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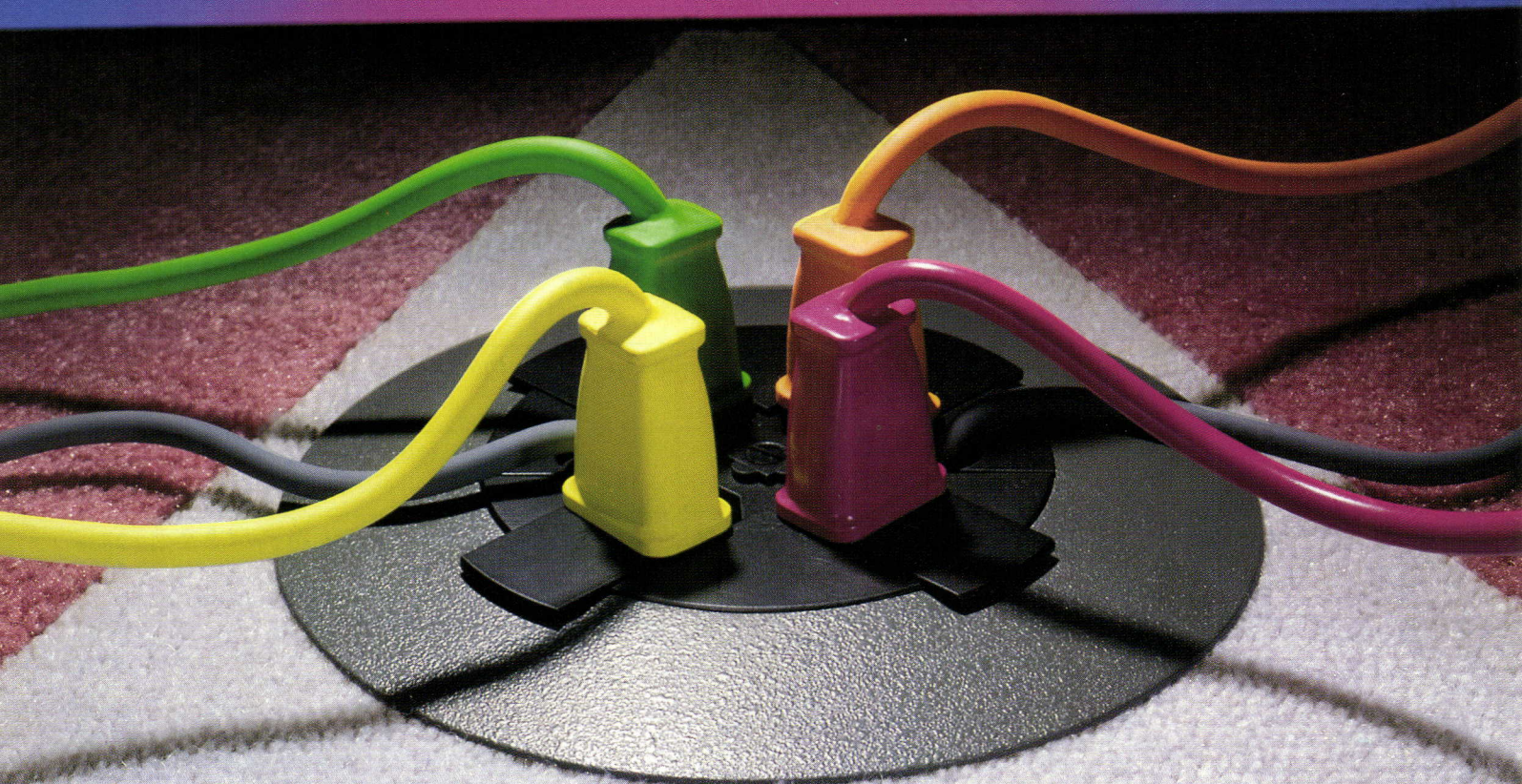
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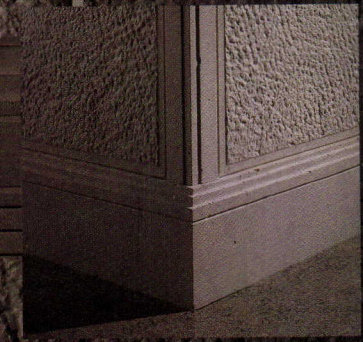
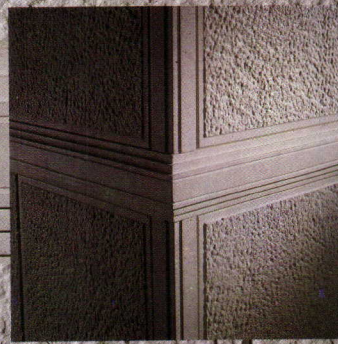
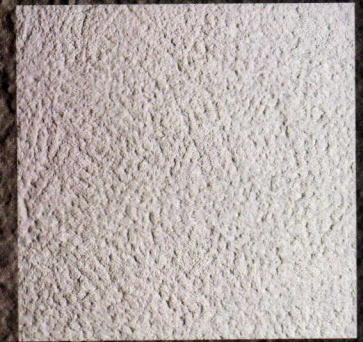
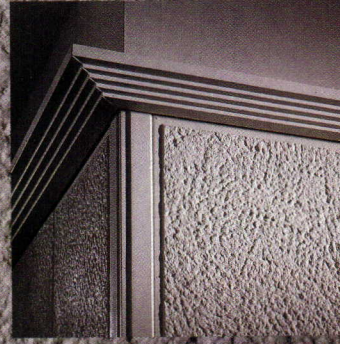
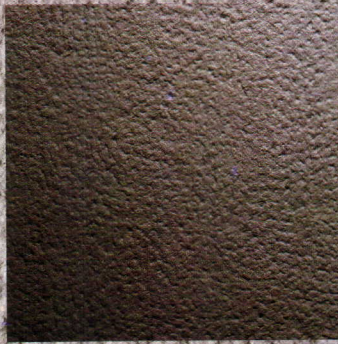
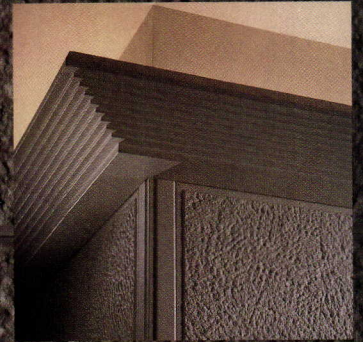
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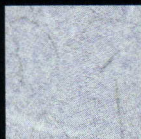
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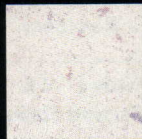
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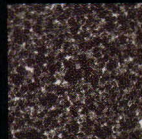
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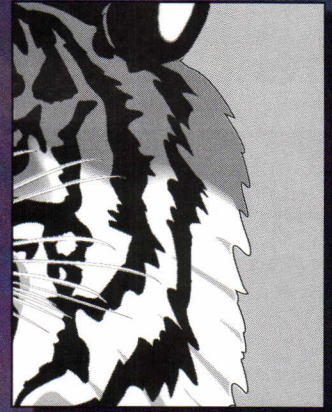
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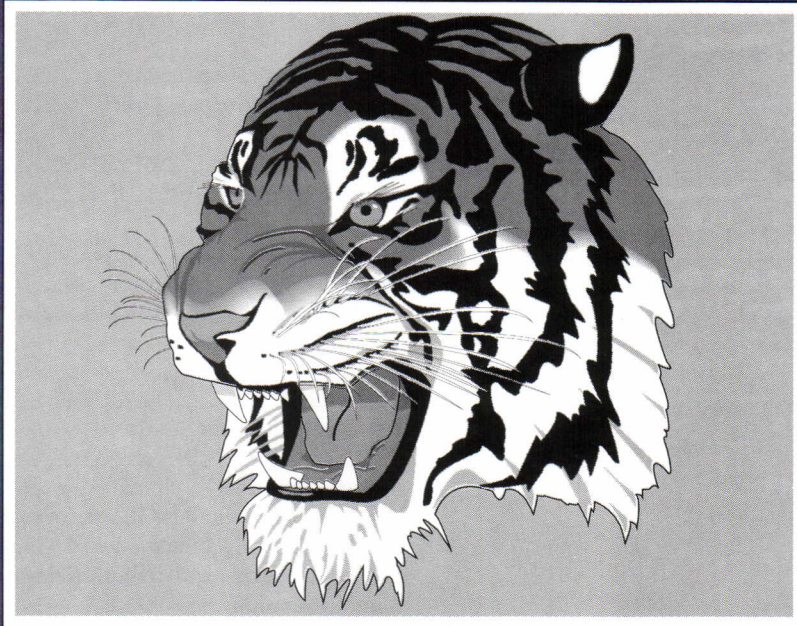
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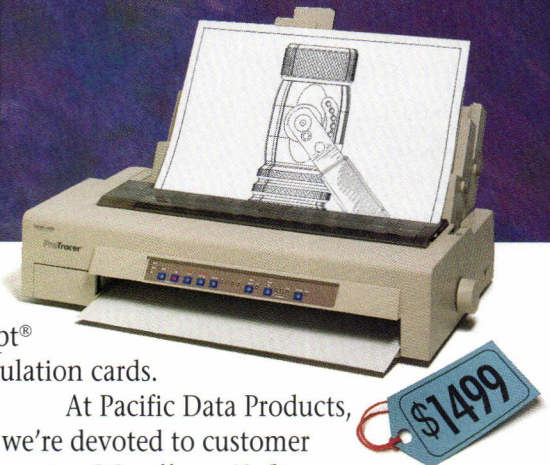


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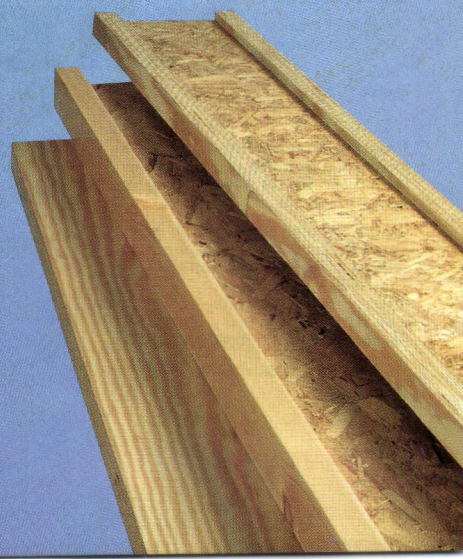
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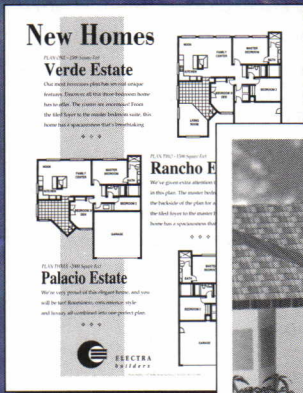
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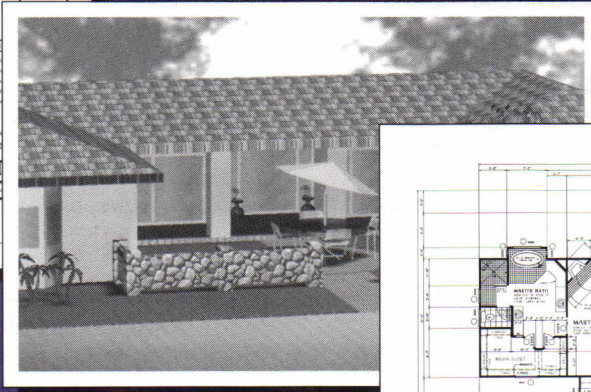
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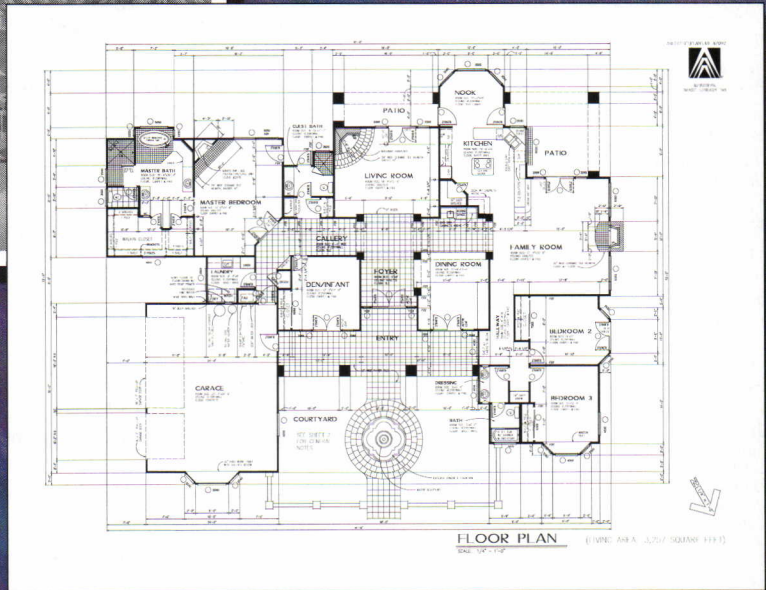
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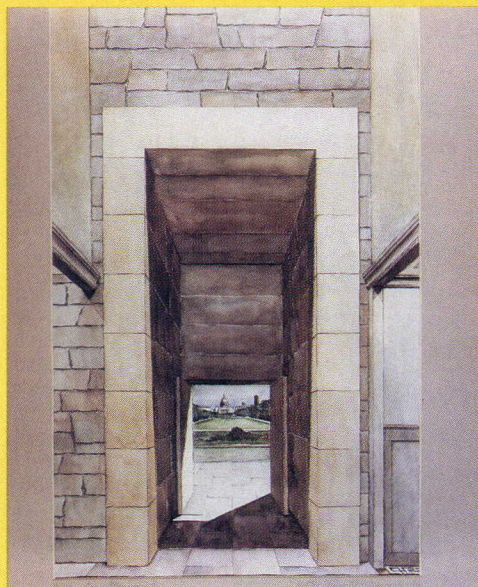
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The Phoenician Resort, Scottsdale, Arizona

District of Columbia

Exposing Coverups at Washington Monument



Peeling away concealing layers is nothing new around Capitol Hill. But in the lobby of the Washington Monument, where a series of revisions over the past century has obscured much of Robert Mills's original scheme, Notter Finegold + Alexander are doing just that. Working with the National Park Service, the architects are proposing a "subtractive" process that not only recaptures lost elements of Mills's design, such as reopening the bricked-up West Portal, but also saves the best aspects of later "intrusions," such as mosaic work from 1904. A 1974 aluminum drop ceiling in the East Chamber (left) will be removed, returning the space to its 20-foot height. In the West Chamber, new elevator door surrounds borrow Mills's destroyed Egyptoid exterior decorations. Bronze is the signature material of this project, to be completed in 1993. ■

New York

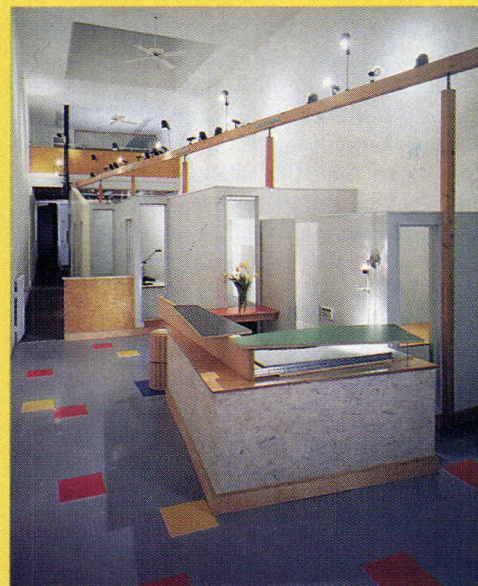
Roger Ferri Dies at 42

With the death of Roger Ferri at 42 last November, contemporary architecture has lost one of its most thoughtful and visionary practitioners. Since the late 1970s, when he exhibited his designs for a "pedestrian city," he had been recognized as a strikingly original, even utopian talent. Yet his emphasis on drawing and painting kept him firmly rooted in permanent architectural values. Ferri created his share of sumptuous buildings, from a private residence in Pennsylvania to a luxury hotel in Tokyo; he appreciated the power of architectural order and beauty as did few of his contemporaries. But his real genius lay in his understanding that architecture in its deepest sense is about more than individual buildings: it is about the physical texture of our shared life in the community. His passing is the loss of a great and only half-fulfilled promise. *Roger Kimball*

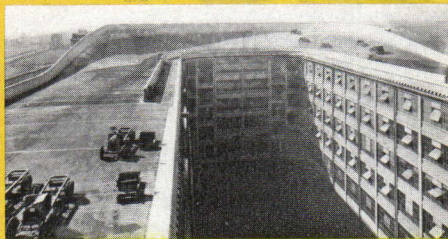
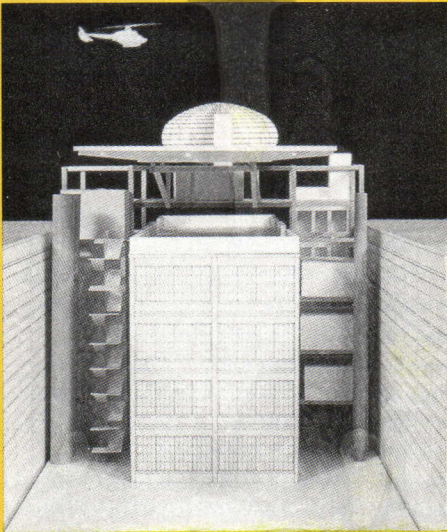
California

Pro Bono Work + Street Smarts Build AIDS Center

The Tenderloin AIDS Resource Center is evidence that architects and the building industry can respond creatively to the tremendous demands raised by the HIV epidemic. The 2,300-sq-ft outreach and counseling center is a community effort: spurred on by the center's nonprofit management group, partners and staff at San Francisco-based Face Architects donated their time; the contractor donated most of his time and passed on materials at cost; and the center was constructed by unskilled laborers hired off the street and trained on-site. The designers used the low city-funded budget (\$63,000) for off-the-shelf materials—plastics, vinyl tile, and stock lumber—achieving a comfortable, uncluttered space. Seizing on the 18-foot high ceilings, they installed two large skylights to flood the space with natural light, a harbinger of hope. *P. D. S.*



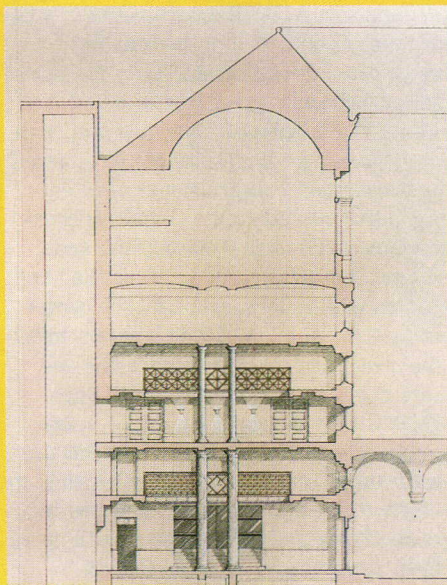
Fiat Factory Gets Renzo Piano Retread



What Reyner Banham called "Europe's own talismanic American building," Fiat's giant Lingotto factory near Turin, will be converted into a convention, exposition, and academic center, and an industrial incubator. The 5.9-million-sq-ft structure, one of the triumphs of early poured-in-place concrete construction, is one-third mile long, five stories high, and incorporates a rooftop test track (bottom left). Regarded by historians as a stripped-to-the-bone synthesis of Chicago-frame construction, the redevelopment will maintain the "discipline of the structural grid," according to Genoese architect Renzo Piano. Because the factory is so large, its future has been in doubt since Fiat ceased manufacturing operations there in 1982. In Piano's scheme, a series of structures built after the main building's 1919 completion is being replaced by a wide-span 970,000-sq-ft exposition center. Huge courtyards within the factory will be turned into open-air and covered parks. A new glass-clad core structure will support a bubblelike enclosure (housing meeting rooms and a library) and a helipad (top). The project is phased, with final completion expected in 1995. *J. S. R.*

Boston Library Renovation Won't Compete with McKim

A much-needed restoration of McKim, Mead & White's Boston Public Library, a National Landmark, has recently begun under Shepley Bullfinch Richardson and Abbott. Modeled on Labrouste's Bibliotheque Ste. Genevieve, the BPL was built between 1888 and 1894. Its granite exterior and elaborate marbled spaces incorporate sculptured panels by Augustus Saint-Gaudens, bronze doors by Daniel Chester French, and murals by John Singer Sargent and Puvis de Chavannes. Along with a complete systems overhaul, Phase I calls for a new public stairway, new exhibition and lecture spaces, and restoration of the Copley Square entrance. "Most of the project will be a very precise restoration," says project architect William Barry. "And the new spaces will complement, rather than compete with, McKim's design." *Nancy Levinson*



Yale Events Sound Call for Change

By Felix Drury

Parallel events at the Yale School of Architecture last November represent a call for change in the role of minority architects in the American mainstream: the opening of an exhibit, "African-American Architects and Builders: An Historical Overview," and a companion symposium, "People of Color in Architecture." The exhibit is the work of Vinson McKenzie, head of the architecture library at Auburn University. McKenzie brought together a display of material that reflects the accomplishments as well as the continuing struggle faced by black architects and artisans for even modest recognition.

The companion symposium was coordinated by J-C Calderon, a graduate student at Yale. Associate Dean Alan Plattus led off by underscoring the challenge minority architects present to the white-male-dominated architecture establishment. Max Bond Jr. of New York spoke about the "awful press" black architects get, and of the great division between the star system and elite academies on one side and social realities on the other. Boston architect David Lee asked the audience to look to the larger development picture, especially in the inner city, as an entry point for minority architects in the marketplace. Sharon Sutton, a University of Michigan professor, spoke strongly in favor of a broader knowledge base in architectural education. Mui Ho, a lecturer at Berkeley, stressed the need for an informed, involved public in planning issues, while Florida A&M professor Richard Dozier recalled the promising but now-gone architect/community interactions of Yale's Black Workshop of the late 1960s. Professor Luis Aponte-Pares of the City University of New York called on architects to address the destructive impact of urban restructuring on people of color.

The architectural press came under fire for its poor record in publishing the work of minority architects [see "A Time for Basics," *RECORD*, November 1991, page 9]. Despite the success of the symposium, the poor attendance of Yale's white students and faculty is a measure of the gap that needs bridging.

Felix Drury, a former professor at Yale, practices architecture in New Haven.

Briefs

Van Allen Building, Clinton, Iowa

A local business group wanted to turn it into a parking lot and sell the valuable exterior ornamentation. So retired architect Crombie Taylor left England, bought a house in Clinton, teamed up with Gyo Obata of Hellmuth, Obata & Kassabaum, and motivated the town council to rescue and restore Louis H. Sullivan's 1915 steel-frame department store in Clinton, today a town of 27,000. Initial preservation efforts in what will be an ongoing project include both interior and exterior restoration, especially on the first floor. "It approaches its condition in Sullivan's time," says Taylor proudly. "We're still looking for Luxfor glass to match Sullivan's light." With many original mahogany counters and cabinets restored, the first floor reopened last fall with "Sullivan by Sullivan," an exhibit on view through May of 100 photographs from Sullivan's personal collection, some 60 of which have never been seen before. Plans for the second floor include a permanent Sullivan exhibit, and other floors have offices and a community center; a 250-seat theater is planned for the former bargain basement.

Jordan Hall, Boston

Ann Beha Associates is restoring the performance hall in Wheelwright and Haven's 1903 New England Conservatory of Music. The phased \$6-million project will be carried out during summer sessions for a 1994 completion, and carries familiar but no less challenging contemporary demands: new hvac and lighting systems, as well as handicapped access, flame-retardant upholstery that conforms with state codes, and general restoration that doesn't monkey with the hall's acclaimed acoustics.

Casa Italiana, New York City

Demolition and new construction in the blocks around this 1927 McKim, Mead & White building at Columbia University have turned a corner "palazzo" into a freestanding "villa," says Sam White of Buttrick White & Burtis in New York. The firm, with Italian architect Italo Rota, recently won a heated competition for the renovation of Casa Italiana that included Aldo Rossi with Wank Adams Slavin, Pasanella + Klein, and Davis Brody. "We hope to capitalize on that change," says White. *P. D. S.*



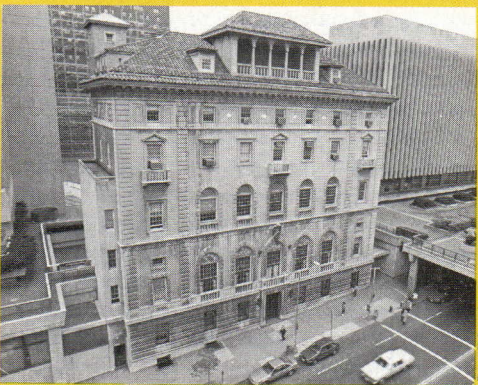
Richard Nickel



Richard Nickel



James Higgins



Joe Pinciro

Briefs

New Projects

The Cranbrook Educational Community in Bloomfield Hills, Michigan, is undertaking a major expansion of its historic Eliel Saarinen campus, designed from 1927-50. The school has announced architects for four new projects that embody a variety of disciplines in the first phase of the plan.

- Steven Holl will renovate and expand Saarinen's 1937 Cranbrook Institute of Science, which will eventually double in size to accommodate its 250,000 annual visitors.
- Cranbrook alumnus Tod Williams and partner Billie Tsien are designing a new athletic complex.
- Peter Rose is charged with revamping Albert Kahn's Brookside School, an elementary school to which Rose will add an early education center and science and art facilities.
- Rafael Moneo is planning the new Cranbrook Academy of Art, a studio complex that will be sited to the east of the existing museum.

Awards

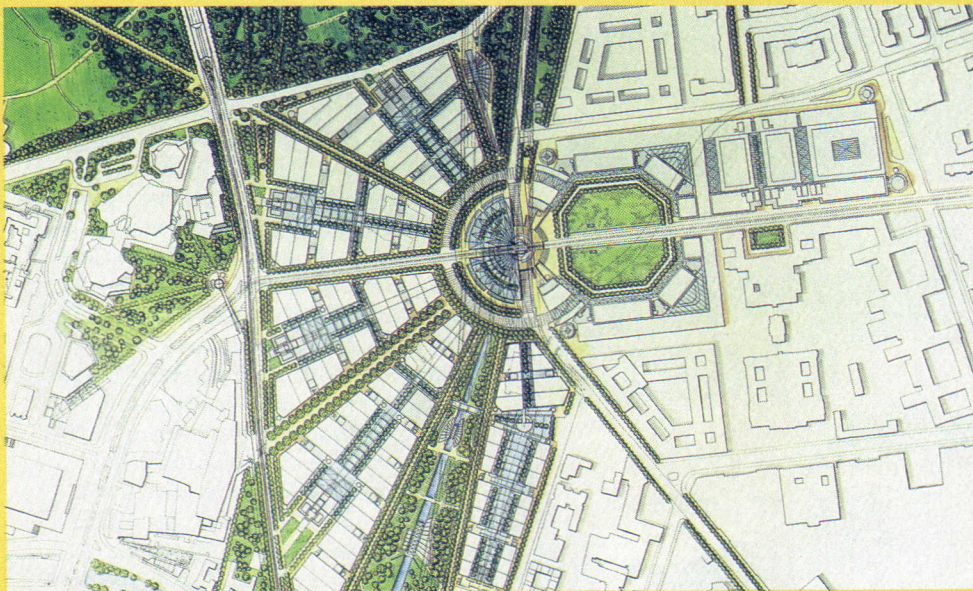
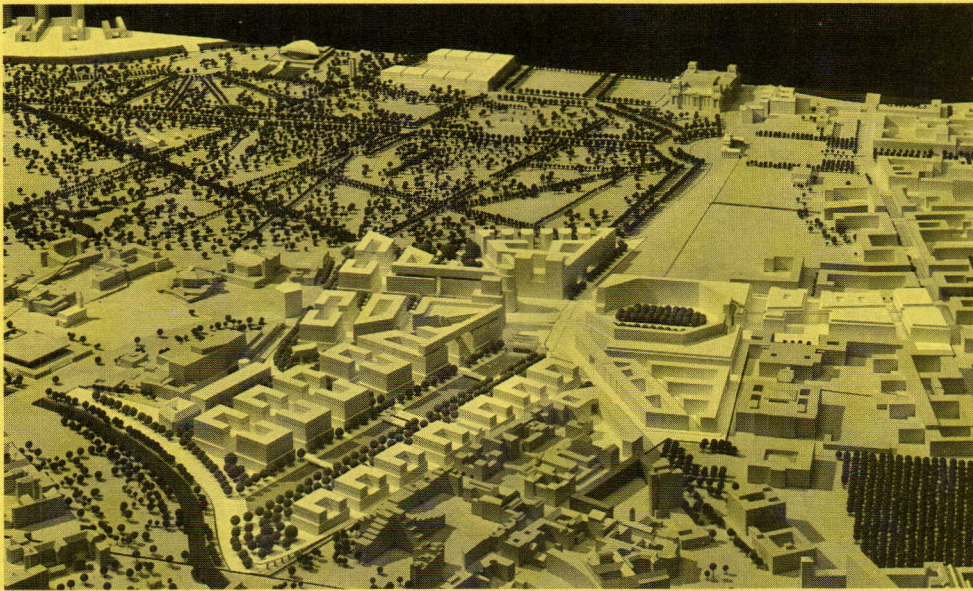
The Texas Society of Architects announced its Design Awards for 1991 in three categories. *General Design:* Highway House, Galveston; Natalye Appel. Northern Trust Bank, Dallas; The Oglesby Group. Dallas Arboretum refreshment stand; Max Levy. Carraro Residence, Wimberly; Lake/Flato Architects. La Estrella Ranch House, Starr County; Lake/Flato Architects. Camp John Marc Myers, Bosque County; Good, Fulton & Farrell. *Interior Architecture:* Sunbelt Sportswear, San Antonio; Jones Kell Architects. World Neighbors Headquarters, Oklahoma City, Oklahoma; Rand Elliott Associates. Solana Marriott Hotel, Solana; Keating Mann Jernigan Rottet. *Restoration/Adaptive re-use:* Thistle Hill Mansion, Fort Worth; Kirk Voich Gist. Adaptive re-use from County Vehicle Maintenance Facility to Travis County Farmers' Market, Austin; Robert Jackson Architects. The jury consisted of architects Marc Hinshaw, Robert W. Evans, and RECORD editor Stephen Kliment.

Competitions

Louisiana-Pacific has issued a call for entries in "Dream On," a new furniture-design contest. Deadline for submission is March 31. Louisiana-Pacific, Dream On Contest, 111 S. W. Fifth Ave., Portland, Oregon 97204. ■

Germany

Potsdamer Platz Designs Strive to Re-unite Berlin



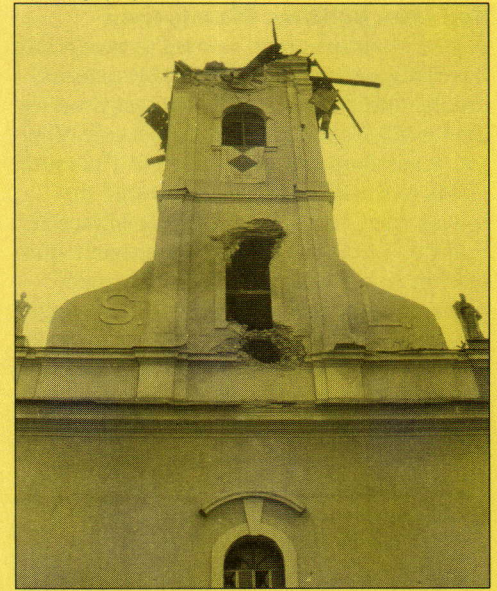
The Munich firm of Heinz Hilmer and Christoph Sattler won the recent masterplan competition for Berlin's Potsdamer Platz, once one of Europe's most vital urban spaces and later bisected by the Berlin Wall. Their design spurned the skyscrapers put forth by most of the other 15 teams. The proposal (top) foresees a compact quarter of 10-story buildings that extends the existing cityscape. Says Sattler: "This design isn't based on the American urban model of skyscraper conglomeration, but rather on the vision of a compact European city." Along

with the official competition, the property owners commissioned London architect Richard Rogers Partnership to prepare a scheme (bottom) that would better accommodate security, traffic, and infrastructure needs. Rogers proposes a series of concentric blocks, each oriented around an internal glass-roofed atrium passage and culminating in a mid-rise tower at the periphery. The developer, Daimler-Benz, is leaning toward the Hilmer-Sattler proposal; further competitions will select architects for specific sites. *Casey Mathewson*

Yugoslavia

Civil War Destroys a Nation's Heritage

Courtesy of Vjesnik



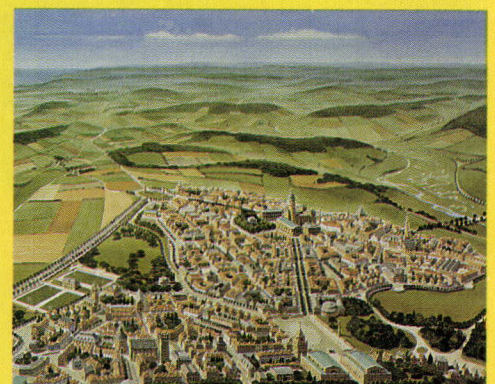
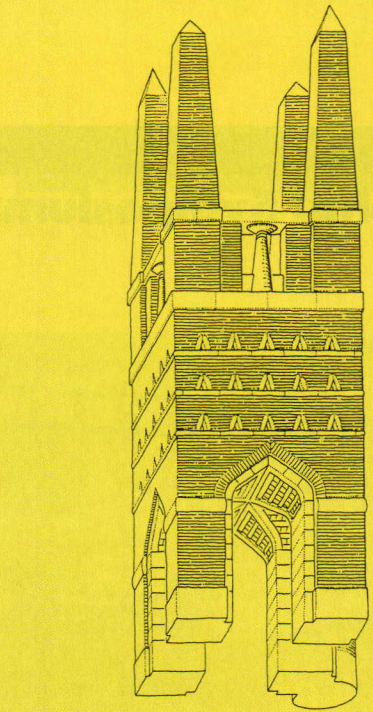
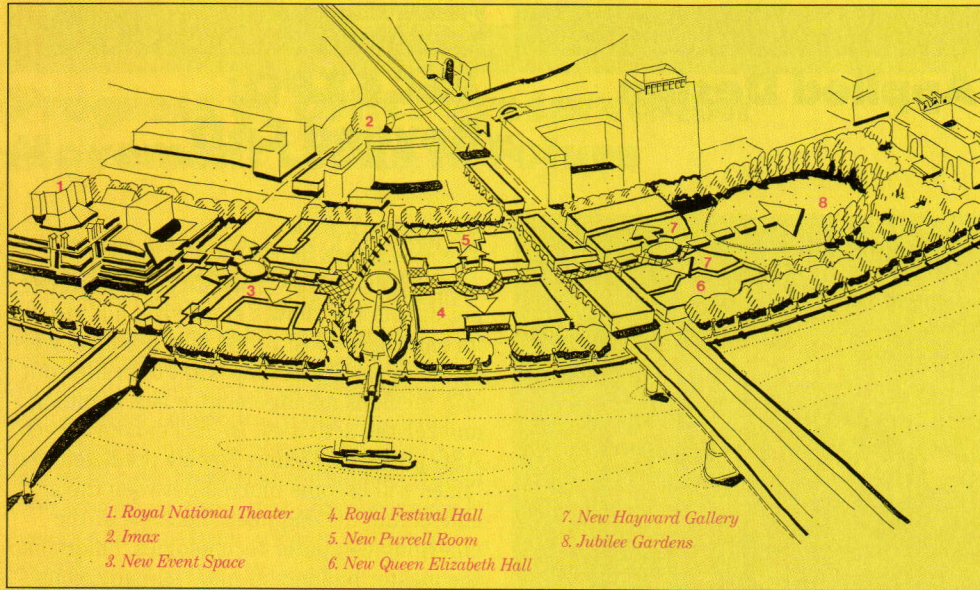
There was a time when the historical monuments of Yugoslavia were not as well known to the public as those of other nations. This has changed. According to the World Monuments Fund, by late last fall at least 76 classified monuments had been damaged or destroyed in the civil war. The threat to the medieval city of Dubrovnik received the most press, but the damage goes far beyond its ancient walls. At the Church of St. Lawrence in the Croatian city of Petrinja (above), the flag of the Hague Convention proved no protection against the bombs. *P. D. S.*

District of Columbia

Ben Thompson Wins '92 Gold Medal

Benjamin Thompson of Cambridge, Massachusetts, is the 1992 winner of the American Institute of Architects' Gold Medal. AIA President W. Cecil Steward cited Thompson's festival marketplaces and performance halls, from Faneuil Hall in Boston to the new Broward Performing Arts Center in Fort Lauderdale, as "jeweled linchpins for urban rebirth." Thompson, 73, was a founding partner of The Architects Collaborative and onetime chairman of architecture at Harvard. Thompson's wife, Jane, has been a strong design force in Thompson's work. ■

Farrell and Krier Plan a Kinder, Gentler England



Three urban-planning schemes, all under the auspices of Prince Charles, illustrate the English trend away from chilly post-war Modernism and toward a more human-scale, often Italianate form of urbanity. Two of these are redevelopment plans for poorly planned, dispiriting areas of London. The South Bank Arts Centre (1) recently announced a \$300-million scheme by planner and architect Terry Farrell to revive this bedraggled, late-1960s complex of raw and rain-streaked concrete by demolishing a number of buildings and raised walkways and introducing new galleries, movie theaters, shops, cafes, and offices. The Hayward Gallery, Queen Elizabeth Hall, and the Purcell Room are to be torn down and rebuilt on what is now a parking lot next to the Royal Festival Hall. Entrances are at street level, with a new covered "Arts Avenue" linking

them to the neighboring National Theatre and the National Film Theatre. The scheme is a more radical version of one Farrell presented in 1989. If planning approval is obtained, work is expected to begin in 1994.

Planners Farrell, John Simpson, and the American Thomas Beeby have worked with five architects, among them Allen Greenberg, on a \$1.4-billion redevelopment plan for Paternoster Square (2,3), a seven-acre triangular area just north of Wren's St. Paul's Cathedral. The plan is a partial reworking of the medieval street pattern as it existed before the Blitzkrieg. The centerpiece is a public square with 125,000 sq ft of retail and 630,000 sq ft of offices, in four- to nine-story buildings clad in brick, stone, granite, copper, tile, and slate. The concept, while lauded by Prince Charles, has

also been criticized as a "literal transcription of the past."

Also in the final stages of planning approval is Poundbury (5), an extension to the southern English city of Dorchester with a master-plan commissioned by Prince Charles from Leon Krier. The first phase includes a central square, market hall, and a 75-foot-high tower designed by Krier to serve as the town hall (4). In line with Krier's aversion to urban sprawl, this "suburb" consists not only of housing—which is recessed, rather than sitting in the middle of each lot—but also sets aside 20 percent of its sites for offices, shops, and light industry centered, as in Krier's native Luxembourg, around courtyards. Models of each building type will be built to guide local architects and developers who will design and build most of Poundbury. *Tracy Metz*

Practice

toric structures are able to accommodate a tenant using that size space without difficulty.

Myth 10. Vacancy rates in older buildings are much higher than in new. In very-weak markets, older buildings seem to have a somewhat higher vacancy level. This is primarily a result of extraordinary incentives given by the owners of new buildings—often banks that have foreclosed or very desperate developers. There is no evidence, however, that long-term vacancy is greater in high-quality rehabilitated buildings than in comparable new buildings. The level of vacancy in older buildings has been consistently less than that of new buildings for the past several years, despite the current weak market.

Myth 11. The economic life of rehabilitation projects is shorter than that of new buildings. An old adage in real estate says: "Far more buildings are torn down than fall down." This is a result of a difference between a property's *physical life* and its *economic life*. Remaining economic life is the period over which a building can still be expected to contribute value. Rehabilitation gives birth to a new economic life as well as extending physical life. There is no evidence that a building having undergone a quality rehabilitation will have a shorter remaining economic life than a new building of equivalent quality.

Myth 12. Large tenants are necessary to make a real-estate deal work. Nearly all of the net job growth in the 1990s will be from small firms comprised of between 11 and 14 people who will each need some 250 square feet. The average amount of space used by organizations renting in a 50-year or older office building is about 4,500 square feet—often making such buildings the ideal size for the fastest-growing businesses.

Myth 13. Most older buildings are in the downtown and the suburbs are where money is being made in commercial real estate. Talk of the decline of the central city notwithstanding, downtown property commands higher rents, has lower vacancy rates and higher net operating income than a suburban counterpart.

Myth 14. If it makes sense financially, older buildings will be rehabilitated with or without the federal-tax credits. Owners who have completed tax-act rehabilitation projects report to the National Park Service each year that their projects would not have gone forward without federal tax credits. The incentives can make the difference between feasible and not (see *Getting the Breaks*, opposite).

Myth 15. There is no way of knowing whether a rehabilitation project will save money or cost more than new construction at the outset. There is some predictability about which building components will cost relatively more in new construction and which will cost less. Components most likely to cost less in rehabilitation: foundations, superstructures, exterior closure, and roof.

Most often it is a series of misconceptions rather than a ticklish conversion that bolsters the idea of functional obsolescence.

Building components most likely to be more expensive: interior construction and mechanical equipment. Building components most likely to be equivalent in rehabilitation and new construction: sub-structure and electrical equipment.

Myth 16. The only way to rehabilitate old buildings is to do the whole thing over. You might as well build a new building as produce a new building in an old shell. In much preservation work, almost every building element is replaced, updated, rebuilt, or restored. But there are also thousands of rehabilitation projects that need a much smaller-scale investment. In the heyday of rehabilitation activity, 80 percent of all tax-act historic rehabilitation projects cost less than \$500,000, and nearly half cost less than \$100,000. In minor rehabilitation, construction costs might range from 40 to 50 percent of those of a comparable new structure. But much of the construction-cost savings would be offset by the higher acquisition cost for a building having so many elements already in usable condition.

Other economic arguments for renovation

- Reinvestment can generate tax credits and a new (and higher) depreciation schedule.
- Rehabilitation can extend a property's economic life.
- A building in improved physical condition may produce better quantity, quality, and durability of income.
- An improved property could well be eligible for more favorable financing.
- Rehabilitation might be the most cost-effective way to realize the value of land that is currently underproducing.
- Individual reinvestment often is the most effective spur to other owners' reinvestments in adjacent property, producing a positive effect on the cumulative value of all properties within the area.
- Improved physical conditions mean more

- ease in renting space.
- Rehabilitation may cut down on operating inefficiency.
- Areas of a building that are currently unused (such as upper floors of downtown buildings) or underutilized (often basements) may be placed in financially productive service. This may also effectively increase the building's net-to-gross ratio.

While the economic arguments are important, noneconomic arguments count for as much, particularly with building owner-occupants. Pride of ownership, effect on sales within the building, neighborhood obligation, civic responsibility, community heritage are essentially noneconomic arguments but often can be as effective. Rehabilitation can often be an investor's most rational reinvestment decision. ■

Getting the Breaks

By David Kent Ballast

Since 1976, federal tax laws have encouraged the preservation of existing and especially historic structures. Both the Tax Reform Act of 1976 and the Economic Recovery Tax Act of 1981 gave tax credits for investment in these buildings (provided they were income-producing) and allowed deductions for charitable contributions. Congress modified these earlier laws with the Tax Reform Act of 1986. Although the 1986 tax law severely curtailed preservation efforts, tax incentives are still available. Local- and state-tax incentives are also available in some areas.

How to get credits

This article outlines the types of federal credits available and the conditions for receiving them. Because the tax laws are complex, you should also contact your state preservation officer and the National Park Service for more detailed information. To study the economic and tax implications for a specific project, also consult legal and accounting professionals.

Currently, there are three primary federal tax incentives: the rehabilitation tax credit for certified historic structures, the rehabilitation tax credit for nonhistoric buildings, and charitable-contribution credits.

Tax credits for certified historic structures

These currently produce a tax credit equal to 20 percent of the cost of rehabilitating a certified historic building used for income-producing purposes. They also allow depreciation of improvements over 31.5 years for nonresidential properties and 27.5 years for rental residential properties.

- To qualify for the credits, the building must be a certified historic structure, which is one listed in the National Register of Historic Places or located in a registered historic district and certified by the Secretary of the Interior as being of historical significance to the district. The owner of a non-listed building may nominate it for National Register listing. The box (above right) lists the criteria used by the state historic-preservation officer and the National Park Service for reviewing nominations. Cur-

rently, the National Register listing includes over 600,000 buildings.

- The owner must complete substantial rehabilitation. According to law, this means that the expenditures must exceed \$5,000 or the building's adjusted basis during any 24-month period. (Adjusted basis is purchase price plus any previous capital improvements not including the land value.)
- The rehabilitation work must be consistent with the historic character of the building and, when applicable, with the district in which the building is located. The Department of the Interior must certify the work is in accordance with the criteria stated in the *Secretary of the Interior's Standards for Rehabilitation*, which list guidelines for design and construction.
- Owners apply for certification by submitting a standard form to the state historic-reservation officer, who reviews it and makes a recommendation. The state officer then sends the form to the National Park Service, which makes the final certification decision. The owner files a copy of the final NPS certification with his/her tax return to claim the credit.

Tax credits for nonhistoric buildings

These are available for nonresidential buildings that are *not* certified historic structures and that were built before 1936. They are 10 percent of the cost of rehabilitation. If the building is in a registered historic district, the 10 percent credit can only be taken if the Department of the Interior certifies that the building does *not* contribute to the historic significance of the district.

The requirements for substantial rehabilitation are the same for nonhistoric buildings as for certified buildings. However, nonhistoric rehabilitations do not have to conform to the *Secretary of the Interior's Standards*. The only requirements are that at least 50 percent of the building's existing external walls are retained in place as external walls; at least 75 percent of the building's existing external walls are retained in place as either external or internal walls; and at least 75 percent of the building's internal structural framework remains.

Federal-tax incentives for reusing buildings are weakened but not dead. Their benefits are still worth going after.

Evaluation Criteria for National Register Listing

To qualify for listing in the National Register of Historic Places, a building, district, or structure must meet one or more of the following broad criteria:

1. It must be associated with events that have made a significant contribution to the broad patterns of our history.
2. It must be associated with the lives of persons significant in the nation's past.
3. It must embody the distinctive characteristics of a type, period, or method of construction, *or* that represent the work of a master designer, *or* that possess high artistic values, *or* that represent a significant and distinguishable entity even though its components may lack individual distinction.
4. It must have yielded *or* be likely to yield information important in prehistory *or* history.

Restrictions on rehabilitation credits

Congress added or tightened up several restrictions on rehabilitation credits with the Tax Reform Act of 1986.

- A taxpayer may only use the credit to offset up to \$25,000 of tax liability, plus 75 percent of liability over \$25,000. The taxpayer must keep the building for at least five years or be forced to repay all or part of the benefit.
- The act restricts credits for high-income taxpayers and increases the capital-gains tax rate. The new tax law also prohibits, with a few exceptions, the use of credits from passive activities. In most cases, the taxpayer claiming the credit must be actively involved in the rehabilitation or management of the project. Because the restrictions defined by the latest law are complex, you should consult a tax attorney or review the sources listed at the end of this article for more information.

Tax credits for charitable contributions
These are for contributions of partial interests in historic properties, which may include

Saving Houses of Worship

Continued from previous page
interior features or adjoining land, but are often historic-preservation easements to preservation organizations. Under such easements, the owners of historic properties give up their right to alter or demolish part of the properties, such as a facade.

Tax credits in the future

Pending legislation since 1986 attempting to ease the restrictions of the Tax Reform Act has been unsuccessful. The outlook is not good as Congress seeks ways to increase revenue rather than hand out tax breaks. The Community Revitalization Tax Act has been introduced into the House of Representatives and has the backing of the National Trust for Historic Preservation, but its outcome is uncertain.

Although current laws have severely reduced the number of rehabilitation projects and the total dollar investment in renovation, preservationists can still use federal-tax credits as one of several economic tools to help maintain part of our nation's past.

Suggested reading:

A Guide to Tax-Advantaged Rehabilitation. Sally G. Oldham, Jane F. Boyle, and Stuart M. Ginsberg, Washington, D. C.: National Trust for Historic Preservation, 1986.

Preservation Tax Incentives for Historic Buildings. Washington, D. C.: U. S. Department of the Interior, National Park Service and National Conference of State Historic Preservation Officers, 1987.

The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings, revised edition. W. Brown Morton III and Gary L. Hume, Washington, D. C.: Technical Preservation Services, U. S. Department of the Interior, 1983. ■

By Theodore Prudon

As religion takes on renewed social importance, its older facilities are being renewed as well. Increased activity can be gauged from the growth of such organizations as the Religious Property Fund in New York City and the Trust for Sacred Places in Philadelphia. Their resources and case-study reports include hundreds of restoration projects across the country.

Many projects are small and done in stages. The impetus for renovation is usually serious structural failures or leaky roofs. Other needs such as liturgical changes, a faded or rundown appearance, a new organ, a severe lack of space for programs, or high cost of operation often prompt the congregation to re-examine their physical-space requirements. An internal committee consisting of the religious leader and members of the congregation identifies the immediate and long-term goals. At this point, the participation and advice of an architect is crucial. There are several distinct tasks:

Evaluating existing conditions for life safety and code compliance

- **Structure:** Survey masonry and floors for cracks and deflections. Typical concerns are settlement, particularly near the tower or steeple, and rotted roof and floor framing.

- **Code compliance:** In general, life safety is not a serious concern for the main sanctuary because egress is sufficient and at grade. If the use of the sanctuary is altered (i. e. for theater or music performances), there may be a problem. Life-safety issues are more likely in ancillary spaces such as the parish or community house. Depending on the geographic location, there may be other requirements. In earthquake areas, the existing lateral resistance of the sanctuary is usually not sufficient.

- **Handicapped accessibility:** Many in the congregation may be elderly or infirm. Accessibility must include toilet facilities and spaces for programs.

Mr. Prudon is preservation-design director and a principal of Swanke Hayden Connell Architects, and holds a doctorate in preservation and conservation.

- **Exterior walls and roof:** Safety concerns include possible loose masonry (see photo 1). Exterior stone walls may be exfoliated. Roofing, often of slate or metal, has typically been repeatedly patched. Upper tower floors, often exposed to the outside through unglazed openings, leak. The intersections between the flashings of large and small roofs result in complex drainage. Many leaks are the result of blocked drains, botched repairs, and inadequate flashing.

- **Windows:** Preserving existing windows is often important to the character of the sanctuary. Concerns are twofold. Air infiltration uses energy and raises operating costs, and the windows may need structural repair. Stained-glass windows may have broken or deteriorated lead comes, which hold the glass together. Glazing may have begun to buckle and bow out. Iron bars, installed to reinforce and stiffen the glass, are frequently corroded. The glass itself may be delaminated. Such problems are not limited to historic stained-glass windows. Colored glass set in concrete, common in the 1960s, shows similar problems (see photo 4). Operable sections, added to the windows later, may weaken appearance and strength.

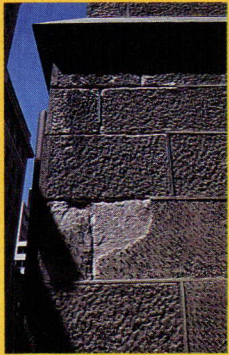
To protect against vandalism and improve energy efficiency, secondary polycarbonate glazing has been installed over many stained-glass windows. Unfortunately, this will turn milky-opaque and buckle out. Improper installation contributes to the deterioration of stained glass by creating condensation and dirt accumulation, and magnifying solar heat resulting in large temperature differentials and serious stresses.

- **Interior finishes:** Leaking roofs and gutters may have caused deterioration of original plaster and decorative painting. Efflorescence, blistering, and powdering of plaster combined with flaking paint are the usual signs. Where plaster has been suspended from roof trusses, its weight and water infiltration may have broken the keying to lath and/or hangers.

- **Systems:** Mechanical and electrical systems are usually simple and antiquated,

Stone deterioration may not be the problem; repairs may be. Figure 1: Delaminated patch. Figure 2: Patch removed and subsurface being textured to match sur-

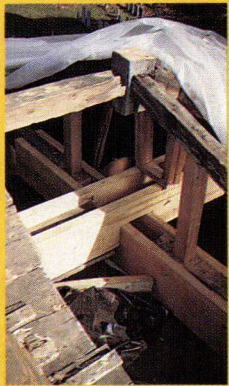
rounds. 3. Sistering rotted timbers. 4. Cracked stained glass set in concrete. 5. Basilica of St. Mary, Minneapolis: example of many problems handled discretely.



1



2



3



4



5

often original. Separate mechanical systems and rooms are likely for subsequent additions. Changes in lighting made over the years may be dangerous, inadequate, or inappropriate. Review their condition, efficiency, and anticipated life span with an engineer. New or upgraded systems can produce substantial operational savings. Consider code compliance of fire-rated enclosures and separations, dampers etc. Most older heating systems pass air by gravity over cast-iron steam elements and through plenums under the floor to wall and floor grilles.

Evaluating program needs

Ranking repairs and programmatic changes is not easy because of many competing needs for often-limited funds. The program and use of the sanctuary is not likely to change significantly except, in the Roman Catholic Church, Vatican II requires relocating the altar closer to the congregation. Frequently, churches want to expand the role of music in the liturgy by enlarging the organ and the choir, and changing its location. Other changes in the sanctuary may support secular activities—a growing trend—such as music and theater. Special

lighting, sound systems, tiered, raked seating, and a stage can be very disruptive to the original design of the sanctuary and are good architectural challenges. Traditional programs, such as churches' Sunday school, choir practice, music ensembles, and socials, compete for space with social-services such as soup kitchens and homeless shelters within the same facility. One solution: Juggle schedules so the same spaces can be used for more than one program.

Making a master plan

When money is scarce, religious organizations use master plans to raise funds. They first need architects' evaluations of existing conditions, contradictory needs, and visual implications of changes. Weigh long-term goals against immediate needs such as water-tightness and life safety. The next most-frequent need is to restore the sanctuary.

Stained-glass windows needing repair usually must be removed and totally dismantled to reinforce and patch the lead camming. Detail secondary exterior glazing to provide ventilation, and prevent condensation and temperature buildup. Consider sanctuary

lighting carefully. Too much light detracts from the character and atmosphere. Original fixtures relamped and rewired, combined with appropriate accent lighting, are often the most-satisfactory solution.

A major overhaul of mechanical systems may not be possible or necessary. Most buildings have heating, but no air conditioning. Upgrade heating for efficiency and operating-cost saving. The solutions may be elementary; the congregation of the 1693 Old Dutch Reformed Church in Tarrytown, N. Y., wanted few amenities. There is only a wood-burning stove and electricity.

Providing for maintenance

Post-construction maintenance is often neglected, eventually reproducing the same problems over again. Architects can anticipate this by preparing a maintenance manual and schedule for routine check-ups on potential-problem areas. Such a manual ensures that experience gathered during construction is passed on to the next generation. List which problems can be solved in-house and which require professional help. ■

How to Handle Renovations in the Field

By Ann Bayard Ketterer

Short of destructive testing during design, it is next to impossible to forestall all the surprises that will emerge during renovation. While owners are reluctant to have walls, floors, and ceilings removed before a construction contract is signed, discussion with them and maintenance personnel often provides clues. Original construction documents may show hidden conditions, but they are not always available. Original specifications are rare.

Essential tools for predesign site inspections are a camera loaded with high-speed color film, a good set of binoculars, and a powerful flashlight. Even taking along a magnifying glass can help architects spot such problems as minute holes bored in wood by powder-post beetles.

Using all the senses

An architect can also gain knowledge of existing conditions through touch, smell, and sound. Touching a material frequently provides clues to its soundness; a wall that feels damp warns of moisture; a plaster wall that sounds hollow when tapped may not be securely attached to its substrate; wood that crumbles or compresses when squeezed may be decayed or tunneled by insects. Some problems can be identified by their distinctive odors such as the musty scent of mold and mildew or the smell of defective plumbing. The sounds of creaking floors may indicate minor fastening problems or major structural defects.

Being on the spot

Some conditions cannot be fully assessed until construction scaffolding is up. As soon as it is, schedule site visits whenever hidden conditions are being uncovered. During this period, inspections should be frequent and decisions quick. When conditions are found that endanger structural integrity, the scope of work could greatly increase. In preservation projects, decisions become even more critical because replacing so much of the original fabric could threaten the historic features of the building.

Ms. Ketterer is an architect experienced in project management and contract administration.

Contract administration means more time on site before design and during construction, new things to look out for—and ad hoc solutions.

Knowing where to get advice

Frequently experienced contractors have insight into causes and solutions. If the owner negotiates with one contractor, that contractor's help should be available during analysis and design. If the project is bid, it may be worthwhile to hire an experienced contractor as a consultant. Either contractor can decide what construction methods cost least.

Pricing the unknowns

After defining types of potential problems, use drawings and specifications to outline their solutions. Require the contractor to provide unit prices for each type of work. After construction begins, existing conditions are uncovered, and the actual amount of work determined, pay unit costs. If a specified solution turns out to be inappropriate for the actual conditions, work with the contractor to find a better one. Specifications writers should base their requirements on worst-case scenarios; final work may turn out to be less difficult and less expensive.

For example, when specifications require cleaning interior brick and plaster surfaces with strong chemicals, field tests may find that plain water, household detergent, or TSP (trisodium phosphate) may suffice for a large percentage of the interior surfaces. Polychrome decoration may appear faded and need expensive restoration, even though it may only be covered with dust and grime. One contractor's experiments with cleaning compounds found that such colors may be returned to their original brightness by simple cleaning with Murphy's Oil Soap.

Protecting what stays

One particular problem in restoration work is protecting an existing building and its contents during construction. Temporary structures for protection can be as important as the permanent construction. Although furniture, artwork, and other movable items can be stored, integral features are best left in place during construction. Large stone sculpture, pipe organs, and stained-glass windows are usually considered an integral part of a church, but may need to be removed if the work around them would expose them to potential damage. Specify removal and reinstallation of these items, and protective coverings for items that re-

main; the cost of this work can be high. Protective coverings for a large pipe organ, for instance, must guard against dirt, dust, and moisture, as well as damage from demolition and construction. Identify items that should be removed or left in place. The church pews are often removed even if they do not require restoration. While scaffolding could be built around and between pews, protection can be costly. One solution: Schedule scaffolding for half a space at a time and move the pews into the other half under one large covering. These are the kinds of decisions that architects and contractors can make together.

Staying flexible

Architects are often asked to approve on-site solutions to problems encountered after scaffolding has gone up. In one example, stained-glass windows needed protection from breakage as well as from chemicals to be used to clean adjacent stone walls. The architects specified heavy plastic and plywood or high-density boards in front of each window, but did not detail their installation until they could observe conditions from the scaffolding. They found that the boards could be flexed enough to be held in place by projections of the surrounding stone moldings. After the walls were cleaned with chemicals, the boards were removed and the jambs cleaned by hand-sanding.

When new construction is to be attached to old, contractors may ask why new elements must be plumb if existing construction has settled and, though structurally sound, cannot be returned to a level condition. An off-plumb existing structure may not be noticed until absolutely level elements are placed close by. Then the extent of compromise needed to correct or at least ameliorate the condition can only be decided after weighing the importance for historical accuracy versus costs of a project.

As with any successful endeavor, vigilant observation, flexibility, and open communications with the contractor are key to completing on-site renovations and rehabilitation with care and accuracy while bringing the project in on time and on budget. ■

Landmarking in Peril

By Arnold Berke

After the U. S. Supreme Court handed New York City a victory last March in the St. Bartholomew's Church case, preservationists throughout the country were ecstatic. Then in July, the Pennsylvania Supreme Court set preservationists on their ears by invalidating Philadelphia's entire historic preservation ordinance—ruling that the city's landmark designation of the Boyd Theater, over the owner's objection, was a taking of private property without just compensation, [ARCHITECTURAL RECORD, September 1991, page 29].

Flouting it

The 4-3 decision in *United States Theater Circuit, Inc. v. City of Philadelphia*, Philadelphia Historical Commission departed dramatically from legal precedent—the many cases at the state and federal levels that have upheld local landmark laws against constitutional “taking” challenges. The most famous of these was the Grand Central Terminal case in 1978. Worries mounted over the message sent nationwide by the Boyd case. The decision by the Pennsylvania Supreme Court to allow the case to be re-argued in October provided the only measure of hope. But no matter whether the court overturns its original decision, much damage has been done in both the long and near term.

Statewide impact

In Philadelphia, the historic commission stopped designating landmarks unless requested by property owners. Demolition requests increased. The Pennsylvania Manufacturers Association cited the case in its initial request to raze three mid-19th-century buildings in downtown Philadelphia. Another owner revived his attempts to raze a prominent downtown block. And the Old Original Bookbinders Restaurant is rumored to have requested from the city \$2.5 million in damages and the right to raze the early-19th-century Elisha Webb Ship Chandlery.

In Pittsburgh, the court ruling left in doubt the outcome of a number of preservation battles. An attempt to landmark Pitts-

Mr. Berke is executive editor of Historic Preservation News.

burgh's Syria Mosque withered after the city attorney advised against approval. Preservationist hopes were crushed last September (see photos at right). Scranton and other Pennsylvania cities pulled back proposed preservation ordinances. Threatened with a lawsuit by Washington and Jefferson College, the city of Washington, Pennsylvania, scrapped a proposed historic district; the college then razed two affected buildings. The Boyd decision spurred another lawsuit against the state historic preservation office by the owner of a Bucks County quarry who objected to its inclusion in a National Register district.

National impact

Outside Pennsylvania, the local landmarks designation and regulation process under more than 1,700 municipal ordinances appeared unharmed. It was also apparent, however, that the officials in charge of interpreting these laws would be re-reading them carefully and proceeding with caution, especially if owner-consent provisions for landmarking were absent. Copies of the Boyd decision have been the most-requested ever, according to Brenda Barrett, director of the state's historic preservation office.

“This opinion reminds us of something we've all known—that state courts might differ from the Supreme Court,” says Jerold Kayden, a planning/preservation attorney in Cambridge, Massachusetts. “There's been an unmeasurable psychological reaction,” says Pratts Cassity, executive director of the National Alliance of Preservation Commissions, “a fear that this decision might impact the impressions of legality in local preservation ordinances.”

More than landmarks at stake

Indeed, many preservationists foresee sharks circling around the 49 other state constitutions, waiting for the opportune moment to challenge not only local preservation laws as they affect private-property rights, but also to use the Boyd case to attack zoning, planning, and environmental laws on such issues as billboard control, wetlands protection, and open-space acquisition. The Boyd ruling's broad interpretation of the U. S. Constitution has in fact emboldened the nascent national property-rights move-

Just when it looked like landmarking was safe as mom and apple pie. . . Pittsburgh's Syria Mosque before and after the Pennsylvania Supreme Court ruling.

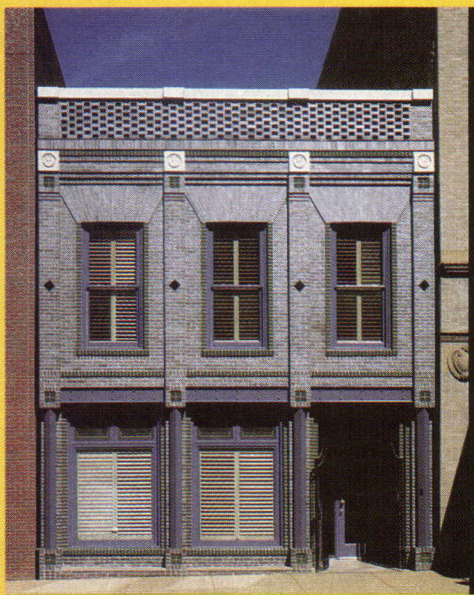


ment, “Private property groups will sow the Pennsylvania message in state after state, hoping to see a new crop of pro-landowner decisions emerge,” Kayden is quoted in *The Washington Post*.

At this writing, a decision in the rehearing of the Philadelphia case is expected early this year and may have already been given. What are the chances of a reversal? One of the opposing briefs was submitted by associations representing oil-and-gas and coal companies, realtors, builders, and farmers, among others. Although justice Rolf Larsen, who wrote the original decision, restated his philosophy that “a man's home is his castle,” the court, says Barrett, “was very much aware of what they had done and showed an understanding of the issue.”

The briefs in support of the city, citing case law from across the country, made a strong argument for the validity of preservation regulation under U. S. Constitution. Preservationists are hopeful of gaining the crucial swing vote for reversal. This will quiet the argument—until next round. ■

Making Design Review Boards Work



A new building designed under Denver's Lower Downtown Historic District guidelines: the Cactus Club by Peter Dominick, the Urban Design Group.

By Constance Epton Beaumont

Laws protecting historic buildings from discordant neighboring architecture are on the books today in over 1,700 communities across the U. S. Through "design review" provisions, many of these laws give local governments a strong voice in the character of new or renovated buildings. Not surprisingly, these laws are often unpopular with architects.

Review boards "tend to equate 'good' with traditional and 'bad' with modern architecture," says Gwathmey Siegel's Charles Gwathmey. "When a new building comes before a board, there is a presumption of guilt." Design review encourages mediocrity and discourages excellence, say other architects. "But design guidelines aren't intended to achieve good design; they're meant to create a baseline of acceptable design, to keep bad design out," rejoins Jennifer Moulton, president of Historic Denver.

These concerns and others were heard four years ago in Denver when the city

Ms. Beaumont is senior policy analyst at the National Trust for Historic Preservation.

Why one design review board for an historic district is a success where others have failed

council passed a preservation ordinance strictly regulating architectural changes in the Lower Downtown Historic District—despite a protest petition signed by owners of 80 percent of the district's property. Today the complaints have subsided as the Lower Downtown Design/Demolition Review Board builds a reputation for fairness and competence with preservationists, architects, and developers alike. How did this happen?

Lower Downtown is a section of old warehouses just north of Denver's central business district. Over the past 40 years the area had acquired a seedy, down-at-the-heels appearance. Then a few enterprising developers moved in and converted some old warehouses into attractive loft housing. As others observed the success of these projects, the notion took hold that this seedy but architecturally interesting area could become a boon to the city. In 1986, the city council approved a Downtown Area Plan encouraging downtown housing, arts, and entertainment.

How the review board works

While the local planning office governs such matters as a project's height, bulk, and street-level uses, the review board asks whether a building's design—materials, scale, roof lines, windows, etc.—will harmonize with Lower Downtown's existing architecture. No renovations, new construction, or demolitions may go forward without the board's approval.

By law, board members either have firsthand experience with real-estate development or live and work in the district. A developer, an architect, a business owner, a landowner, and a representative of the city landmarks commission serve on this five-member body. "The board is made up of architects and developers who appreciate what their counterparts are going through," says Bar Chadwick, a redevelopment specialist for the city.

To save architects from spending hours on building design only to be told they are way off the acceptable mark, the ordinance mandates "pre-application conferences" with project developers or architects. "We meet

with people at the development site to get a general idea of what they want to do," explains John D. Anderson, chairman of the review board and a local architect. "You can forestall a lot of problems that way," he adds.

A matter of style

How the board's members are perceived may be one of the biggest factors in the board's success. They are seen as competent, flexible, and, while pro preservation, familiar enough with development to empathize with applicants. "Clearheaded" and "civil" are terms used by Peter Dominick, Jr., a Denver architect with the Urban Design Group. "The board is selfless and makes excellent suggestions," comments Dana Crawford, a local developer who completed Denver's popular Larimer Square in the early 1980s. Both individuals at first strongly opposed the design-review concept.

Why is the review board working as well as it is?

- The quality of the board members and their behavior may be the greatest reason.
- The legislation set up clear development rules with little ambiguity.
- It also provided for the preservation incentives of a business support office, low-interest facade-improvement loans, tenant recruitment, and streetscape improvements.

A few brickbats

"I believe the [board] is populated by zealots with a very negative view of private-property ownership," says Bill Saslow, a Denver developer, architect by training, and resident of a building he has renovated in the district. Saslow points to the ordinance's scrapping of surface parking lots as an as-of-right land use. "While I'm not advocating the demolition of buildings for parking lots, when you have no building there, what's the justification for depriving an owner of income when the market can't support construction of a new building on that site?"

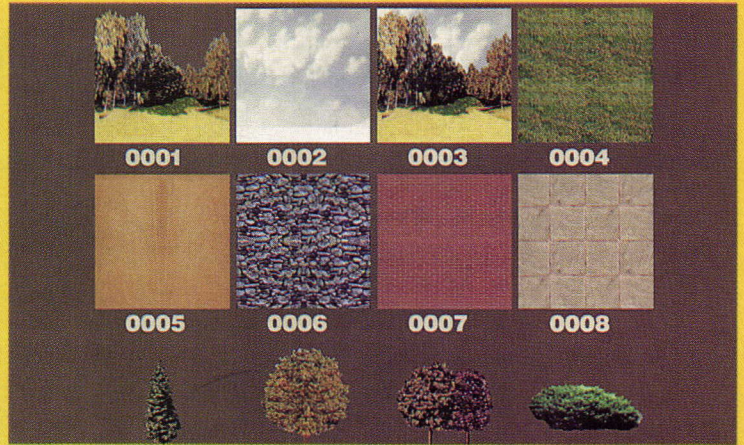
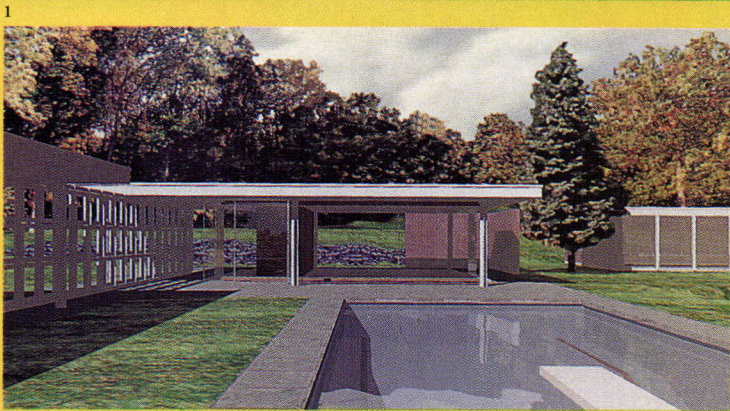
The bottom line

Little new construction has happened over the past several years and some of the old vacant lots remain. But according to a recent study by Hammer Siler George Associates, *Continued on page 154*

Computer Simulation Makes Mies Add-on Look Real

In adding onto an early Mies van der Rohe house in New England, (far right, bottom photo), Peter Gluck and

Partners create an accurate computer model (bottom left photo) with scanned images of real materials.



By Kent Larsen

Until recently, computers were too limited, slow, and difficult to learn to use for any other than repetitive drafting tasks. Most architects had decided that 3-D computer images were crude and inappropriate for client presentations. "Photorealistic" computer images often looked like paint-by-numbers cartoons created with stock, unappealing textures and materials. Hand drawings communicated better. However, powerful UNIX-based computer-graphics systems used by television and motion-picture animators show that the experience of design—moving through space, materials, lighting, color, and textures—can be studied with an accuracy, flexibility, and subtlety impossible through models and drawings.

Witness our firm's addition to a Mies van der Rohe house designed with ARRIS modeling and rendering software by Sigma

Mr. Larsen, a partner in Peter Gluck and Partners, was in charge of this project.

Design on a SUN Microsystems workstation, Advanced Visualizer software by WAVEFRONT Technology on a Silicon Graphics 4-D workstation, and high-resolution color-scanning equipment.

Working with Caleb Weissberg of Editel Graphics (assisted by Erik Akerblom, Paul Verdone, and Paul Walton), we created a 3-D computer model of the site and buildings. The problem was especially challenging because hills, grass, trees, and water in the pool had to be simulated.

Although the manipulations to create the model were complex, describing the steps is fairly simple. Computers like buildings with repetitive elements—as did Mies; our addition was designed to his 5 ft 6 in. module. The model of existing and new was completed in about five hours on ARRIS. We then photographed samples of all the special materials and site features needed to render brick, pavers, paneling, trees, stone walls, grass, etc. The photographs were scanned,

cropped, masked, scaled, and turned into texture maps—repeated images that can be applied to computer models.

Each element of the model was assigned properties such as color, reflectivity, and, if required, a texture map. Finally, the views were established and the ambient and shadow lighting adjusted. Because of many variables in WAVEFRONT, this process requires skill, patience, and trial-and-error to create high-quality images. Images averaged 2 1/2 hours to render with reflections and shadows.

The technology is helpful to architects for making conceptual studies so long as one looks beyond the technical gymnastics. It is also useful for client presentations if the design is completely thought out. Architects must be careful, however, because—while hand drawing can compensate for incomplete ideas through abstraction—computers are not able to achieve such ambiguous results. ■

Specifications Series: Waterproofing

By William Dyer

The following amplifies the guide specification (opposite) based on the CSI format.

1. General

Summary: First, determine whether waterproofing is required at all. If there is hydrostatic head, use waterproofing. Other considerations: use of affected spaces; frequency and duration of hydrostatic head (from site engineers and soils reports).

Definitions: The difference between waterproofing and dampproofing is that the first will withstand a hydrostatic head and the second will not. Dampproofing only prevents absorption of moisture by capillary attraction. Many dampproofing products are mislabeled as waterproofing. The manufacturers' published test results will help you determine which is which.

References: Several manuals help select and detail a waterproofing system:

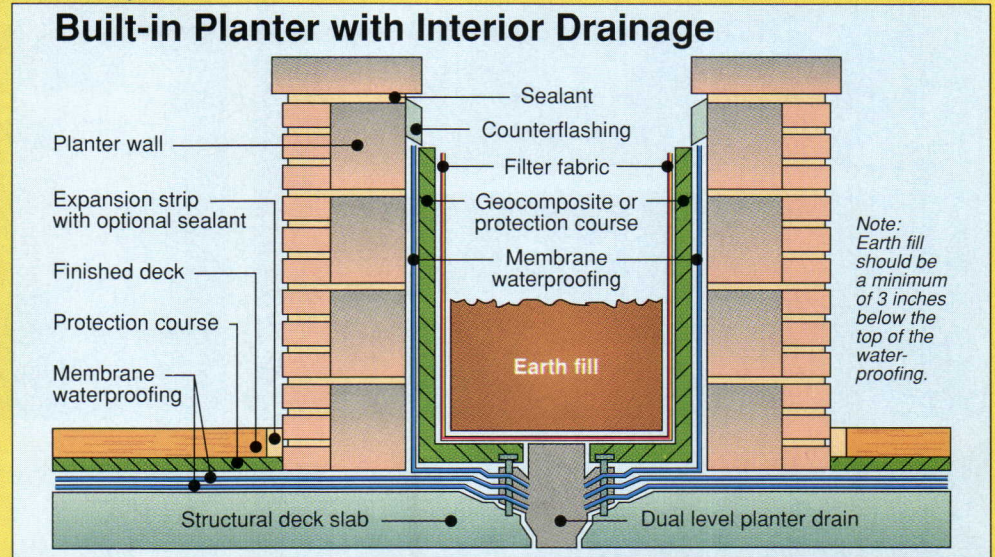
- American Concrete Institute, *A Guide to the Use of Waterproofing, Dampproofing, Protective and Decorative Systems for Concrete* (revised 1985), ACI 515.1R-79(85). (313/532-2600)
- National Roofing Contractors Association, *NRCA Waterproofing Manual*, Third Edition (revised 1989). (800/323-9545)
- Sealant, Waterproofing and Restoration Institute, *Guide To Waterproofing Products And Systems*, (1991). (816/561-8230)

System description: There is no consensus on performance criteria to classify waterproofing. Individual manufacturers test their materials and published results. However, they use different test procedures and produce uncomparable results. For an unusual soils condition, consult an expert in waterproofing applications. Other considerations: flexibility in cold, water resistance, vapor permeability, and use temperatures.

Submittals: Architects must keep product-data submittals to identify the manufacturer should there be a problem later on. These should include manufacturers' installa-

Mr. Dyer is an architect, a specifications consultant, and chairman of the AIA Masterspec Architectural Committee.

Leonor M. Glynn



tion instructions. Shop drawings are only required for unusual conditions because product data describes the standard ones. Any unusual conditions of ending or penetrating the waterproofing or of its meeting materials should be covered by shop drawings.

Samples are not important unless appearance is a factor; data on performance is much more significant. Still, architects often require samples showing, for instance, a joint and protection board.

Quality assurance: Installer qualifications are very important for any defense against water penetration. In fact, the choice of waterproofing sometimes depends on the installer's capabilities. A specific number of years in business or projects completed may not be the best way to specify qualifications; a results-oriented specification may better. If you do not know the waterproofing installer, require evidence of successful installations. Some government agencies prohibit or strongly discourage proprietary specifications. Then specify manufacturers qualifications. Use requirements similar to those used for the installer.

If you need waterproofing, summon a pre-installation conference. Require the contractor to call in the manufacturer, the installer, the testing laboratory (if you are requiring

field testing), and the installers of other materials that require coordination with waterproofing. Require the contractor to notify the owner and the architect of the meeting in advance and indicate how far in advance.

Delivery, storage, and handling: Many specifiers think that these are the contractor's responsibility and that to specify requirements is to usurp that responsibility and thereby incur liability. The owner and the architect clearly have the right to reject damaged materials, which lends weight to this argument. This is an area where the comfort of the specifier should dictate; there is no evidence that either approach is best.

Project conditions: Some waterproofing systems are sensitive to temperature and all are sensitive to rain. Set requirements accordingly. Conditions anticipated at the time of installation may affect the waterproofing system selected.

Sequencing and scheduling: These can also influence the selection of a waterproofing material. Some materials cannot be applied to green concrete, some can. Be aware of the conditions under which waterproofing will be applied and the substrates that it will be applied to. Two or more kinds of waterproofing may be required.

A step-by-step guide to dealing with a potentially troublesome part of construction.

Warranties: There are many different types of warranties available from manufacturers and from contractors. Three elements of a waterproofing system can be warranted: materials, application, and performance. Material warranties come from the manufacturer. Application warranties come from the contractor and his subcontractors. Performance warranties come from the manufacturer, who normally visits the site. A licensed applicator is required. This is the best kind of warranty and, not surprisingly, the most expensive.

2. Products

It is very unusual to specify a waterproofing system other than by the proprietary method. Knowing the manufacturer stands behind its product instills confidence.

Materials: Basic types are:

Sheet membrane: Bituminous (field-applied or preformed built-up); elastomeric (ethylene

propylene diene monomer, butyl, or neoprene); modified bituminous (preformed rubberized asphalt or coal tar); and thermoplastic (polyvinyl chloride, chlorinated polyethylene, high-density polyethylene, or chlorosulfonated polyethylene).

Fluid applied: One- or two-part polyurethane and hot rubberized asphalt.

Sheet lead.

Bentonite: Panels, mats, sheets, and spray applied.

Metal oxide.

Cementitious.

Crystalline

3. Execution

Examination: Contractor inspection of substrate is an important first step in the application of any waterproofing system. The contractor must follow the manufacturer's related recommendations on the condition of the substrate in scheduling waterproofing work. For instance, the man-

ufacturer may require that concrete be cured for 14 days before the waterproofing is applied.

ufacturer may require that concrete be cured for 14 days before the waterproofing is applied.

Preparation: It is important that the contractor prepare the surface according to the manufacturer's recommendations. Some systems require extensive surface preparation; others require very little.

Application: There are two basic ways to specify application: by technique and by results. In using the technique method, the architect tells the contractor, step-by-step, how to apply the waterproofing. The problem is that the architect is then responsible for the results. If there is a problem, the contractor only needs to be able to prove that he followed the architect's instructions. Using this method, it is *not* reasonable then to ask the contractor to warrant the performance; it is reasonable to ask him to warrant the

Continued on page 154

Guide Specification: Waterproofing

PART 1 GENERAL

1.01 Summary:

- A. Section includes identification of basic system.
- B. Related sections: Use for more than one waterproofing system specified in separate sections.

1.02 System description: Establish minimum performance criteria to evaluate system in place, substitutions, or both.

1.03 Submittals

- A. Product data.
- B. Shop drawings.
- C. Samples.
- D. Quality-control submittals.
 - 1. Flood-test reports.
 - 2. Certificates: contractor's certification that applicator meets qualification criteria, manufacturer's certification that the applicator is licensed, or both.
 - 3. Manufacturer's field reports: Use if a performance warranty, manufacturer's field service, or both are specified and you want the reports.
- E. Contract closeout submittals.
 - 1. Warranty: Use for submittal

1.04 Quality assurance

- A. Minimum qualifications of manufacturer, installer, or both.
- B. Pre-installation conference: Specify who must attend, where the meeting is to be held, what is to be discussed, what records are to be kept, and how much advance notice to give the owner and the architect.

1.05 Delivery, storage, and handling

- A. Packaging and shipping.
- B. Acceptance at site.
- C. Storage and protection.

1.06 Project conditions/environmental requirements: If you specify the products of several manufacturers and their criteria do not agree, establish consensus criteria.

1.07 Sequencing and scheduling

1.08 Special warranty: Extends the one-year period of limitations in the general conditions of most construction contracts. Specify period and terms.

PART 2 PRODUCTS

2.01 Manufacturers: List along with product names.

2.02 Materials: Describe system components.

PART 3 EXECUTION

3.01 Examination: Require contractor to verify that substrate is in acceptable condition to receive waterproofing.

3.02 Surface preparation

3.03 Application: If an application warranty or a performance warranty is specified, specify that the application be in accordance with manufacturer instructions. Identify the installation instructions of each manufacturer by title, publication number, and date of publication.

3.04 Field-quality control

- A. Tests: Specify testing and reporting procedures. Include procedure if the installation fails test.
- B. Manufacturer's field service: Specify manufacturer's inspection and reporting responsibilities.

3.05 Protection

3.06 Schedules: List each type of waterproofing and the surfaces each type will be applied to.

Disappearing Act

© Walter Dufresne photos

Warren & Wetmore's turn-of-the-century New York Yacht Club interrupts the sober midblock wall of West 44th Street with a nautical fantasy: the sterns of sailing ships, carved in limestone, emerge from three tall, arched windows. The club, though tiny, is a lavish gem of Beaux Arts bombast, and was a considerable challenge to Beyer Blinder Belle, the firm charged with restoring it and discreetly updating life-safety measures.

Most challenging of all was the Model Room—grand, but museumlike and little used—in which the Club hoped to hold meetings and parties. On the second level, it had only one exit, and surrounding construction precluded adding a second required exit outside the room. The solution, negotiated with the New York City Building Department, is a stair that is normally stored invisibly within the floor construction, but lowered when needed into the Stranger's Room, a small reception space off the main foyer that provides a direct way out to the street. The architects concealed the electric hoist motor along with the stair in the lower room's ceiling (section opposite and photo 3). Flush-trimmed doors conceal the wall opening (bottom right). Once the stair is lowered, two doors swing up into the Model Room, providing side panels for the stair (2). The stair cannot be used until the demountable railings are installed and a lighted exit sign is placed in the upper-level cross rail.

Though not as disruptive of the building's elaborate finishes as other solutions, the stair did require reframing a portion of the floor, chamfering nearby walls (to achieve code-width passage) and coving a ceiling below the stair opening. Not surprisingly, the engineering and fabrication of the stair was done by a firm that has considerable shipyard experience. *James S. Russell*

Credits

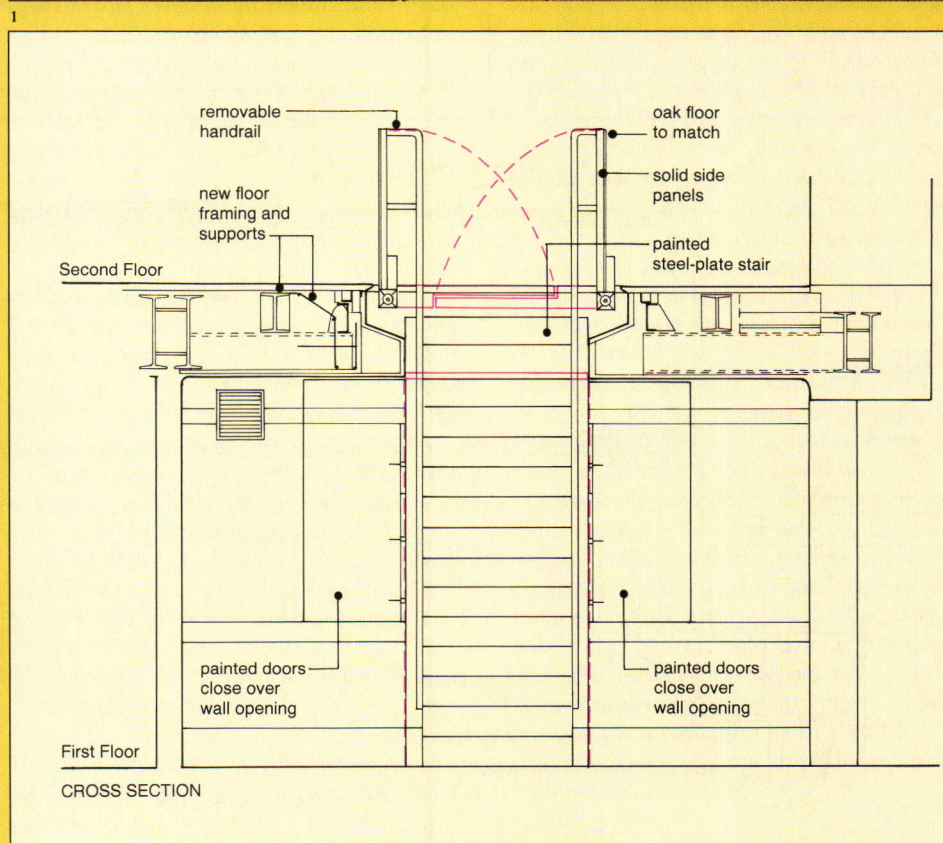
New York Yacht Club

New York City

Architect: *Beyer Blinder Belle—Richard Blinder, partner-in-charge; Page Ayres Cowley, Vincent Benic, project team*

Engineers: *Eipel Engineers (structural); Syska & Hennessey (mechanical); Steinmetz Ironworks (stair)*

Contractor: *Alexander Wolf*



A small private club, faced with evolving use and stricter building codes, turns to a novel scheme to assure emergency egress.

The Model Room's emergency stair is usually invisibly stored (1, opposite, and middle left of 4 below). Open, it includes an exit sign (2) and removable railings (3).



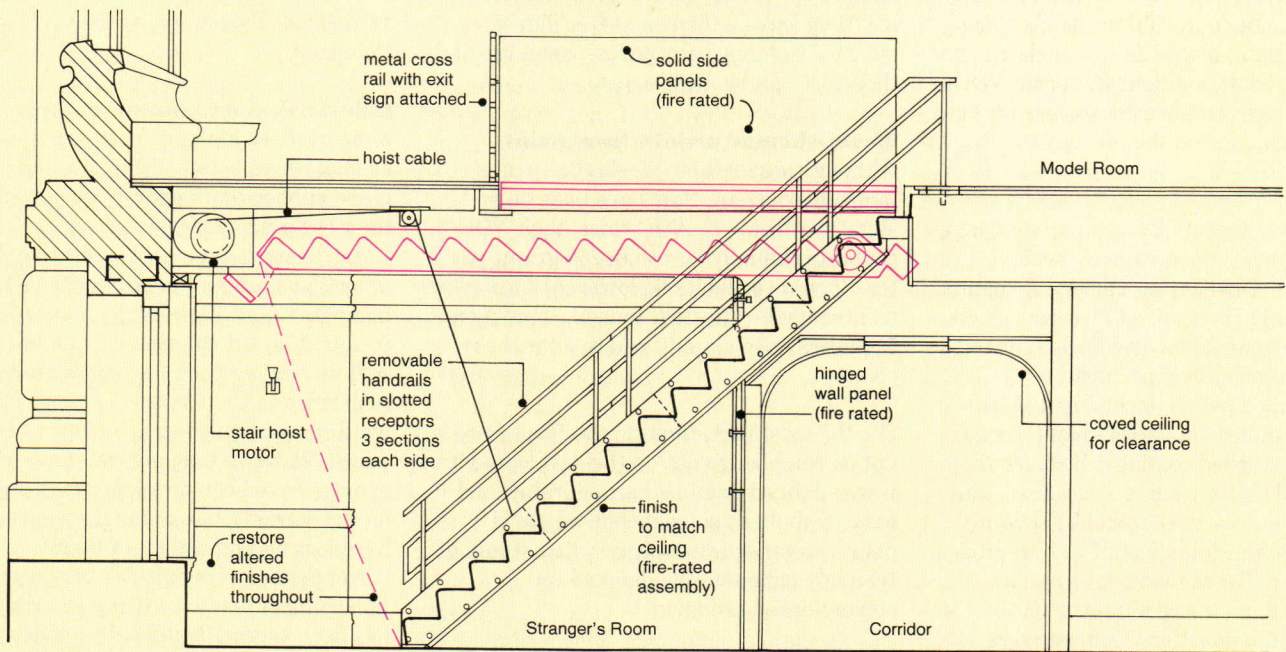
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3



4



LONGITUDINAL SECTION

Schinkel Style

Harland Walshaw



1

By Roger Kimball

If asked about Karl Friedrich Schinkel, most of us would probably sum him up in the phrases “19th-century German neoclassical architect” and “designed the Altes Museum and Schauspielhaus in Berlin.” Having thought a bit harder, we might recall the cool, ceremonious geometries of the Altes Museum and the New Guard House, Schinkel’s other great building in Berlin, and then note his influence on Modern architects from Peter Behrens and Albert Speer through Mies and Le Corbusier.

In all this we would not be wrong, only incomplete. For Schinkel’s achievement cannot be so neatly or briefly encapsulated. He was, as the subtitle of a splendid exhibition devoted to the architect this fall at London’s Victoria and Albert Museum reminded us, “a universal man.” A highly accomplished landscape painter, and stage designer (his durable 1815 design for *The Magic Flute* was featured in the movie *Amadeus*), Schinkel was anything but a narrow technician. His legendary energy—it is said that his death, in 1841 at 60, was from overwork—and superlative administrative gifts catapulted Schinkel to official notice at an early age. In his capacity as Chief State Architect for Prussia, a post he obtained in his thirties, Schinkel transformed

Roger Kimball is managing editor of *The New Criterion*.

the face of Berlin and built a stunning series of royal residences in Potsdam and elsewhere; together with his friend Peter Christian Beuth, he helped revitalize the industrial arts in Germany, designing and overseeing the design of objects of every description, from porcelain vases to fabric patterns and furniture.

Perhaps the only architect on record who was accorded a state funeral, Schinkel was as much a flower of classic German *Bildung* as were his contemporaries Goethe, Schiller, Fichte, and Hegel. And like these illustrious compatriots, he saw everything in terms of the ideal. Schinkel lived at a time when Romanticism was often still fired by a high-minded adherence to Duty (the capital seems essential), when one could speak of Beauty, Virtue, and Spirit without irony. For him, architecture was more than a branch of applied engineering; it was an instrument of human and moral perfection—an element in what Schiller called esthetic education. Schinkel sought not merely to build but, as one of the contributors to the catalog accompanying the exhibition put it, to change society “as it were from the head down.”

A talented youth

Schinkel displayed great artistic gifts early on. Indeed, he had at first thought of becoming a painter. It was an exhibition of Friedrich Gilly’s design for a memorial to

1. *The Schauspielhaus, Berlin*
2. *Schloss Glienicke, painted by C. A. Hawn*
3. *Tea Salon in the Royal Palace, Berlin*



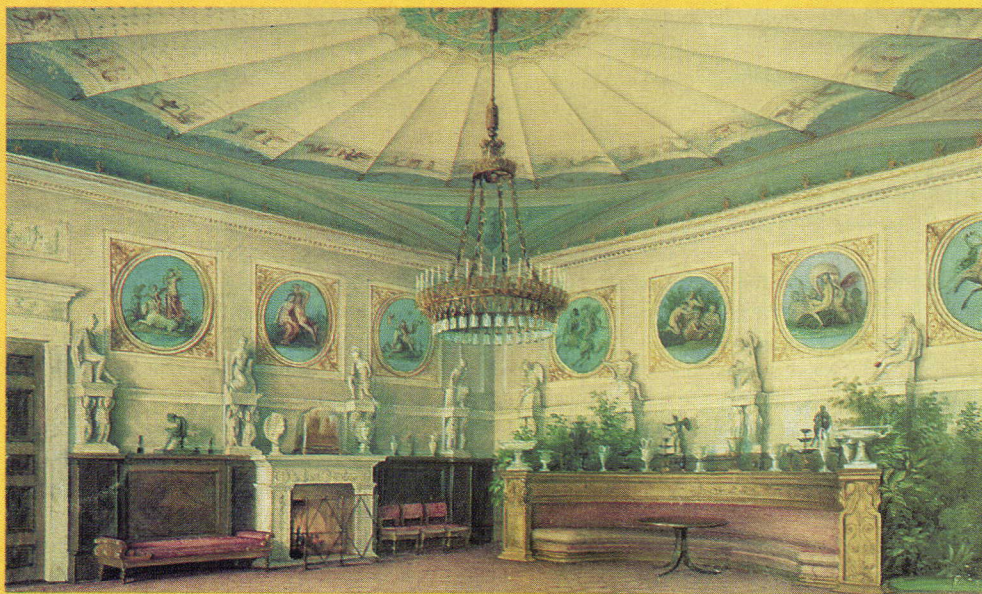
2

Frederick the Great—an ensemble featuring a Doric temple set loftily upon a massive base—that inspired Schinkel to become an architect in 1797. With typical thoroughness and passion, he left school and moved in with Gilly and his father, quickly becoming their star pupil.

The death of Friedrich Gilly at 28 in 1800 helped set Schinkel on his own course. After completing several of Gilly’s projects, he traveled in Italy and Paris, recording his impressions, working as a painter of panoramas and dioramas, and as a stage designer. He continued to draw and paint, executing many Romantic scenes of Gothic cathedrals and dramatic landscapes. By 1805, Schinkel was back in Berlin, busily painting and designing artifacts (including, in 1813, the Iron Cross) and buildings.

It was between 1816 and 1830 that Schinkel designed his principal buildings, the signature neoclassical structures by which he is best known today. Beginning with the New Guard House (1816-1818)—a squat, cubic building, soberly fronted with a six-columned Doric portico—he undertook a campaign of building and urban renewal that reflected the burgeoning self-confidence and nationalism of the post-Napoleonic period. Schinkel’s masterpiece is undoubtedly his redesign of Berlin’s Lustgarten, including plans for a new museum, known today as the Altes Mu-

Roger Kimball examines the legacy of Karl Friedrich Schinkel and how it has been used and abused by generations of architects.



3
seum (1823-30). The stately, two-story building facing the plaza of the Lustgarten features an imposing colonnade—18 mammoth Ionic columns—and a double stairway to the second story that has rightly been called “one of the most impressive staircases in modern architecture.”

In 1826, in the midst of his work on the Lustgarten, Schinkel traveled in Great Britain with Peter Beuth to inspect Robert Smirke’s British Museum, then under construction, and to learn about recent developments in industrial architecture. Like the Modernists who came after him, he was most impressed by utilitarian structures: the London docks, Manchester factories, gasworks in Edinburgh, and Thomas Telford’s great bridges and roads. Schinkel was particularly impressed by the brickwork he saw in Britain. Here was a material that could be put to great use in stone-poor Prussia, as he showed in his Architectural Academy in Berlin, built in the early 1830s.

Drawn primarily from the Altes Museum—which, appropriately, houses the Schinkel collection—“Karl Friedrich Schinkel: A Universal Man” was mounted last year at the V&A to mark the 150th anniversary of the architect’s death. (In one sense, of course, the show was as much a celebration of German reunification as of Schinkel’s anniversary, for only reunification made the

requisite cooperation among German museums possible.) The chronologically arranged exhibition included some 100 drawings and paintings by Schinkel and such chroniclers of his work as the view painter Carl Daniel Freydanck, as well as 60-odd examples of furniture, sculpture, and other pieces designed by Schinkel. A good record of the exhibition is the catalog of the same title edited by Michael Snodin and published by Yale University Press. The half-dozen essays are uneven—the piece by Alex Potts on Schinkel’s architectural theory is the one really insightful contribution—but the catalog entries present a good overview and visual souvenirs of Schinkel’s development.

The architect’s legacy

While many contemporary architects are eager to claim Schinkel as an influence on their work—and why not?—the truth is that Schinkel’s idealism and uncompromising seriousness make him something of an anomaly in an age when irony is king. In this sense, anyway, Schinkel’s approach to architecture recalls not the Postmodernism or Deconstructivism of today but the high Modernism of Mies, Corbu, and Gropius. Schinkel too dreamed of a “City of Tomorrow,” “total architecture,” and believed, with Mies, that architecture was “the will of an epoch translated into space.” This points to both what is most problematic and most promising in Schinkel’s legacy.

The fact that Schinkel—his rhetoric as well as his monumentalizing Classicism—should have been so patent an influence on Albert Speer must give us pause. The dream—or perhaps we should say the fantasy—of architecture as a *Gesamtkunstwerk*, as a total work of art that could absorb public and private, the individual and society, into a “higher” unity is a dangerous if persistent ambition. It would be simplistic to see Schinkel’s architecture or theories as a forerunner of Speer’s monuments to totalitarianism. But there can be little doubt that this idealism, at times corrupted by cynicism and a lust for power, has helped furnish a vocabulary for architectural imperialism from Speer to Philip Johnson.

Nevertheless, Schinkel’s idealism is also the source of his greatest triumphs and his continuing interest for contemporary architects. Despite the imposing isolation of some of his late, utopian designs, Schinkel recognized that if architecture is to transform the world into a more habitable and human place, it must begin by recognizing the inevitable messiness and variety of reality. Because the world cannot be reduced to a purely rational scheme, Schinkel wrote, “architectural projects too admit of no pure solution, and have to take on a significant historical dimension.” As a result, what Alex Potts calls the “ethical imperative” implicit in Schinkel’s view of architecture is tempered by an element of acquiescence.

“At its simplest,” Potts notes, this ethical imperative “took the form of a commitment to avoid false appearances or ‘masquerade.’” As Schinkel himself put it, “any masking or hiding of the construction is an error.” Among much else, this rejection of “masquerade” implies the rejection of *arbitrary* ornamentation: this is why there are no “decorated sheds” in Schinkel’s architectural pantheon.

In the not-too-distant past, there was reason to worry that architecture’s claims to embody an “ethical imperative” had resulted in sterility, pedantry, or worse. In our day, when any imperative beyond the drive for publicity and commercial success seems to have evaporated, Schinkel’s idealism can serve as a rejuvenating tonic. ■

Preservation in Print

The Preservationist's Progress: Architectural Adventures in Conserving

Yesterday's Houses, by Hugh Howard.

New York: Farrar, Straus and Giroux, 1991, 272 pages, \$23.

Keeping Time: The History and Theory of Preservation in America, by William J.

Murtagh. New York: Sterling, 1991, 238 pages, \$25.

Reviewed by Page Ayres Cowley

While both of these books deal with historic preservation in America, they differ significantly in scope, purpose, and style. *The Preservationist's Progress* is a series of profiles of dedicated individuals written for a general audience. *Keeping Time*, on the other hand, is more of a textbook, thoughtfully assembled and illustrated, intended for the student of preservation.

Hugh Howard brings to life the passion of restoring old buildings by focusing on nine individuals who make their livelihoods from American history and building. Although all the subjects have roots in Howard's own

New England, they come from diverse backgrounds and illustrate the multidisciplinary nature of historic preservation today. The narrow geographic scope of the subjects profiled, though, limits the book to a regional appraisal of preservation efforts and allows Howard to touch on only some of the issues currently confronting preservationists.

Howard's best essays focus on success stories in which buildings survived due to the dogged determination of certain individuals. One of these success stories is Donald Carpentier, who champions the importance of craftspeople and apprenticeship, and conducts hands-on workshops at his property, Eastfield Village. Other chapters look at people such as Christopher Gray, a New York-based researcher and building connoisseur, and John Mesick, an architect known for restoring the pavilions fronting the Lawn at the University of Virginia.

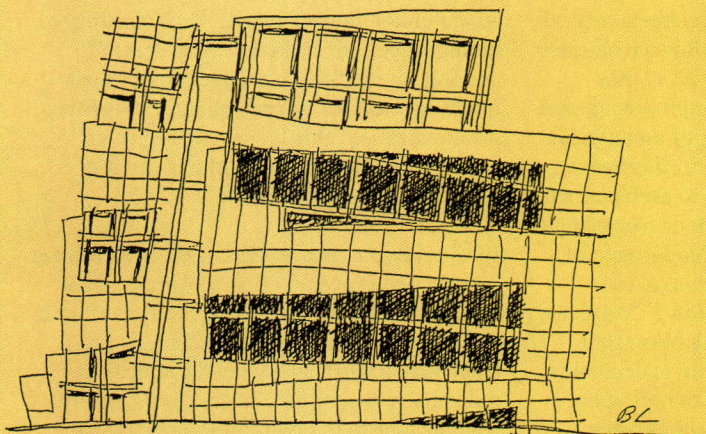
While Howard's work is anecdotal, William Murtagh's book is more a reference tool. The author organizes events and issues chronologically and presents his facts

clearly and concisely. Murtagh also highlights preservation milestones in a chronology in the appendix, along with reprints of preservation legislation and a glossary of frequently abused preservation vocabulary. The book includes chapters on the evolution of outdoor and house museums, the creation of historic districts, the importance of rural and landscape preservation, and the demands of adaptive use.

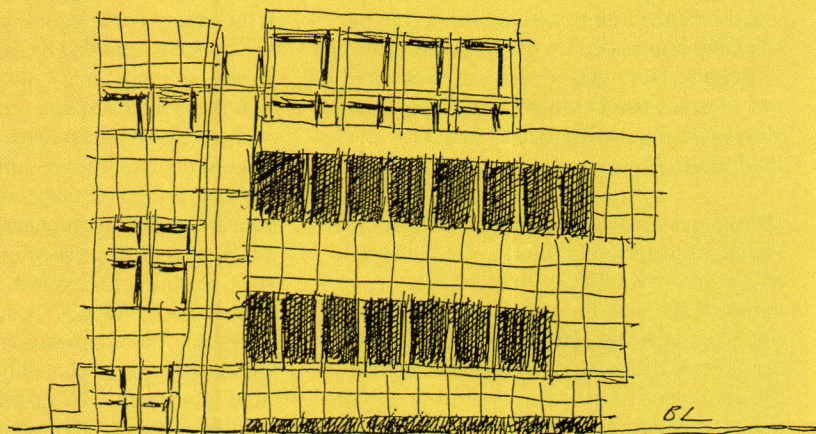
Although Murtagh offers an overview of American preservation, he omits several topics that would have contributed to a comprehensive course of study, including the advances made in conservation sciences, the rise of the architectural conservator, and the importance of preservation education and training. The book also falls short in not providing a commentary on the significance of the preservation movement and in only briefly mentioning related disciplines such as sociology, urban planning, and education. ■

Page Ayres Cowley is the director of historic preservation at Beyer Blinder Belle Architects & Planners in New York City.

Drawn for ARCHITECTURAL RECORD by Bill Lacy.



Peter Eisenman building—before earthquake.



Peter Eisenman building—after earthquake.



COVERAGE - TAMKO - TOTAL
TSC
SYSTEM

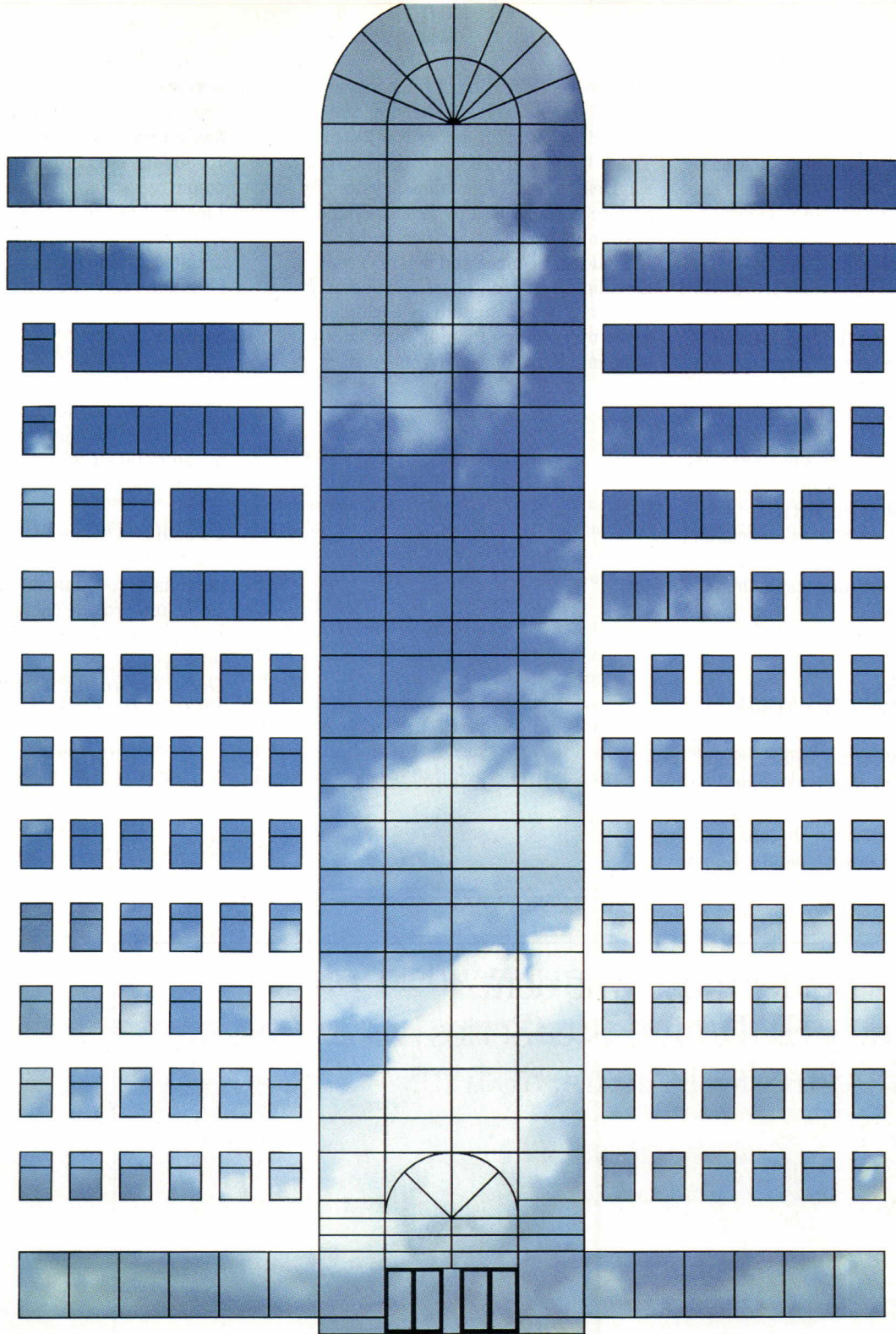
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Building Types Study 695/Preservation

Begun as the struggle of a few against the wreckers' assault on our built heritage, the preservation movement has evolved to a matter-of-fact, mainstream drive to capitalize on the useful life that remains in old buildings—and some not so old. Today, pragmatic renovation and re-use far outweigh fly-in-amber preservation. Even in meticulous restorations, upgrading to current standards of amenity and access has become a given. So, increasingly, has the once-taboo practice of adding new spaces to suit new uses.

Hence the astonishing variety of projects falling under the rubric of preservation. Of those featured in this issue, only one is "pure" restoration: a '20s Hollywood theater which, Moderne-ized in 1941, has been returned to its original ornate splendor. By contrast, the loving restoration of the Morgan Library's Renaissance-Revival palazzo involved not only discreet updating of related buildings in the complex but also the addition of a thoroughly Modern glass-and-steel garden court. Similarly, the rehabilitation of such period pieces as a neo-Byzantine synagogue turned headquarters for the Missouri Historical Society and Cass Gilbert's notable but sadly deteriorated New Haven Public Library depended on adjacent, complementary annexes—as did the rebirth of a World War I balloon hangar as a performing-arts center. Sometimes recycling alone will rejuvenate buildings that are neither historic nor distinguished: a '20s warehouse upgraded to offices; a '60s office structure stripped down but rebuilt for the same purpose. *M. F. G.*

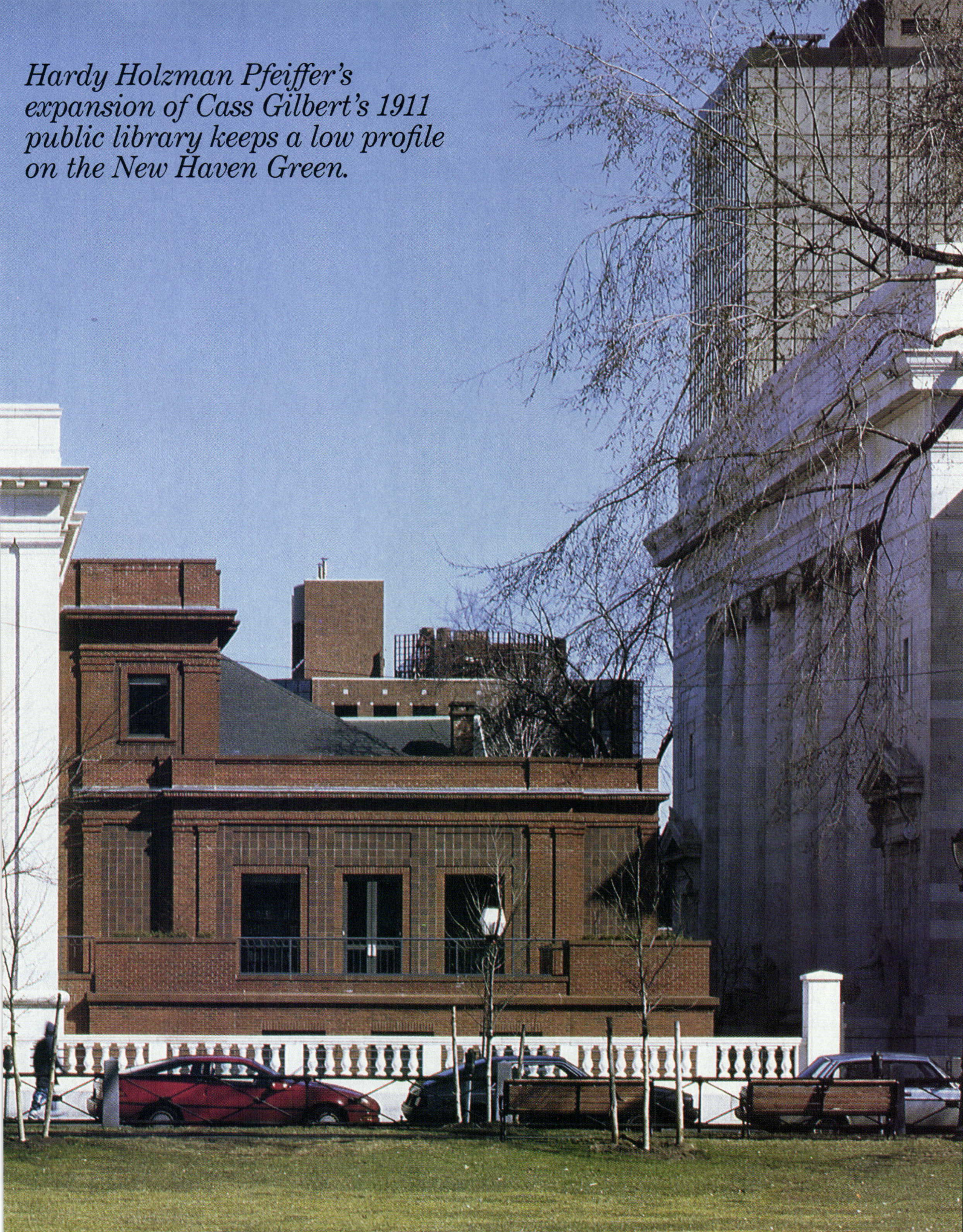
Doing the Right Thing

*New Haven Free Public Library
Renovation and Expansion
New Haven, Connecticut
Hardy Holzman Pfeiffer Associates,
Architect*

First Addition



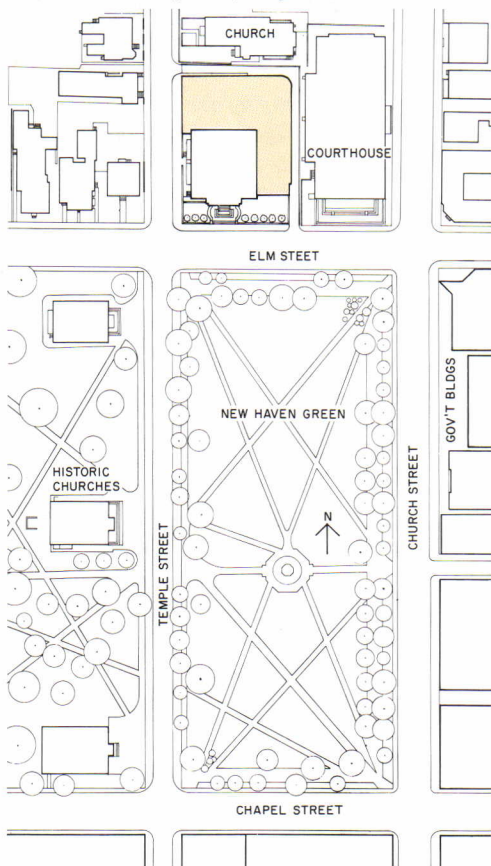
Hardy Holzman Pfeiffer's expansion of Cass Gilbert's 1911 public library keeps a low profile on the New Haven Green.







© Cervin Robinson photos, except as noted



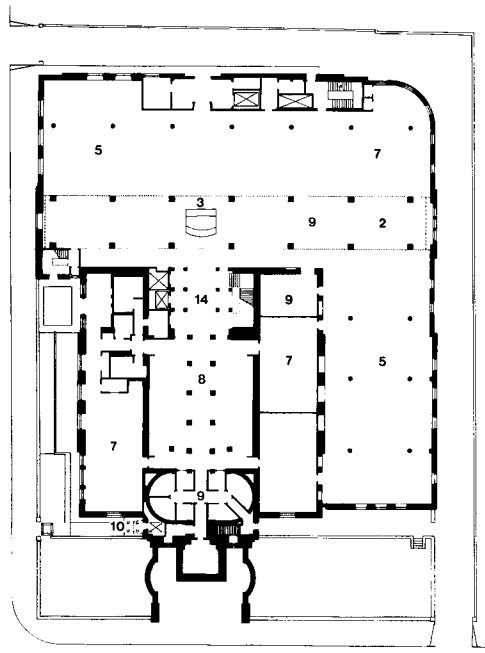
Set on the historic New Haven Green, flanked by a neoclassical courthouse and a row of three early 19th-century churches, the new wing (opposite) asserts a distinctive identity without trying to overpower its neighbors. The addition adapts the rhythms of Gilbert's Neo-Georgian facade in its brick and tile patterns, and in the ordering of its windows.

In renovating and expanding the New Haven Free Public Library, Hugh Hardy of Hardy Holzman Pfeiffer Associates faced the daunting prospect of not just altering Cass Gilbert's 1911 Neo-Georgian building, but also changing the character of the New Haven Green, the historic center of the city's nine-square town grid. Along with rehabilitating Gilbert's badly deteriorated structure, Hardy's scheme triples the library's space, adding 65,000 square feet of reading rooms, stacks, and offices. Crucial both to the health of the collection "and human comfort" are new building-wide air-conditioning and humidity controls, in place for the first time. These would be useless without comprehensive energy-saving measures: the masonry has been repointed, and windows are double-glazed and contain thermal shields. But most important is the new roof, which seals off a building the architect says "leaked like a sieve."

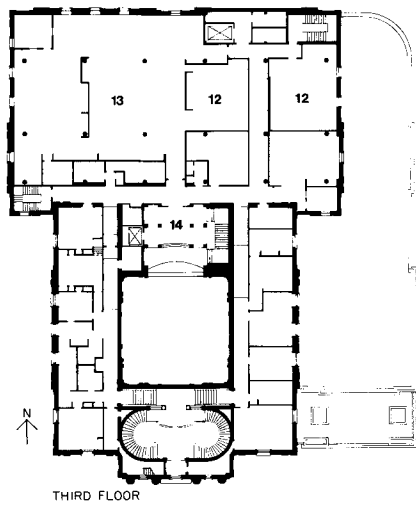
With its careful proportions, patterned masonry tile, and mullionless windows, the new addition defers to, rather than dominates, Gilbert's North Haven brick and marble exterior. The two-story south elevation of the expansion is set back from the main building along Elm Street, and is separated only by a service drive from the neoclassical courthouse to the east. The L-shaped addition wraps around the library to the north and west, where it rises to four stories, matching Gilbert's roofline and respecting the integrity of the courthouse and the three historic churches that face the Green along Temple Street (site plan left). The proportions of Hardy's building adhere to those of Gilbert's design—"an overgrown English country house," he says—but reject its symmetry and scale. "We kept his geometric rhythms, the proportions of his windows and openings, but we changed the scale of the components," explains Hardy.

The architect has also maintained Gilbert's entry stair, providing handicapped access through an elevator inserted into the older building on Temple Street. The steps lead into a cool marble foyer with curving staircases on either side. A square triple-height interior court, crowned with a curved, leaded-glass skylight, now holds the circulation desk and card catalog. Plaster walls, painted pale gray-green, are punctuated by marble pilasters. The lobby is flanked by restored double-height reading rooms, washed with fluorescent tubes along bookshelf perimeters and tungsten/halogen fixtures at the ceiling; tamper-proof lamps affixed to long reading tables provide "personal reading space," says Richard Renfro of lighting consultant Fisher & Marantz. Fluorescent tubes run parallel to the stacks to provide even illumination. The movable stacks allow the entire floor to be reconfigured. Access to the addition is through a massive archway in the court, to the right of which Hardy has created a new elevator and staircase. This ensemble "is the hinge that connects new with old," says Hardy. "It's the vertical and horizontal gateway." Wherever possible, the addition captures the marble pilasters and bare brick of Gilbert's exterior for its own interior walls.

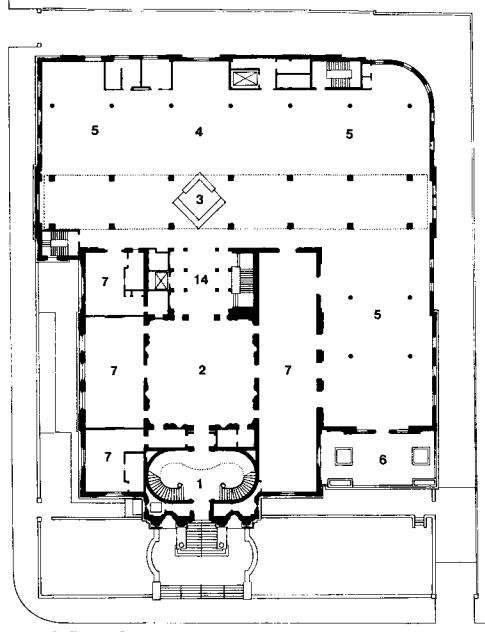
The lower level has a separate entrance that permits off-hours access to a small lecture room—the former children's room, with restored murals of *The Legend of Sleepy Hollow*. The large, bright children's library, now on the second floor, has patterned carpeting, colorful, scaled-down furniture, and private reading niches. On the lower and main levels of the new wing, large multipurpose open-plan spaces contain reading areas, computer carrels flat-wired under carpet tile, and banks of open stacks. The open stacks are movable, making it possible to reconfigure the entire room. The stacks, which represent the bright face of change at an institution where shrinking budgets have forced shortened hours, replace a now-demolished stack wing that was kept closed to the public. *Peter D. Slatin*



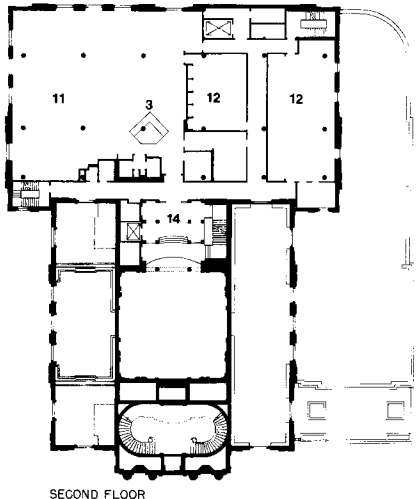
LOWER FLOOR



THIRD FLOOR



FIRST FLOOR



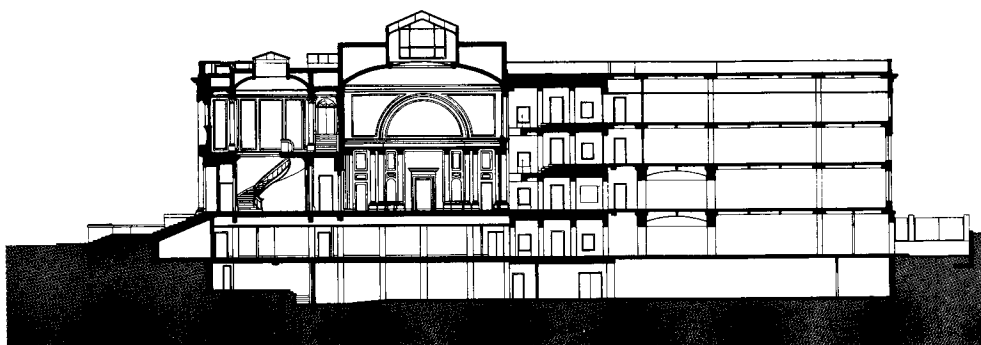
SECOND FLOOR

- | | |
|----------------------|------------------------|
| 1. Foyer | 8. Microforms |
| 2. Lobby/circulation | 9. Instruction rooms |
| 3. Information desk | 10. Handicapped entry |
| 4. Reference | 11. Children's library |
| 5. Stacks | 12. Staff |
| 6. Terrace | 13. Technical services |
| 7. Reading rooms | 14. New wing entry |

Staircases in the foyer lead to small balconies, with stained-glass by artist David Wilson (opposite). The L-shaped new wing wraps around Gilbert's square building. Set back from the Green, the two-story sunken facade of the new wing features a terrace (plan bottom left). Handicapped access is through a street-level elevator (plan top left).

Credits

New Haven Free Public Library
Renovation and Expansion
 New Haven, Connecticut
Owner: City of New Haven
Architect: Hardy Holzman Pfeiffer Associates—Hugh Hardy, partner-in-charge; Victor Gong, administrative partner; Diana Blum, Mark Tannin, Jack Martin, project managers; David Johnson, project architect/designer; Hilda Lowenberg, John Varsa, construction team; Sterak Ohannessian, field representative; Jamie Akers, Skip Boling, Mark Buchalter, David Cagle, Scott Cohen, Mark DeMarta, John Janco, Joanne Maddox, Raphael Pelli, Bert Pimock, Greg Radford, Gilbert Sanchez, Bin Shu, Douglas Stebbins, Matt Tendler, design team; Darlene Fridstein, Catherine Whalen, Robin Kunz, interior design team
Liaison Architect: The office of Felix Drury
Engineers: Besier Gible Norden (structural); Jansen & Rogan Consulting Engineers (mechanical); GZA/Heller (geotechnical); TPA Design Group (civil)
Consultants: Aaron Cohen Associates (library); V. J. Associates (cost estimator); Jules Fisher & Paul Marantz, Inc. (lighting); Peter George Associates Inc. (acoustical/audio-visual); Tele-Studies Communications Consultants, Inc. (telecommunications/security); Quennel Rothschild Associates (landscape)
General Contractor: Atlas Construction Co.

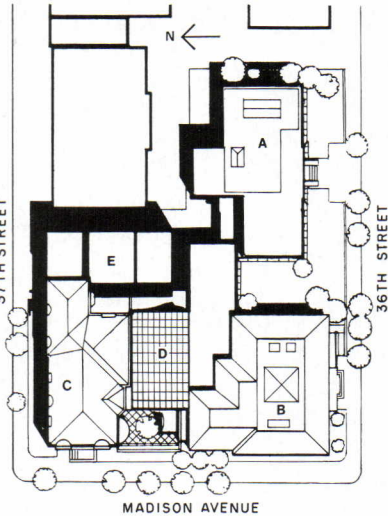




Bound Volumes

*The Pierpont Morgan Library
Addition and Renovation
New York City
Voorsanger & Associates,
Architects*





The new garden court (opposite and top) serves as the common link between all of the Morgan's older buildings. Inserted between Charles McKim's 1906 Library (A on site plan above), a 1928 annex (B), the 19th-century J. Pierpont Morgan, Jr., mansion (C), and an attached five-story office block (E), the garden court (D) is a glass-and-steel counterpoint to the masonry architecture all around it. Plans call for the office block, now used for storage, to be razed for future expansion.

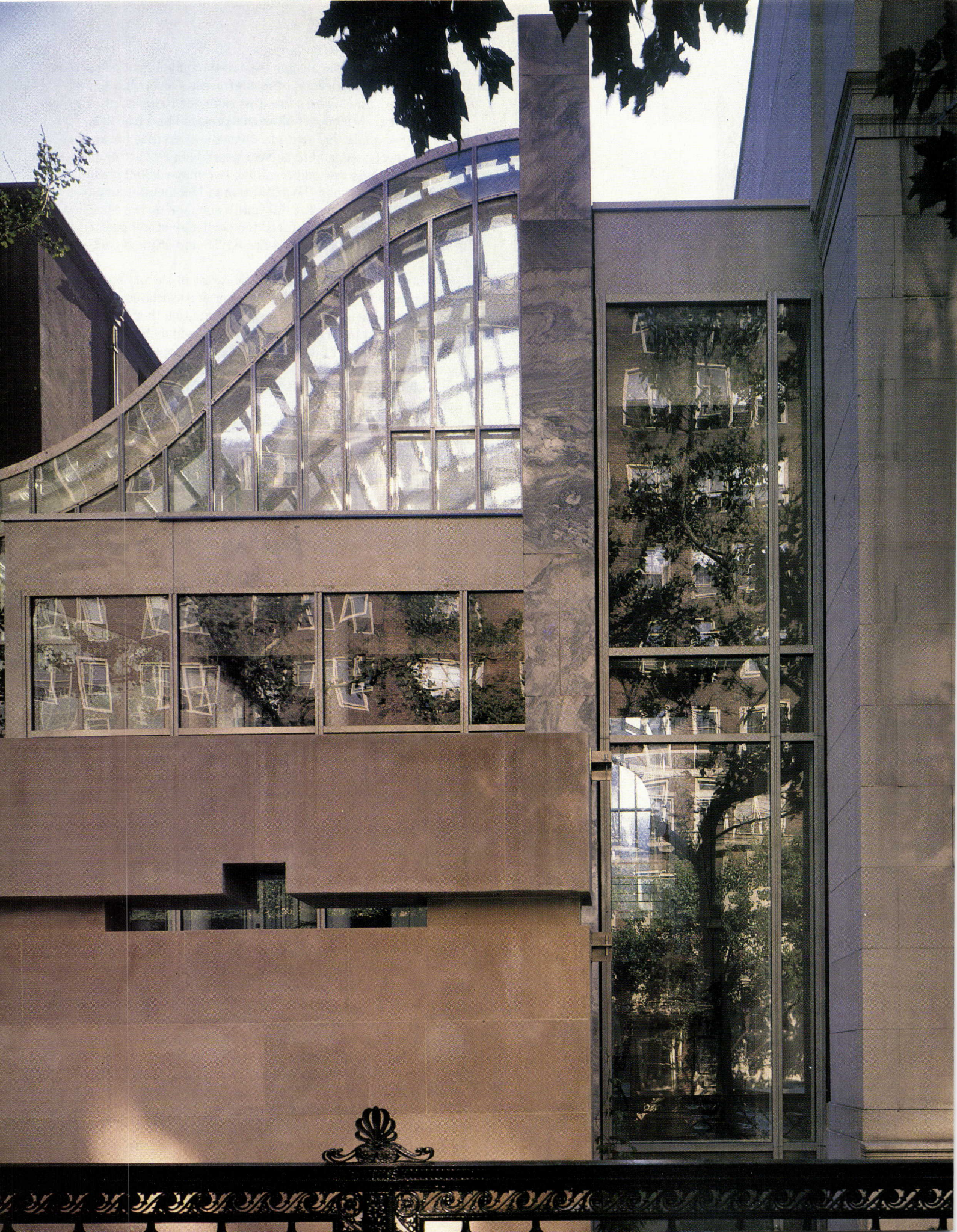
The Morgan Library has always treated the buildings it inhabits as integral parts of its collection of masterpieces. Occupying one of McKim, Mead, and White's finest works—the Renaissance Revival palazzo built as J. Pierpont Morgan's private library in 1906—certainly helps explain this attitude. Over the years, the library has expanded piecemeal, adding a Neoclassical annex in 1928 and a number of small wings tucked behind the two major buildings in the 1960s and '70s. So when the institution in 1988 bought an adjacent mansion once owned by J. P. Morgan's son, and got an attached office block in the bargain, it faced the challenge of integrating a set of buildings varying greatly in size, style, and original use.

Charged with preserving the historic fabric of the old buildings and adapting them to new roles, Voorsanger & Associates also searched for a way to weave the various components together. The architects' solution is an enclosed garden court: a glass-and-steel counterpoint to the solid masonry of its older neighbors. Slipped between the Italianate mansion on East 37th Street and the Beaux-Arts library on East 36th Street, the court is the essential link to all parts of the expanded complex. Rather than selecting one of the older buildings as the leader of the pack and following its stylistic example, the architects designed the court as a crystalline room that rises 54 feet to a wavelike vault and clearly embodies a Modernist sensibility. "We feel it's important to speak with our own voice in our own time," explains partner-in-charge Bartholomew Voorsanger.

The asymmetrical section of the glass-and-steel vault helps negotiate the change in height from the five-story mansion to the two-story library without favoring either structure. Facing south and rising above the library roof, the vault brings in enough natural light (up to 2,000 footcandles) to let mature olive trees and flowering plants bloom. The break in the vault's profile also moves the highest point of the new structure far enough away from the library so it is not visible from the institution's main entrance on 36th Street. Because the architects couldn't burden the old buildings with extra weight, two-thirds of the new structure's load is supported by a free-standing 55-foot-long truss stabilized by pretensioned cables and set on steel-jacketed columns. To minimize the need for artificial light and emphasize the transparent nature of the garden court, the architects used clear laminated glass for most of the structure, specifying translucent "seeded" glass only for the higher portions of the short east and west elevations.

Cooling every cubic foot under the vault to a uniform 70 degrees "would be prohibitively expensive," says Tom Brashares, the project associate. "But it is unnecessary." By introducing conditioned air from above and placing returns at floor level, the designers ensure that the portion of the greenhouse where visitors roam will be cool, even if the air just below the ceiling is as warm as 105 degrees.

While the Morgan's old exhibit rooms focus on the library's collection of rare drawings, illuminated manuscripts, and first editions of important books, the new garden court looks out to the sky above and Madison Avenue to the west. Landscaped by Dan Kiley with a row of olive trees and walls of climbing fig vines, the court is a modern oasis perfect for resting between galleries. Working with a limited palette of Indiana limestone walls, gray-veined marble floors, and pewter-clad aluminum panels and mullions, the architects have created a restrained but elegant room that works as well by day as by night. One of the few failures here is a freestanding limestone wall along Madison Avenue that shields the glass court from diesel-belching buses and intruders, but is much too massive. By obscuring



David A. Loggie

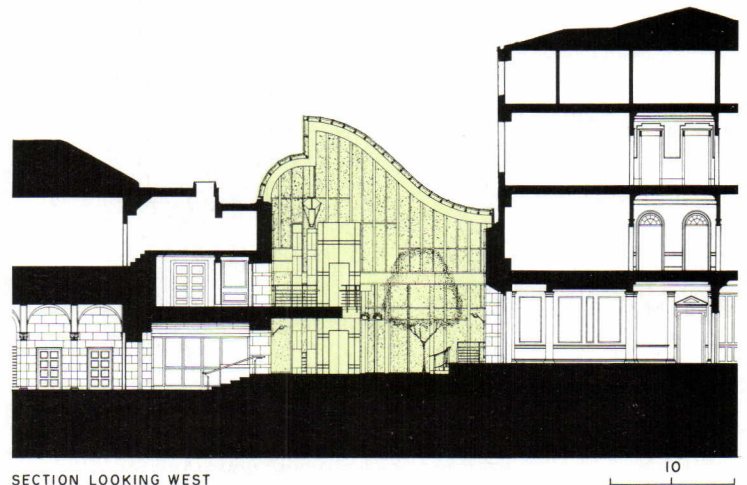
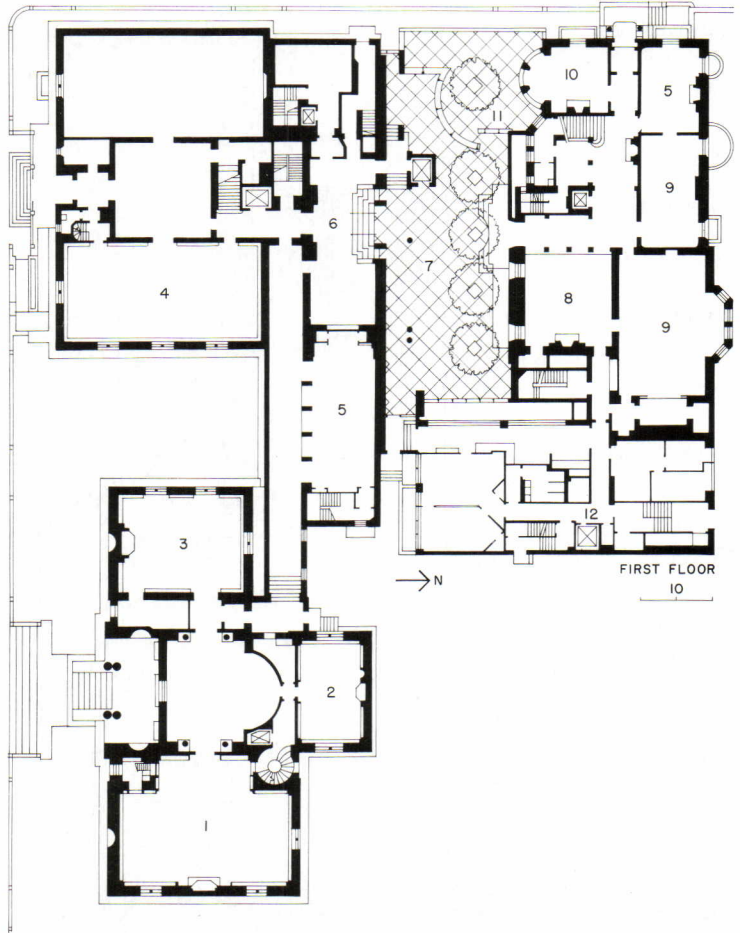


© Jeff Goldberg/Esto

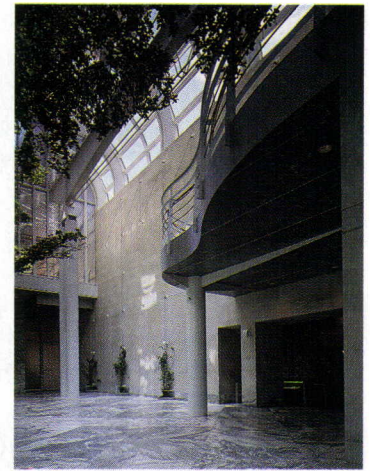
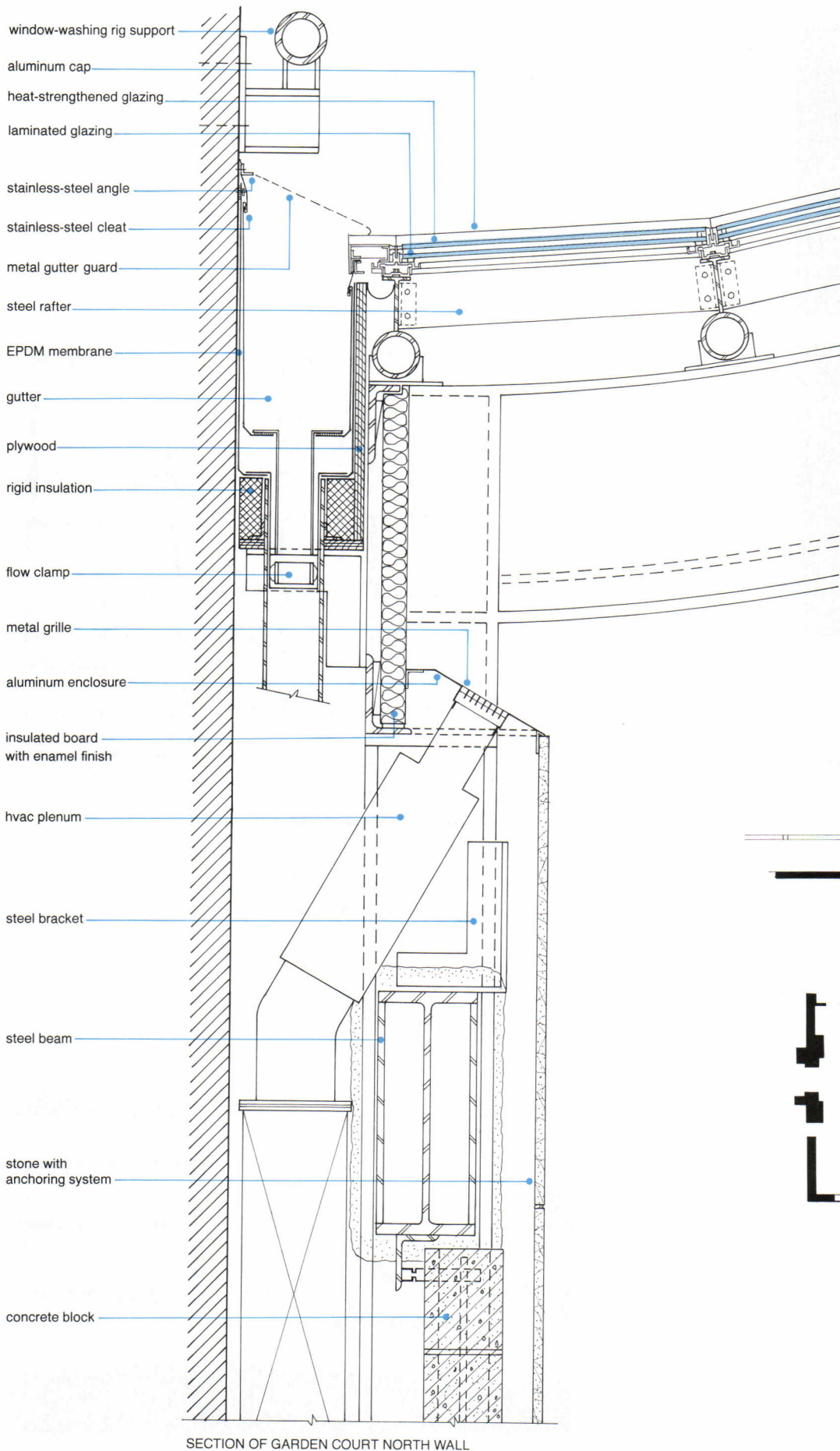


Built for the ages, Charles McKim's original Morgan Library (top) required almost no exterior restoration. The institution's main entrance, at the 1928 annex (above), received wider stairs and a new handicap-access ramp, neatly tucked behind a metal fence.

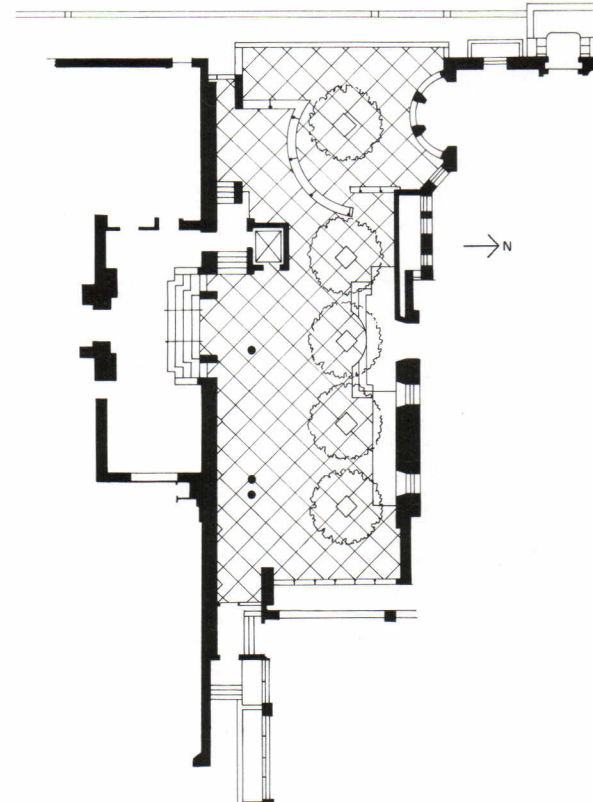
- 1. East room
- 2. North room
- 3. West room
- 4. Reading room
- 5. Exhibition room
- 6. Vestibule
- 7. Garden court
- 8. Bookstore
- 9. Lecture room
- 10. Lounge
- 11. Terrace
- 12. Storage



SECTION LOOKING WEST



Section drawing (left) shows how the garden court's glass vault meets the stone wall of the Morgan mansion. A window-washing rig slides along the outside of the vault on two tracks (lower one seen in drawing). Interior surface of the vault is cleaned from a scissor-jack lift driven on the floor of the court. Metal railings and trim in the court are either painted white or oxidized cobalt blue or green (above and opposite). An elevator (opposite) is surfaced with pewter laminated onto aluminum panels.





the point where new meets old, the wall defeats the architects' intent to contrast masonry architecture with a more ephemeral Modern addition.

While the new garden court was a bold stroke in conception and execution, the renovation of the existing library and mansion was a more subtle effort. The Charles McKim-designed library, whose stones were cut and placed so precisely that no mortar was necessary, has remained in excellent condition and required no major preservation. Adapting the building and its annex to the needs of an expanding institution, however, required a few key interventions.

First among these was upgrading the complex's main entrance to reflect the Morgan's higher public profile. Although the architects considered moving the entry to the original library—whose grandly proportioned 36th Street facade has few equals—the presence of delicate frescoes and a Renaissance wood ceiling made such a change unwise. Instead, the architects enlarged the existing annex entrance, widening its stair from 11 to 22 feet and moving its metal fence from the bottom of the stair to the top. While the Morgan might have asked for a variance from new accessibility requirements due to its status as a landmark, the library's director, Charles E. Pierce, Jr., felt it was important to open the institution to as many visitors as possible. As a result, a new switchback ramp was built along the east side of the main stair, tucked discreetly behind the elegant old fence. Separate ramps linking the annex and the mansion to the new garden court, along with a new elevator in the garden court, make all public areas accessible to the handicapped.

In the 1928 annex Voorsanger & Associates converted what had been the bookstore into gallery space, in the process opening up a series of piers and revealing the full effect of the room's gray-hued mosaics. The architects also added a new vestibule connecting the annex to the garden court, using traditional elements such as cherry paneling, marble flooring, and a gentle barrel vault to ease the transition from the old to the new. One floor below this vestibule, the designers installed new restrooms.

The major work in the original library building involved restoring the interiors to their full glory: cleaning the murals by H. Siddons Mowbray in the rotunda and the East Room for the first time and improving lighting. In addition, for the first time in two decades, visitors are now able to fully enter Pierpont Morgan's private study and appreciate its coffered wood ceiling and elegant proportions.

Although wood structural members in the J. P. Morgan, Jr. mansion raised the possibility of fire and made locating precious artifacts there too risky, Voorsanger & Associates put the Italianate building to good use. The firm converted upstairs bedrooms into offices and adapted first-floor parlors into lecture rooms, all the while maintaining a residential tone. And by replacing a solid bearing wall on the main floor with a row of four columns, the architects created a new bookstore that visitors can see as they enter the mansion from either the garden court or Madison Avenue. (The dull five-story office block next door was converted into storage and someday will be torn down to make way for future growth.)

With an extra 50,000 square feet of display, office, and storage space, the Morgan Library is a new institution with an expanded mission. What hasn't changed, though, is the sentiment expressed by critic John Russell in 1986, that the "Library has to be one of the best places in which to be walled up alive." *Clifford A. Pearson*



In the Morgan mansion, the architects opened up the hallway (top) by replacing a wall with a row of columns now looking onto the new bookstore (above). In McKim's 1906 building, murals by H. Siddons Mowbray in J. P. Morgan's personal library (opposite) were cleaned for the first time since 1906.

Credits

*The Pierpont Morgan Library Addition and Renovation
New York City*

Owner: *The Pierpont Morgan Library, Charles E. Pierce, Jr., director*

Architect: *Voorsanger & Associates—Bartholomew Voorsanger, partner-in-charge; Tom Brashares, associate; Paula Mary Murphy, Shu Hashimoto, Noel Clarke, Louis Batsch, William A. MacIntosh, Alistair Reilly, Amanda Crocker, project team*

Engineers: *Weidlinger Associates (structural); John Altieri Engineers (mechanical)*

Consultants: *Carbone Smolan Associates (graphics); Office of Dan Kiley (landscaping); H. M. Brandston & Partners (lighting)*

General Contractor: *Lehrer, McGovern, Bovis*



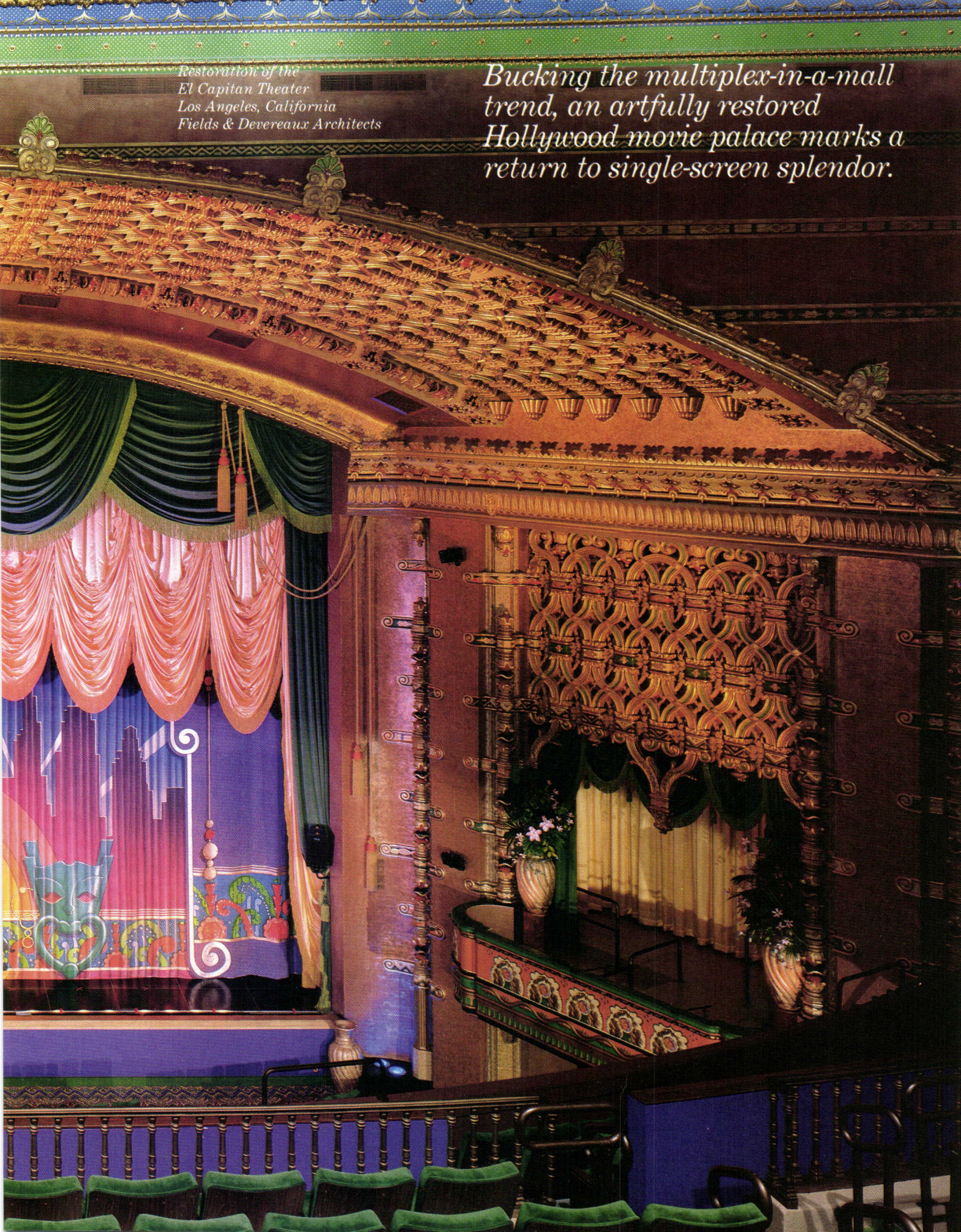
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INTER ANHELATAS SEMPER AVARVS OPS

Hollywood Comeback



Restoration of the
El Capitan Theater
Los Angeles, California
Fields & Devereaux Architects

Bucking the multiplex-in-a-mall trend, an artfully restored Hollywood movie palace marks a return to single-screen splendor.



If the invention of ornate movie palaces early in this century represents one of America's architectural glories, the swift destruction of this unique legacy following World War II is one of our great architectural shames. Only a few theaters built between 1910 and 1940 remain, and most of these have been unceremoniously chopped up into soulless multiscreen houses. All of which makes the recently completed restoration of the El Capitan Theater a remarkable preservation story. The theater, part of a six-floor office building located just across Hollywood Boulevard from the more-celebrated Chinese Theater, was designed for live performances in 1926 by G. Albert Lansburgh in a typical (for the '20s) blend of Baroque, Moorish, East Indian, and Churrigueresque elements. In 1941, the El Capitan was renamed the Paramount and converted into a motion-picture house by architect William Pereira, whose redesign concealed much of the original architecture with drop ceilings and corrugated plaster, removing balcony boxes and a pair of Baroque columns in the process.

In 1987 Pacific Theaters, the Paramount's operator, and Buena Vista Pictures, the distribution arm of Disney, recognized the theater's potential as a showcase house that patrons might seek out for its architecture *and* its show. (The two companies had previously collaborated on the successful redesign of the old Crest Theater in Westwood.) Unlike the Crest, however, which is in an affluent area where moviegoing remains a nightly ritual, the Paramount was an underutilized house situated in a rundown neighborhood. Then, too, the developers had to run the gauntlet of public and private agencies—ranging from the National Parks Service to the Community Redevelopment Agency and local homeowner associations—all of which had a say in the project's direction (faithful restoration or less-costly preservation? One screen or a fiscally sounder two?).

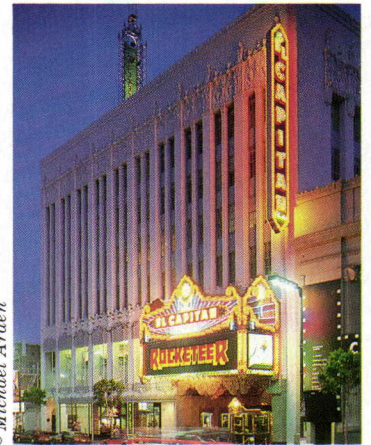
Pacific and Disney persevered with a single-screen, 1,100-seat scheme carried out by a group of theater consultants and preservationists, all overseen by architects Fields & Devereaux. After five months of cleaning and asbestos removal, the team discovered that much of the El Capitan's original auditorium and lobby ceiling survived, albeit badly damaged by six- by eight-foot holes cut for Pereira's drop ceilings. With the aid of old photographs and existing plaster fragments, conservators were able to reproduce lost plaster ornament in the theater and cast-stone medallions on the outer-lobby walls. In a bit of Hollywood-style illusion, moreover, the outer-lobby floor is concrete, colored and grouted to mimic Spanish tile.

In bringing the El Capitan up to current code, the developers received a couple of breaks. First, because the interior was listed on the National Register, they got concessions on handicap accessibility, though they did modify the ground-level rake to accommodate wheelchairs. What's more, the steel-framed theater needed minimal seismic upgrading, save for some strengthening of the proscenium. Mechanical and electrical systems, however, needed complete replacement (principal-in-charge Edwin Fields recalls that the new marquee alone required a 2,000-amp service, more than for the entire old Paramount). To make the auditorium more sound-absorbent, the architects stretched a scrim across the rear wall.

More important from the patron's point of view, new ellipsoid framing fixtures and filtered PAR cans now illuminate the auditorium's ornate walls and ceiling, reminding viewers that moviegoing was once an event. When the three curtains concealing the El Capitan's 42- by 20-foot screen open and close for each film, and a new THX-certified sound system pours forth "Hooray for Hollywood" between performances, one senses that it still is. *Paul M. Sachner*



© El Capitan Theatre Co.



© Michael Arden

The El Capitan opened in 1926 (top), the second of three stage theaters built in Hollywood by developer Charles Toberman (the first, the Egyptian, opened in 1923; the third, the Chinese, in 1927). In 1941 the El Capitan was converted to a Streamlined Moderne movie house and renamed the Paramount. Fifty years later an \$8.65-million restoration has returned the El Capitan to its original form (above). Though much of the 1,100-seat theater's ornate outer-lobby ceiling survived the 1941 remodeling behind a drop ceiling, the original gilded plaster required extensive repair (cover and opposite).

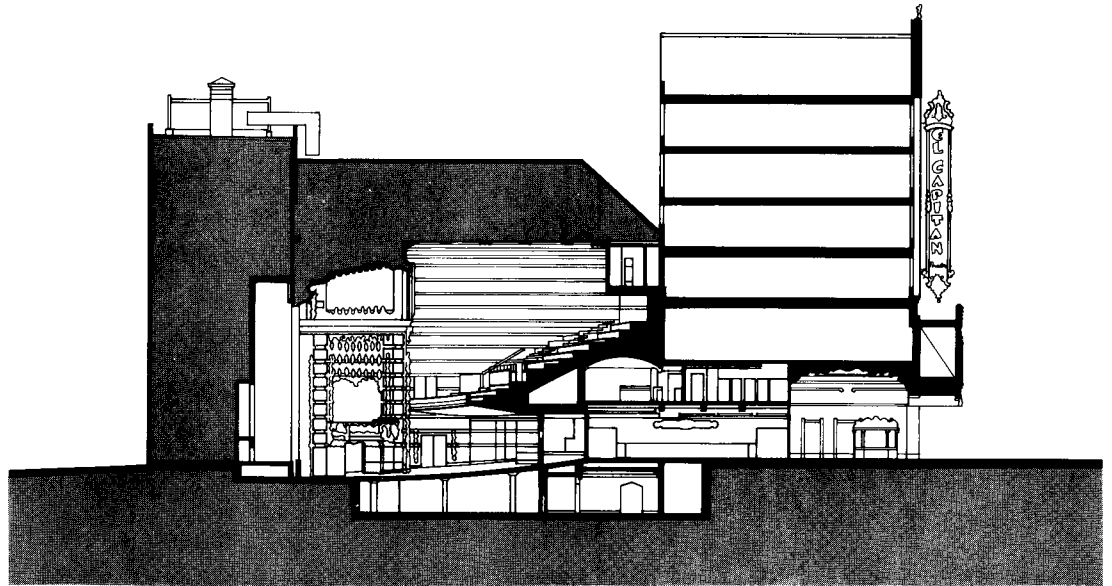
© Tim Street-Porter photos, except as noted



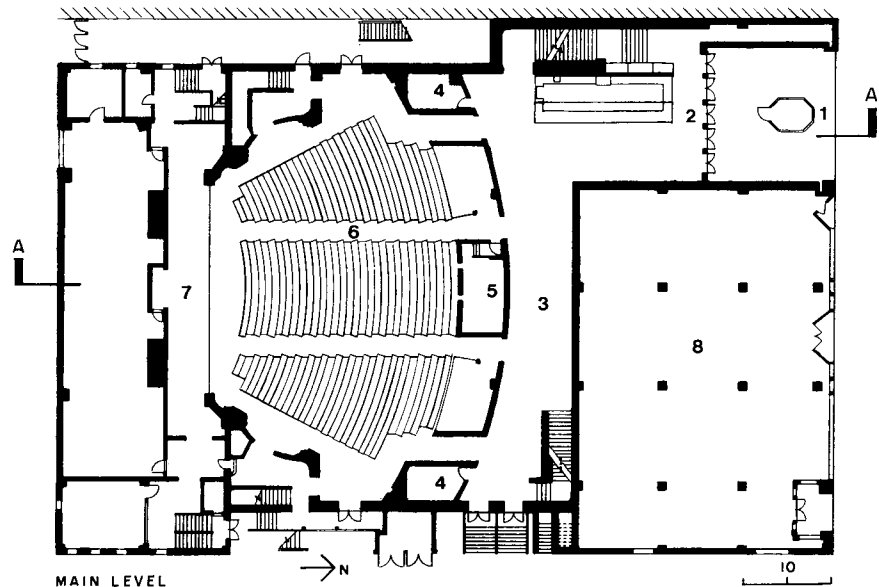


EXIT

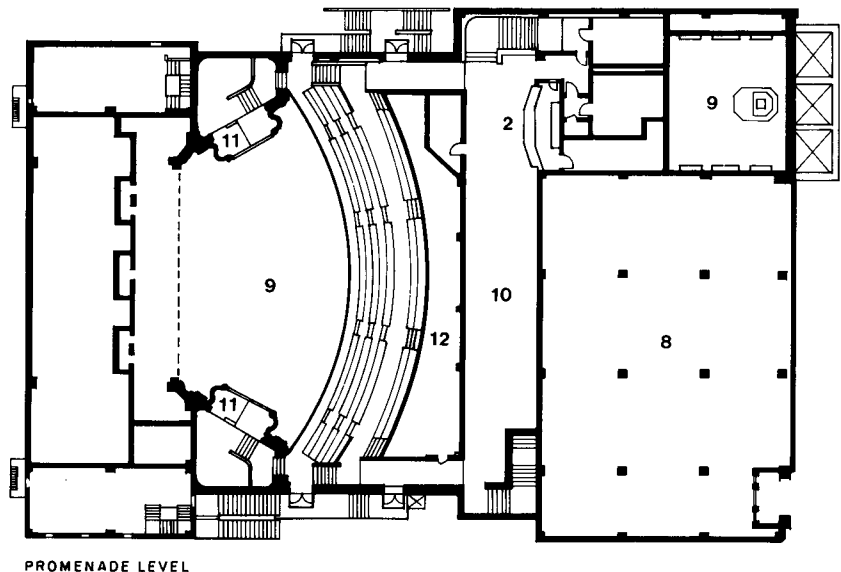
Although the theater's opera-box interiors survived the 1941 remodeling, their balcony faces had been sawed off and two massive Baroque columns flanking the stage removed. Cost constraints precluded replacing the columns (new shafts of colored uplights make up for the loss today), but a team headed by conservator J. Ronald Reed rebuilt the opera boxes and replaced other missing ornamental detail in the auditorium (opposite). The job required an onsite plaster shop, where Reed's staff worked with over 40 different plaster-casting molds.



SECTION A-A



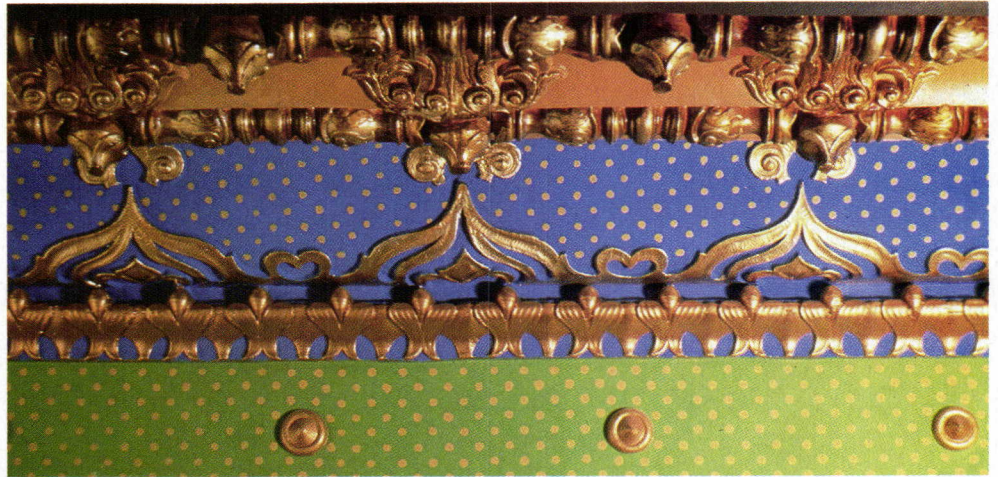
1. Box office/entry
2. Concessions
3. Lobby
4. Restrooms
5. Projection booth
6. Auditorium
7. Stage
8. Retail/office
9. Open to below
10. Promenade
11. Opera box
12. Mechanical



PROMENADE LEVEL



The entrance lobby's heavily damaged stenciled ceiling was re-created with the aid of remaining fragments and historic photographs that enabled restorers to piece together the original geometric pattern (top). In the auditorium, a team of conservators used plaster molds to replicate damaged cornice moldings (middle) and ceiling coffers. Although the painted wall mural of the theater's lower promenade appears to be a restoration (bottom), it is actually a completely new work of art that evokes vaguely East Indian motifs inside the auditorium. Opposite photos: the lower promenade (top) and upper promenade (bottom) feature new patterned carpeting, restored chandeliers, and rehabilitated walls of cast stone. Decorative urns, benches, and refreshment bars on both promenades are new elements that blend unobtrusively with the old.



Credits

Restoration of the El Capitan Theater
Los Angeles, California
Owner: Pacific Theatres and Buena Vista Pictures Distribution, Inc.
Architect: Fields & Devereaux Architects—Edwin L. Fields, principal-in-charge; Robin Meierding, project architect; Glen Edward Murphy, job captain
Engineers: Ismail & Otova (structural); Helman & Lober (mechanical); John Snyder & Associates (electrical)
Consultants: Pat Gallegos (lighting); Martin Weil (preservation consultant); Joseph Musil (theater consultant); J. Ronald Reed (conservator)
General Contractor: Turner Construction



Saved for Sound



*A deteriorated 70-year-old
balloon hangar is reborn as
a performing-arts center.*

*Fort Worden Balloon Hangar
and McCurdy Pavilion
Port Townsend, Washington
The Bumgardner Architects*



Fort Worden was built on Washington State's Olympic Peninsula around 1900 to protect the narrow inlet that leads from the Straits of Juan de Fuca to Puget Sound. During World War I, the U. S. Army tried using manned weather balloons tethered on each side of the windswept inlet as reconnaissance platforms. The experiment failed after six months, but not before a contract for constructing the Fort's balloon hangar had been let. The building, erected in 1921, never actually housed a balloon, and until recently was known mainly as a location set for the film *An Officer and A Gentleman*.

Today, the hangar is the unlikely centerpiece of an unusual adaptive-use project sponsored by Centrum, a nonprofit performing-arts group based at Fort Worden. Not long after becoming state property in 1972, the long-decommissioned fort was placed on the National Register of Historic Places. That made any new building on the site (as opposed to alteration) virtually impossible. But when Centrum outgrew the mule barn and circus tent that had been its quarters, the state encouraged the group to develop the balloon hangar as its new performance space. A few years and \$2.2 million later, the hangar was reborn with the added McCurdy Pavilion attached.

The Bumgardner Architects' design is simple. The 10,700-square-foot hangar now houses a portable thrust stage, with removable seating at the wings, permanent sound and lighting booths, and dressing and green rooms. Other theatrical necessities—catwalks, spiral staircases, ladders, and conduit—were skillfully fit into the hangar's steel structure. Matching corrugated metal skin replaced the original, and metal frames in the clerestories were reglazed. The new 9,500-square-foot pavilion, attached at a right angle to the balloon hangar, houses permanent seating, restrooms, and concessions. By wisely not attempting to match the new pavilion to the existing hangar, the architects strengthened the hangar's distinctive profile. New structural steel is painted burgundy rather than the original's gray, and a much lighter gray was chosen for the skin. The new is compatible with, but at the same time different from, the old.

The pavilion seats 1,620, and 2,000 more can enjoy performances outside when two 23- by 46-foot hangar doors are opened. The building's acoustical performance has received glowing reviews from Seattle music critics, who have wondered in print how a big metal barn can be "acoustically . . . better than the Music Shed at Tanglewood." This high quality is no accident. The hangar's interior is covered in corrugated metal, peppered with nearly imperceptible 3/32-inch holes, 3/16 inch on center. These openings expose sound-absorbing fiberglass plenum insulation, allowing most of the hangar's walls and roof to function as acoustical control surfaces. To improve sound quality further, local boatbuilders fabricated curved wood acoustical reflectors that hang over the stage. *Charles D. Linn*

Credits

*Fort Worden Balloon Hangar and McCurdy Pavilion
Port Townsend, Washington*

Owner: Washington State Parks and Recreation Department

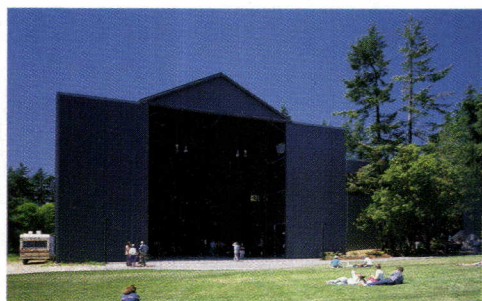
Architects: The Bumgardner Architects—Robert H. Schneider, principal-in-charge; Jim Replinger, project architect; Kay Fleenor, Mark S. Smedley, Thomas Gerard, design team

Engineers: Chalker, Putnam, Collins & Scott (structural); Centrac (mechanical/civil); Travis Fitzmaurice Associates (electrical); Michael R. Yantis & Associates (acoustical)

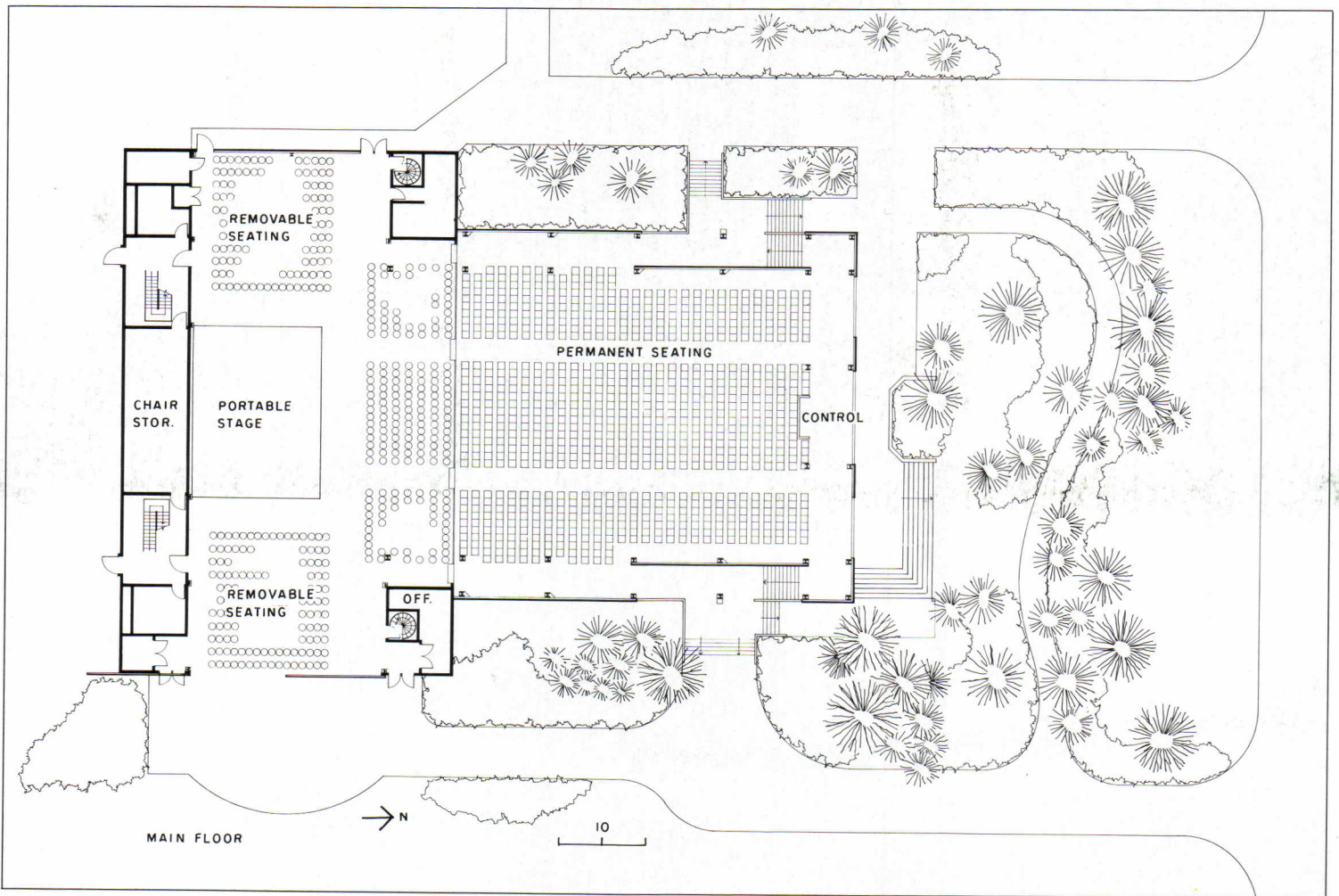
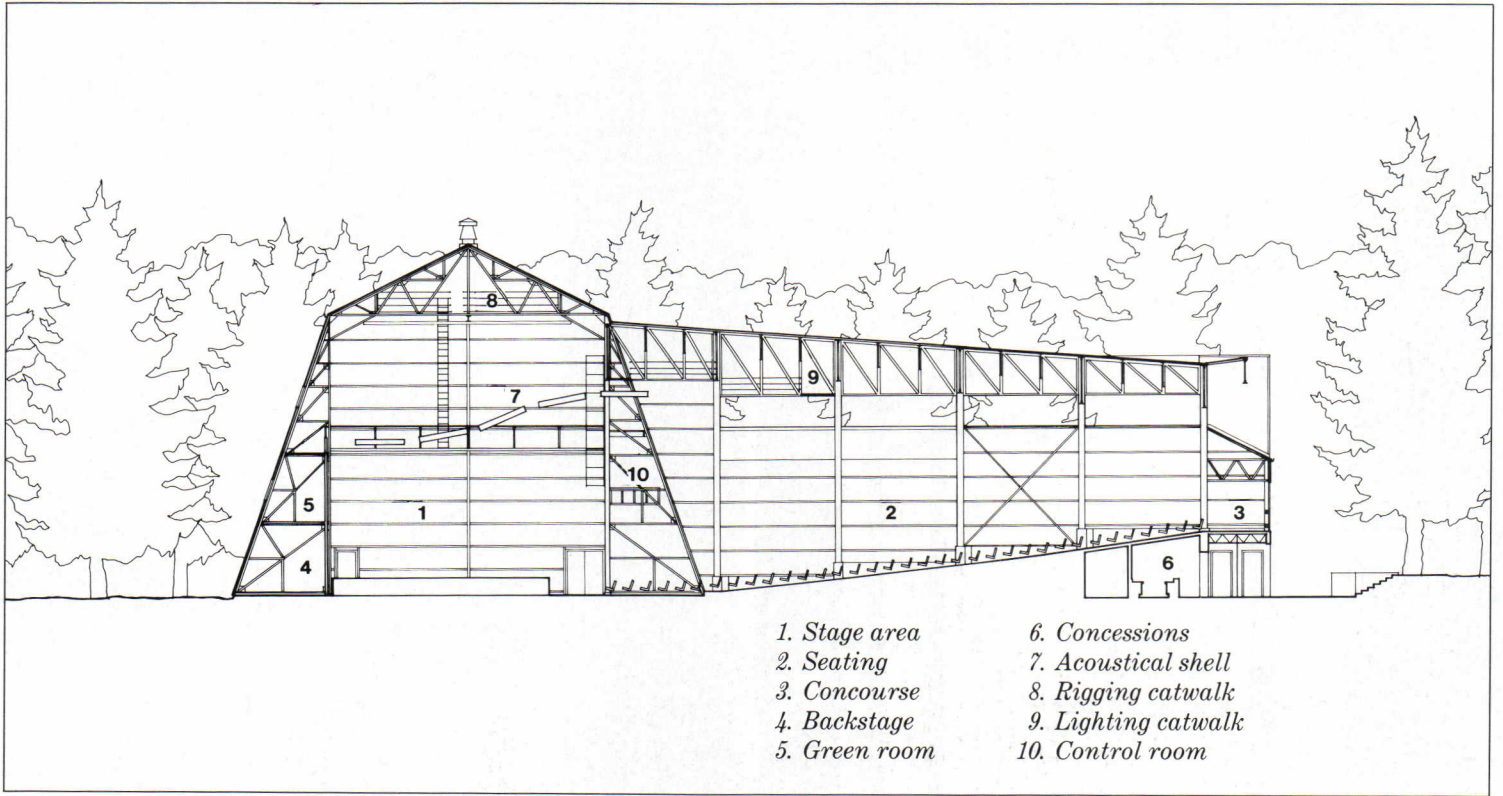
Consultants: Armand R. Marion (theater); The Collaborative (landscape)

General Contractor: The Vemo Company

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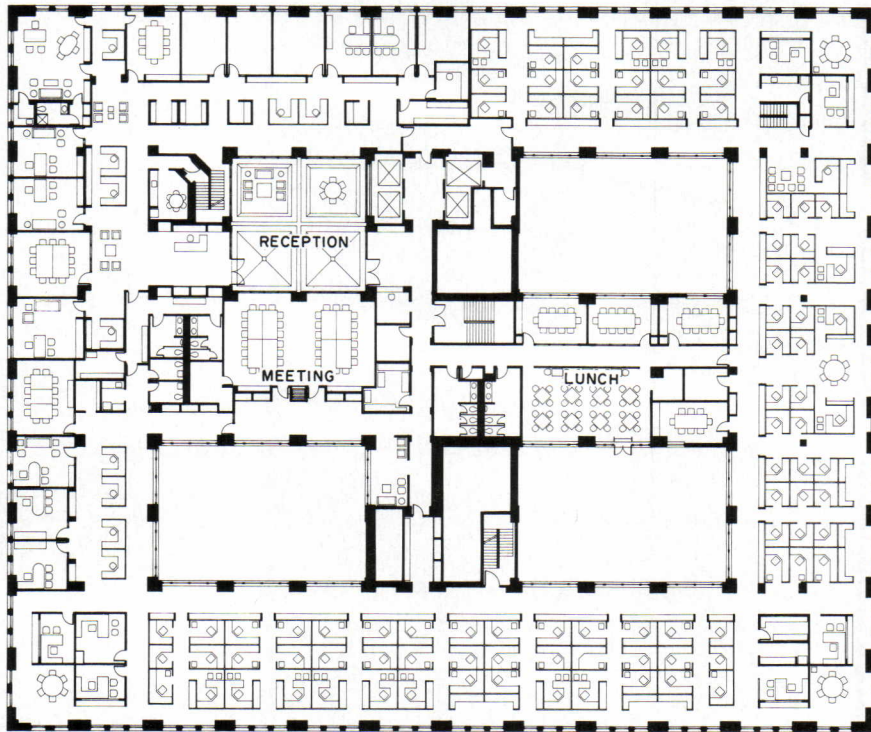


After stripping away the balloon hangar's original corrugated-metal siding (top) the architects added new steel cross bracing to help the structure resist the Olympic Peninsula's high wind loads. During performances, the hangar's 23- by 46-foot doors can be rolled open (middle), allowing spectators to enjoy the music on Littlefield Green, a grassy field that once would have been the balloon staging area. Inside the new McCurdy Pavilion (bottom), audiences seated on raked auditorium chairs watch artists perform on a portable stage situated in the former balloon hangar.

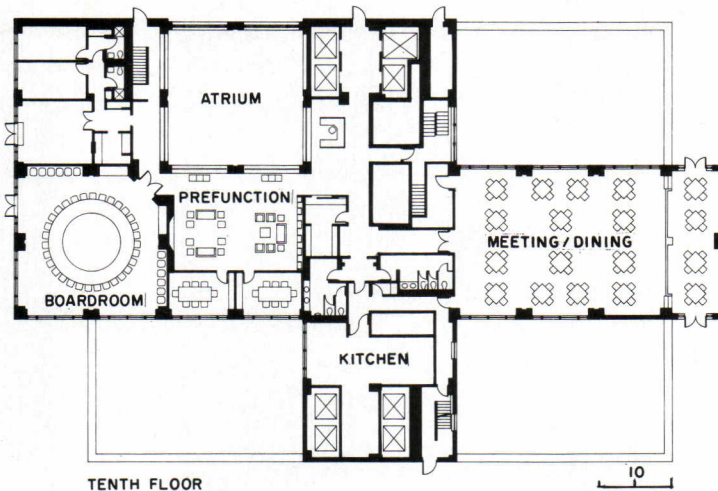








NINTH FLOOR



TENTH FLOOR

The area most frequented by the union rank-and-file is a large reception room on a "street" (bottom far left) bordering the benefit funds' eighth-floor offices. Glass-fronted offices and conference rooms on the outer wall admit borrowed daylight and introduce maple accents that reappear on a row of wood-clad freestanding columns.

On the ninth floor (plan left), the benefit funds yield space to central common facilities—clinic, employee lunchroom—as well as to the district council's corner suite. The two-story atrium extends its skylit space to the tenth-floor penthouse, where it meets the balcony of a prefunction lounge outside the boardroom.

The vaulted ceiling of the lounge (bottom left) exemplifies the architect's exploitation of the penthouse's pitched roofs. In both the boardroom (below opposite) and the larger meeting/dining room (above opposite), ceilings form outside coffers that add height and integrate lighting and mechanical elements. Adjacent rooftops are used as terraces.

Credits

Headquarters Building
United Brotherhood of
Carpenters and Joiners
New York City

Owner: 395 Hudson Street
Associates

Architect: Davis, Brody &
Associates—Lewis Davis,
partner-in-charge; Nathan
Hoyt, associate partner;
Christopher Grabé, project
architect; Margaret Sedlis,
Anthony Louvis, Norman
Dorf, Dan Dougherty, Meg
Chapman, Aaron Naveh, Lelia
Gilchrist, Maria Guarneri,
Frank Michielli, Gene Park

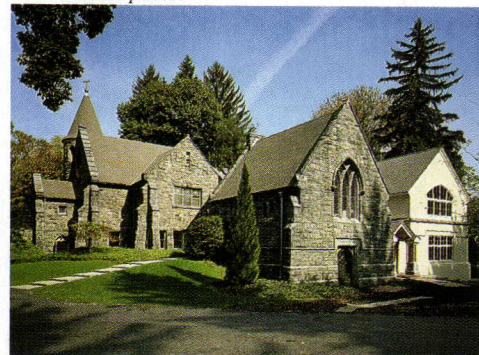
Engineers: Weidlinger
Associates (structural);
Cosentini Associates
(mechanical)

Consultant: Fisher Marantz
(lighting)





© Mick Hales photos



Duo Dickinson's addition to an addition to the Church of St. Joseph of Arimathea doubles the size of the existing parish house and completes it visually by capping it with an upper story. But to parishioners, less dramatic enhancements—a window cut here, a hall widened there—are no less important. Built in 1883 as a mortuary chapel for a wealthy family who added an ell c.1900, St. Joseph's is a picturesque country-Gothic assemblage of rusticated granite perched on a knoll amid carefully tended grounds. By the early 1950s it had become a parish church whose broader activities spurred the building of a second wing to serve as parish hall. Joined to the rear of the church at crypt level, the resulting flat-topped box of concrete block was ungainly and "unfinished" in appearance from the start. By the late 1980s it was outgrown as well.

Although another large meeting space and adequate church offices headed the building program, the parish hoped to expand its social and educational domain without forfeiting domestic character: the choice of an architect known best for modest but seemly houses was no happenstance. Welcome was to be extended in two ways. As a practical matter, the revamped parish hall was to ease access to a sanctuary then reachable only via daunting stairs inside or out. Symbolically, it was to replace the perfunctory entrance and pinched vestibule with an inviting portal.

The principal element of the addition is a multipurpose room placed directly over the existing assembly room (plans page 128). The congregation calls the new space "the ballroom" for its generous size and gracious proportions, which were enhanced by framing the roof with a scissor truss that complements the steeply pitched roofs of the church on the exterior but shapes a gentler slope inside. At one gable end a fireplace offers a hospitable hearth. At the other a broad custom window crowned by a shallow splayed arch balances the lancet window fronting the upper floor of the earlier wing, which, freed of other uses, provides the rector a handsome and spacious study.

In the crossing between the two, the new second story finds space behind a low, dormerlike front for a sacristy, an office for parish staff, and a much-needed elevator. Moving and widening the stair relieved congestion in circulation areas on both floors, while a new outer vestibule released space within for a generous downstairs lobby and larger kitchen. Bathrooms and closets burgeoned. ("No house," Dickinson observes, "can have too many closets.")

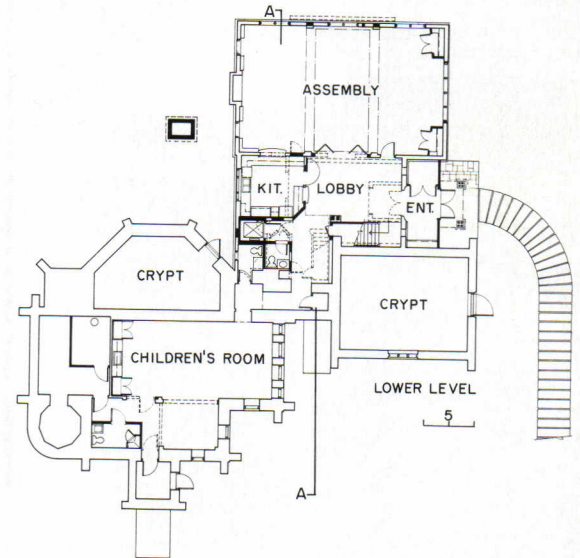
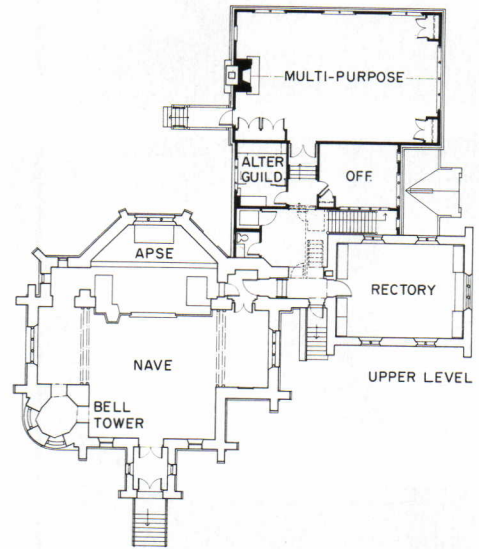
The restraint of the interiors and their seamless merger with the church give way to bravura, however, at the new entry, where a larger-than-lifesize porch of wood, stone, and stucco introduces this big comfortable house for the church family. *Margaret Gaskie*

Tucked into the sloping site, the expanded parish hall is all but hidden from the approach to the church, but a walk across level ground to its entry (opposite) and elevator provides a new, stairfree route to the sanctuary. The second-floor "ballroom" built atop the original assembly hall (above) affords a second egress to grade. Sympathetic roofscapes and window treatments unify hall and church despite the contrasting materials—crisp stucco and muted wood trim—that reinforce the domestic character of the addition.

Erin Gotard drawing







Jennifer Huestis drawings

Although new construction comprised only the multipurpose room (top left), sacristy, and office on the second floor, subtle alterations made the most of existing space as well. Key to improving circulation and widening of the stair (above left and opposite), which also exposed the once-buried stone wall of the adjoining ell. The detailing of the stairwell includes a lighting cove at the eave of the old building and an interior window to the adjacent office. The big arched window in the gable end of the new room is framed by closets.

Credits

Parish Hall Addition
 Church of St. Joseph of Arimathea
 Elmsford, New York
Owner: Church of St. Joseph of Arimathea
Architect: Duo Dickinson, Architect—Duo Dickinson, principal; David Basilone, project architect; William Egan, staff; Leigh Basilone, administrative assistant
Engineer: Martin Gehner
General Contractor: Indorf Construction



Morphosis Metamorphosis

*Salick Health Care, Inc.
Los Angeles
Morphosis, Architect*





“Instead of layering the building horizontally, we separated it into vertical slices,” explains principal-in-charge Thom Mayne. Out of the bland 1960s box that once occupied the site (top), the Salick corporate headquarters was reborn as what Mayne calls a “heterogeneous composition” (bottom and opposite) that resolves seemingly conflicting site conditions.

It started with a bland, 1964-vintage developer package: a four-story stack of offices atop two floors of parking. The building had nothing to do with its west Los Angeles neighborhood, had an identical skin on all four sides, lacked visible entrances, and was awkwardly proportioned. It did, however, have one major asset: in an area of zoning rollback that prohibits new buildings over 45 feet high, it towered 72 feet, providing 37,000 square feet of office space and 18,000 square feet of parking, all on a 10,000-square-foot lot. Dr. Bernard Salick, the owner of a fast-growing chain of outpatient cancer clinics and kidney dialysis centers, wanted to relocate his headquarters in the area and promptly snatched up the building.

Salick turned to Morphosis, architect of his nearby Cedars-Sinai clinic, for the metamorphosis. “All we could really do was subtract,” recalls project architect Mark McVay of the original structure (top left). According to principal-in-charge Thom Mayne, the basic approach was in fact to divide the existing building and make three parts out of one: the building was split down the middle, with the two principal facades clad in radically distinct skins and an honorific granite frontispiece that serves as a lobby. The rationale, says Mayne, was to make a building that “addresses the condition of Los Angeles, which is one of localized events.”

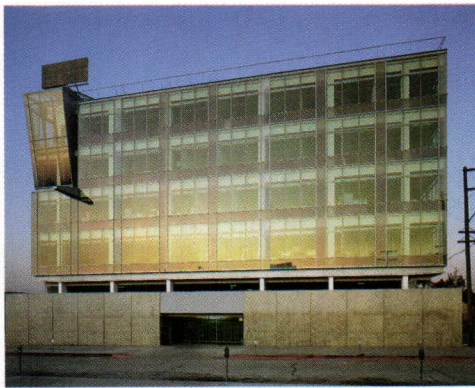
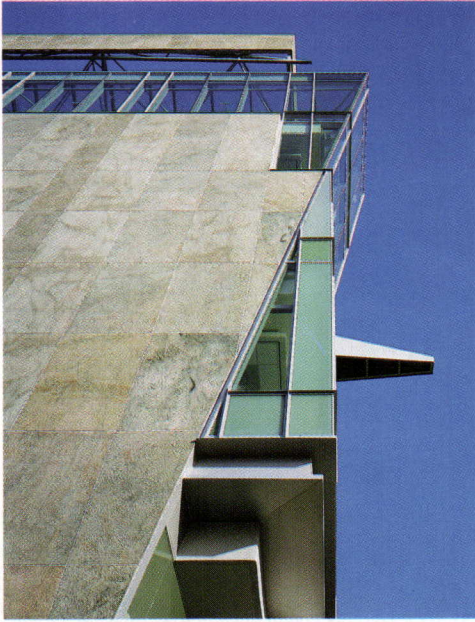
In this case the renovated building needed to address its position at the juncture of a commercial thoroughfare and a side street. The architects’ first task was to return the building to its basic structure and mechanical core. On the east, the stripped-down volume was reclad with a new glass originally developed by Monsanto for the automotive industry. Called Solarflex, it is said to provide the shading and insulating qualities of tinted glass in clear panes, at a cost comparable to standard curtain walls. (To meet California’s stringent energy-conservation codes, designers must often specify deeply tinted glass. Ironically, Solarflex is so clear that the Salick building’s occupants sometimes close blinds to reduce brightness.) The result is Lever House reinterpreted—an elegant assembly whose green cast does not obscure the interior. The architects arranged the glass in a grid over unequally spaced structural bays. “Here too we brought out the idiosyncrasy of the original building,” explains Mayne. The separation between structure and skin is emphasized by the chamfered edges of the slabs and the elongation of the panes, giving the windows and spandrels a vertical rhythm all their own.

The building’s west side was conceived as a black slab—a backdrop for the open cage of the opposite facade. Morphosis used PPG’s dark Solarcool Greylight 14, and then silkscreened a 3/8-inch-wide horizontal ceramic frit onto it at 3/4-inch intervals. The result is a monolithic form that appears to trap light, though the architects admit that it also makes for unusual light patterns inside. The two cladding types allowed the architects to contrast seeming solid and virtual void during the day, while at night the transparency of both facades reveals their connection.

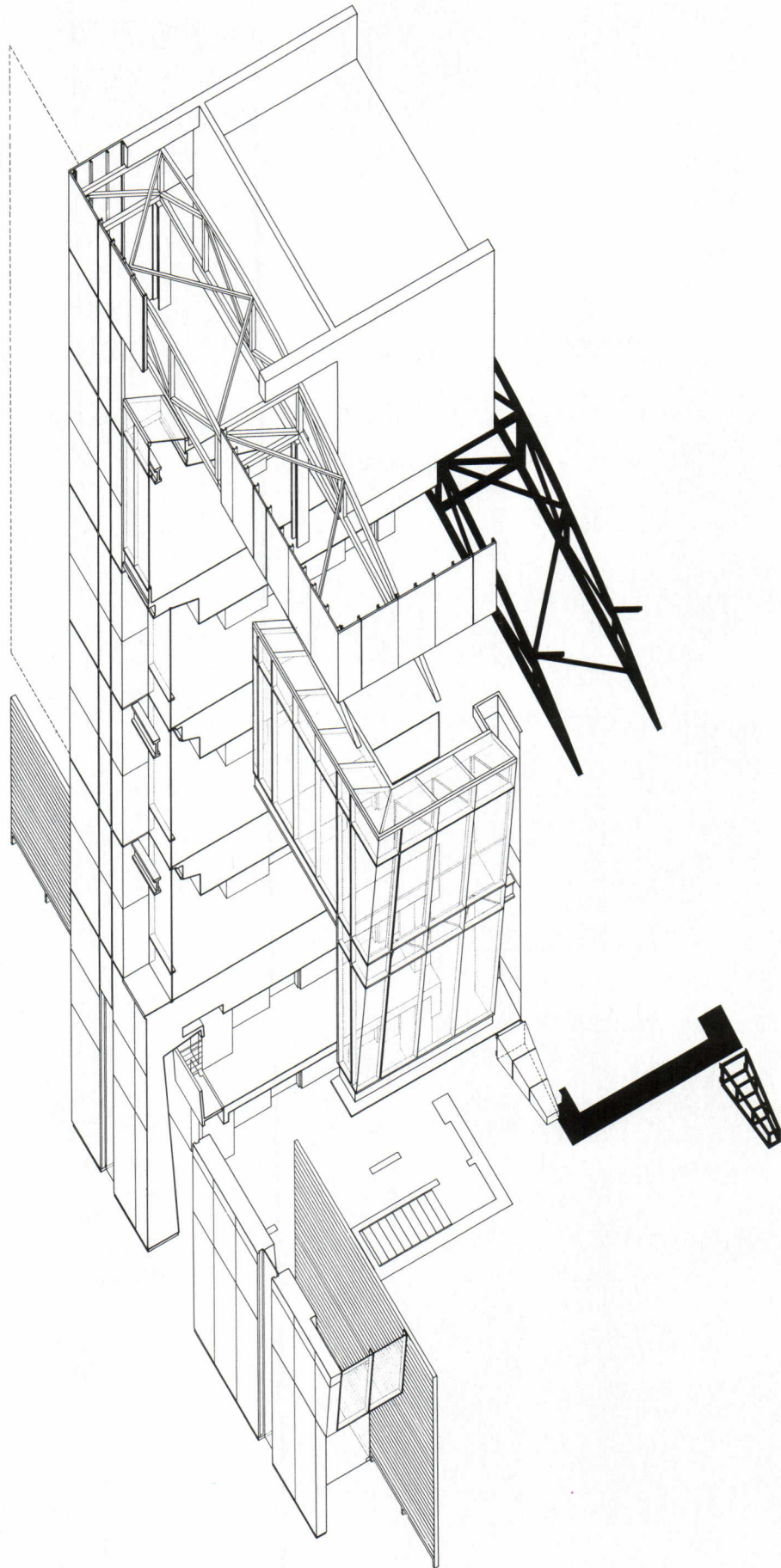
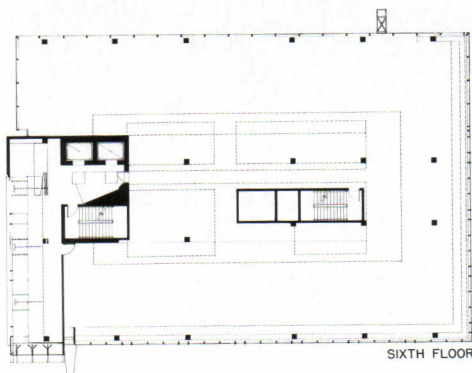
The third component of the composition is the south-facing front, where the owner hoped to present a dignified public facade. Morphosis accommodated him with a granite face that rises above the two glass boxes to screen the mechanical penthouse and provide a vertical contrast to the horizontal expanse. The architects removed a section of the slab on the ground floor to create a two-story entry slot. On the sixth floor, the executive lobby was enlarged with canted floor-to-ceiling windows and a strip of skylights that, in a soothing image for this healthcare company, make its occupants feel as if they are floating down Beverly Boulevard. *Aaron Betsky*







The architects cut back the east and south facades in several places, making the glass skin appear at times a thin plane and at times a crystalline container (photos above and drawing right). The structure of the front is revealed above the sixth-floor lobby, which juts out from its granite frame (opposite). Canted mirrors behind a vertical slot of windows reflect the sky, in effect dematerializing portions of the building.







The narrow entry hall (bottom left) features acrobats by artist John Frame. The executive lobby on the sixth floor (opposite) appears to cantilever beyond the building's constricted site, the effect of leaning windows. Beyond the angled reception area, the boardroom (above) and chairman's office (top left) are covered in American and Brazilian cherry. "We wanted it to look as if the space had been carved out of a wood envelope starting at about 30 inches high," says Mayne of the conference room, "and as if the desk were carved out of the ceiling."

Credits

*Salick Health Care, Inc.
Los Angeles*

Owner: *Dr. and Mrs. Bernard Salick*

Architect: *Morphosis—Thom Mayne and Michael Rotondi, principals; Mark McVay, project architect; Rebecca Bearss, Michael Brandes, Barbara Bouza, Craig Burdick, Cathleen Chua, Todd Dundon, John Enright, Daniel Eggen, Kim Groves, Dominique Jakob, Richard Lee, Sheridan Lowrey, Frank Martens, Alexander Moh, Dian Philips, Daniel Rodriguez, Scott Romses, Craig Scott, Christopher Wahl, Selwyn Ting, Micheal Volk, team*

Engineers: *B-P Consulting Engineering and Ove Arup & Partners (structural)*

Consultants: *Saul Goldin (lighting); Denise Anton, Inc. (interiors)*

General Contractor: *Salick Health Care, Inc.—Timothy F. Siuta, director, corporate construction*





EXIT

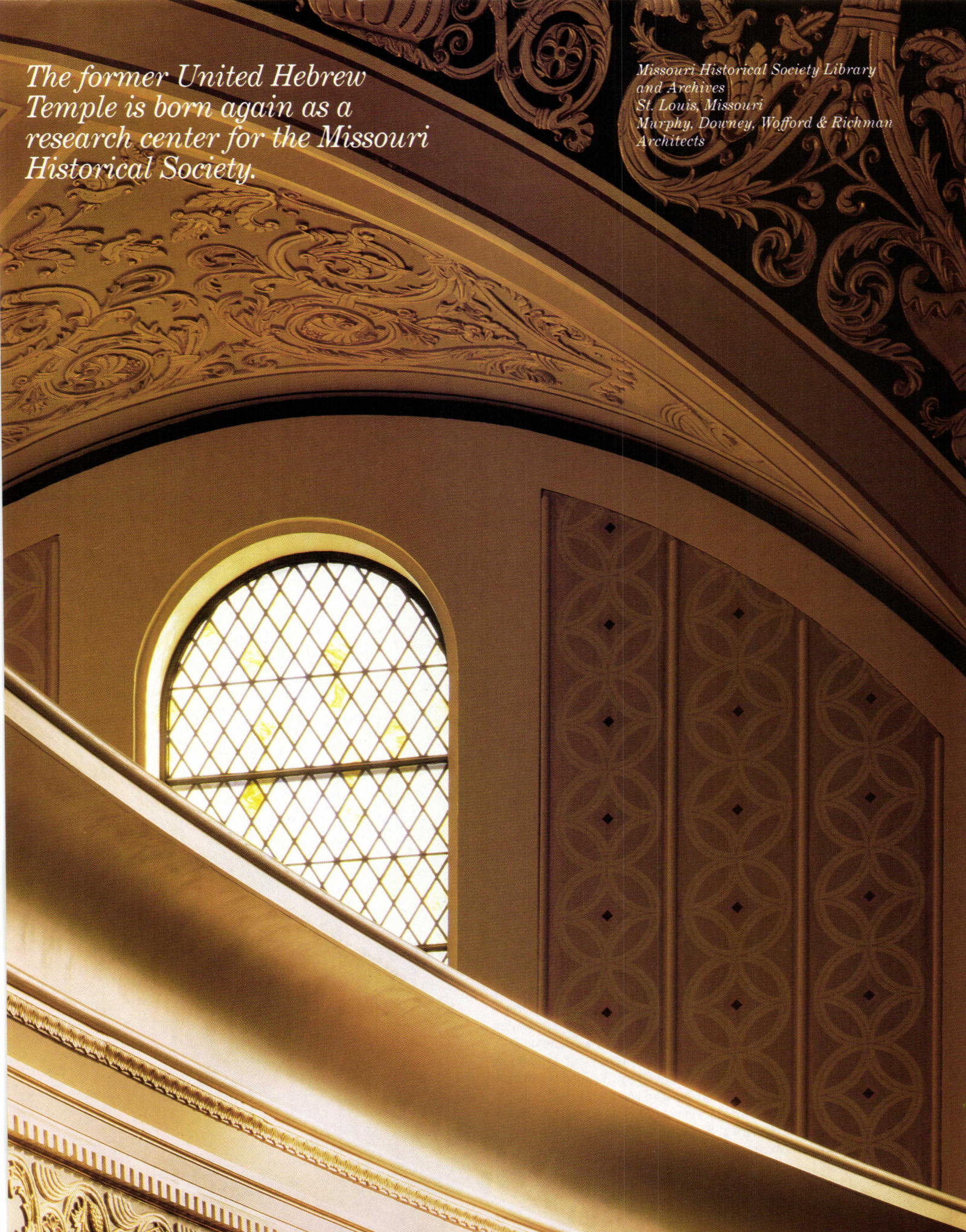
EVER BUTLERS?
Get it here, search it here, find it here!

Religious Conversion



The former United Hebrew Temple is born again as a research center for the Missouri Historical Society.

*Missouri Historical Society Library
and Archives
St. Louis, Missouri
Murphy, Downey, Wofford & Richman
Architects*



It's not always possible to practice what you preach. But the Missouri Historical Society got the chance when it acquired the former United Hebrew Temple on the western edge of Forest Park in St. Louis. Not only would it be able to establish a new research center, but it would be preserving a valuable piece of the state's architectural history in the process.

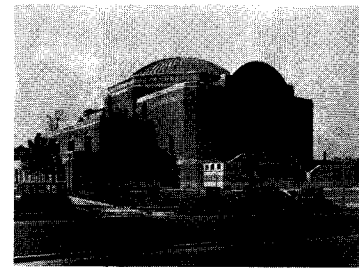
As designed by Murphy, Downey, Wofford & Richman, the new library respects the past without being captive to it. The heart of the project is the sanctuary of the 1925 neo-Byzantine temple which, with its 30-foot-high dome and decorative frieze, has been converted into the library's main reading room. The architects also razed a later classroom addition to make way for a new storage and conservation annex, and reconfigured the building's ancillary spaces to accommodate new offices and stacks.

Designing the four-story, 44,000-square-foot storage annex was somewhat akin to training an elephant to behave at a tea party. First, the architects got the beast to sit, sinking two of its floors below grade. Then they dressed it in a handsome coat of nine different-colored bricks, matching the temple's old skin. Finally, they broke down its bulk into four bays and recessed each one 16 inches from the previous one. Inside the annex, the architects incorporated sophisticated security and fire-safety systems to protect the manuscripts, furniture, and other historic objects stored there.

While the exterior of the 58,000-square-foot temple building required repointing, reglazing, and new roofing, the most dramatic work centered on the former sanctuary. Decorated with plaster in the fashion of movie theaters of the times, the great interior had been remodeled in the 1950s and lost all of the ornament, wall molding, and squat nonstructural columns that once graced its first floor. Unable to re-create these features out of whole cloth, Murphy, Downey, Wofford & Richman designed new wood paneling and bookshelves as background elements for the architectural fireworks above.

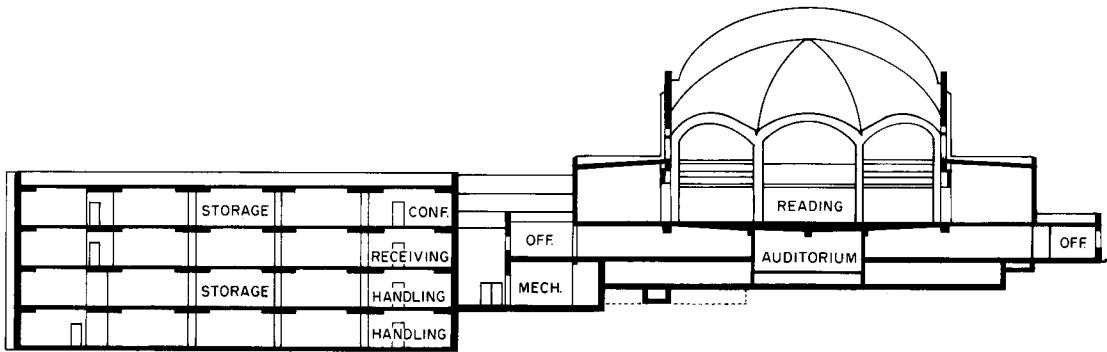
The most important discovery made during the renovation was finding the elaborate frieze that wraps around the room at the base of the second level. Long hidden behind plaster and lath, the frieze had been damaged and even cut in places to make way for ductwork. But the architects brought it back to life by recasting pieces that were missing, repairing other parts, and then cleaning and repainting the entire element. Although the richly decorated dome above is the room's star, the frieze and reconstructed ornament on the second floor play important supporting roles in visually tying the room's various elements together.

The dome itself required extensive work due to water damage and unsympathetic remodelings. On the exterior, the architects repaired copper, added new roofing, and installed new gutters to prevent water seepage. Inside, they stripped all surfaces of the hospital-green paint applied in the last few decades, repaired damaged plaster, and installed fiberglass acoustical panels to absorb sound. The architects then applied a double coat of epoxy paint to create a vapor barrier, wiped glaze on the raised portions of the bas-relief to give them definition, and painted the whole composition. The color scheme used—blue, gold, and ivory—differs from the original (gold leaf, gold paint, and brown stain), but project architect Theodore Wofford believes it is more appropriate for a secular space. The result speaks for itself: by giving new life to an important piece of St. Louis's architectural heritage, the Missouri Historical Society has shown it can lead by example. *Clifford A. Pearson*

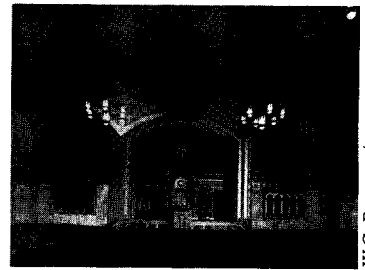


Designed by architect Gabriel Ferrand for the St. Louis architecture firm Maritz & Young, the United Hebrew Temple opened its doors in 1925 (above). In converting the temple to a historical research center, the St. Louis firm of Murphy, Downey, Wofford & Richman added a 44,000-square-foot storage annex and renovated interiors. In the process, the architects rebuilt the front stairs (opposite) and made the complex accessible to the handicapped by adding an elevator.

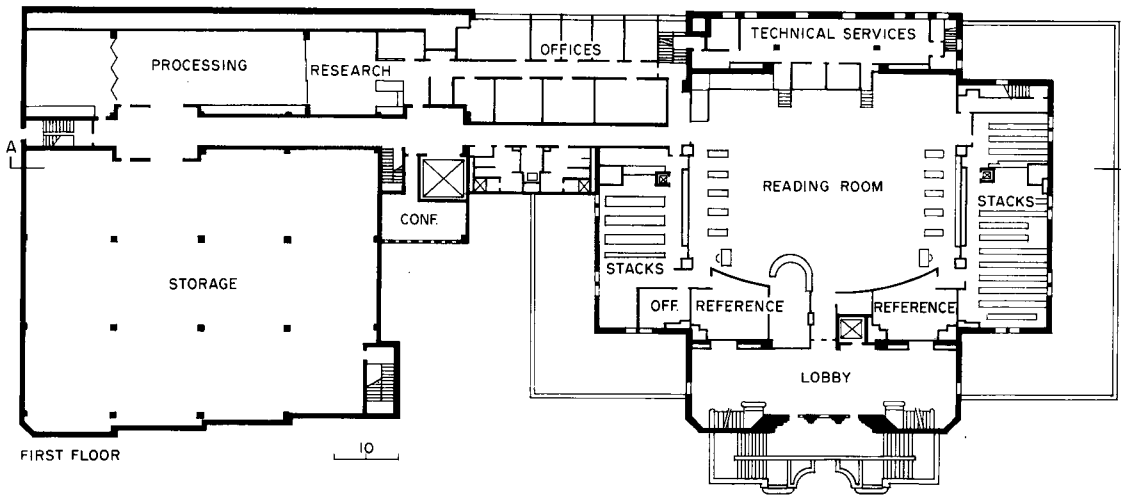




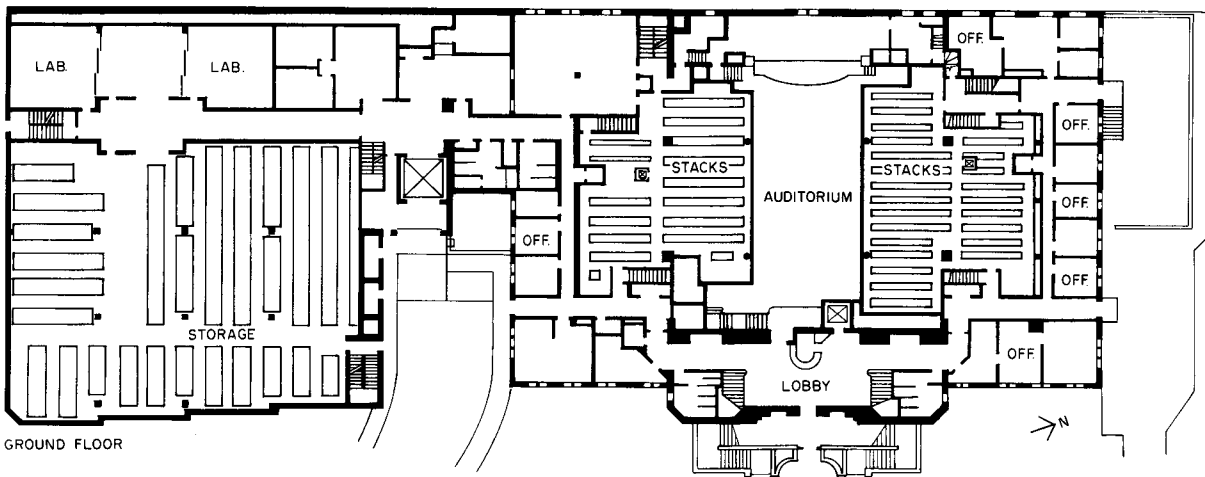
SECTION A - A



The interior of the temple's sanctuary (above) was drastically altered in the late 1950s when the original bema (or altar) and much ornamentation were eliminated. In adapting the sanctuary to a reading room, the current architects restored the balcony-level frieze and dome decoration, recreated the alabaster-and-bronze chandeliers, and designed new reading tables, lamps, and carpeting (opposite). An ice-harvester and chilled-water system maintain a constant 68-degree, 50-percent-humidity environment, while a sophisticated air-filtration system minimizes outside contaminants that might harm historic artifacts.

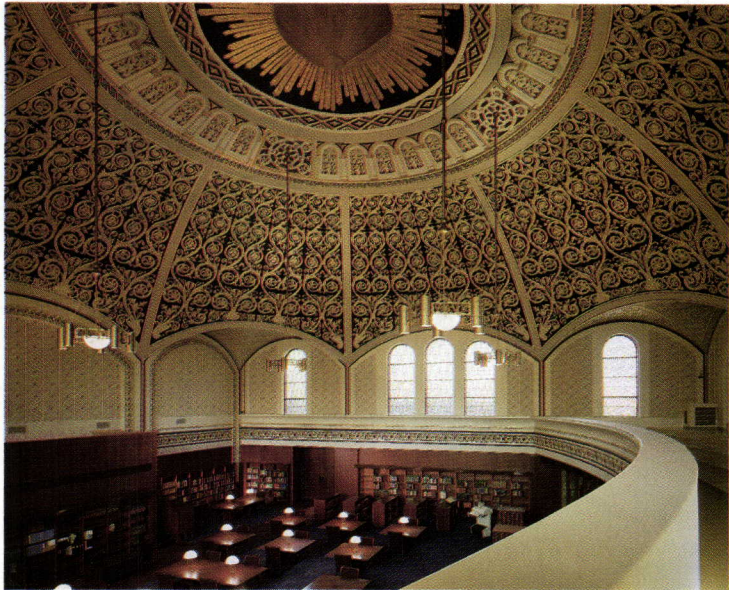


FIRST FLOOR



GROUND FLOOR





Murphy, Downey, Wofford & Richman leveled the sanctuary's raked floor for the new reading room (top left). Wiring for table lamps and future computer terminals now runs below the floor. Like much of the building's ornament, the dome's color scheme had been altered several times over the years. When the current architects began their work, they found the dome painted mostly hospital green. Its original finishes—gold leaf, gold paint, and brown stain—were too heavy and ecclesiastic for a secular space, says project architect Theodore Wofford, so gold, blue, and ivory were selected (opposite). The foyer (middle left) had been radically remodeled in the late 1950s, leaving little of the original design to be restored. As a result, Wofford's strategy for the foyer was to keep it simple. Built to carry loads of 250 pounds per square foot, the four-story annex (bottom left) stores manuscripts, photographs, flags, furniture, and other historic artifacts. To limit the fragile artifacts' exposure to water, the architects used a "dry" sprinkler system that keeps water out of overhead pipes until absolutely necessary and localizes any release to as small an area as possible.

Credits

*Missouri Historical Society
Library and Archives
St. Louis, Missouri*

Owner: *Missouri Historical Society*

Architect: *Murphy, Downey, Wofford & Richman Architects—Theodore J. Wofford, partner-in-charge; Ronald J. Berra, project architect*

Engineers: *Alper Associates (structural); William Tao & Associates (consulting)*

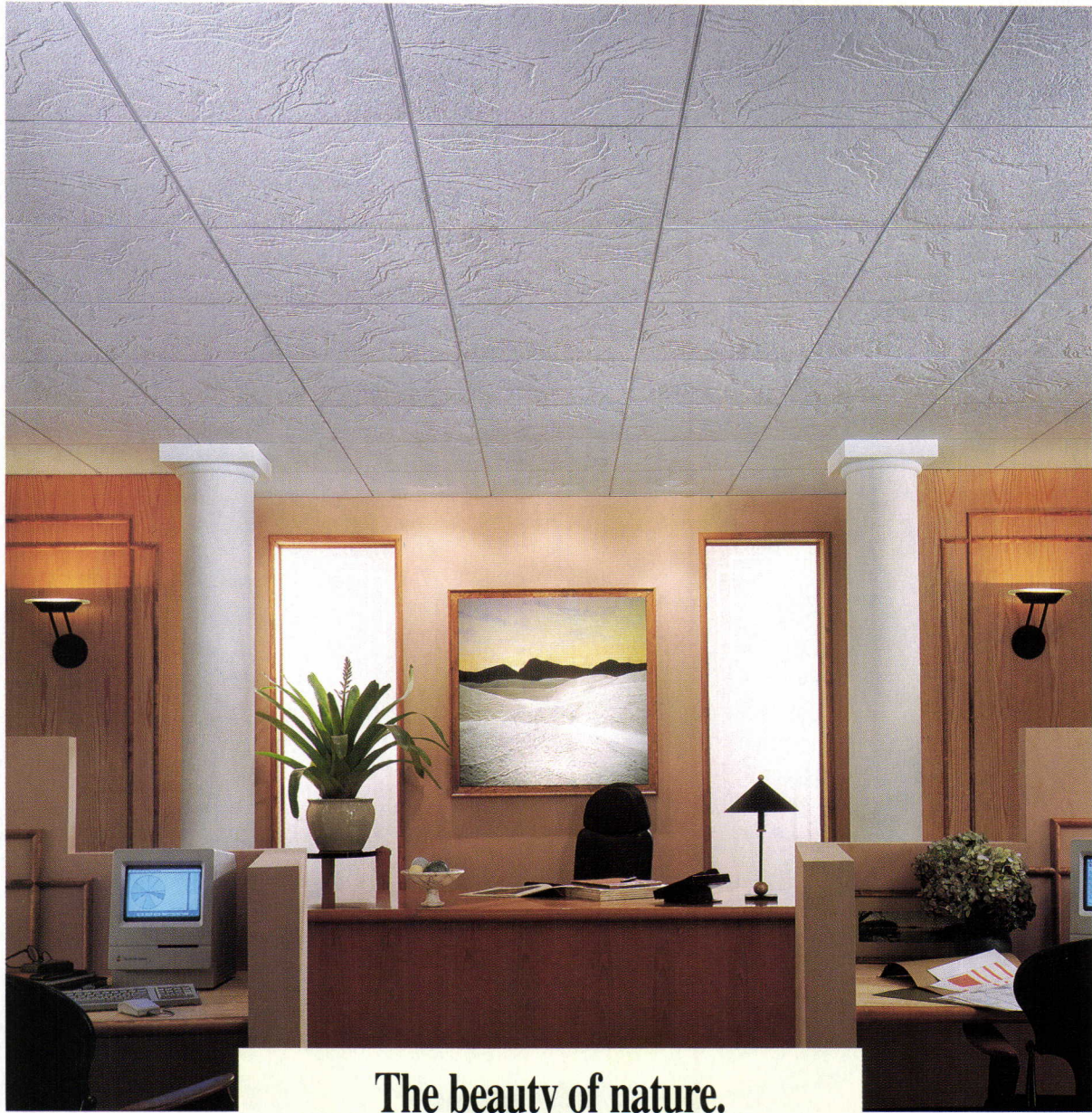
Consultants: *Artisan Decorators (custom painting and finishing)*

General Contractor: *BSI Constructors, Inc.—Paul J. Shaughnessy, project manager*



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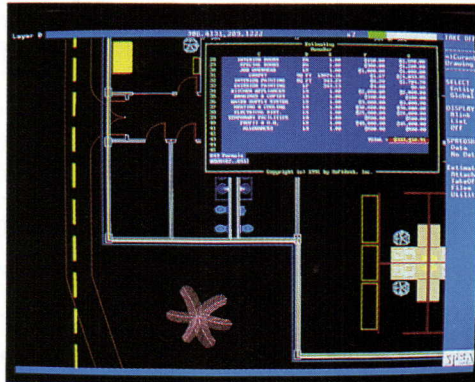
USG Interiors, Inc.

New software from A/E/C Expo

For more information, circle item number on Reader Service Cards.

Estimating interface

Softdesk (formerly DCA) demonstrated new AutoCAD add-ons for facilities management and for estimating. The estimating package (right) counts individual entities in a drawing, even if they have not been assigned attributes, and links to all Timberline estimating packages. Softdesk says this is the beginning of its new AdCADD line of "horizontal" products that provide specific functions across all design disciplines. Softdesk. **311**



Facilities management

Auto-trol Technology displayed several upgraded packages that run on Sun, DEC, and HP Apollo computers. The Series 5000 tracks preventive-maintenance schedules. Plan 3.0 allows architects and facilities designers to use floor plans of commercial and industrial facilities as construction drawings; includes 3-D modeling; and offers a better link to the Series 5000 database. The General Drafting Interface to Series 5000 has been improved with a Motif windowing look. Auto-trol Technology Corp. **312**

Furniture specification

CAP/Electronic Sweet's demonstrated its Windows-based Spex furniture and equipment specifier, with links to the Cadvance 5.0 Windows-based CAD software due mid-1992. Its Spacetek facilities-planning software works with DXF files produced by many CAD packages. CAP/Electronic Sweet's. **313**

Financial-management software

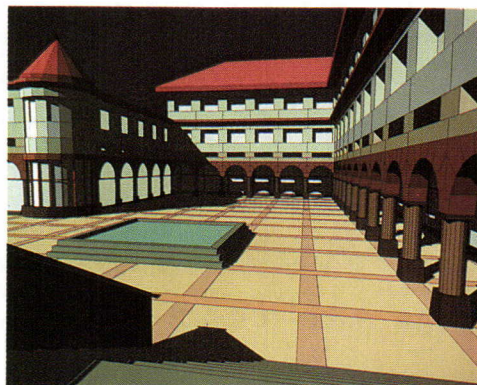
Version 9 project-financial-management system runs on VAX minicomputers and on microcomputers. It includes an easier-to-use on-screen interface, the ability to do more detailed project reporting, a new billing system, and redesigned output. Detailed reports can now be generated on small tasks within a project, making tracking and billing easier. The system shows tasks on bills, allows withholding and tracking retainage, and posts costs to three accounting files. Harper and Shuman. **314**

Drawing manipulation

Expert Graphics showed the latest version of its AutoIcon software. Working with the Rasterex graphics boards, it allows editing, scaling, and plotting of scanned drawings in AutoCAD files. Expert Graphics. **315**

Macintosh modeler

Alias demonstrated Upfront 2.0 for the Macintosh (right). This latest version of the firm's modeling software includes a drawing tool that places textures in 3-D space without requiring mapping to a surface. It is also easier to animate walkthroughs of the model. Alias has also brought Sonata, a modeling package with underlying facilities database and other features, to the North American market. Alias. **316**



Drawing integration

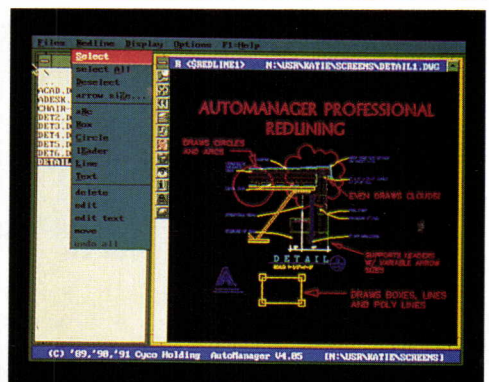
Image Systems also demonstrated improved ways of tying scanned images into AutoCAD. The firm's CAD Overlay ESP 3.5 works with protected-mode ADI drivers for many graphics boards, and ViewBase 3.0 allows redlining—making comments and changes without AutoCAD. Image Systems Technology, Inc. **317**

Conversion software

Scorpion Technologies demonstrated version 3.0 of its SRV386 raster-to-vector conversion software; it automates the entire translation process, and also works in interactive mode. Prices range from \$16,000 for the DOS version to \$25,000 for the Sun SPARCstation. Scorpion Technologies. **318**

Drawing management

Cyco International showed its new AutoManager Professional 4.2 (right). It can be used as a file viewer and plotter for AutoCAD DWG, DXF, and BAK files. It also allows users to redline these drawings. This new version, which began shipping in October, has a Windows-like graphical interface. The price is \$395. Cyco International. **319**



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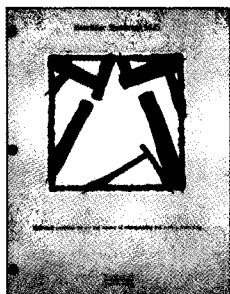
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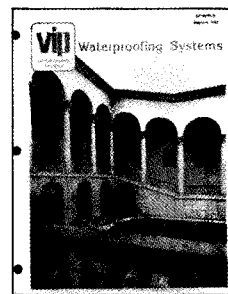
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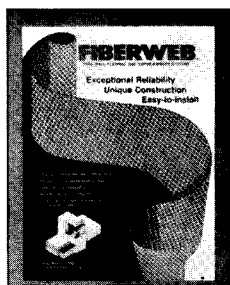
Self-healing
MM6125 is a no-mix, flowable blend of rubberized asphalt that forms a monolithic, acid-resistant waterproofing membrane on vertical and horizontal structures above and below grade. American Hydrotech, Inc. **400**



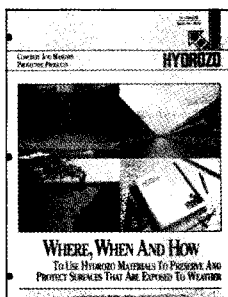
Cement-based
Below-grade, clear, and architectural coatings shown in full-color brochures. Cementitious and acrylic formulations are said to let the protected structure "breathe" damaging water vapor. Thoro System Products. **401**



Flexible
Catalog explains how VIP elastomeric waterproofing materials, in opaque and clear formulations, respond to thermal movement and structural flex of concrete and masonry structures. The Flood Co. **402**



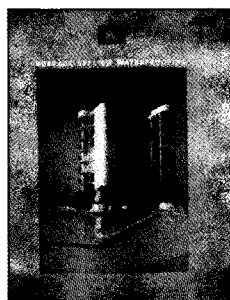
Vapor Barrier
Metalized vapor barrier and flashing systems constructed of various types of polyester film, such as Mylar, bonded to a fiberglass scrim reinforcement. Said to remain flexible at extremely low temperatures. Fiberweb International. **403**



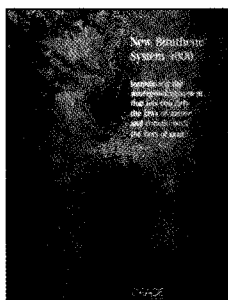
Weatherproofing
A 12-page catalog describes products that protect concrete and masonry surfaces against water penetration, acid rain, chloride intrusion, and spalling. Hydrozo, Inc. **404**



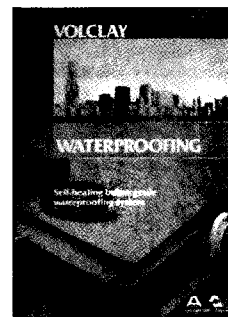
Bituminous
Elastomeric liquid membranes, offered in formulations for many waterproofing applications including traffic decks, foundations, and roofs, are covered in a 24-page 1992 catalog. Karnak Corp. **405**



Traffic-bearing
Color catalog describes applied systems for waterproofing vehicular and pedestrian-traffic-bearing surfaces and parking decks, as well as Pool-Gard II, a coating specifically for reflective and other pools. Neogard. **406**



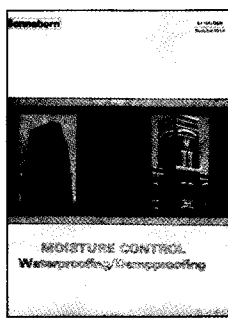
Compliant
Bituthene System 4000, formulated to meet all current and anticipated VOC regulations, consists of a spray-on, clear surface conditioner and a self-adhesive membrane. Grace Construction Products. **407**



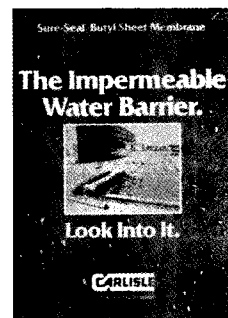
Bentonite Systems
Explains how individual bentonite-based components—panels, waterstops, tubes, and sealants—solve specific water-infiltration problems to provide a total below-grade waterproof envelope. American Colloid Co. **408**



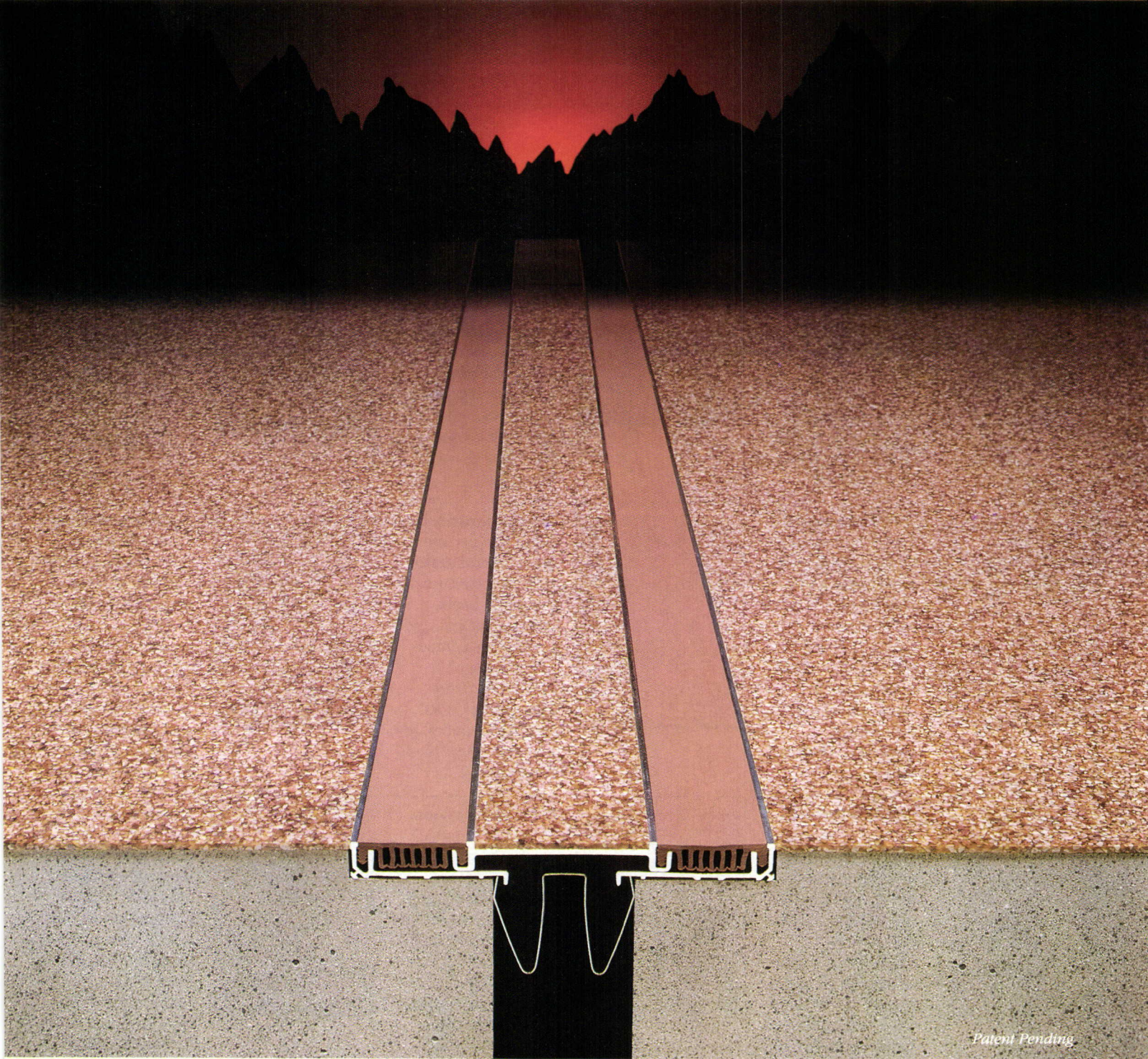
Self-adhered
Brochure discusses the easy-to-install features of Miradri below-grade waterproofing. The membrane, made of rubberized asphalt laminated to a polyethylene film, is said to resist high hydrostatic pressure. Mirafi, Inc. **409**



Moisture Control
Four-page bulletin highlights six waterproofing-product groups for specific applications, including decorative coatings, traffic-deck materials, and below-grade mastics. Sonneborn Building Products. **410**



Butyl Membrane
Catalog lists the performance characteristics of Sure-Seal membrane, said to be particularly appropriate for critical applications such as hospitals and computer facilities. Carlisle. **411**



Patent Pending

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But now there's a solution! C/S has developed a flush expansion joint cover system with clean, simple lines. It provides for multi-directional movement — up to 50% — *without loss of seal* and is available for 1" through 16" openings.

The design features rugged aluminum components and gaskets of a co-extruded thermoplastic material

to smoothly accommodate both pedestrians and wheeled equipment. Gaskets may be custom colored for larger projects and the center plate recessed to accept tile or carpet for the ultimate unobtrusive look. Best of all, C/S Flush Seals cost no more than conventional joint systems.

A new age in expansion joint technology is now here — even for seismic applications! Call 800-233-8493, our technical staff is ready to assist you.

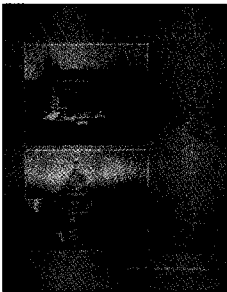
THE C/S GROUP

Circle 41 on inquiry card

Architectural Record January 1992 151

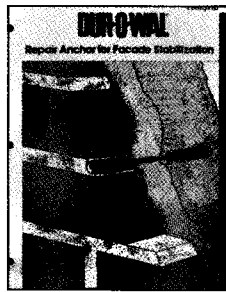
Renovation Sources

For more information, circle item numbers on Reader Service Cards.



Custom metalwork

Bulletin describes metal spinning and hydroforming techniques used to create such unique architectural shapes as the 66-in.-diameter copper globes on the corners of the Main Building, Ellis Island. Kosempel Mfg. Co. **412**



Restoration Tie

Adjustable stainless-steel anchors re-fix destabilized stone panels and brick facades to most backup conditions. Anchors lock mechanically, and install without damage to the outer face. Dur-O-Wal, Inc. **413**



Decorative Trim

Architectural woodwork line includes a cornice that incorporates the classic details of ornate plaster in natural white hardwood. Curves are made of a polymer to match the wood pieces. Ornamental Mouldings Ltd. **414**



Wood Consolidant

Two-part formulations, LiquidWood consolidant and WoodEpoxy adhesive putty, restore shape, function, and strength to rotted or damaged decorative and structural wood elements. Abatron. **415**



Precast Ornament

Catalog illustrates monumental sculpture, architectural elements, pools, building panels, and restoration components made of precast concrete, Laserstone GFRC, cast stone, and polymer concrete. Dura Art Stone. **416**



Replica Metalwork

Catalog highlights stairs, ceilings, and facade elements in authentic Victorian designs, and describes custom casting and metal-fabricating services in cast iron, aluminum, and bronze. Steptoe and Wife Antiques, Ltd. **417**



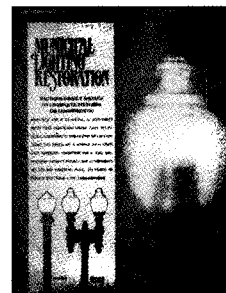
Window Retrofit

A 64-page ideabook, "Before and After" illustrates renovation work—garage conversions, kitchens, additions, whole-house make-overs—on 16 homes ranging from Cape Cods and ranches to Victorians. Marvin Windows. **418**



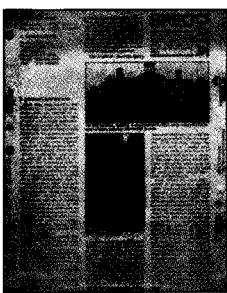
Remodeling Costs

Repair & Remodeling Cost Data 1992 has 452 pages of unit- and building-systems costs, labor data, and estimating assistance that reflect prices of commercial and residential renovation. Price: \$72.95. R. S. Means Co. **419**



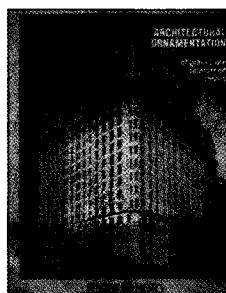
Luminaires

Authentic retrofit luminaires and complete street lights offered to replace existing units. Said to provide modern photometrics and light dispersion, custom fixtures fit any existing pole. Niland Co. **420**



Paint Removal

Peel Away 6 is a biodegradable, non-caustic system that removes multiple layers of paint or varnish in one pass. Said to minimize hazards of lead-paint removal; will not harm historic fabric. Dumond Chemicals. **421**



Replica Ornament

Fiberglass-reinforced resin can recreate the intricate details of elements originally done in stone, terra cotta, metal, and wood. Integrally colored gel coat can match any surface. Rocca Noto Sculpture Studio. **422**



Wide Board

Paneling, beams, and flooring of Eastern white pine is a specialty of this mill, a source for restoration lumber. Planks can be provided 14- to 20-in. wide by 10- to 16-ft long. Carlisle Restoration Lumber. **423**

Don't Invest In Any Curtain Wall Until You've Studied All The Angles.

Your curtain wall is your biggest visible expense. Don't base your selection on face value alone. Before you choose, ask yourself these important questions:



1 How reliable is the distributor/installer?

You could go with one of those new curtain walls, and find that nobody knows how to install it. Or choose Alucobond® material and get 12 years of installation experience, plus authorized distributors who'll get your materials on site, on time, even with short lead times. And you can depend on our distributors to keep your fabrication and installation on schedule.

2 What kind of quality am I getting?

Can your curtain wall resist buckling, rippling and oil-canning?

Alucobond material will. Made of two light-weight sheets of aluminum with a thermoplastic core, its impressive strength-to-weight ratio guarantees flatness, while conforming beautifully to curves and folds.



3 What about fire safety standards?

With Alucobond material and

Alucobond 21®, you're covered to meet the standards of BOCA, ICBO, SBCCI, New York City and Los Angeles, just to name a few.

4 Can I afford it? Compare costs, and you'll find that Alucobond material is an affordable alternative to brick, marble, granite, or pre-cast materials.

Any other questions? Let Alucobond's team of technical experts demonstrate the service that makes Alucobond material your best curtain wall value.

Just call us at 1-800-626-3365. We'll show you the smartest way to cover all the angles.

*Empire Bank, Springfield, MO
Distributor: Midwest Metal
Fabricators, Inc.
New Haven, MO*

ALUCOBOND®

MATERIAL



Alucobond Technologies, Incorporated
P. O. Box 507, Symsonia Road, Benton, Kentucky 42025 • 800-626-3365 • (502) 527-1376

Circle 42 on inquiry card

Design Review Boards

continued from page 34.

real-estate consulting firm, the historic district actually fared better than the rest of the city between 1988 and 1990. The average number of project applications submitted to the design review board has risen from one to nine or so a month.

How architects around the country rate design review

• Graham Gund, Graham Gund Architects, Inc., Cambridge, Mass.: "It is somewhat a double-edged sword. It's nice to know that someone's keeping an eye on things, and there are many very dedicated people on these boards. The *con* part can be the quality of the review board. Often people aren't as qualified as they should be. The individuals are more important than the provisions. The answer is partly in raising sufficient interest in the community to attract the best people."

• Warren Cox, Hartman-Cox Architects, Washington D. C.: "Board members worry that, to do their job, they have to give people direction. In most urban situations, boards are very useful, but I don't favor turning them into inquisitions working with a narrow and restrictive set of regulations."

• Peter Dominick, Jr., The Urban Design Group, Denver: "All of us probably resisted design review as a form of censorship. But I have decided I can work with design review just as I can with zoning or energy regulations."

• Christopher Chadbourne, Christopher Chadbourne Associates, Boston: "There absolutely should be design rules, but these are very tough to write. Take the Design Research Building designed by [1992 AIA Gold Medal winner] Ben Thompson in Cambridge. It is a primarily glass structure just off Harvard Square. You would never be able to build that building under any set of contextually based design guidelines. And yet no one would say that building isn't appropriate. So how do you allow that sort of building to be built?" ■

Waterproofing *continued from page 37*
application and to ask the manufacturer to warrant the materials.

In the results method, the architect tells the contractor how the system is to perform in place. The performance requirements are specified in Part 1. This method is consistent with a performance warranty. If the architect specifies the level of performance and a system that is capable of performing at that level, then it is reasonable to ask the contractor to warrant the performance. A performance warranty, however, is usually issued by the manufacturer.

Field quality control: Tests are usually limited to elevated horizontal surfaces that can be flooded. This test might require temporary bracing to carry the added weight of the water. There is usually no way to observe leakage in slabs on grade and to test in these locations is pointless.

Protection: All waterproofing systems need protection from backfilling operations; that is the purpose of protection board. There is also a need for protection from the weather if the waterproofing is to be exposed for any length of time. This depends on the type of waterproofing, latitude, time of year, and climate.

Schedules: To ease coordination of drawings and specifications, list types of surfaces that will be waterproofed. Making up such a schedule also means a double check for omissions. ■

For product information see pages 24-25

Lead paint *continued from page 43*
tant buildings, spawns a dilemma more deep-seated than the choice of technique. For intellectual and esthetic reasons, they regret the loss of the old paint itself. "Paint is a form of documentary evidence," says Sharon C. Park, an architect with the National Park Service. "Its color, age, and type can tell us a lot about a building and its features." And, discussing the look and patina of old paint, Martin Weaver, Director of the Center for Preservation Research at Columbia University, notes, "New paint is like sliced white bread—all of the interesting imperfections have been refined out. Whereas old paints, which were mixed by craftsmen, had all sorts of subtle variations . . . which our eye and brain *do* register."

To date, the growing public concern with lead-based paint removal—the subject recently rated a *Newsweek* cover story—has resulted in surprisingly little regulation. Only two states (Massachusetts and Maryland) and a few cities require abatement of certain buildings. Except for subsidized and Indian housing, there are no federal laws. This likely will change soon. Abatement rules are being debated in Congress as well as in jurisdictions around the country. The EPA is sponsoring several research and information programs and developing a model certification course for inspectors and contractors. In the next few years, then, according to a recent National Park Service bulletin, preservationists "must look for successful solutions that mitigate the danger and leave the [building] materials in place." *N. L.*

Further Information

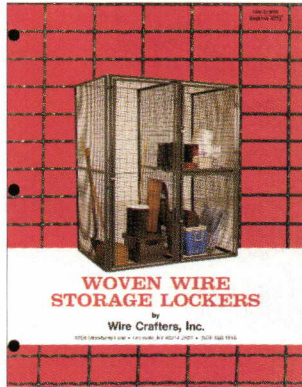
The following publications include full discussions of lead-based paint detection and removal:

- "Historic Buildings and the Lead Paint Hazard," available from the Massachusetts Historical Commission, 80 Boylston Street, Boston, Mass. 02116, 617/727-8470.
- "Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing," Department of Housing and Urban Development, 451 Seventh Street, S. W., Washington, D. C. 20401.
- Preservation Assistance Division, National Park Service, P. O. Box 37127, Washington, D. C. 20013, 202/343-9573.
- National Institute of Building Sciences, 1201 L Street, N. W., Washington, D. C. 20005, 202/289-7800. ■

Product Literature Showcase

Here are some building products, catalogs, brochures and technical literature available in the architectural market today. To receive your copy of any of them, just fill out and return one of the special Reader Service Cards bound into this Product Literature Showcase.

WOVEN WIRE STORAGE LOCKERS

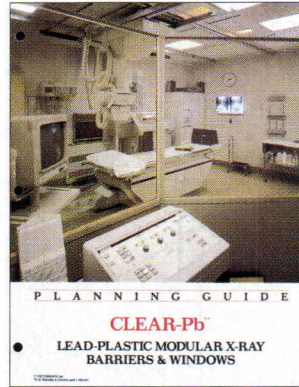


Woven Wire Storage Lockers from Wire Crafters are the heaviest lockers available for multi family building storage areas. Choose from single or double tier styles. A variety of standard sizes, and custom units are available. Specify the best for building owners and residents. Choose Wire Crafters for your next storage area project.

Wire Crafters

Circle 501 on the PRODUCT LITERATURE SHOWCASE inquiry card.

FREE X-Ray Room Planning Guide

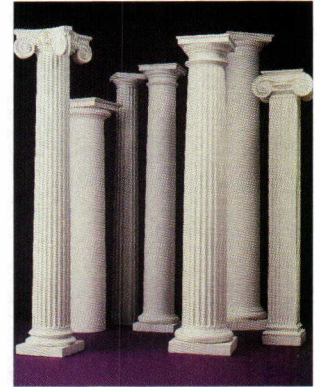


New guide illustrates userdesigned installations of CLEAR-Pb Lead-Plastic Modular Barriers and Windows in hospitals, radiation therapy centers. CLEAR-Pb is a transparent, lead-impregnated plastic sheet in lead equivalencies from 0.3 to 2.0 mm, over 200 stock sizes up to 6 x 8 ft. (larger on special order.) Nuclear Associates.

Nuclear Associates

Circle 502 on the PRODUCT LITERATURE SHOWCASE inquiry card

CHADSWORTH COLUMNS



Classic Authentic Replication wooden columns and pedestals, Architectural Stock, Art Deco, Contemporary and custom designs available in pine, redwood and other wood species. Shipped factory direct to job site. Chadsworth - The number one column company in America. Free filer. Catalog requests (800) 394-5177. Sales orders (800) 486-2118. Other inquiries (404) 876-5410.

Chadsworth Incorporated

Circle 503 on the PRODUCT LITERATURE SHOWCASE inquiry card.

All New 88-Page TimberForm Catalog

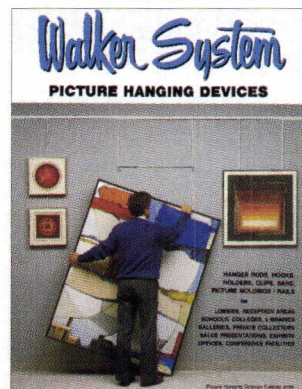


More than 350 products made of cast iron, perforated metal, steel, welded wire & wood are offered in a dozen different design series from traditional to contemporary. Ash receptacles, benches, bike racks, bollards, litter containers, picnic & game tables are presented in design-coordinated families. Over 170 designer colors are available. Photos, technical data & product dimensions are shown. Call toll-free 1-800-547-1940(ext. 502).

Columbia Cascade

Circle 504 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Picture Hanging The State of the Art

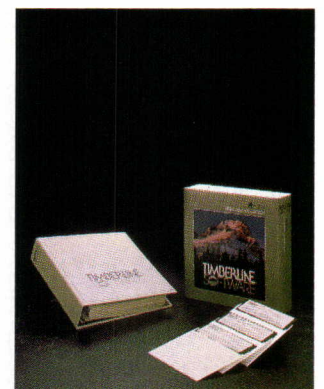


New and complete, a fully illustrated 4-color catalog of Hanger Rods, Picture Moldings, with Hooks, Clips and Holders for framed, matted or unmounted paintings, prints, posters, drawings, quilts, weavings and tapestries. Write for catalog and samples. 250 South Lake Ave., Duluth, MN 55802.

Walker Systems, Inc.

Circle 505 on the PRODUCT LITERATURE SHOWCASE inquiry card.

AEasy Plus



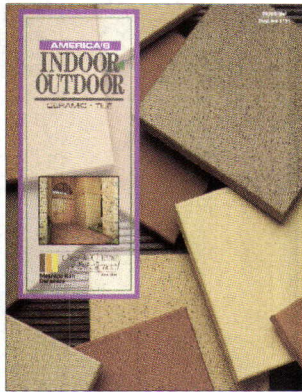
AEasy Plus, new project management software designed specifically for architects and engineers, includes full departmentalization eliminating guesswork about which departments are most profitable. It also lets you void invoices any time, even months later, and get a new invoice out the same day. Disputed amounts won't tie up your cash flow.

Timberline Software Corp.

Circle 506 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Product Literature Showcase

Indoor/Outdoor Ceramic Tile



Metropolitan Ceramics' vitreous (less than 3% absorption) ceramic tile is a natural for a wide variety of indoor and outdoor applications. A new, six-page brochure features exciting installation photos, color swatches, performance specifications, trim shapes and suggested uses. Write for it today! Metropolitan Ceramics, P.O. Box 9240, Canton, OH 44711. (216) 484-4876. Fax (216) 484-4880.

Metropolitan Ceramics

Circle 507 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Decorative Grilles

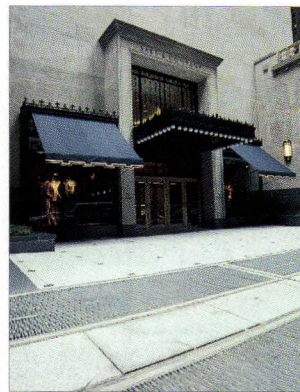


Unusual visual effects emerge when our grilles are designed for area effects. Versatility is the theme. R&G offers architects & interior designers many ways to express the changing forms of metal with the integrity of R&G's architectural grilles. Custom or standard finishes are available plus any grille can be made in matching color to blend with your decor. 202 Norman Avenue Bklyn, NY 11222. 800-521-4895. fax 718-349-2611.

Register & Grille Mfg., Co.

Circle 508 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Architectural Cast Metal Ornamentation

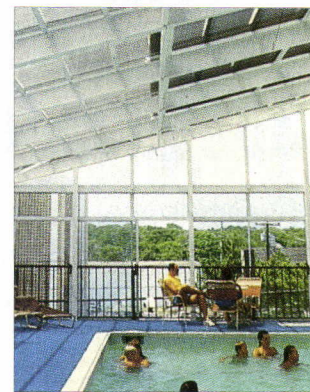


Design professionals look to Historical Arts and Casting for the restoration and replication of many architectural details, including traditional cast metal storefronts. Our skilled craftsmen work with a variety of materials including bronze, aluminum, and iron. Please write or call for more product and service information: 4130 W. 1939 S. Unit F, Salt Lake City, UT 84104. (801) 974-0242.

Historical Arts and Casting

Circle 509 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Aluma-Glaze Corporation



Aluma-Glaze Corporation
1601 S.W. 71st Terrace
Hollywood, Florida 33023

Custom Manufacturer Of:

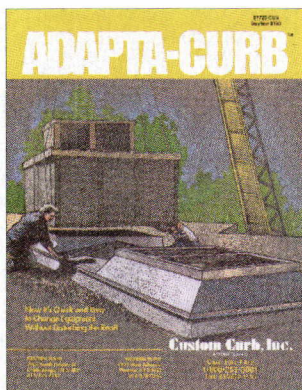
- All Season Pool Enclosures
- Skylights • Fixed & Motorized
- Curtain Walls • Store Fronts
- Railings • Aluminum Fencing

Local (305) 962-3222
Outside FL 1-800-962-1922
FAX (305) 961-5363
See Sweet's Catalog 13149/ALU

Aluma-Glaze Corp.

Circle 510 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Adapta-Curb

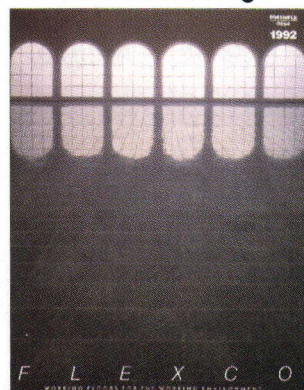


Informative color brochure illustrates the many configurations and options available with Adapta-Curb System that allows easy addition or replacement of rooftop equipment without disturbing the roof. It's designed for retrofit as well as new construction applications. The brochure outlines features and methods possible for easy addition or replacement of HVAC units and other rooftop equipment. 800-251-3001.

Custom Curb

Circle 511 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Flexco Company Resilient Flooring

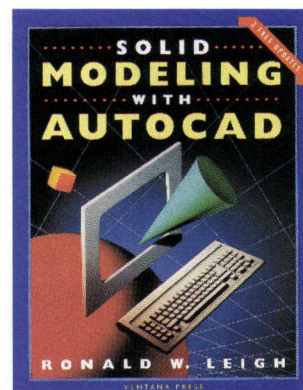


Flexco produces premium rubber & solid vinyl flooring products for a wide variety of commercial uses. Their unique color palettes & styling offer high design potential for environments with even the heaviest traffic. Flexco products combine beauty & function and are sold through an int'l network of over 125 distributors. Catalog features complete line. Catalogs or info. Call 1-800-933-3151, Fax 404-454-9435.

Flexco

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Solid Modeling With AutoCAD

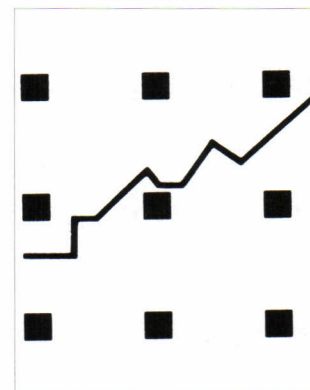


The Most Economical Way to Stay Ahead of AutoCAD! Ventana Press now offers 7 best-selling books that give you never-before-published tips; an overview of commands & features; help for working with AME & 3D, customizing AutoCAD, accessing & managing its powerful database, & using AutoLISP to solve simple drawing problems. Ventana Press, POB 2468, Chapel Hill, NC 27515; (919) 942-0220; FAX (919) 942-1140.

Ventana Press

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Keep Dodge In Your Plans!

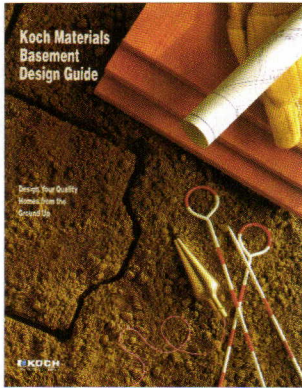


Don't forget to provide your local Dodge Reporter with the details and plans for your next job. You don't want them to miss out on the best bid for your next job. Contractors can't bid on jobs they don't know about. Thank you for your input. We appreciate your cooperation. F.W. Dodge, Mc-Graw-Hill Construction Information Group.

F.W. Dodge

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Discover The Value In Basements

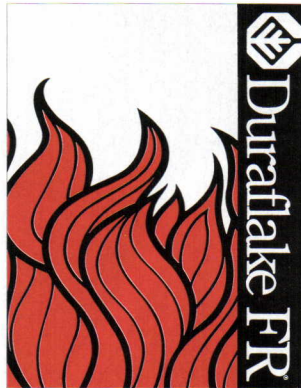


The Basement Design Guide from Koch Materials Company can help you discover new ideas in designing warm, dry, comfortable living spaces in below grade areas. This 20-page brochure highlights construction techniques and design considerations that help make the basement a value to you and your buyers. Includes information on a 10-year limited warranty against exterior foundation leaks.

Koch Materials Co.

Circle 515 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Duraflake FR



DURAFLAKE FR is a smooth, grain-free, class I fire-rated particleboard panel designed to meet fire code regulations. It is an excellent substrate for fine wood veneers, high and low pressure laminates and vinyls in all wall systems, furniture and fixture applications where fire codes and public safety are critical. Contact Willamette Industries, Inc., P.O. Box 428, Albany, OR 97321 or call (503) 928-3341.

Duraflake

Circle 516 on the PRODUCT LITERATURE SHOWCASE inquiry card.

New Information on Garaventa Stair-Lifts

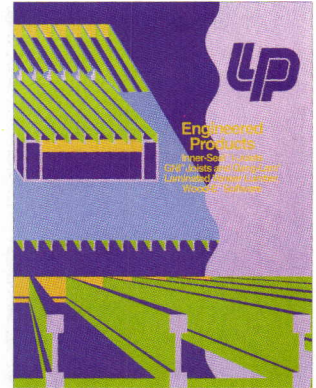


The Garaventa Stair-Lift, North America's most popular inclined wheelchair lift since 1978, complies with ADA legislation. In response to your needs, Garaventa has prepared some valuable information on *Stair-Lifts and the ADA*, and a **newly revised Design and Planning Guide**, to help answer your concerns on codes, layouts, contract specifications, and more. Call 800-663-6556 or (604) 594-0422.

Garaventa

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Engineered Products

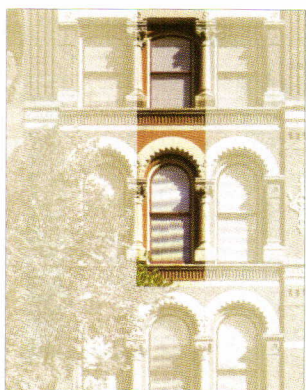


Louisiana-Pacific's engineered wood products are designed to eliminate the common problems of solid sawn lumber. Gang-Lam LVL, Inner Seal I-Joists and GNI Joists are stronger, more stable and easier to handle. Catalog includes span and uniform load charts, and information on the Wood-E engineering software package.

Louisiana Pacific

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Marvin Windows' New Commercial Catalog



It describes the commercial capabilities of Marvin's entire line of wood and clad wood windows and doors. The catalog provides information on product styles, performance and design capabilities as well as Marvin's Architectural Support Department and other non-residential services. Also included is the Magnum Series, Marvin's premiere products for commercial applications. 8043 24th Ave. S., Minneapolis, MN 55425. 800-328-0268.

Marvin Windows

Circle 519 on the PRODUCT LITERATURE SHOWCASE inquiry card.

FIRE RETARDANTS AND PRESERVATIVES

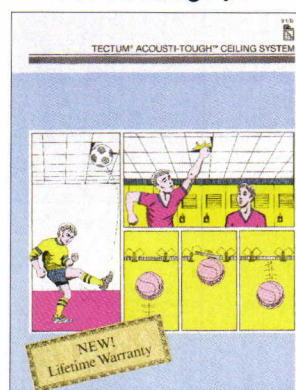


Hoover Treated Wood Products' new 12-page Sweet's Catalog features PYROGUARD third generation interior fire retardant treated lumber and plywood for roof sheathing, and other structural uses; EXTERIOR FIRE-X FRT lumber and plywood for decks, balconies, siding and other outside uses; and CCA preservative treated lumber and plywood that's kiln dried after treatment.

Hoover Treated Wood

Circle 520 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Lifetime Warranty On Tectum Ceiling System

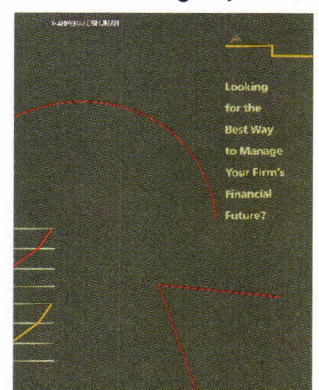


The Tectum Inc. Acousti-Tough™ ceiling system now carries a lifetime limited warranty against panel breakage. Featuring the well known Tectum abuse resistant acoustical panels and a special clip that repositions panels if they are pushed up from the grid, the system has been proven in school applications where replacement is a major cost item.

Tectum, Inc.

Circle 521 on the PRODUCT LITERATURE SHOWCASE inquiry card.

CFMS (Computer-based Financial Mgt. System)



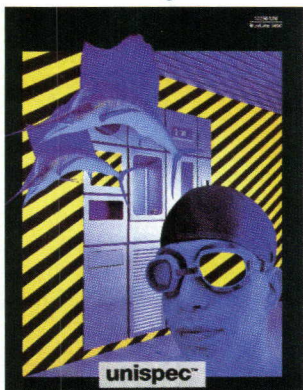
Harper and Shuman develops, sells and supports financial management software specifically for architects. The only system of its kind sponsored by the AIA, MICRO/CFMS runs on PCs and CFMS runs on the DEC VAX. A modular approach lets you buy only what you need. Call today 1-800-275-2525. Harper and Shuman, Inc.

Harper & Shuman, Inc.

Circle 522 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Product Literature Showcase

Limited Only By Your Imagination



The possible configurations of modules, materials, colors and finishes are limited only by what you envision.

We do the rest!

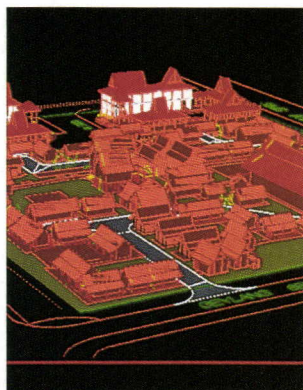
These Modular Wall Systems can be integrated with other manufacturer's components.

There's no need to come up against a wall selecting a Modular Wall Unit for your next project.

UNISPEC

Circle 523 on the PRODUCT LITERATURE SHOWCASE inquiry card.

FastCAD® 3D-Includes DXF and RenderMan

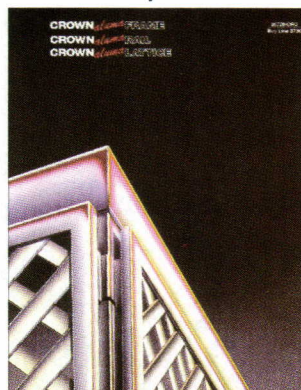


FastCAD 3D can take you from plan to presentation in a single package. Selecting, drawing and editing entities have never been faster or easier. Why not optimize your design environment with FastCAD 3D's eight interactive windows, icons, and pull-down menus? Viewing three-dimensional objects is a snap from any position in hidden line, surface and animation modes.

Evolution Computing

Circle 524 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Aluminum Frame and Rail Systems

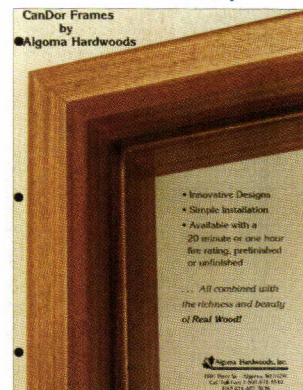


Maintenance free, easily installed — ideal for balcony and utility enclosures. Custom designed and fabricated to meet your requirements. Many finishes available including paint and anodize. Accommodates CROWN AlumaLATTICE, CROSS VINYLattice, and a range of custom built aluminum or vinyl panels. For information contact CROWN AlumaCORP, 800-521-9878.

CROWN AlumaCORP

Circle 525 on the PRODUCT LITERATURE SHOWCASE inquiry card.

Fire Rated Wood Frames Install Quickly

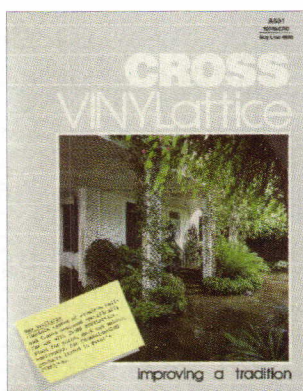


Prestige... Warmth... Beauty... These are the hallmarks of candor frames from Algoma Hardwoods. Specifying Architectural wood frames by candor broadens design capabilities and allows the architect and owner to create an environment with the richness of wood that is unique, distinctive and beautiful.

Algoma Hardwoods

Circle 526 on the PRODUCT LITERATURE SHOWCASE inquiry card.

CROSS VINYLattice

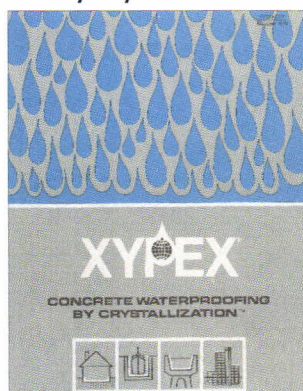


These lattice panels, reinforced with polyester cord, are much stronger than the conventional wood lattice panels. CROSS VINYLattice is easy to install and won't split or crack during installation. Available in a variety of sizes, patterns and colors that never need painting. For more information contact Cross Industries, Inc., 3174 Marjan Drive, Atlanta, Georgia 30340, 800-521-9878.

Cross Industries

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Concrete Waterproofing by Crystallization

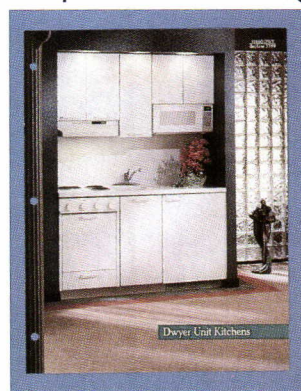


Applied as a slurry coating, Xypex is a chemical treatment that waterproofs by penetrating the concrete with a crystalline formation that 'plugs' the pores of the structure preventing water seepage. Xypex is ideal for use on the 'inside' of wet underground structures.

Xypex Chemical Corp.

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New Dwyer Custom Compact Kitchen Catalog

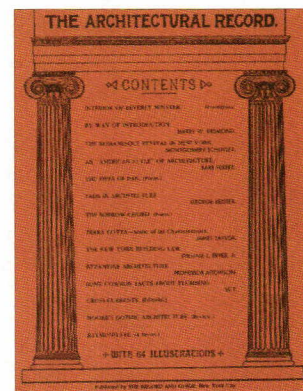


A new 20-pg., catalog featuring compact kitchens for every application is available from Dwyer Products. The catalog includes color photography, elevation drawings & specifications on the kitchens—which range in widths from 30" to 120" -- & the myriad of design options & modifications available. For info. or design assistance, contact Dwyer Products Corp., 418 Calumet Ave., Michigan City, IN 46360. 219-874-5236.

Dwyer Products Corp.

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Limited Numbered Edition

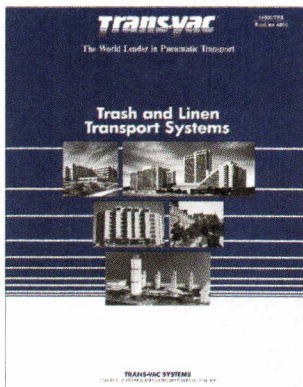


ARCHITECTURAL RECORD'S first issue (1891) is reprinted to celebrate our centennial. 150 pages. 64 illustrations. Every architect should have this collector's issue. Only \$16.95 ppd. For more information call: 212-512-3443. ARCHITECTURAL RECORD, Circulation Department, 1221 Avenue of the Americas, New York, NY 10020.

Architectural Record

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Trash / Soiled Linen Automatic Transport



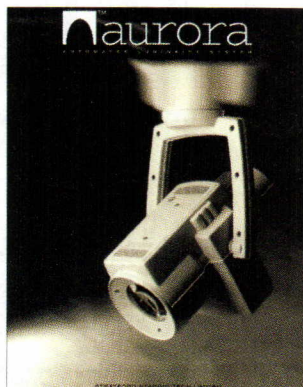
Design assistance to ARCHITECTS & ENGINEERS upon request.

HOSPITALS, HOTELS, OFFICE BUILDINGS and APARTMENTS Reduce elevator requirements, corridor congestion and cross-contamination by providing Pneumatic Transport of Soiled Linen and/or Trash through concealed pipe. Tech. Info. # 512-863-7549.

Trans-Vac Systems

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AURORA™

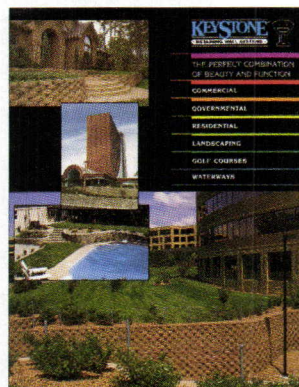


AURORA™ - The first computer controlled theatre 'LEKO' spotlight. AURORA™ is silent, accurate, affordable & beautifully designed. AURORA™ is a complete system from control to dimmer to 1KW luminaire. The eight page brochure has complete description. Add the drama of theatrical lighting to any building project! To discover more contact: STRATFORD STAGING TECH LTD. at (519) 273-7499.

Stratford Staging Tech Ltd.

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Concrete Retaining Walls

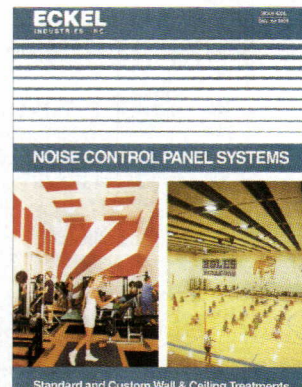


Patented, mortarless system of high strength concrete rock face modules interlocked with reinforced fiberglass pins produce structurally sound walls of timeless beauty. Permanent. Environmentally safe. Easy to install. Cost effective. Keystone Retaining Wall Systems, (612) 897-1040 or (800) 747-8971.

Keystone Retaining Wall

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High Performance Noise Control Treatments



Four standard acoustic panel systems, Eckoustic Functional Panels (EFPs), Textured Functional Panels (TFPs), Acoustic Lay-in Panels (ALPs), and the Eckoustic Security Ceilings are detailed in Eckel's new literature. Custom acoustic treatment and design services are also outlined in this new 8 page catalog.

Eckel Industries, Inc.

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Impressions Are Important!!!

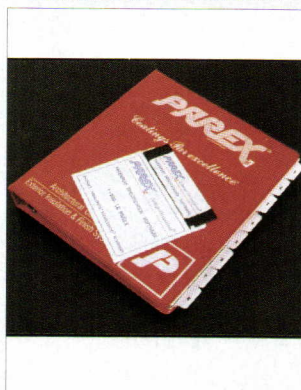


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EIFS AND THE PAREXPERT SOFTWARE

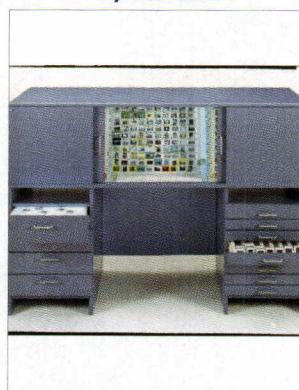


Parex, Incorporated has developed the Parexper software including specifications & product data sheets. Architects should find this software informative & helpful. This new 1992 Parex product binder includes specifications, details & descriptions of EIFS-System 3 & Insul/Crete Gold, Monocouche-the one day stucco, & various architectural related decorative & protective coatings.

Parex, Incorporated

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Slide Storage System by Abodia

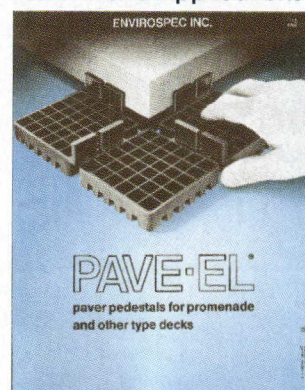


stores 1,000 to 12,000 slides. Scan, edit and view entire slide collections. Slides are stored on metal racks housed on either side of an illuminated viewing screen. Base systems store up to 65,000 slides and feature drawers for duplicate slides. Elden Enterprises, Box 3201, Charleston WV 25332. (800) 950-7775.

Elden Enterprises

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A Practical Solution to Roof Paver Stone Applications



New bulletin shows a better way to transform a roof into a patio, terrace, balcony, walkway, plaza podium, promenade, or just plain roof deck, using the Pave-El Pedestal System. Designed to elevate, level, and space paver stones for drainage in any weather, Pave-El reliably protects roof, paver stone, membrane and insulation. Ellicott Station Box 119, Buffalo, NY 14205. 416-252-2090.

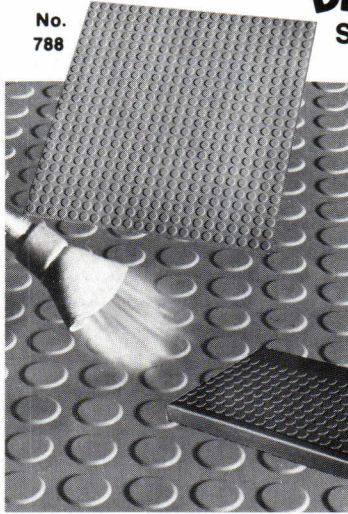
Envirospec

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 Safety stair treads

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