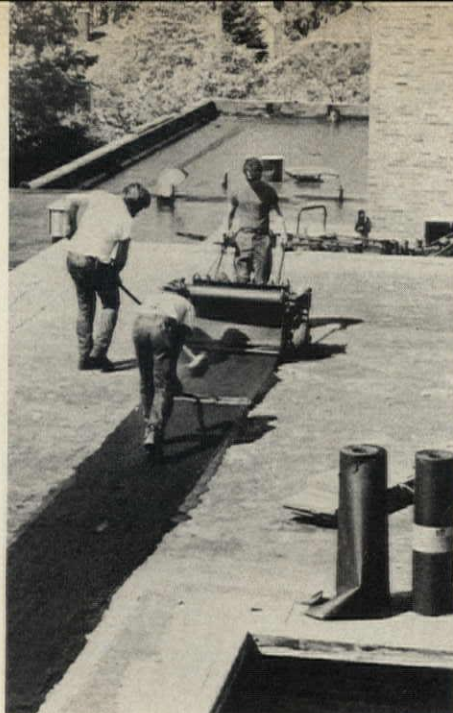
One approach to installing insulation above the membrane is to cover polyurethane board with a pouring of hot asphalt and slag or gravel.

unenlightened, he and the architect should take a look at the life cycle cost figures, and determine what thickness (based on R values) of insulation to advance to before reaching the point where added material and labor exceed payback figures. (There are many sources to turn to for help on this, including all major insulation manufacturers, and the National Roofing Contractors Association literature.)

Assuming our duo has done these steps properly, our design professional still has pitfalls ahead. Suppose it is decided that insulation will be added to the ceiling assembly suspended below an under-insulated roof deck, giving both acoustic and thermal protection. This may or may not be a disaster. Since the new insulation might isolate the roof deck from the inside temperature, the deck will be colder in winter than before. If the deck acts as a vapor barrier, and the plenum between the insulation and the deck is not well vented, water vapor can rise through the insulation and condense or freeze on the deck. This condensed vapor (liquid) may then fall back onto the insulation, impairing its thermal properties. If, on the other hand, the ceiling or the insulation's inside face is the vapor barrier and/or the plenum is adequately ventilated, the system might work fine. However, even if the inside moisture is controlled, the deck and roof assembly may undergo worse stresses due to outside temperature fluctuations not as severely felt before isolation from inside conditions. It is important to look at the whole assembly inside to out, know the location of the vapor barrier, and its dew point, and make decisions based on those factors.

One broad solution to the above problems is to put the insulation outside the envelope, not inside. In the case of roofs, since problems there are so crucial, several approaches are possible. Insulation applied above the roof deck can be in two locations with respect to the built-up roof layers—above them or below them. In either location, the material must be as immune to water absorption as possible.

If the insulation is between the deck and the layered roofing membrane, the deck is warmed by inside temperatures and the membrane is exposed to exterior temperature variations and moisture from rain or snow. Vapor from the interior, if it can get through the deck, can collect in or on the insulation, and exterior damage or weather-related



Courtesy Dow Chemical USA

failures may cause the membrane to leak.

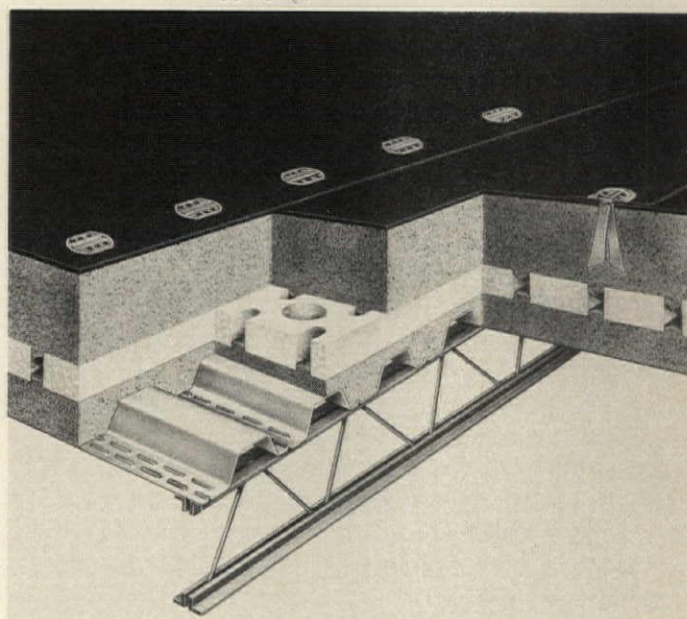
Two variations exist in the option of putting the insulation outside the membrane, but they differ only in the final steps of the roofing process. The main point of this approach is to protect the built-up roofing from radical temperature changes and/or exterior damage. The membrane is kept on the warm (deck) side of the assembly, and the insulation must be virtually waterproof and have high compressive strength. Insulations for such applications may or may not have asphalt impregnated felt or glass-fiber facings, or may have a high density skin formed during the manufacturing process. Since some rigid insulations, the foams, are less resistant to ultraviolet degradation than others, the last steps involve covering them with some form of protection. Some manufacturers recommend a coat of asphalt atop the membrane to anchor the insulation and another coat on top, into which is poured crushed rock or stone. Another approach omits the top asphalt coat, using the stone as both the ballast and ultraviolet protection.

Where insulation is installed on the outside of the building envelope, its behavior in a fire situation is generally less critical than if it were inside. Since this article concentrates on the thermal aspects of insulation, we will not attempt to cover comparative fire behaviors. It should be strongly pointed out, however, that each type behaves differently in the presence of fire; some are incombustible, but others may burn under certain conditions. Where it is critical, check with the major manufacturers.

With the increased emphasis on upgrading existing, as well as new, buildings for energy performance, it is more important than ever that the designer know where, how, and when to add insulation. To reiterate, even the right insulation in the wrong place can bring on problems. All of the reputable manufacturers are equipped to help decide what kind of insulation is best, how much of it makes economic sense, and where to put it.

At the current time, most manufacturers are experiencing unprecedented demands, largely from the residential markets. As a result, they are gearing up to produce more insulation as early as possible, feeling that commercial and industrial demand will pick up as well. It may take as long as two to three years, however, to get new production capability into full swing. In the interim, though, the indus-

try will probably continue to allocate material due to short supplies.



Courtesy W.R. Grace Co.

Other ways

As mentioned before, there are many other insulating materials and assemblies. Glass was covered in our June 1976 article (p. 49), exterior wall panels will be featured in February, and built-up roofs in September. While we've inevitably touched on some aspects of these other components, some products or construction packages deserve to be considered when insulative value is the issue. One obvious area is window/door assemblies, and the use of wood and wood products for their inherent ability to resist heat transfer. Still another is the masonry wall.

Because they put holes in our perfectly devised insulation package, windows and doors offer us the opportunity to pay attention to another potential heat gain and loss source. There are several ways in which these products

Thermal insulation

Courtesy Owens-Corning Fiberglas Corp.



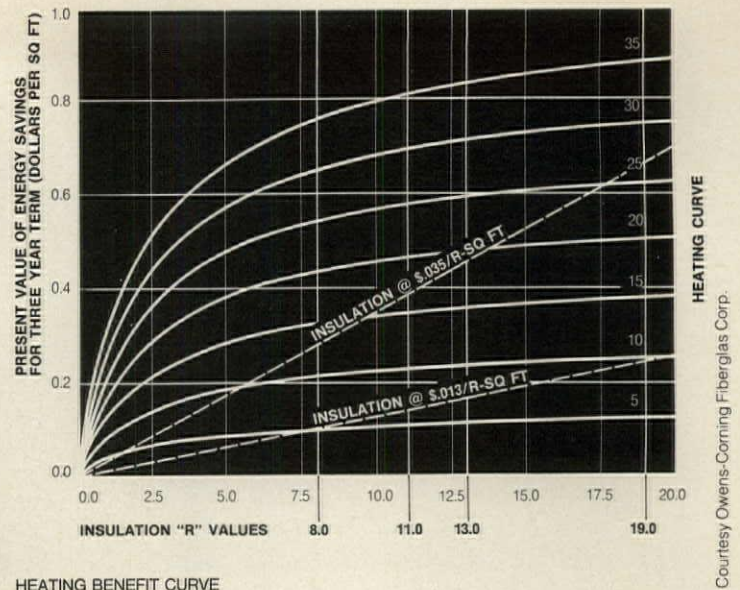
can help. First, of course, doors can be insulated and carefully weatherstripped. Frames around openings can be selected for their lack of willingness to allow heat conductivity. If the frame and assembly is metal, a number of manufacturers produce noncontinuous frames, with thermal breaks between inside and out. Wood assemblies are known for their lack of conductivity, and top-quality wood windows now offer snap-in third panes to complement dual pane insulating units and heat-reducing glass. Resulting U values can be reduced 67 percent from those of a single-glazed wood window.

Another example of wood's insulating value is the contribution to total R values of walls and roofs through the use of cedar shakes and shingles. In roofing, wood shingles can begin with an R of .94 for 1/2 in. average butt thickness, and go on up to 1.69 for tapered heavy shakes (1 in. average butt thickness) with 30-lb felt between each course. This compares to slag built-up roofing at .78, asphalt shingles at .44, or slate at .05.

Since normal U values are calculated as if heat flows through an assembly at a steady rate, the values disregard several effects. One such condition is the actual behavior of heat passing through materials of higher mass, such as masonry walls. These walls are said to have "capacity insulation" values which are not considered in the conventional figures. While ASHRAE provides a procedure for modifying heat flow measurements toward this end, it has been for heat gains influencing the cooling cycle only, not heating.

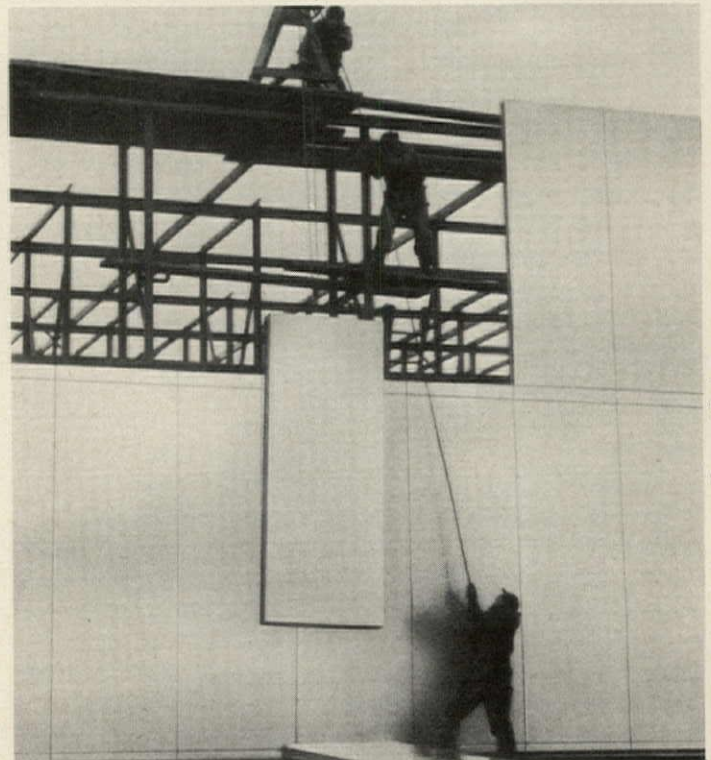
Engineers for masonry industry organizations have developed a modifier factor, "M" which allows conversion of standard U factors to "U effective" values. Dividing the traditional figure by the correction factor gives the U value allowing for capacity insulation. The factor can be used in calculations—as an indication of true thermal performance for masonry—both for meeting prescriptive U value requirements, and for meeting ASHRAE 90-75 performance requirements based on U_o figures. For more complete information, readers may contact The International Masonry Institute, The Brick Institute of America, The National Concrete Masonry Association, or The Portland Cement Association.

In addition to masonry's potential for capacity insulation, of course, it is common to construct masonry walls with

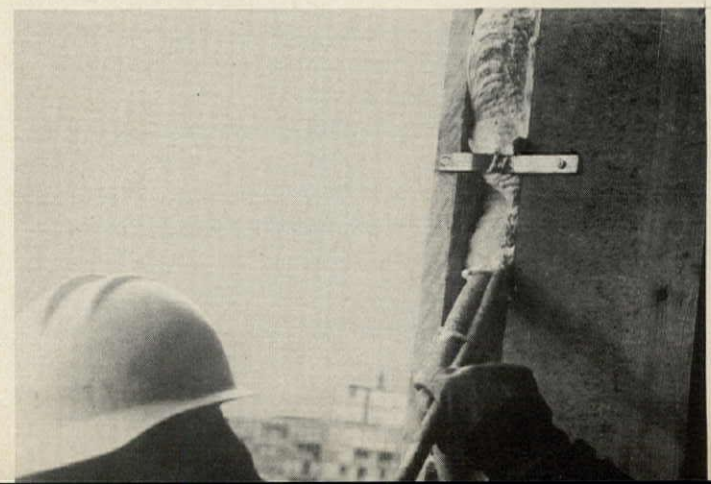


HEATING BENEFIT CURVE

Insulation cost per R value considerations changed basic construction materials on the store for Sears Roebuck (top, left) to steel frame with foil-faced glass fiber blankets when energy belts got tightened. Chart above, used with heating cost figures and a heating zone value published by one manufacturer, determines energy savings. It is an example of tools offered by industry to designers for predicting dollar payback resulting from added insulation. Building below is a pure case for insulation. New sections of a refrigerated warehouse were clad in urethane and steel sandwich panels with an R value of 28.5. Fabricated off-site, panels are locked together on job. Deck is composite urethane/perlite and urethane.

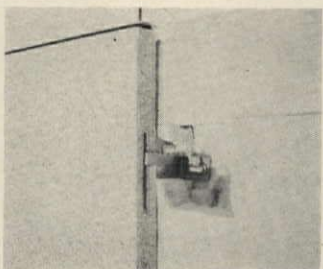
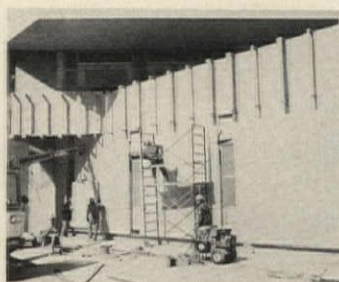


Urea formaldehyde foam insulates structure Water Tower Place, Chicago.

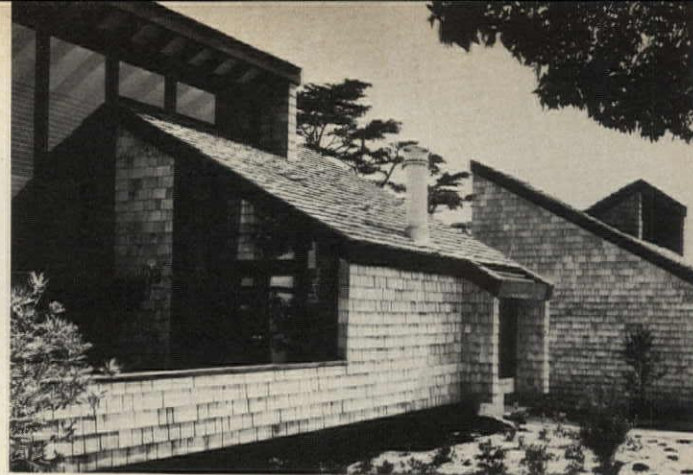


Courtesy Mobay Chemical Corp., Bally Case and Cooler

Courtesy Rappaport Corp.



Courtesy Certain-teed Products Corp.

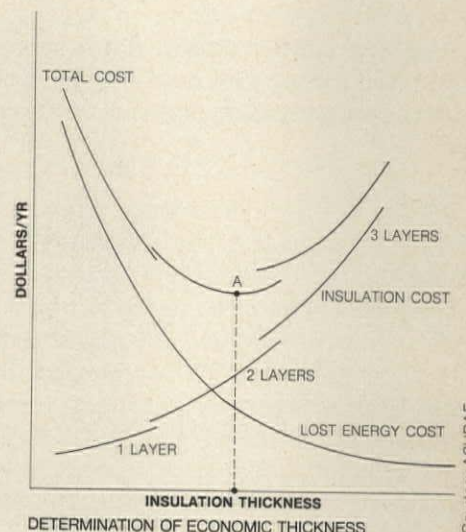


Courtesy Red Cedar Shingle and Handsplit Shake Bureau

Insulation of The Federal Office Building in Manchester, NH, part of the overall energy demonstration project for the government, is installed (photos, left) outside concrete structure, between it and facing stone. Economic thickness of insulation is determined on a chart of the type shown below. With appropriate values assigned, the lowest point of the total cost gives thickness. Other energy measures range from using wood shingles (above, housing by Deems/Lewis & Partners) to reglazing all of the windows in Maine East High School near Chicago (below, left) with a mostly translucent fiberglass sandwich panel to reduce heat transmission.



Courtesy Kalwall Corp.



Courtesy ASHRAE

various forms of insulation. A simple 8-in. lightweight concrete block, for example, starts out with a relatively good R value (1.75), and jumps to 4.85 when filled with vermiculite. Cavity walls and composite walls of various types can produce U values as low as .06-.07 using 2-in. polyurethane or polystyrene boards. Filling the cavity with perlite or vermiculite produces U values in the .13-.18 range.

If nothing else, it should be clear that insulation is a subject that can be approached in many ways. We have tried to introduce some of them. Each approach is worthy of more in-depth study, and the reputable manufacturers and associations can help with technical data and, in some instances, computer evaluation. With the focus on energy, the topic becomes more vital daily. The design professions can, and should, lead the way by knowing all about the care and handling of the Btu. [Jim Murphy]

Acknowledgments

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Recipes for baked earth

As preservation takes up successive building periods, architects must now deal with terra cotta, a unique, ubiquitous cladding material of the years 1880–1930.

As long as preservation was limited to buildings George Washington slept in, the technology of restoration was relatively simple. The course of architectural salvation has since led us through some more demanding assignments with elaborate plaster and ironwork and some hard-to-duplicate stonework. Now architects renovating or extending turn-of-the century buildings are encountering a material with its own quite unique technology and installation methods, a material which resists shortcut methods of patching or simulation—terra cotta.

Though its origins go back to the baked earth at its core—the source of its Italian name—the terra cotta now visible all over America is really one of the industrial products of the 19th Century. Its uses in this country progressed as the century wore on, from sewer pipes—which remained a mainstay of the industry—to the fireproof cladding of metal frame members and the light floor vaulting between them. It emerged on the exterior only in the 1880s—decades behind its decorative use in Europe—when the Queen Anne style called for earth-colored masonry reliefs set into brick or stone walls. Louis Sullivan and his Chicago colleagues thoroughly explored the potential of terra cotta as a cladding material, then the succeeding wave of Classical Revivalism adopted it—glazed in creamy white and delicate pastel colors—for every kind of structure from coast to coast.

So adaptable was the material to every nuance of color, texture, and modeling desired by architects of an eclectic era that producers of the decorative units sprang up all across the country, consolidating into about 20 major companies by the 1920s. In 1913, terra cotta reached a pinnacle of sorts when Cass Gilbert used it to clad the world's tallest building, the 792-ft Woolworth tower in New York. By the 1930s, terra cotta cladding was in rapid decline, brought on in part by a taste for simpler surfaces, in part by competing ceramic, metal, and precast concrete products, and in part by demanding requirements for production and installation of terra cotta. ("Ceramic veneer,"

Unglazed terra cotta (near right) in spandrel panels of Wainwright Building (1890–91), St. Louis, by Adler & Sullivan. White glazed terra cotta in Prospect Park Boathouse (1905), Brooklyn, NY, by Helmle & Huberty, restored—with extensive new terra cotta—in 1970 by Brown, Lawford & Forbes, architects.

which succeeded terra cotta in the 1930s and 1940s, is similar in its composition, but is limited to forms that can be produced mechanically by extrusion, having vertical voids inside like those of concrete block instead of the egg-crate internal structure of terra cotta.) Today, the architect who wants to replace or duplicate terra cotta with the real thing has only one producer—to our knowledge—to turn to: Gladding McBean & Co. of Lincoln, Ca, which began making the product in 1875.

No shake-and-bake solutions

Most terra cotta cladding has been—and still is—custom-produced. The process of translating the architect's intentions into material in place is a painstaking one. Surface designs first have to be divided into sections (weighing up to several hundred pounds) that are manageable in the plant and at the site; internal portions of special units have to be designed for structural integrity; casts have to be made to allow for 6–10 percent shrinkage during firing; glaze, if any, has to be formulated and applied to adhere firmly through firing and weathering. Units have to be dried before firing, which may take 14 days at 1000F or higher and must be controlled to yield desired shrinkage and avoid cracking or rupture. If units are damaged in shipping or storage, replacement currently requires about six weeks; architects are urged to begin planning for extensive terra cotta applications one year in advance.

At the construction site, terra cotta sections must be tied to their structural support with metal anchors; mortar has to be fine and carefully placed to ensure uniform loading; backfill for fireproofing and protection of hidden elements must have proper density and expansion characteristics to prevent damage during temperature cycles.

If all goes well, the cladding thus produced can survive for many decades; the ultimate life span is not yet known. But any inherent flaws, installation errors, or poor maintenance of mortar joints, flashing, etc. will eventually produce spalling and crumbling of the units.

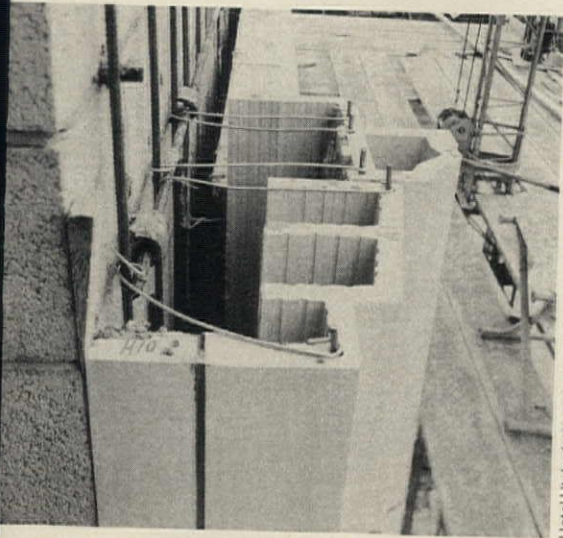
Most of the terra cotta failures we see now are in buildings dating from the period 1895–1920, after glazed terra cotta had become common and—it seems—before some of the bugs were worked out of the process. Theodore H. M. Prudon, architect-engineer with Building Conservation



John Morris Dixon



Courtesy Gladding, McBean & Co.



Hotel Utah photos courtesy International Masonry Institute

Ten-story extension of Hotel Utah, Salt Lake City (John Parkinson and Edwin Bergstrom, 1910) is cleaner duplicate of old portion at right in overall view. White glazed brick is used with terra cotta, as originally. New methods include concrete masonry back-up walls, rebars, stainless steel ties and dowels (above), but process remains meticulous. New portion is by Robert A. Fowler Associated Architects.



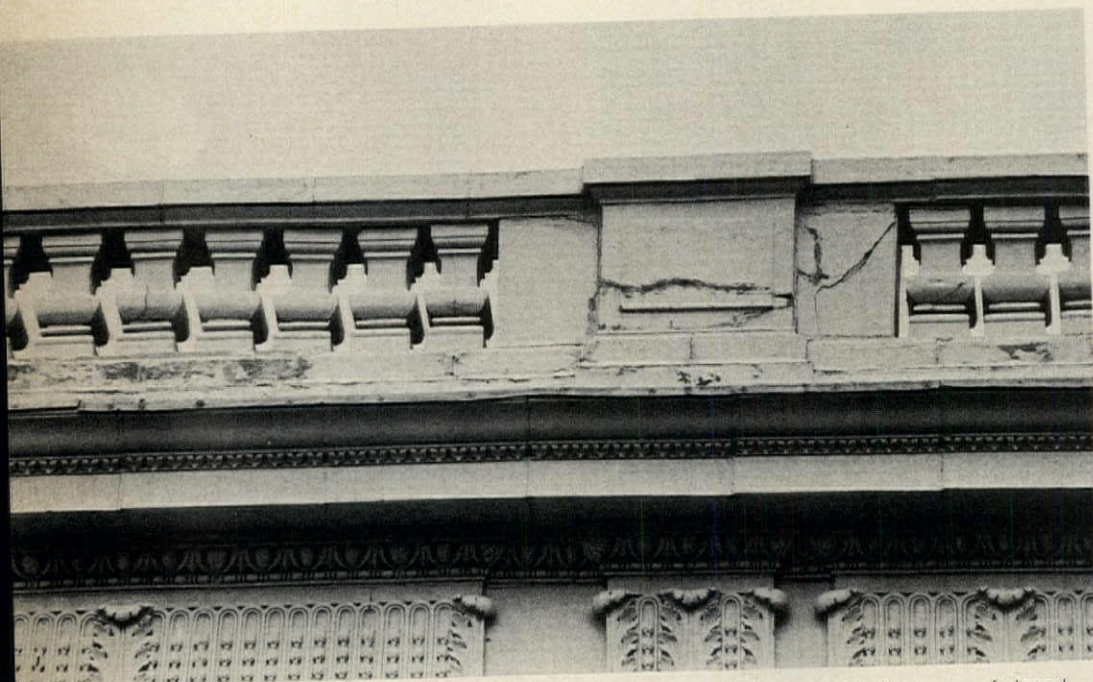
Technics: Terra cotta restoration

Technology in New York—and instructor in the preservation program at Columbia University School of Architecture—observes that examples from the earlier era of unglazed units seem to survive intact, even with inadequate building maintenance. The spandrels and cornices of Sullivan's Wainwright Building (St. Louis, 1890-91) and Prudential Building (Buffalo, 1894-95) remain in excellent condition, notwithstanding deteriorated mortar joints, flashing, and window frames. Glazing the product, he explains, means fusing an impervious finish to a highly porous base; any moisture that finds its way inside will tend to break down the bond between these uncongenial layers, and the result will be spalling.

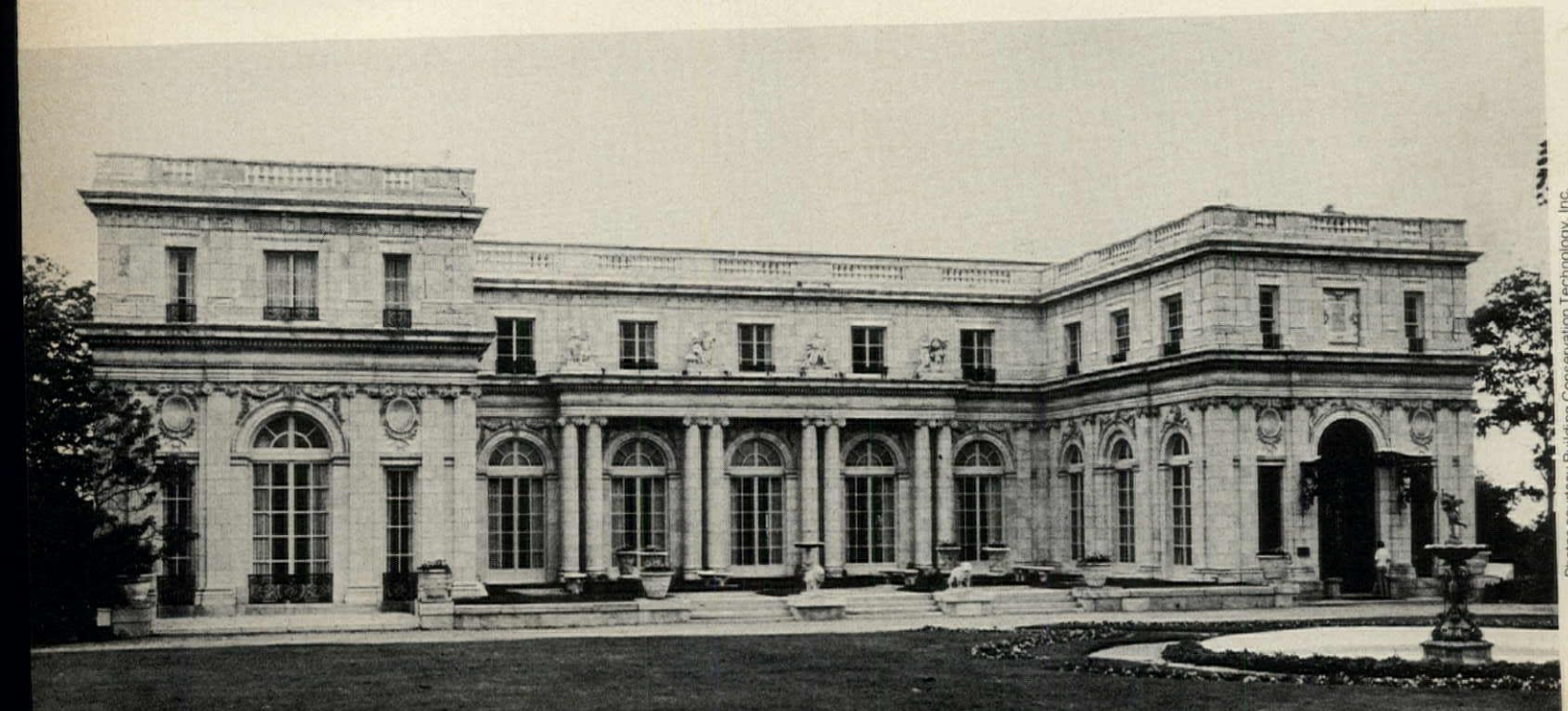
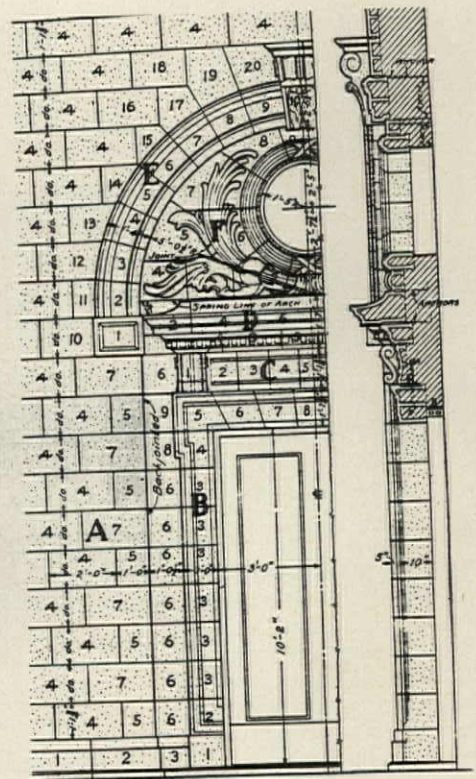
After the turn of the century, terra cotta began to be

used in more daring ways, some bordering on foolhardy. Parapets, open cupolas, and other formal flourishes at the tops of buildings left the material exposed to more extreme differential stress between the cladding and its metal supporting frame than would occur in walls. Flying buttresses at the top of the Woolworth Building, for instance, required some replacement of units only two years after its completion. It was also in this period that terra cotta was applied as a continuous cladding for heights of 15 stories or more, firmly anchored to masonry back-up walls with no relief for settling or thermal stresses, which produced characteristic cracking patterns. Notwithstanding these pitfalls, much terra cotta from that period remains in good condition.

According to Prudon, procedures for checking the condition of terra cotta are no less painstaking than the production of it. Most serious deterioration of the units can be detected by visual inspection, but this must be very close



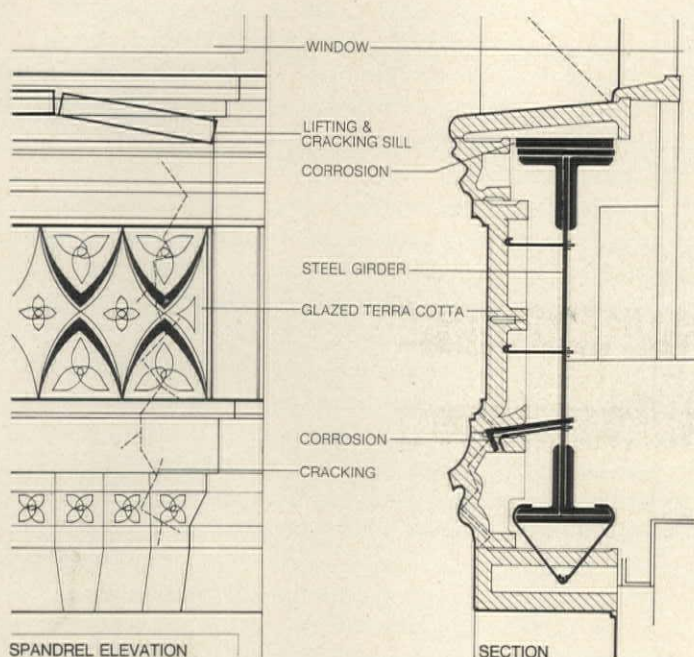
Rosecliff (below) a Newport RI "cottage" by McKim, Mead & White (1902) shows use of glazed terra cotta in Beaux-Arts design. Cornice and balustrade show characteristic types of failure; patch-and-paint methods have not helped, and house is being surveyed for replacement of damaged units. Drawing (right) is typical of those drawn up by fabricators in terra cotta's heyday.



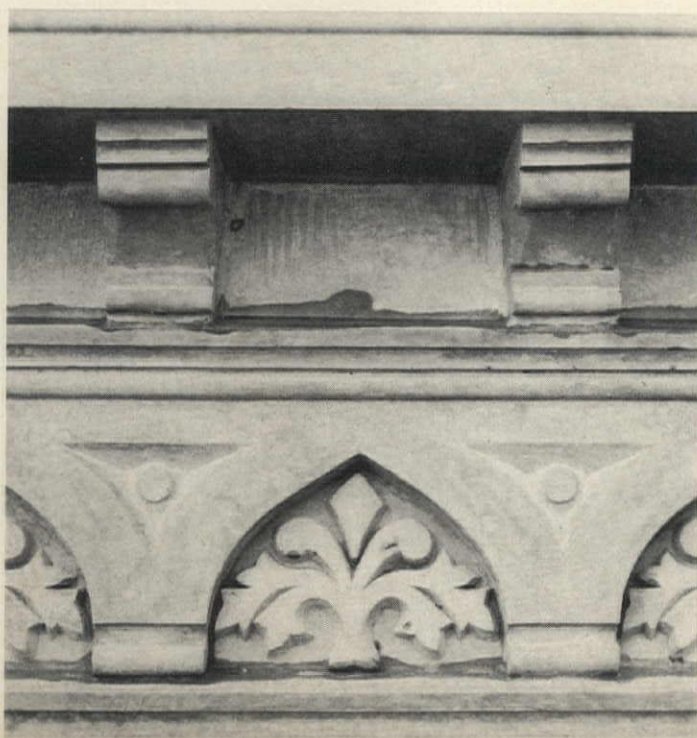
inspection to reveal hairline cracks, which are potentially as serious as more advanced spalling. Tapping of the units can indicate deterioration of the internal webs of units or separation of the surface from it. Metal detection devices can locate the anchors and give critical indications of their condition. (They can corrode completely away behind a deceptively secure-looking surface.) Carefully selected and removed samples can reveal moisture problems or the penetration of damaging salts. Much of this effort is aimed at determining causes of deterioration so that damage to sound units can be headed off, though it also serves to determine where material must be replaced.

Restoration ingredients

The architect faced with restoration of deteriorated terra cotta has a number of known options, not all of them yet tested in actual situations:



Drawing from a Building Conservation Technology survey (above) shows characteristic spandrel failure of Woolworth Building, New York (1913), by Cass Gilbert. Fiberglass-reinforced concrete cast of a sheet metal cornice (below) represents possible replacement for damaged units.



Courtesy GlasCon

- 1 standard masonry restoration techniques, including filling of gaps in the surface with stuccolike material; difficulty of matching the texture and color of terra cotta often leads to painting of the patched surfaces; the method is readily available, but basic incompatibility with the terra cotta can lead to early paint failure and cracking of infill.
- 2 replacement of terra cotta units with precast concrete; molds can be readily made from existing units, since there is no significant shrinkage to contend with; greater weight of units can cause unwanted stresses; matching of color and texture is difficult, especially considering change in concrete as weathering exposes more aggregate; acrylate finish can be used to simulate terra cotta surface, but requires periodic recoating.
- 3 replacement of units with fiberglass-reinforced plastic units; easily molded, light, and weather-resistant; usually require a coating for visual match, which must be renewed; not sufficiently fire-resistant for many situations.
- 4 replacement of units with fiberglass-reinforced concrete units (with special, alkali-resistant fibers); easy to cast, using molds from existing units; thinner, hence lighter than conventional concrete; questions of cost and long-term performance in such situations still being investigated.
- 5 replacement of units with cut stone; economically reasonable for flat terra cotta walls, as in Chicago's Commonwealth Edison Building, where limestone was used (ironically, to replace terra cotta originally designed as an inexpensive substitute for limestone); color and texture match after weathering not certain.
- 6 replace units with new terra cotta units; best opportunity for matching; proven durability, assuming original design was sound; cost varies widely with degree of mechanization possible; simple units can be replaced with ceramic veneer at, perhaps, \$15 per sq ft; low-relief designs can be reproduced mechanically, using ram-press method, at somewhat greater cost; deeply modeled units, with undercutting, must be built up by hand in the traditional way, at costs that may exceed \$100 per sq ft; molds cannot be made directly from existing units, but must be scaled up to allow for shrinkage during firing.

Prudon, who is now consulting on the extensive restoration of the Woolworth Building façades—exact procedures for which have not yet been determined—shows no bias toward one method or the other. The object, of course, must be to preserve as much of the original fabric as is feasible, then to replace what cannot be saved by whatever means best suits the scale, situation, and architectural character of the building—and the funds available. When the job is done, he predicts, the elegance of the Woolworth Building façades—with long-observed blues, greens, golds, and purples in the recesses of their overall white tracery—will be a revelation.

In few instances historically is a surface material so intrinsically a part of the architectural concept as in the landmarks—big and small—of the terra cotta era. Restoration of the cladding on these buildings is, in effect, restoration of their architectural integrity. [John Morris Dixon]

Acknowledgments: Our thanks to the following sources for assistance in preparing this article: Neal English, International Masonry Institute; Angelo A. Simone, Gladding, McBean & Co.; Theodore H.M. Prudon, Building Conservation Technology, Inc. (The Ehrenkrantz Group).

Zoning: public interest vs individual rights

Bernard Tomson and Norman Coplan

Zoning restrictions which conflict with the rights of individual property owners are challenged as being confiscatory in nature and unconstitutional.

The constitutional validity of a zoning restriction is often questioned. Currently, challenges to zoning laws which tend to exclude minority or low-income groups are very common. In respect to one such challenge, the United States Supreme Court has upheld the validity of an Illinois zoning statute (whose effect was to exclude minority and low-income groups) in the absence of proof of a discriminatory motivating factor in the adoption or enforcement of such a zoning ordinance (see *It's the law*, P/A., June and July 1977). A different type of challenge is often premised upon the claim that a particular zoning restriction is confiscatory in nature and therefore unconstitutional. The right of the municipality, under its "police power," to adopt zoning restrictions in the public interest, when in seeming conflict with the right of an individual property owner to protection against confiscatory governmental action, often results in litigation.

The New York Court of Appeals, in *Grimpel Associates v. Cohalan*, 393 N.Y.S. 2d 373, has recently had occasion to consider the appropriate rules to be applied in determining the constitutionality of a change in zoning. In this case, the plaintiff owned approximately 24 acres of real estate consisting of two parcels divided by a public street, one parcel of approximately 8 acres and the other of approximately 16 acres. Prior to 1963, this acreage had been zoned for residential use, but in that year, the property was rezoned for business use. In 1970, a shopping center was developed on the 8-acre parcel, but the 16-acre parcel was not developed. In the meantime, a residential subdivision consisting of single-family homes on 20,000-sq-ft plots was built on property adjacent to that owned by the plaintiff, and there was other substantial residential development in the area of the plaintiff's property as well.

In January 1974, after a public hearing, the Town Board rezoned the undeveloped 16-acre parcel to residential classification, and the plaintiff sought to have the Town Board's action declared confiscatory and unconstitutional. At the trial of this action, there was evidence furnished that

this parcel was not suitable for residential use because a residential zoning classification would create an "island" surrounded by business operations and major thoroughfares. The plaintiff's real estate expert testified that such rezoning would result in 92 percent diminution in the value of the property. He testified that the property zoned for business use had a fair market value of \$1,280,000, but that its fair market value for residential use was \$104,000.

The Trial Court ruled that the change in zoning as applied to the plaintiff's property was unconstitutional in that it was confiscatory in nature. Upon an initial appeal, such judgment was affirmed by a divided appeals court. The dissenting judges stated that the plaintiff had the burden of proving that the land in question could not yield a reasonable return if used only for a purpose permitted under the prevailing zoning classification and that the plaintiff had failed to meet that burden. The majority of the Appeals Court, however, ruled that the plaintiff had established a significant economic deprivation resulting from the rezoning and that the burden of proof was upon the town to demonstrate that the community's gain was sufficient to justify the harsh impact of the ordinance.

Upon further appeal to the Court of Appeals, that Court affirmed the decision.

"In order to establish that a zoning restriction amounts to an unconstitutional exercise of the police power as applied to particular real estate, the owner must demonstrate that the zoning restrictions deprived the owner of all reasonable use of the property. . . .

"In this case we are presented with affirmed findings of fact that the subject property was not suitable for residential use because the residential zoning classification would create an 'inappropriate and unjustifiable island' surrounded by business operations and major vehicular thoroughfares. . . . Additionally, there was proof that the rezoning resulted in a 92 percent diminution in the value of the property. While not itself dispositive of the constitutional issue, proof of a drastic reduction in value tends to establish that the property is not reasonably suited for the uses prescribed by the zoning ordinance."

It was contended in the Court of Appeals that the plaintiff had failed to prove that the property was unsuitable for public or quasi-public use, such as a school, church, library, etc., and that, therefore, the plaintiff had not satisfied its burden of establishing that the zoning restriction had deprived the plaintiff of all reasonable use of the property. The Court, in respect to this contention, said:

"It was not incumbent upon plaintiff to prove that its property was not suitable for various public or quasi-public uses permitted by the residential zoning classification such as church, school, college, public library, municipal building or municipal park. To confine private property to public uses alone amounts to an appropriation of property rights for the benefit of the public without compensation therefor."

It is significant to point out, as illustrative of the evolving nature of the law, that the Court of Appeals, in reaching its conclusion, rejected the language of an earlier decision by that Court which had expressly stated the principle that the property owner must prove that his property is not suitable for public use as a condition to a successful challenge to the constitutionality of a zoning restriction. □



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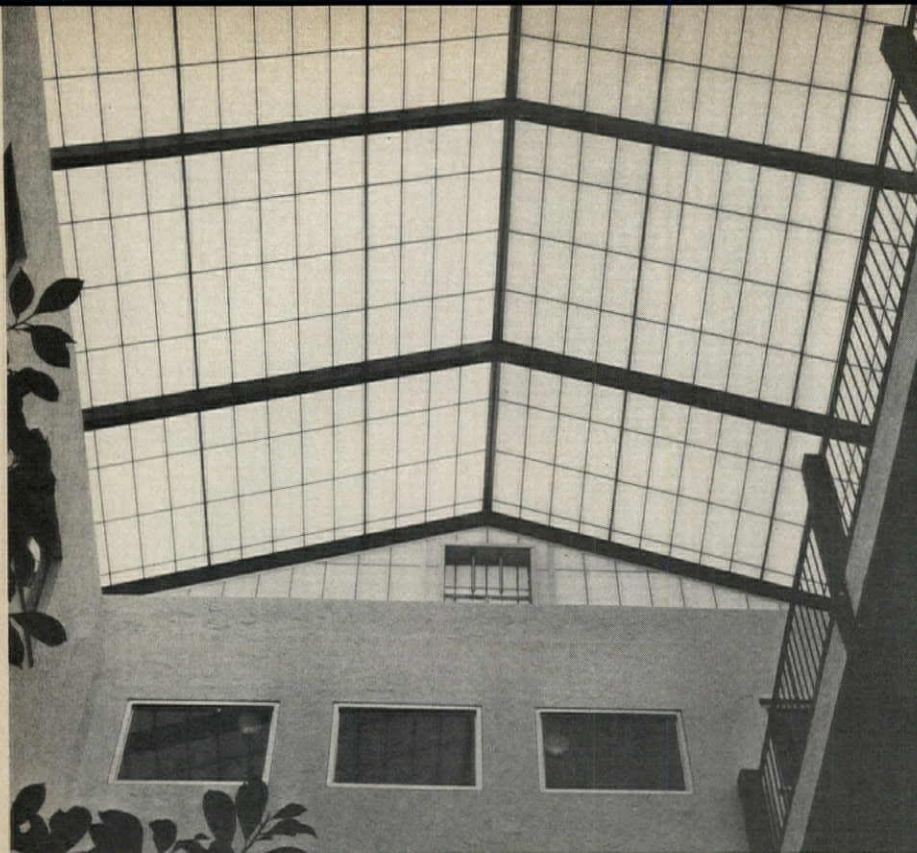
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Books

After the fall

The two book reviews here are the first in a monthly series of commentaries about the 'death' of modern architecture and the rise of post-modern architecture.

Form Follows Fiasco: Why Modern Architecture Hasn't Worked by Peter Blake. Boston/Toronto, Little, Brown & Company, 169 pp., illus., \$12.95.

Introducing an interview with Peter Blake, *People* magazine (Sept. 12, 1977) refers to his work as "a good-natured book." The publisher's jacket blurb calls it "new, irreverent, iconoclastic." Actually, beyond its flippancy title, the book is about as good-natured and fresh as one of Richard Nixon's concession speeches. Blake has had to struggle free of powerful loyalties and run hard from behind to join the assault on the Modern Movement, and the effort has apparently left him exhausted and bitter.

His book is a series of attacks on such vulnerable targets as highways, suburban sprawl, urban demolition, zoning, modern chairs, open plans, industrialized building, winds induced by towers, asbestos in the lungs, and high-rise housing (with the inevitable going-going-gone shots of Pruitt-Igoe). In all of this, he merely paraphrases—often oversimplifying—arguments long familiar to reasonably informed readers.

About his own conversion, Blake shows admirable candor. He admits that as the author of *The Master Builders* (1960), which asserted the supremacy of Wright, Mies, and Le Corbusier, he was "both publicly and privately committed to much modern dogma." He also concedes that he "was not the only one, or even the first among American architects or critics, to question the validity of much modern doctrine." Not the first, to say the least. Blake claims that 15 years have passed since his doubts first began to arise; if so, it was a mere three years ago that they became public, in an *Atlantic Monthly* article of September 1974.

Blake is by no means generous in recognizing alternatives to Modern dogma proposed during the years he was repressing his doubts. He acknowledges the influence of Jane Jacobs' writings—as who doesn't—and the words (not the works) of James Stirling and Robert Venturi (not Denise Scott Brown). Lewis Mumford is mentioned, as are Serge Chermayeff and Christopher Alexander; Charles Moore is not. Altogether less than a dozen architects from all over the world are given favorable mention for building design, and a few others can be identified by referring to illustration credits at the back of the book. As for the younger avant-garde, Blake's attitude is reflected in his attribution of a particularly damning quote to "the director of some outfit called the Institute for Architecture and Urban Studies."

[continued on page 106]

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Books continued from page 104

In his extended attack on "advanced" building technology, Blake cannot resist far-fetched assertions about building materials producers, whom he blames for the economic collapse in 1975 of *Architecture Plus*, which he edited. He constructs a questionable alliance between the Modern Movement and the manufacturers who have thrived on its demand for sleek, industrially precise materials and components. "One reason modern architects continue to be misled by manufacturers of many of these new miracle products," he goes on, "is that the professional magazines do not dare to report failures." Blake knows perfectly that no responsible professional would specify solely on the strength of a magazine article, however authoritative, that "failures" are hushed up if possible by everyone involved; reports that are published cannot include the causes until they are established—usually through long litigation. His objectivity here is apparently affected by his belief that the economically troubled *Architecture Plus* was snuffed out when one major advertiser withdrew support and "apparently induced other potential advertisers to do the same" after Blake had "had the nerve" to say in the *Atlantic Monthly* "that glass was not necessarily what it had always been cracked up to be."

In the final pages of his book, Blake reiterates his unshakable—and understandable—attachment to the "heroic moments" of the Modern Movement, represented by the best work of the "master builders." But he winds up this list with incongruous praise for I.M. Pei and Harry Cobb's John Hancock Tower in Boston, calling it one of the "truly inspired works" of the movement. If there is anything that should repel attentive readers of the previous 160 pages, it is this scaleless "razor-edged and mirrored prism" with which Blake is infatuated.

For those of us who know Peter Blake's impressive intellect and writing ability, this entire recital of truisms and allegations—riven with internal contradictions—is genuinely disappointing. It can be read most sympathetically as a sermon by a convert who is not yet reconciled to new-found realities. [John Morris Dixon]

The Failure of Modern Architecture by Brent C. Brolin, New York, 1976, Van Nostrand Reinhold Company, 128 pp., illus. \$11.95.

The funeral pyre of the Modern Movement is glowing brightly, and Brent C. Brolin is the latest of the moths to be drawn ineluctably toward that fatal flame. He had hoped, one thinks, to add fuel to the fire, but has succeeded only in adding smoke to the air. As much as one would like to see a judicious and thoughtful reappraisal of the Modern Movement, the cause of architecture is done a great disservice by books such as this one.

The objections begin with the very first page of text, and continue unabated to the very end. The guileless reader is informed on that first page that "After fifty years of indoctrination the majority of the public remains indifferent or hostile to the modern aesthetic." Oh? The truth of the matter is that the "majority of the public" has never even heard of the modern aesthetic, and the comprehension of that

[continued on page 109]

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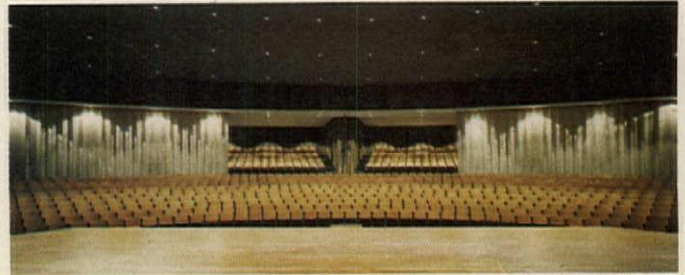
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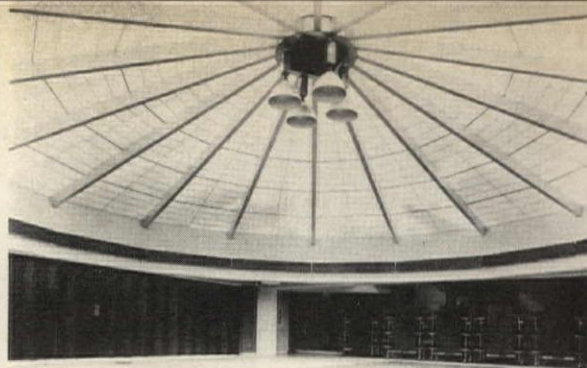
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aesthetic has been limited to a relatively small intellectual elite, just as any of the great movements in art have been in the past. "The disillusionment with modern architecture," Brolin informs us on that same page, "came about because architects imposed their values on a public that did not share them," an assertion that skirts the issue of a public that did not even *know* of such values. In truth, the "majority of the public" has accepted some aspects of modern design without either indoctrination or comprehension. Did the "majority of the public" share the values of an Ictinus, a Borromini, a Wren? I think not. Need socially responsive architecture be based on some kind of popular consensus? Certainly not, though much of the great architecture throughout history has achieved that desirable result nonetheless.

The book proceeds with a vexing catalog of misrepresentations of which I will mention but two. Brolin informs us that in the early 20th Century "All traditional styles were declared null and void—to the point where putting ornament on a building was regarded as a criminal act." End of Brolin's discussion. He gives us no indication as to who declared what styles null and void, and no documentation as to who regarded putting ornament on a building as a criminal act. Brolin presumably refers to Adolf Loos's pamphlet *Ornament und Verbrechen* (Ornament and Crime), though from Brolin's distorted interpretation one could infer that such a notion was generally held, not merely by one architectural theorist and his followers. In another instance, the author takes on Ebenezer Howard and the Garden City Movement. Brolin attacks that idea as "a strange mixture of moralism, pragmatism, and optimism," and calls it "a classic example of the simplistic cause-and-effect relationship seen between behavior and environment that still dominates planning and architecture and that lulled modern architects into believing that they could change the way people live by modifying their physical surroundings." So much for the lost interest in social values that Brolin bewails from page one on. We are in the next breath treated to the news—slandorous to the memory of Howard and the great school of planners he inspired—that "apartment blocks surrounded by parks and abundant sunlight and air" (this above a photograph of a 27-story apartment complex surrounded by roads) derive from Howard's garden city idea. This is a gross misrepresentation, with the name of the man actually responsible for monolithic superblocks amidst vast parks nowhere in sight: for it was Le Corbusier who transmogrified Howard's idea into the vertical garden city.

Luckily, this form of architectural doublethink goes on for only 128 pages, 22 pages of which are devoted to Brolin's case studies of Chandigarh and of Sanaa in Yemen, which he hopes will prove the points he has been trying to make: arguments so far-fetched both geographically and intellectually that one's chances of making it all the way to the conclusion are happily reduced. Read it if you must, but for those who cannot wait for an authoritative reappraisal of the Modern Movement and its effect on contemporary architecture, all one can add is the urgent admonition: "Caveat lector." [Martin Filler]



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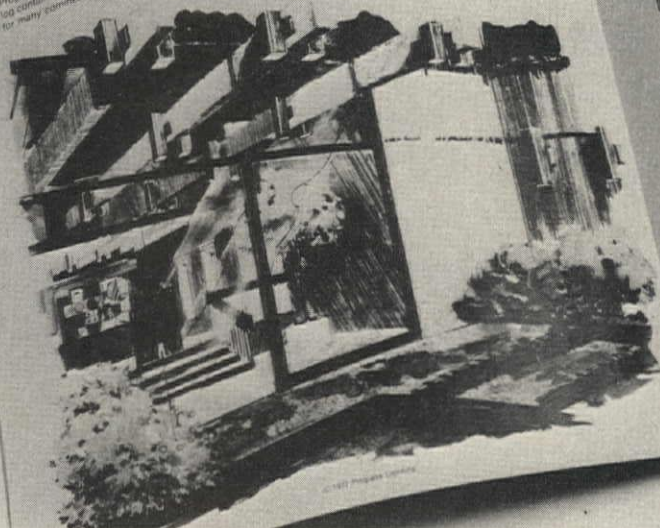
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KIDDE

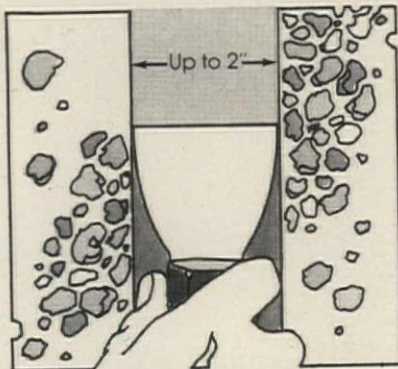


Tremco can help you solve special problems involved in designing with precast.

While precast concrete offers many design advantages, it also presents some special joint sealing problems caused by dynamic movement, weather and the threat of fire. To help solve them, Tremco offers broad technical services plus a range of job-proven products and systems. Here's a brief look at our solutions to three basic problems.

Handling stress and movement.

Tremco has developed a sealant to stand up to the unusual amount of movement in precast joints—



DYmeric[®], a two-part high-performance sealant. In a single application DYmeric can seal joints up to 2" wide, normally without priming.

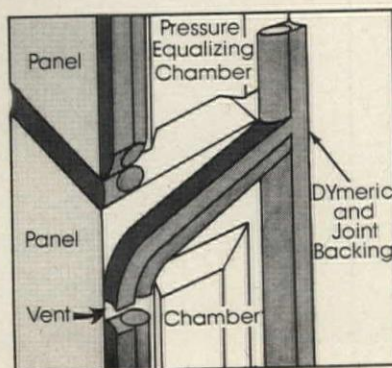
To be sure of good adhesion, the joint interface should be thoroughly clean before it's caulked.

Form release agents and dampproofing coatings can interfere with sealant performance, so your best bet is to draw on Tremco's experience while you're still in the design stage.

Taking weather in stride.

Openings can occur in even the most carefully constructed panels and joints, which will open the door to weather problems.

The Tremco solution: the modified two-stage rain-screen sealing system. Unlike one-stage systems, it



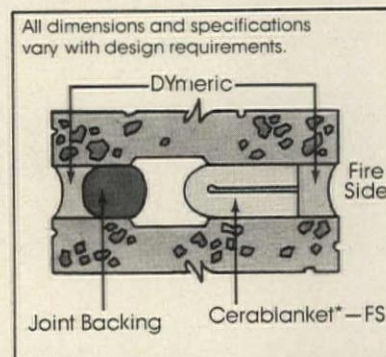
gives you two lines of defense against weather. It consists of a vented seal on exterior joints; an airtight seal on interior joints; with an air-pressure equalization chamber between the two. Equalized pressure in the wall cavity helps keep out wind-driven exterior moisture and prevents moist inside air from being pulled into the wall. Any moisture that finds its way in drains harmlessly away through the exterior vents.

Resisting fire.

Although precast panels themselves are fire-resistant, the openings between them can be a hazard if a fire

breaks out. The best protection: Tremco's exclusive fire-resistive joint sealing system that can achieve required fire endurances of two to four hours at the joint.

This system uses Tremco's DYmeric sealant and Cerablanket[®]-FS, a



pure ceramic fiber blanket made from alumina-silica fibers and manufactured exclusively for Tremco by Johns-Manville. Under test conditions, this system prevented passage of flame or hot gases and stopped transmission of heat beyond the temperature limits in ASTM E-119.

Solving other problems.

Remember, Tremco offers a host of job proven water-proofing, caulking, glazing and roof edge systems. We'll work with you through design and specification stages to make sure you'll get the best system for your needs. Just contact your Tremco man. Or Tremco, 10701 Shaker Blvd., Cleveland, Ohio 44104. Tremco (Canada) Ltd., Toronto, Ontario, M4H 1G7.

*Trademark of Johns-Manville

Drawings not to scale.

TREMCO[®]

Colorail is often specified simply because it is available in eleven colors and adds a lively accent to a variety of settings. But that's just part of the story.

The Colorail System also combines the structural advantages of aluminum, and the color advantages of plastic handrail mouldings and post cladding. Most colors are equally durable indoors and out; consult BLUM about direct sunlight exposures.

Moreover, Colorail components can be fabricated in many ways, or interchanged with those of other BLUM railing systems. In short, it offers the luxury of custom design with the economy of standard component production.

Best of all, the Colorail System is available, from stock, through local fabricators everywhere. For complete information, including engineering data, request Catalog 12 or see the BLUM listing in Sweet's General Building, Industrial Construction and Comprehensive Engineering files.

GIMBEL GYMNASIUM UNIV. OF PA., Philadelphia, Pennsylvania—Arch: Bartley, Long, Mirenda, Reynolds & Noble.

FIRST FEDERAL SAVINGS AND LOAN ASSOC., Niles, Michigan—Arch: Lambert J. Soucek, Jr., Bank Building Corporation; Fabr: Van Dam Iron Works, Inc.

SARAH COVENTRY BUILDING, Newark, New York—Arch: Sherman & Sherman, Fabr: Vance Metal Fabricators.

CARD EMPORIUM, New York, New York—Arch: Lee Kennedy; Fabr: Allied Bronze Corp.

the Colorail[®] system

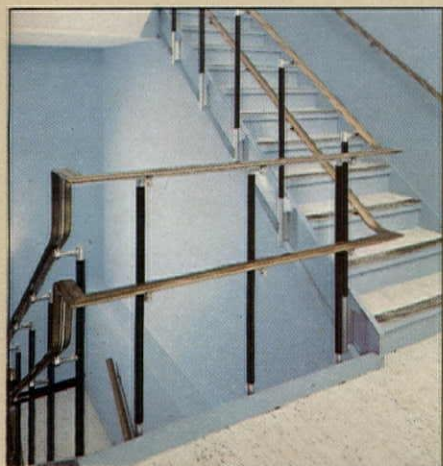
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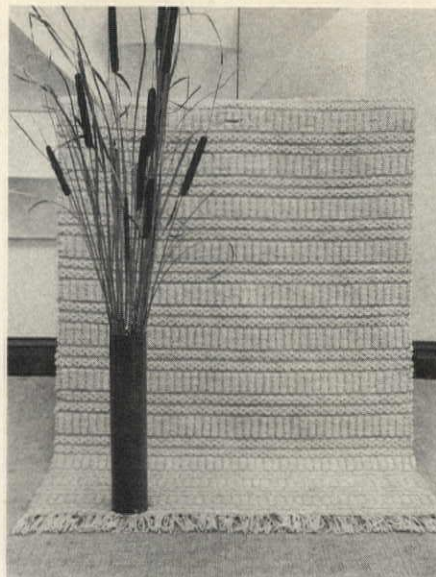


SARAH COVENTRY BUILDING

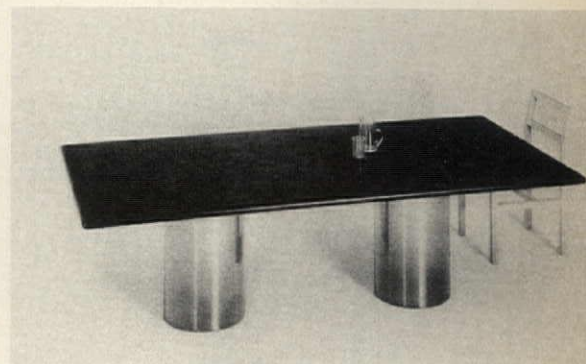


CARD EMPORIUM

Products and Literature



Wool rug



Rectangular conference table

Wool rugs from Ireland. Natural wools in combination with bleached or dyed-to-match yarns are woven on a flax warp in flat weaves, popcorn stitch, and other stripe effects, based on early Gaelic patterns. Product facilities permit sizes up to ten ft in width and 13 ft long, which can be joined to create larger sizes to meet project requirements. Delivery on custom orders is approximately eight weeks. Prouty Designs, Inc.

Circle 100 on reader service card

Foldaway tablet arm. The "TAB" is available on a group of contemporary shell chairs. It is said to be ideal for executive training rooms and corporate lecture rooms. Gregson Manufacturing Company, Liberty, NC.

Circle 101 on reader service card



Foldaway tablet arm

Rectangular conference table. Tops are 1½-in. thick with bullnose edges. Each top is supported by two cylindrical pedestal bases, in a choice of woods, colors, polished chrome, or polished brass. All heights are 29 in. Dimensions range from 42" x 72" to 60" x 120"; pedestal dia from 16 in. to 24 in. Top surfaces are available in ten lacquer colors, glossy or loglare. Wide choice of standard and exotic burl woods are also available. Intrex Inc.

Circle 102 on reader service card

Electronics access control system includes the solid-state electronic control unit, up to eight sensors, the system programmer, and a printer which logs all card accesses and attempted card accesses. The system operates by presenting a valid credit-card-sized command key to a sensor which is concealed near the desired access point. Model 414 controls access for up to eight locations. The programming unit's memory capacity contains more than 1000 individual key codes. Schlage Electronics.

Circle 103 on reader service card

Dura Ridge™ indoor/outdoor carpet. Alternating rows of one wide and four narrow ridges give surface texture to carpet which is suitable for both commercial or residential installation. It is 100 percent Herculon® backed with high density foam rubber, comes in eight colors and in 12-ft widths. Needle-Craft Industries.

Circle 104 on reader service card



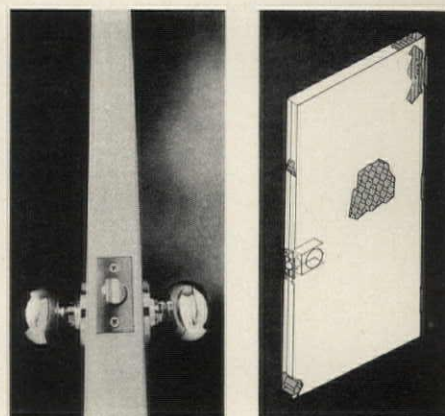
Biolet

Biolet™ is an odorless, biological toilet that uses no water. Designed for fast installation, the unit uses no chemicals and is entirely self-contained. It is said to be suitable as a replacement for flush toilets as well as an alternative for them in new construction or remodeling. The unit is constructed of high-density polyethylene and its dimensions fit most standard toilet spaces. It can be installed wherever a 110 v AC electrical outlet is located and where there is room to provide for a 2-in. ventilation pipe. Biolet Corporation.

Circle 105 on reader service card

Trash compactor. Automatic, multiple-story drop chute-fed operation with adjustable full load warning system alerts operators when it's time to remove compacted wastes. Size: 78"h x 40"w x 77"d. Toney Team, Inc.

Circle 106 on reader service card



Hollow-metal steel doors

Hollow-metal steel doors. Features include a) sheet steel formed with an overlap at the lock edge; b) nonhanded hinge edge that is reinforced with a continuous 16-ga hinge channel plus backup plates; c) bottom reinforced with 16-ga channel; d) flush top reinforced with a 16-ga channel; e) one-in. honeycomb core coated with adhesive; f) reinforced lock box. Republic Builders Products Corp.

Circle 107 on reader service card

Floor closers. Designed for doors to be used by handicapped persons, they are available for both off-set hung and center hung doors and can be adjusted to exceed the 30 sec requirement, between maximum opening and 60 degrees, of the ANSI Standard. Final closing speed from 60 degrees opening is obtained with a separate valve adjustment. The closers require nominal 10 pounds opening force on a 36-in. exterior door, but with spring force adjustment, lower opening force is possible. Rixson-Firemark, Inc.

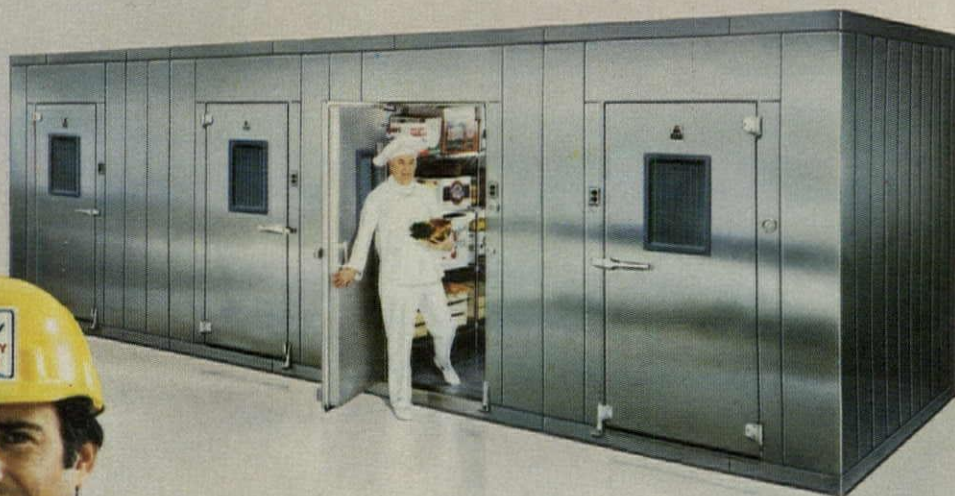
Circle 108 on reader service card

Masterfile cabinets for filing, retrieving, and protecting vellum, film, and linen original drawings permit intermixing of drawing sizes, within the indexing system. The steel units hold 800 to 2000 drawings and accommodate sheet sizes of 24" x 36", 30" x 42" and 36" x 48". Plan Hold.

Circle 109 on reader service card

[continued on page 117]

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are aimed at reducing
your energy costs.



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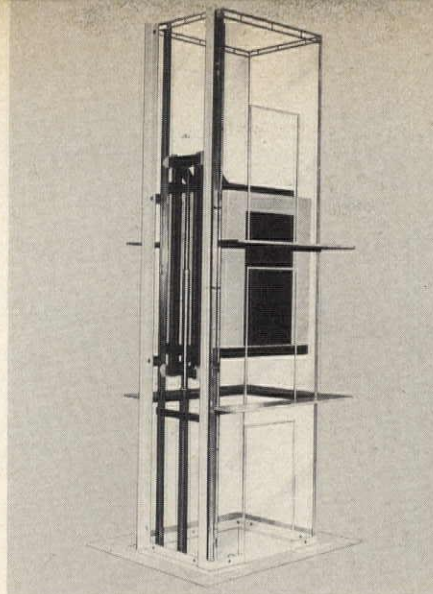
*Our estimate of the number of competitive Walk-Ins being manufactured with 2½" thick urethane . . . or 3" thick urethane . . . or wood frame panels with urethane butted in place . . . or fiberglass . . . or polystyrene . . . or other conventional materials.



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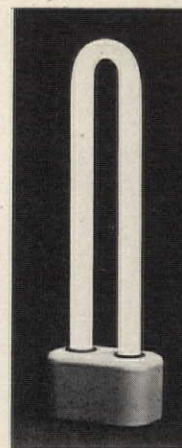
Products continued from page 115

Holeless hydraulic elevators are said to have platform and entrance dimensions that satisfy HUD requirements for accommodating wheelchair and stretcher passengers. All elevators in the line have control buttons and communication cabinets located for operation from a wheelchair. Door opening and closing are adjustable to allow time for handicapped passengers to enter and leave. Other, optional features include plates with raised numerals and other symbols or Braille markings on car operating panels and door jambs; car and hall lanterns with gongs to indicate car direction, and audible in-car signals to indicate floors passed or served. Otis Elevator Co.
Circle 110 on reader service card



Holeless hydraulic elevators

Lighting design collection consists of four basic designs. Shown: a 25-in.-tall portable table lamp with a 5" x 8" base. It accepts a 40 w fluorescent tube; and 2) a work light that is 8-in.-wide, 49-in.-long, and 28-in.-tall which takes a 40 w fluorescent U-line tube. Both lamps come in choice of white, red, orange, yellow, beige, gray, black. Light/Inc.
Circle 111 on reader service card



Lighting design collection

Electro-magnetic locking devices. The 250 Series Powerlock system accepts normally open or normally closed switches and can be controlled by key switch, digital combination, or

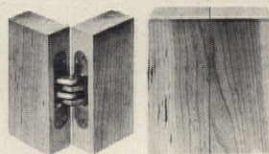
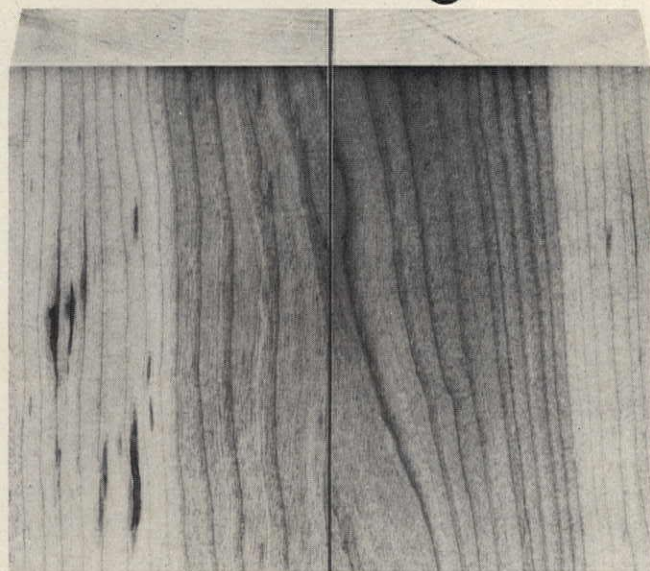
card reader for limited access and by mat switch, panic bar release, or electric eye for general egress. Manufactured in three sizes, the devices include surface and mortised models for single and pairs of out-swinging, in-swinging, and sliding doors. Options include built-in power and bond sensors, semi-concealed door status switch, indicator lights, and anti-tamper switch. Locknetics.
Circle 112 on reader service card

Burglar-proof panic doors. Nightwatch[®] concealed rotary astragal panic door uses turnstile action and an independent free-wheeling rotor.

The door, which fits flush against any wall, is available for narrow and medium stile doors and will accommodate any panic device. It is made of extruded aluminum and is available in clear anodized or dark bronze or black hardcoat finishes. Howmet Aluminum Corporation.
Circle 113 on reader service card

Convolved carpet cushion. The high-density latex foam cushion has a density of approximately 8 lbs per cu ft. Maker states rippled structure improves air circulation. Dayco Corp.
Circle 114 on reader service card
[continued on page 119]

Just like no hinge at all



Now you see it. Now you don't!

the SOSS
Invisibles

The hinge that hides

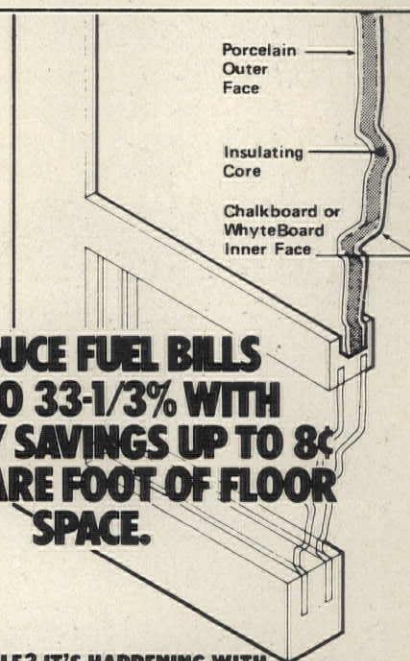
Some hinges are decorative. Some are functional. But only one hinge is invisible.

So when the best hinge would be no hinge at all, specify Soss.

Choose from 18 models and four finishes. All models open 180° and disappear when closed.

Complete specifications are in Sweet's. Or, write to Soss Mfg. Co., Div. SOS Consolidated Inc., P.O. Box 8200, Detroit, Mi. 48213.

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Building owners and managers report fuel savings up to 33 1/3 % after old, drafty windows are supplanted with new, air-tight aluminum or wooden replacement windows which utilize AllianceWall insulated panels. These handsome panels provide insulation equivalent to a 12" brick wall and never require painting or other expensive maintenance.

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Zonolite Masonry Insulation is a familiar old friend. Proven. Trusted. Basic in the initial construction of masonry walls. And for good reason. Just look at the benefits this old friend provides.

Insulation Values. Zonolite Masonry Insulation virtually doubles the insulation value of lightweight concrete block walls. It's the most efficient, economical way to meet FHA "U" value standards for multi-family housing. Inorganic, Masonry Insulation will not rot, emit odors, attract vermin or support combustion. Its insulating value is retained for the life of the building.

Fire Resistance. Zonolite Masonry Insulation doubles the fire rating of block walls. A two-hour wall (UL approved 2 hr. 8" lightweight block) becomes a four-hour wall when it's filled with Masonry Insulation.

This extra protection provides the needed safety factor that gives occupants time to escape and lessens the risk to fire fighters.

Economy. Zonolite Masonry Insulation saves money two ways. Installation costs are reduced because Masonry Insulation pours freely, with no rodding or tamping, from lightweight bags to completely fill cores and cavities quickly and easily. And, of course, the sharp reduction in heat transmission means reduced heating and cooling costs.

For complete information, write Construction Products Division, W. R. Grace & Co., 62 Whittemore Avenue, Cambridge, Massachusetts 02140. In Canada: 66 Hymus Road, Scarborough, Ontario M1L 2C8.

GRACE

Products continued from page 117

Intrusion detector. Thermalarm model P1RS75 is a passive infrared detector that covers a 75 degree angle. The system employs logic processing and optic designs. This indoor wide range motion sensor's field of view consists of a 75-degree horizontal subtense and covers up to 1600 sq ft of space. The unit requires no mounting bracket and has an internal environmental adjustment feature. It can be mounted flush on a wall or placed on a shelf. All Thermalarm units incorporate RFI filters to meet MIL spec 461A. Fire-Lite Alarms, Inc.

Circle 115 on reader service card

'Mahogany.' A wall system, a living room, and a dining room group have been added to this company's line of contemporary furniture—all done in mahogany. Shown is a mahogany side chair from the dining room group. Cado/Royal System, Inc.

Circle 116 on reader service card

Wood lateral files feature all veneer finishes in oak and walnut, full accurate suspension, and a safety interlock system. Designcraft.

Circle 117 on reader service card

Ceramic panels up to 10' x 2' and 3/4-in.-to 1-in. thickness with 1 percent dimensional tolerances have been introduced in U.S. Plates are vitrified at 1300 C and can be decorated and glazed. Over 300 colors and patterns are available and



Mahogany

company has capability of developing ceramics in any color pattern or sculpture form, states maker. These plates are suited for custom furniture such as tables and flower bases, interior and exterior decoration. Otsuka Chemical Company, Ltd.

Circle 118 on reader service card

Indoor wall bracket. One of a series that combines plastic and metal for contrast. A translucent white lumacryl diffuser of .187 in. thickness has a steel central band available in a choice of three finishes: polished chrome, polished brass, or metallic red. Series includes a rectangular, horizontally mounted model, 11 1/2" w x 5' d x 9" h;

a vertically mounted rectangular unit, 6" w x 5' d x 12" h; and a half-cylinder horizontally or vertically mounted, 8" w x 5' d x 12" h. All units come with universal crossbar for mounting to standard recessed outlet box. Habitat Inc. Circle 119 on reader service card

Literature

Loose-fill insulation. Perlite is an inert volcanic glass expanded by a heat process and treated with a nonflammable silicon. The white granular material which results is light weight and pours easily, states maker. Leaflet gives properties, coverage, coefficients of heat transmission data, and specifications. Perlite Institute Inc. Circle 200 on reader service card

Insulation and installation techniques. "Building Insulation Application Manual" features step-by-step photographs, showing installations in attics, ceilings, walls, floors, and crawl spaces. Text and technical data explain the installation process as well as the recommended minimum amount of insulation to use. Moisture control, through attic ventilation and use of vapor barriers is also discussed. The manual tells how and where to use loose-fill insulation in new and existing homes; cutaway drawings and photographs illustrate the text. Owens-Corning Fiberglas Corporation.

Circle 201 on reader service card
[continued on page 122]

u-poxy[®] / WD

TILE MORTAR AND GROUT ... in colors!

... A unique, 3-part water-dispersed epoxy-cement system ... the best "working" and performance features of epoxy and Portland cement. Can be used as a setting bed and as grout ... easy-to-work, water cleanable, tough, stain-resistant, smooth fast set, BONDS TO DAMP SURFACES ... it's easy to mix, non-toxic. U-Poxy/WD is excellent for problem areas ... counter tops, entries ... OVER PLYWOOD OR CONCRETE.

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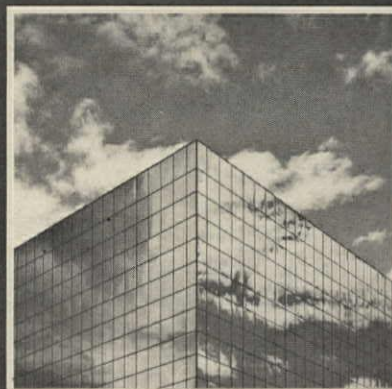


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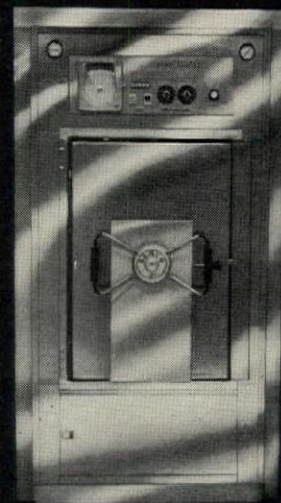
VERNITRON VACU-CLAVE™ HIGH VACUUM STERILIZERS

Point: Low in-use cost for long-term economy.

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Point: Cycleguide pre-programmed control provides fully automatic operation. Manual override.



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CAYWOOD•NOPP•WARD, Architects & Planners

The real beauty of Pella Wood Folding Doors is their smooth flowing action.

A concealed steel spring hinging system is the secret of Pella's smooth, responsive operating action. This system creates equal tension on each panel throughout the door which imparts a "live action" feeling when opening or closing it. The panels spread more evenly when open, stack compactly when closed. They're hung on double nylon rollers which maintain proper balance, minimize sway, and eliminate noisy metal-to-metal contact. Pella Folding Doors are available in a selection of high quality veneers, or vinyl finishes, over a stabilized wood core.



For more detailed information, send for your free copy of our full color catalog on Pella Wood Folding Doors. See us in Sweet's General Building File, call Sweet's BUYLINE number, or look in the Yellow Pages under "doors", for the phone number of your Pella Distributor.



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Mail to: Pella Windows & Doors, Dept. T35K7 100 Main St., Pella, Iowa 50219
Also available throughout Canada.

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Literature continued from page 119

Suprathane sheathing/board is a rigid urethane foam, faced on either side with an aluminum foil/kraft fiberglass reinforced membrane, designed for application as a nonstructural insulating sheathing for residential wood frame construction with let-in corner bracing. Folder gives installation details and technical data. United States Mineral Products Company. *Circle 202 on reader service card*

Styrofoam™ insulation sheathing. Brochure provides detailed information on application of sheathing panels and contains charts showing energy savings attainable. Full-color brochure is available from Dow Chemical U.S.A. *Circle 203 on reader service card*

Commercial wall insulation (CWI) systems are described in brochure. Addressed to architects, contractors, and building owners, the 12-page brochure details product features, installation methods and energy-saving cost benefits in both new construction and retrofit applications. The brochure describes the three types of CWI blankets—unfaced, foil-faced, and foil-reinforced kraft-faced (FRK)—and three types of semi-rigid boards—Types 3 and 5 are available FRK-faced. Architectural drawings illustrate how CWI insulations are applied using standard construction components to meet all designs in masonry, precast and poured-in-place concrete and curtain-wall constructions.

Charts and formulas are guides in calculating cost advantages. Owens-Corning Fiberglas Corporation.

Circle 204 on reader service card

Thermafiber insulation handbook describes effective methods of heat energy conservation, as well as sound control and fire-protection, through the use of Thermafiber insulation products. Booklet discusses heat transfer and thermal insulation, acoustics and acoustical insulation, products and characteristics, installation procedures, and uses in partition, wall, and ceiling systems. United States Gypsum. *Circle 205 on reader service card*

'Sound Control in Commercial Construction' reviews noise transmission testing, compares the acoustic control benefits of Commercial Wall Insulation (CWI) systems with other systems and offers recommended construction practices to achieve sound control in commercial structures. Booklet also describes test results that demonstrate the acoustic benefits of CWI compared with other wall systems. Owens-Corning Fiberglas Corporation. *Circle 206 on reader service card*

Replacement windows. Specifications Writers Guide kit contains product literature, specifications, cross-sectioned product drawings, test reports on complete line of commercial, institutional, and industrial NuPrime replacement windows. Season-all Industries, Inc. *Circle 207 on reader service card*

Rubber flooring/stair treads. Color brochure describes and illustrates rubber sheet flooring as being especially suitable for hospitals, schools, offices, and institutions, requiring little maintenance, and being stain and scorch resistant. Architectural specifications are included. The R.C.A. Rubber Company. *Circle 208 on reader service card*

Fascia and flashing systems. Eight-page illustrated brochure describes features such as built-in venting, modular, self-locking installation, with no exposed fasteners. It includes design ideas, detailed application drawings, suggested CSI Format, Division 7 specifications, performance specifications, and installation drawings and instruction. Tremco, Inc. *Circle 209 on reader service card*

Blood bank equipment brochure highlights the series of refrigerators with a brain as well as the cylindrical models and counter-top and wall-mounted units. Illustrated folder also describes temperature monitoring system and seven-day recording thermometer. Metric and English specifications are listed. The Jewett Refrigerator Co., Inc. *Circle 210 on reader service card*

Loading dock equipment. Brochure illustrates and describes standard and optional equipment and accessories, includes specifications. W.B. McGuire Co., Inc. *Circle 211 on reader service card*
[continued on page 125]

WATER AND ENERGY CONSERVATION—THE BIG PLUS WITH MOEN FAUCETS.

Moen gives your clients the first full line of energy-conserving fittings. Now our faucets, valves, and shower heads include special features that automatically save water, energy needed to heat water and sewer usage charges.

One big saver is the famous Moen cartridge that's on every Moen product. It cuts water flow 50% over two-handle controls. The Flow-Rator™ aerator, standard on all Moen faucets, saves up to 25% of water compared to other single-handled faucets with conventional aerators. A Flow-Rator is also standard on Moen shower heads for even further savings.

You already know Moen for quality, reliability, convenience and superb styling. Now's the time to get to know us as the thriftiest water delivery appliance you can specify. Check Sweets for details. Or send for our free folder, "Automatic Single-Handle Savings by Moen." Contact: Moen, a Division of Stanadyne, Elyria, Ohio 44035.



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designed to prevent heat transfer, keep the building evenly comfortable. Which means they reduce day-to-day heating and cooling operating costs, reduce interior climate system adjustments, and reduce tenant complaints to a bare minimum.

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Sauna. Color brochure illustrates all sizes of saunas from a single door that can be installed on a closet to large commercial models. Detail drawings, specifications, and product information are also included. Viking Sauna.
Circle 212 on reader service card

Flooring. Catalog contains full-color illustrations of all colors and patterns in vinyl and asphalt floor tile, feature strip, and vinyl cove base. Also included is general information on sizes, gauges, uses, installation, light reflection values, and brief specifications. Azrock Floor
Circle 213 on reader service card

Commercial vinyl tile. Full-color brochure illustrates two series of tiles: Vinylcraft I which is custom-designed and produced as individual tiles. Tiles are 1/8-in.-thick and deeply embossed. Vinylcraft II which has three-dimensional pieces fused right into the tile itself. Textured look with grout lines that are part of the tile itself are said not to wear off. The Flintkote Company.
Circle 214 on reader service card

Sliding hardware. Brochure illustrates and describes products ranging from sliding door hardware to drawer slides, folding door, shelf, and hospital hardware. Grant Hardware Co.
Circle 215 on reader service card

Risk management. Brochure discusses the concept of risk management. Process is to identify, measure, and determine the best method to neutralize, eliminate, or transfer risks so as to have the least effect on the operation of the business. Brochure discusses the role insurance plays in risk matters. Marsh & McLennan.
Circle 216 on reader service card

Screens/grilles/panels/doors. Complete product line is illustrated in full-color catalog. Photos of products in actual use, features, sizes, choice of materials, finishes, and stains are included. A design service for custom grille/panels is available. Customwood.
Circle 217 on reader service card

Contemporary clocks. The 1977-78 catalog of wall, desk, and floor clocks includes both institutional and residential designs. It offers new case colors and, in the institutional series, new mountings. It features 24-hour and 12-hour movements. Howard Miller Clock Company.
Circle 218 on reader service card

Doors. A 28-page catalog describes entire line of industrial, fire, acoustical, double-acting doors, and strip curtain. It is designed to provide guidance in the selection of the correct door for the traffic and doorway conditions encountered. Door selection guidance charts are included along with photos, specifications, and drawings. Clark Door Company, Inc.
Circle 219 on reader service card

'A Portfolio of Religious Structures' depicts in 12 full-color pages how glulam has been used for this purpose. A wide range of beam and arch systems are featured. American Institute of Timber Construction.
Circle 220 on reader service card

Ceramic tiles for paving, facing, interior and exterior applications, glazed and unglazed, are illustrated in color brochure. Dimensions and shapes are shown and color availability chart is included. Gail International Corporation.
Circle 221 on reader service card

Earthquake-resistant structural design. The 1977 illustrated, 12-page brochure examines the causes of earthquakes. Maps show the earth's crustal plates, along the boundaries of which most earthquakes occur, as well as seismic risk areas and quake locations in the U.S. Building codes as they relate to earthquakes are reviewed, structural design equations are offered, and such factors as structural connections, lightweight roof and floor systems, and building symmetry are examined. American Iron and Steel Institute.
Circle 222 on reader service card

Faucet collection. Full-color 28-page booklet presents eight faucet lines—from avant-garde Bravura to eclectic "antique." It also features kitchen sink faucets, showerheads, and other accessories. Kohler Co.
Circle 223 on reader service card

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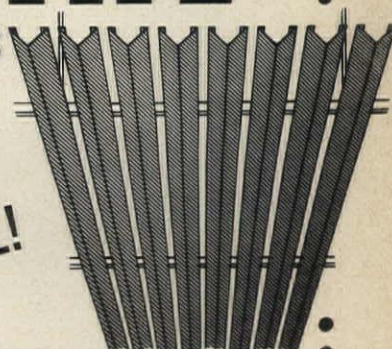
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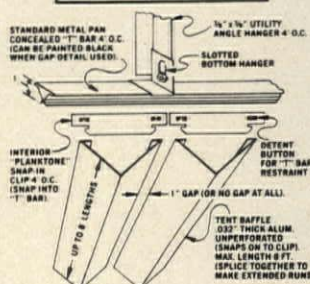


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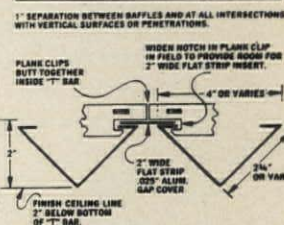
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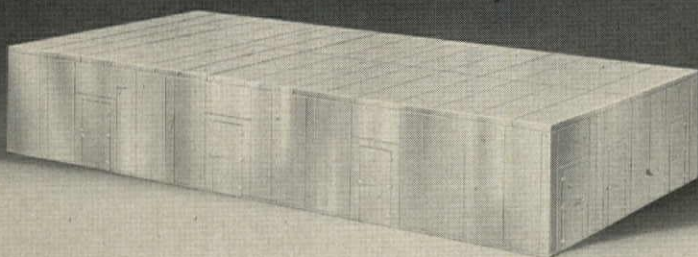
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096/473
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162/182
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231/15X
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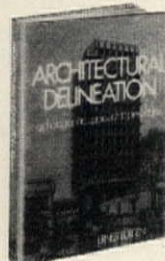


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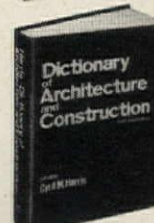
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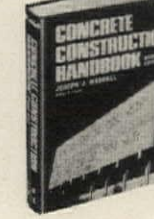
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Bldg. materials cont'd from page 14

Hollow metal and wood solid-core doors: Weyerhaeuser. Steel rolling doors: Kinnear Corp. Elevators and elevator doors: Otis. Door locksets, closers, hinges, and panic hardware: Sargent. Exterior enamel and interior alkyd flat paint: Glidden. Elevated access floors: EDP Floors. Fountain equipment: Kim Lighting. Exterior incandescent soffit lighting: Prescolite. Interior fluorescent lighting: Mark Lighting. Electric main panelboards, Type CCB: General Electric. Water closets and lavatories: American-Standard. Flush valves: Coyne & Delany. Multizone roof type ducted heating and air-conditioning system: Mammoth Industries.

Notices

Appointments

Louis Edward Barbieri and James T. Voorheis have been named project managers for J. Arthur Johnsen, AIA, Montclair, NJ.

Homer C. Innis, PE and Robert R. Conolly have been appointed associate members of Total Design Four, Corpus Christi, Tx.

Christi Oliver and Jack Cade have joined Planning, Design, Research Corporation, Houston, Tx, as vice presidents.

William M. Magruder, Jr. has been named associate of Steven Winter Associates, building systems consultants, New York, NY.

Gary A. Bowden, AIA and Vernon D. Moorer, AIA, CSI have been appointed principals in the firm of RTKL Associates Inc., Baltimore, Md.

Orlando Diaz-Azcuy has been named vice president of Gensler & Associates, San Francisco.

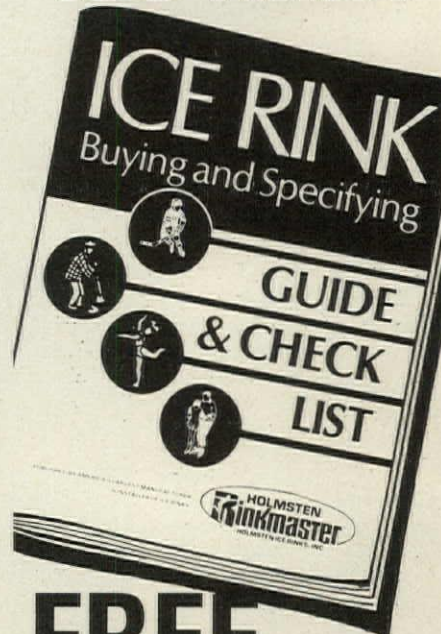
Metz Train Olson & Youngren, Inc., Chicago, has elected the following: Carl J. Hunter, AIA and Howard C. Pederson, AIA, principals; Don R. Belford, PE, John Gillan, Robert J. Piper, FAIA, AIP, and Jorge J. Sirgo, AIA, associates.

Michael S. Owen, Patricia Tusa Fels, Roger Oakdale, and Sharon Davidoff have joined Kramer, Chin & Mayo, Inc., Seattle, Wa, Juneau, Ak, and Corvallis, Or.

Miloyko Lazovich has joined Archi-Systems, Van Nuys, Ca, as executive architect, design.

William Carmen, Vernon Almon, and William Bruner have joined Broome, Oringdolph, O'Toole, Rudolf & Associates, Portland, Or.

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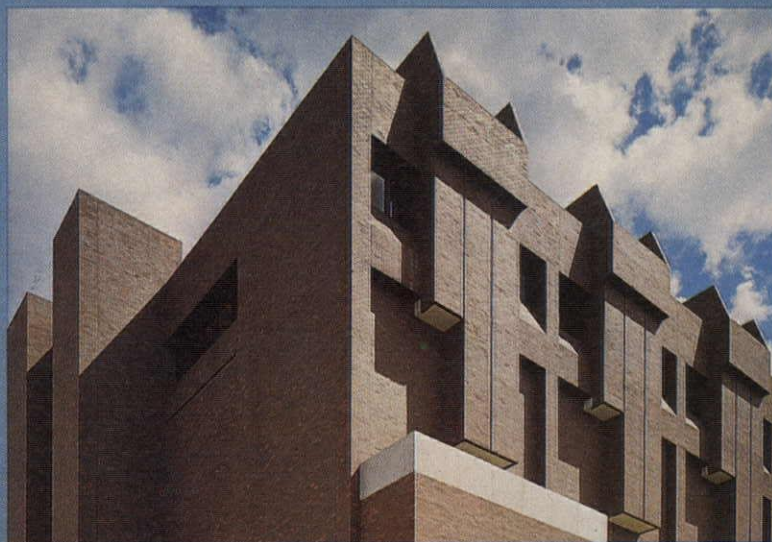
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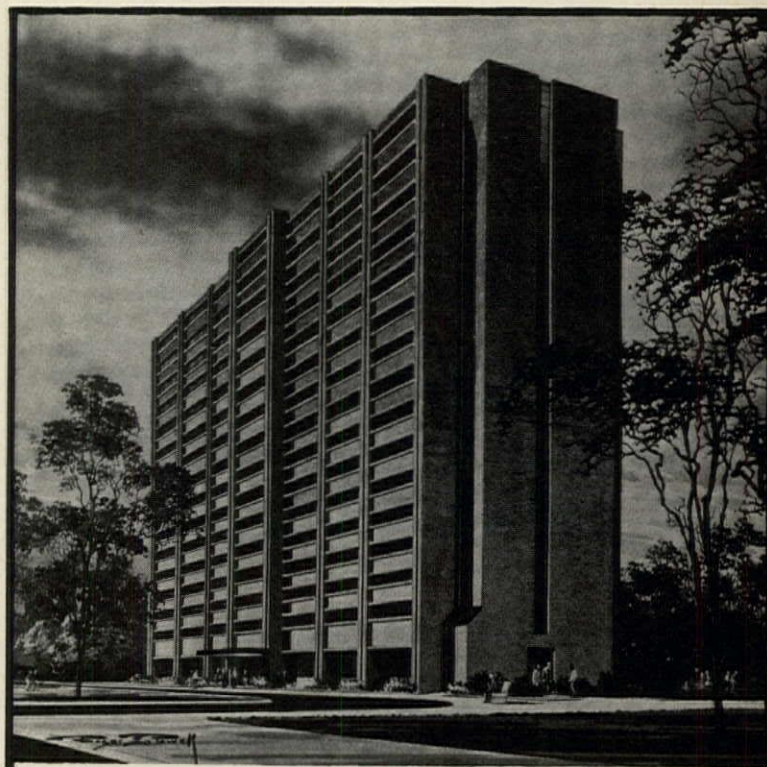


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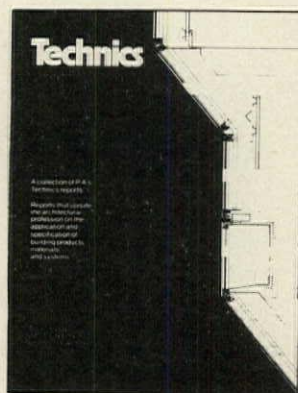
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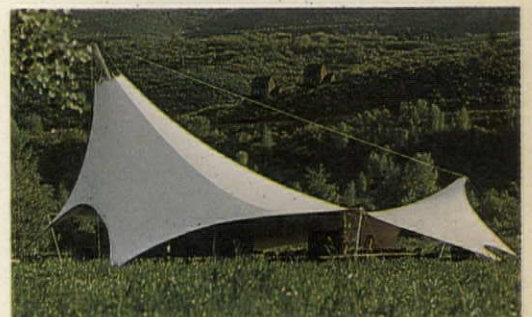


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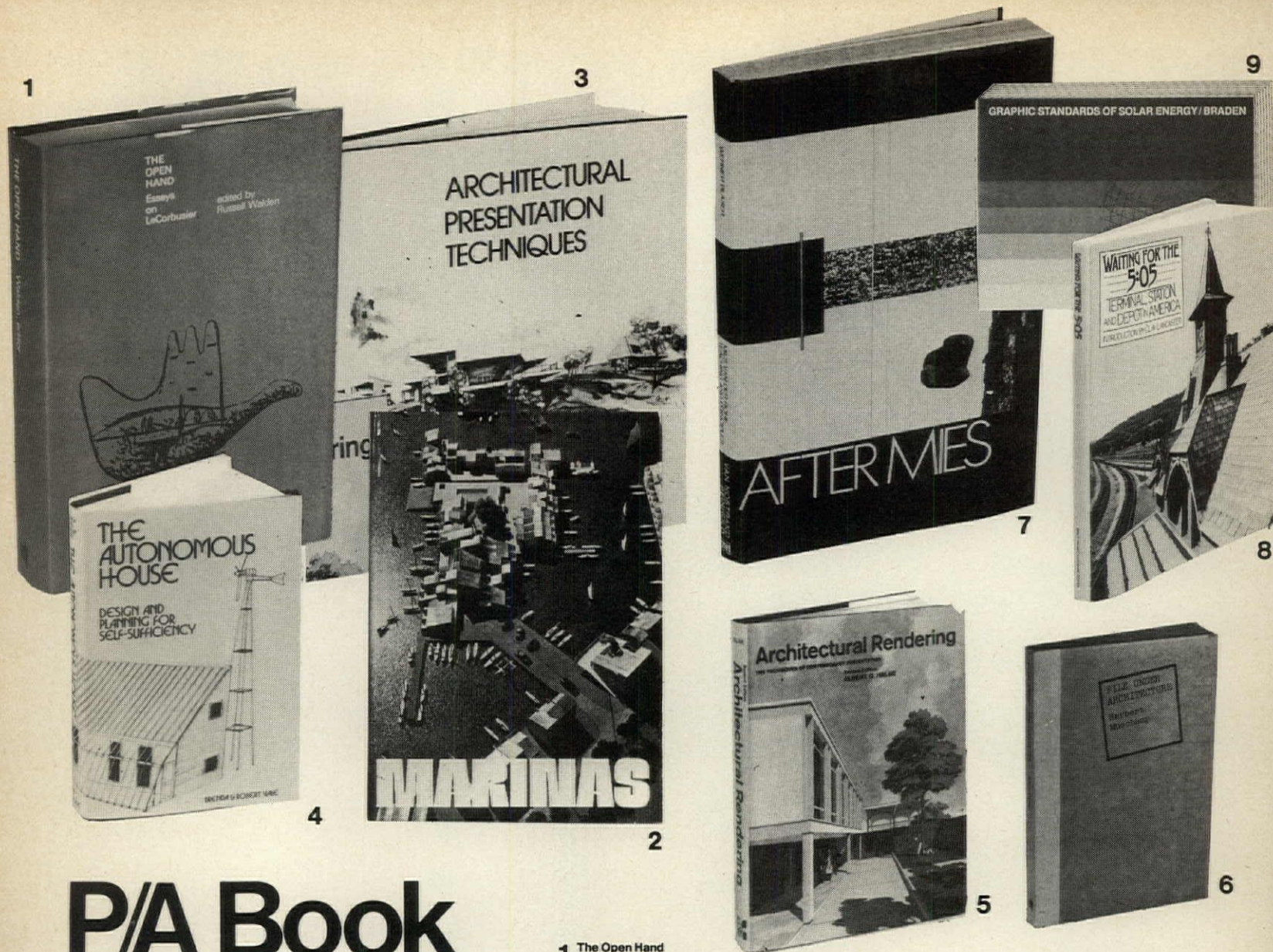


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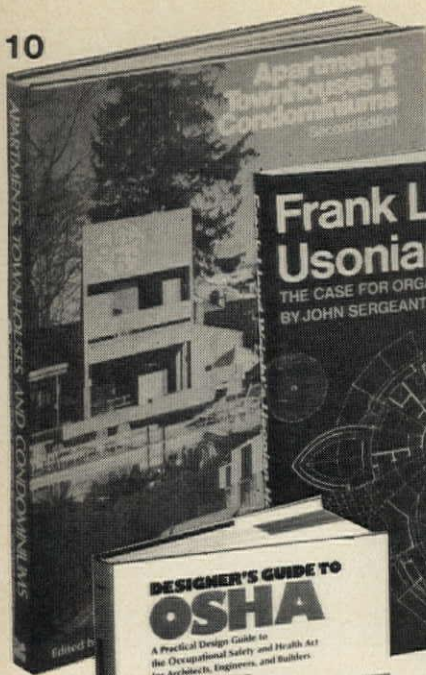
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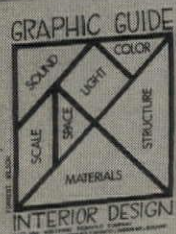
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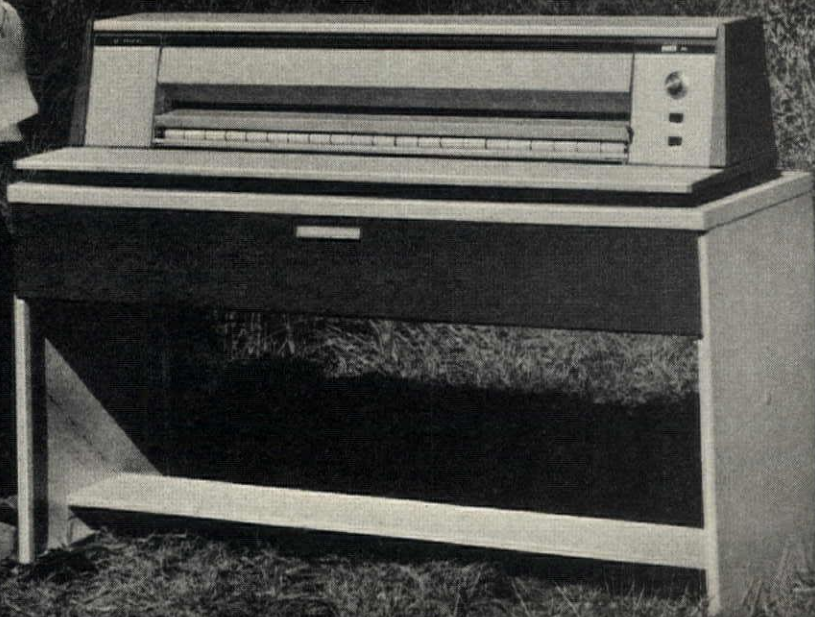


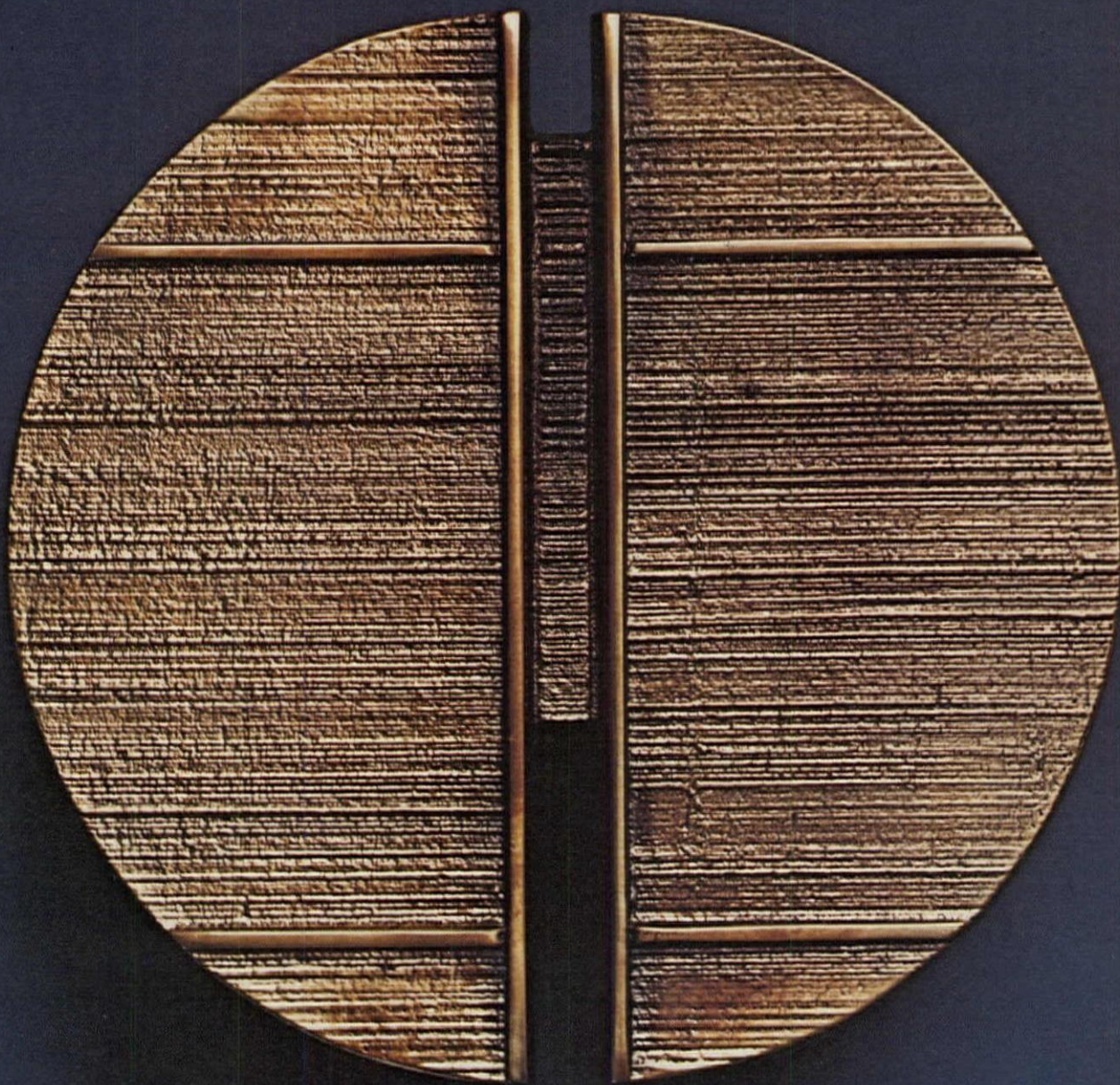
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