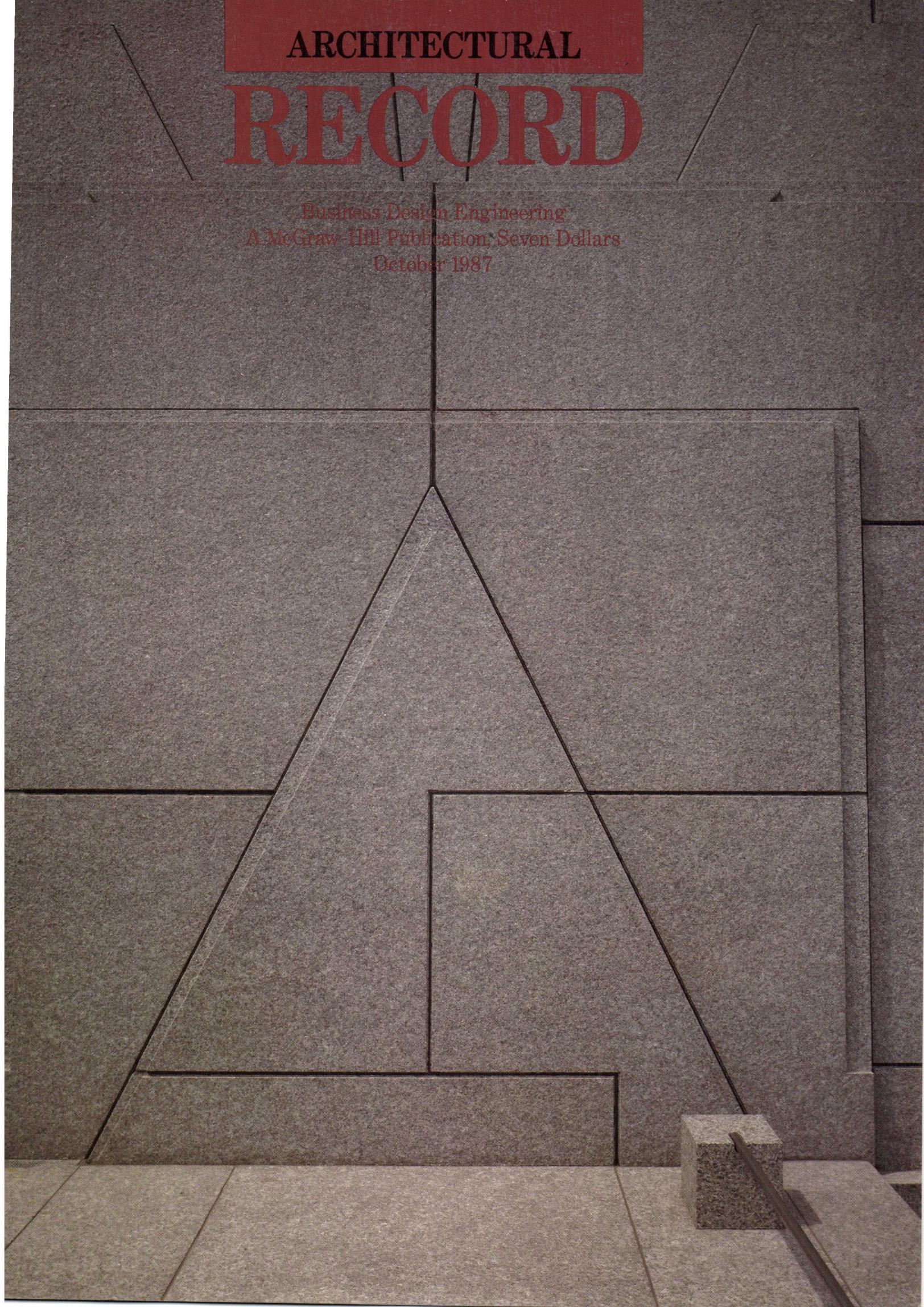


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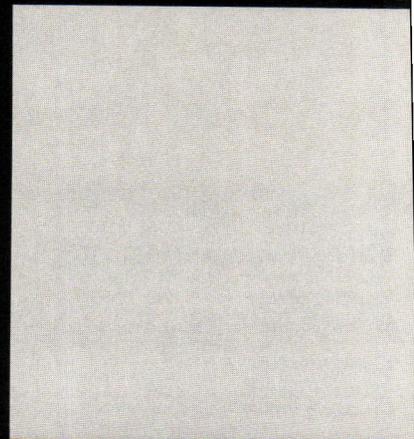
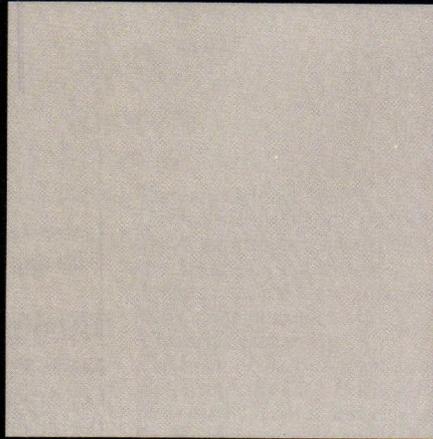
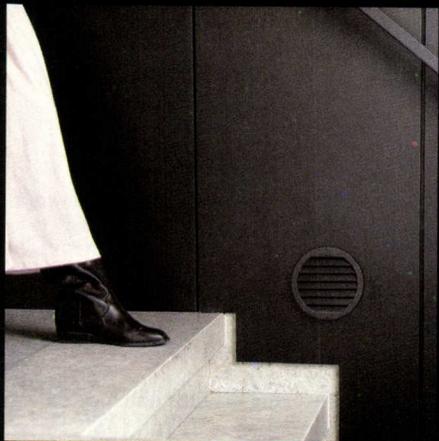
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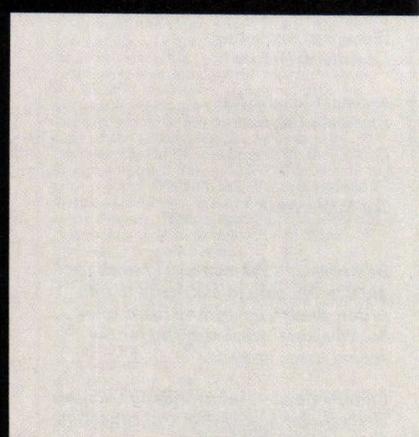
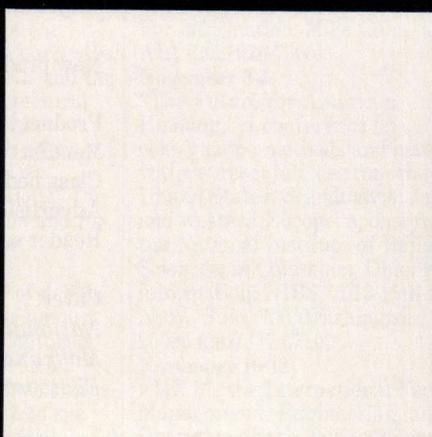
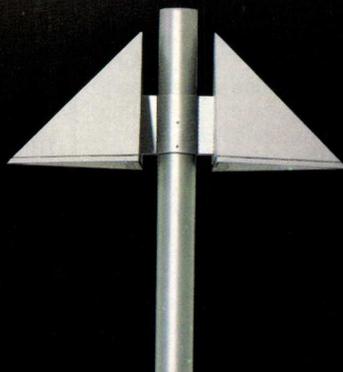
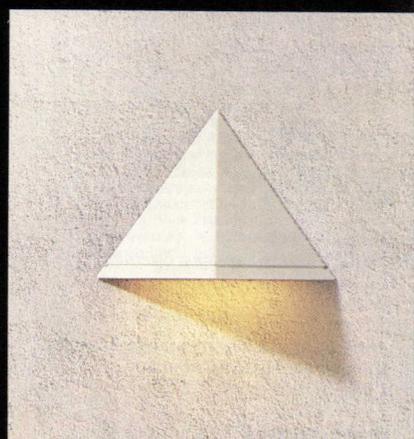
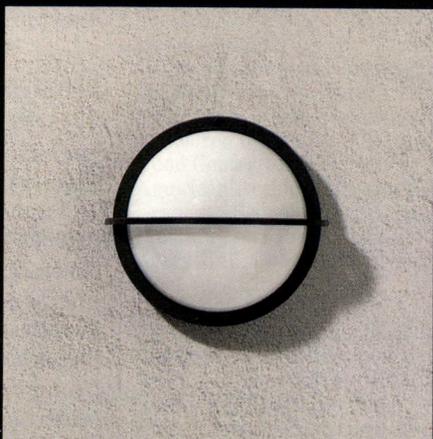
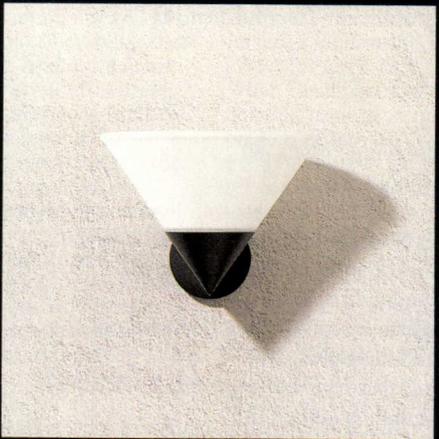
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Charles Edouard Jeanneret (Le Corbusier) was born 100 years ago this month in La Chaux-de-Fonds, Switzerland. He died in 1965 at the age of 78 while swimming in the French Mediterranean off Cap Martin. Twenty years younger than Wright and about the same age as Gropius and Mies, his genius was acknowledged in his lifetime. Today, even as his technological urban utopianism is almost universally scorned, his eminence as a prophetic designer, philosopher, and artist continues to be recognized. According to Gropius, Le Corbusier created "a new scale of values, sufficiently profound to enrich generations to come."

Today's generations have been particularly enriched this centennial year by major exhibitions of Corbu's drawings, models, paintings, and decorative arts in London, Paris, New York, and Helsinki. Just as important, this anniversary has been the catalyst for a great outpouring of publications. Corbu's sometimes bombastic, but often poetic manifestos have been brought back into print, and a number of critical texts, monographs, and collections of essays, the work of serious and original scholars, are to be found on the architectural shelves of the better bookstores. Many of these publications are sumptuously produced and the best are copiously illustrated by drawings never widely seen before now, made available by the Fondation Le Corbusier, Paris. These drawings offer new insights into all phases of Corbu's work. Construction details, for example, tell us more than scholars knew before about the master's work as a structural engineer. (Featured this month on pages 142-151, in honor of the centennial, is an article on Corbu's structural invention by architect, educator and Corbu scholar Werner Seligmann, which includes drawings from this archive.)

Now that the books are out, the shows are on, and many of the master's seminal works are an easy trip from Paris, the sheer quantity and quality of the scholarly and curatorial effort could make 1987 the year for an international Neo-Corbu awakening. In recent years a small and select younger avant-garde has joined forces with the few outstanding older architects who still share Corbu's vast imaginative world, but this has hardly constituted a movement. Sweeping changes are in store, however, if these architects are soon to be joined by the multitudes who should be seeking alternatives to Postmodern classical pastiche. No longer mainly a figure for the history books, the master could be, once again, a living presence.

At worst, of course, Corbu will become a cult, his forms and styles just one more source of fashionable appropriation. It won't be easy for the cultists, however, because Corbu was always very difficult to copy. Better to understand the great architect's modern spirit, his search for the new, his high principles, his philosophic and esthetic will to deal with the modern mechanized, industrialized world, his efforts to use yet transform elements of architecture's rich past by distillation and abstraction, and his fundamental classicism. This is the language to which architects who wish to follow Corbu must return. If they do, we may once again have an architecture, openly rededicated to L'Esprit Nouveau. *Mildred F. Schmertz*



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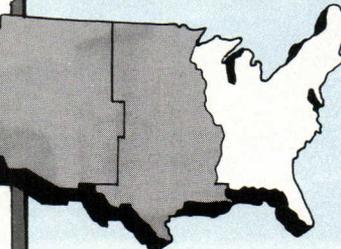
For All the Commitments You Make

Construction costs: An upswing reflects unexpected vigor in the building industry

Summary of Building Construction Costs



| | Number of metro areas | Districts Eastern U. S. | | |
|---|-----------------------|-------------------------|--------------|----------------|
| | | 4/87 to 7/87 | 7/86 to 7/87 | 1977* to 7/87 |
| Metro NY-NJ | 6 | 1.52 | 6.57 | 1897.31 |
| New England States | 9 | 2.79 | 5.98 | 1778.32 |
| Northeastern and North Central States ... | 51 | 0.60 | 2.06 | 1698.21 |
| Southeastern States | 55 | 0.32 | 1.27 | 1758.67 |
| Average Eastern U. S. | 121 | 0.75 | 2.22 | 1741.52 |



| | Number of metro areas | Districts Western U. S. | | |
|---|-----------------------|-------------------------|--------------|----------------|
| | | 4/87 to 7/87 | 7/86 to 7/87 | 1977* to 7/87 |
| Mississippi River and West Central States | 56 | 0.50 | 1.37 | 1699.44 |
| Pacific Coast and Rocky Mountain States | 40 | 0.42 | 1.45 | 1733.28 |
| Average Western U. S. | 96 | 0.47 | 1.40 | 1713.54 |
| United States Average | 217 | 0.68 | 1.86 | 1729.14 |

* Using only cities with base year of 1977

What might have been hoped to be a modest peak in costs during the first quarter of the year has turned out to be only a step up to a higher level in the second, when costs rose 0.68 percent on national average. The negative side is that the latest rises would appear to be accelerating: The first-quarter increase of 0.35 percent almost doubled that in October through December of 1986. And the second-quarter almost doubled the first.

The positive side, of course, is that we still are not seeing anything like the full-percent and greater jumps that routinely appeared in these reports prior to February 1985, when a relatively modest increase of 0.80 percent prompted the beginning of a long string of titles using "stability" and "moderation" as operative terms. Nor are we likely to. The highest rise since February 1985 was 0.76 percent in the third quarter of 1986 at this cycle's peak of construction activity.

As might be expected, the current surge accompanies an unexpected continuation of high construction volume. New contracts in June rebounded 9 percent on a national average.

The twist is that the highest regional cost rises did not

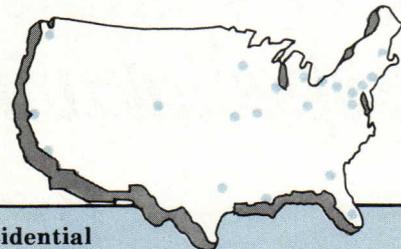
correspond to the highest regional volume. New England, with a rise of 2.79 percent in costs, and metropolitan New York and New Jersey, with a 1.52-percent rise, were, by far, the highest cost gainers but together actually posted construction-volume losses of some 9 percent.

Only some materials were responsible for the national surge: Lumber was up 2.6 percent (and, due to recent massive forest fires in the West, can be expected to rise even more); concrete block was up 2.4 percent; plywood, 1.9 percent; and steel, 1.6 percent. All other materials were only fractionally higher.

Labor-rates were the real villains, although their rise was predictable. They rose between 2.80 percent and 3.10 percent, reflecting the results of contracts negotiated in 1986.

(McGraw-Hill Information Systems Company studies are conducted quarterly by direct contact with union and nonunion sources, direct-mail suppliers, construction-labor consultants, and both general and specialty contractors in each city.)

*Cost Information Systems
McGraw-Hill Information
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Historical Building Costs Indexes

Average of all Nonresidential Building Types, 21 Cities

1977 average for each city = 1000.0

| Metropolitan area | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | | | | | | | | | | 1st | 2nd |
| Atlanta | 1171.5 | 1712.6 | 1925.6 | 2098.6 | 2078.0 | 2360.6 | 2456.7 | 2448.7 | 2518.3 | 2561.9 | 2577.0 | 2584.7 |
| Baltimore | 1018.4 | 1107.7 | 1304.5 | 1446.5 | 1544.9 | 1639.5 | 1689.7 | 1703.7 | 1743.8 | 1765.2 | 1788.0 | 1800.9 |
| Birmingham | 1029.7 | 1142.4 | 1329.9 | 1407.2 | 1469.9 | 1468.1 | 1535.7 | 1594.7 | 1565.7 | 1587.4 | 1572.8 | 1568.3 |
| Boston | 1028.4 | 0998.6 | 1236.0 | 1283.7 | 1432.5 | 1502.0 | 1569.9 | 1646.0 | 1721.0 | 1773.6 | 1806.2 | 1876.8 |
| Chicago | 1007.7 | 1032.8 | 1199.7 | 1323.6 | 1344.7 | 1425.8 | 1439.5 | 1476.7 | 1528.0 | 1599.9 | 1599.1 | 1615.7 |
| Cincinnati | 0848.9 | 0991.0 | 1323.9 | 1385.2 | 1350.4 | 1362.6 | 1430.8 | 1484.5 | 1486.6 | 1499.4 | 1512.0 | 1515.4 |
| Cleveland | 1034.4 | 1040.8 | 1287.5 | 1388.2 | 1459.5 | 1511.4 | 1475.9 | 1464.0 | 1474.1 | 1525.7 | 1538.3 | 1549.4 |
| Dallas | 1042.4 | 1130.6 | 1431.9 | 1481.9 | 1750.6 | 1834.3 | 1925.9 | 1958.0 | 1963.3 | 1973.9 | 1995.1 | 1984.8 |
| Denver | 1038.8 | 1100.4 | 1495.6 | 1487.4 | 1632.2 | 1679.1 | 1800.1 | 1824.3 | 1821.8 | 1795.8 | 1778.5 | 1778.3 |
| Detroit | 1018.1 | 1087.3 | 1275.3 | 1447.4 | 1580.3 | 1638.0 | 1672.1 | 1697.9 | 1692.6 | 1696.6 | 1690.8 | 1707.1 |
| Kansas City | 1023.5 | 0951.5 | 1125.8 | 1233.2 | 1323.4 | 1381.8 | 1407.5 | 1447.1 | 1472.5 | 1484.7 | 1492.1 | 1490.8 |
| Los Angeles | 1022.5 | 1111.0 | 1255.3 | 1387.5 | 1474.3 | 1503.3 | 1523.9 | 1555.1 | 1571.0 | 1609.7 | 1628.8 | 1664.7 |
| Miami | 1004.5 | 1080.9 | 1330.1 | 1380.6 | 1369.1 | 1392.1 | 1467.6 | 1522.2 | 1540.6 | 1566.2 | 1567.7 | 1594.1 |
| Minneapolis | 1060.2 | 1196.8 | 1286.9 | 1327.7 | 1442.6 | 1576.8 | 1624.6 | 1640.4 | 1661.0 | 1674.0 | 1691.6 | 1710.1 |
| New Orleans | 1001.3 | 1138.8 | 1291.9 | 1505.7 | 1572.7 | 1616.9 | 1650.5 | 1691.4 | 1762.5 | 1760.2 | 1749.1 | 1737.1 |
| New York | 1005.4 | 1043.0 | 1247.1 | 1319.4 | 1419.2 | 1491.8 | 1672.5 | 1747.2 | 1806.7 | 1899.9 | 1938.1 | 1970.5 |
| Philadelphia | 1013.8 | 1074.2 | 1487.5 | 1539.5 | 1660.7 | 1769.4 | 1819.5 | 1922.1 | 1967.9 | 1992.7 | 1985.0 | 2029.6 |
| Pittsburgh | 1016.1 | 1015.0 | 1227.0 | 1341.7 | 1493.2 | 1479.5 | 1497.2 | 1576.1 | 1611.0 | 1665.8 | 1668.7 | 1670.2 |
| St. Louis | 1039.1 | 1198.8 | 1275.9 | 1320.0 | 1397.3 | 1451.2 | 1524.9 | 1625.5 | 1641.8 | 1647.4 | 1657.7 | 1668.2 |
| San Francisco | 1083.2 | 1326.8 | 1473.4 | 1644.8 | 1776.4 | 1810.1 | 1856.8 | 1935.3 | 1961.8 | 1995.5 | 1993.1 | 2015.0 |
| Seattle | 1142.5 | 1137.9 | 1373.4 | 1616.8 | 1814.9 | 1962.7 | 1979.0 | 1948.9 | 1937.9 | 1925.3 | 1915.4 | 1913.6 |

Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other; if the index for a city for one period (200.0) divided by the index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than the costs in the other. Also, second period costs are 75% of those in the first period (150.0 divided by 200.0 = 75%) or they are 25% lower in the second period.



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Norco's performance on the original construction phase was so impressive that Opryland Hotel brought Norco back for an encore.

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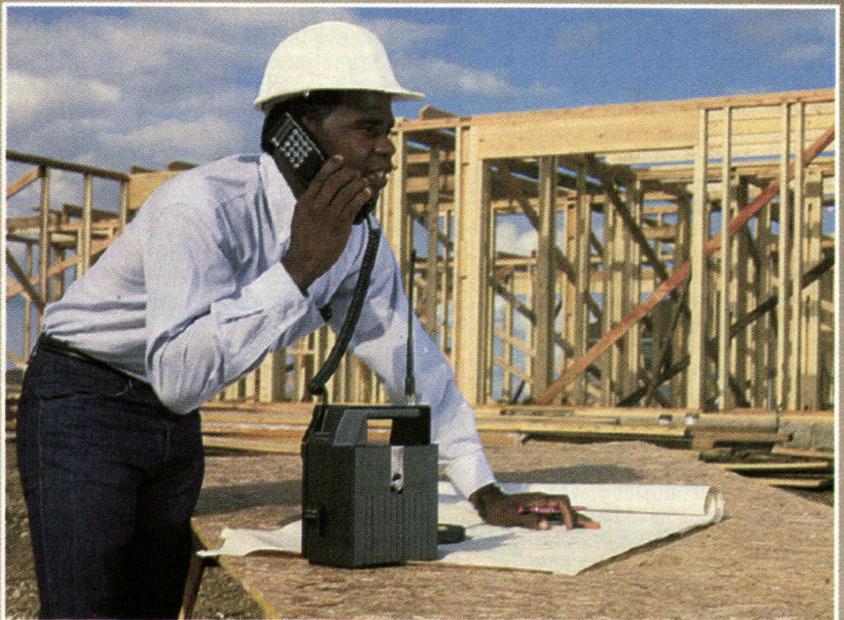
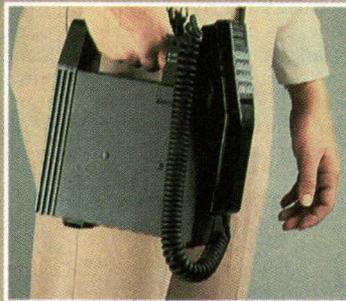
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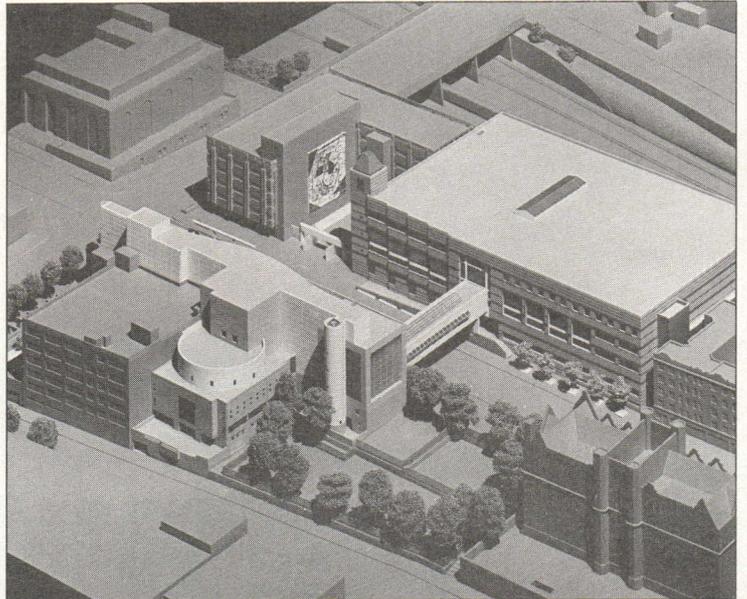
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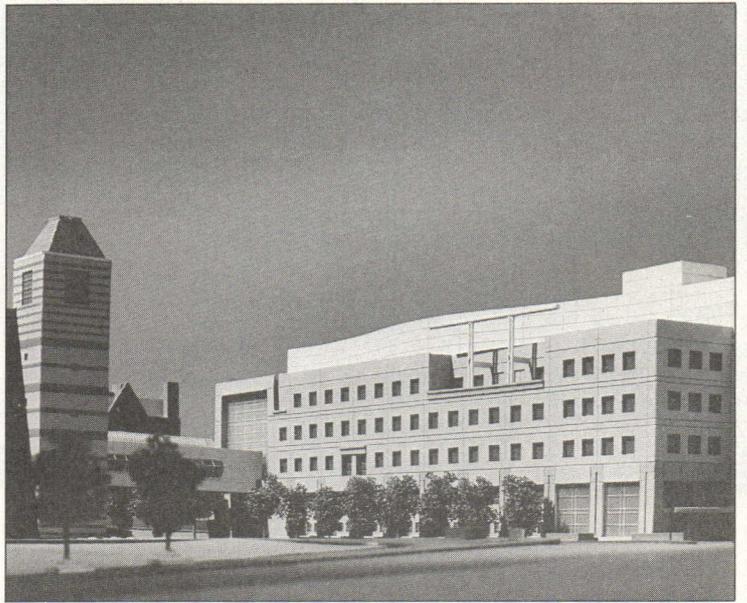
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Onward and upward in the South Bronx

During the decade since its inception, the Eugenio Maria De Hostos Community College in New York's troubled South Bronx has been operating out of an assortment of ramshackle buildings and trailers. But now that enrollment has risen to 4,500—testimony to the perseverance of street-wise students who must navigate the busy Grand Concourse that bisects the makeshift campus—the college has embarked on a major redevelopment plan aimed at improving its educational facilities and centralizing key community services. The New York State Dormitory Authority and the City University Construction Fund have engaged Gwathmey Siegel & Associates (with Sanchez and Figueroa Architects) as master planner and architect of the east campus (background, top), and Voorsanger & Mills Associates (with the Hirsch/Danois Partnership) as architect of the west campus (foreground, top and bottom). Remarkably, given what could have been a cumbersome combination of too many strong-willed players, the two teams have devised schemes that are not only compatible but also mutually responsive. Agreeing to make community activities the literal "base" of their designs, the architects have located day-care and continuing-education programs on the plaza levels of both new buildings. Classrooms and labs on the upper floors will be linked by a pedestrian bridge, while the facades onto the Grand Concourse will consolidate a public academic corridor. The silhouette of Gwathmey Siegel's tower and the sculptural masses of the Voorsanger & Mills building promise to be landmarks for the entire neighborhood.

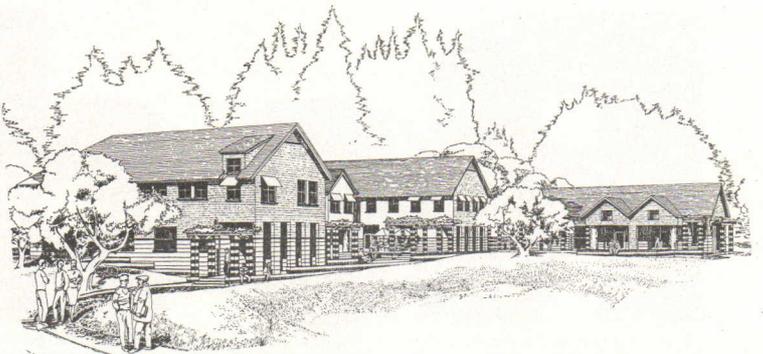


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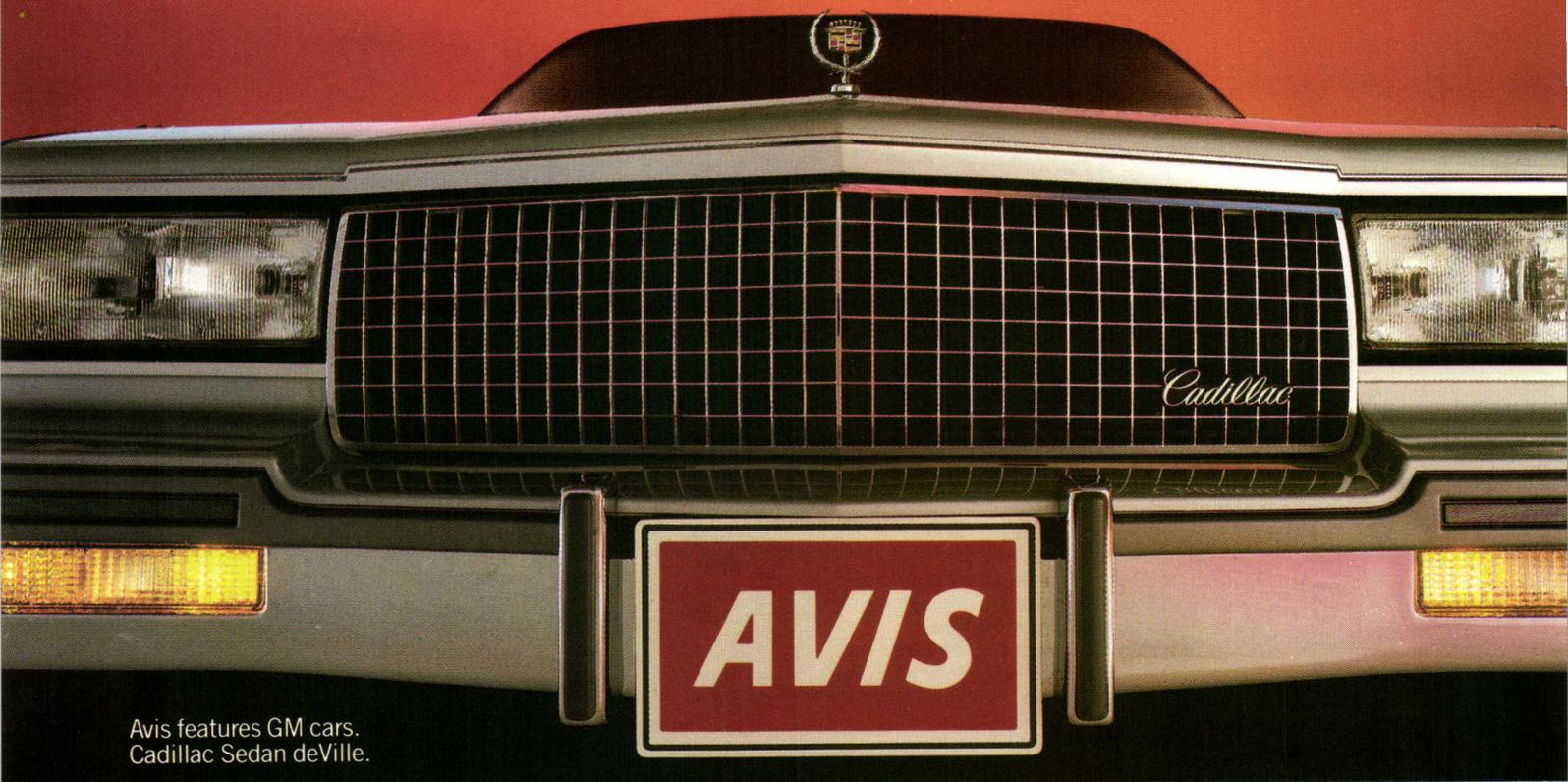


Coming together at Santa Cruz

Berkeley-based Fernau & Hartman has designed a new student center for the University of California at Santa Cruz, whose residential-college system follows the Oxford/Cambridge model. A common facility for all the colleges, comprising offices and a café, the U-shaped building along the edge of the Great Meadow is part of a master plan for recentring the entire campus.



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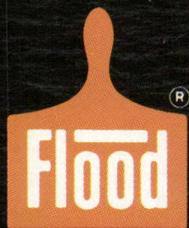
The building was first cleaned with high-pressure water blasting. Then, the large cracks and scars caused by peeling paint were patched with VIP #5300 and #5100 elastomeric waterproof sealants with 525% elongation. VIP #7300 elastomeric waterproof textured coating was used to finish the seven-month job.

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News briefs

A papal platform

Peter Rose has been selected by Vassar College to design the school's new art museum and renovate existing galleries in Taylor and Van Ingen halls. The Montreal-based architect's largest commission to date, the Canadian Centre for Architecture, is currently under construction.

New York Architects, a traveling exhibition on the work of Richard Meier, Steven Holl, Tod Williams and Billie Tsien, and Charles Gwathmey and Robert Siegel, among others, will be at Gullans International at the International Design Center in Long Island City, N. Y., for the month of October. For more information call: 718/937-2310.

Taliesin West, in Scottsdale, Ariz., will celebrate the 50th anniversary of its groundbreaking October 23-25 with a program of informal lectures and discussion groups focusing on future plans for Frank Lloyd Wright's winter campus. For more information call: 608/588-2511.

The first annual Hugh Ferriss Memorial Prize, given for excellence in architectural drawing, has been awarded to Richard Lovelace, of Boston. The prize is sponsored by the American Society of Architectural Perspectivists.

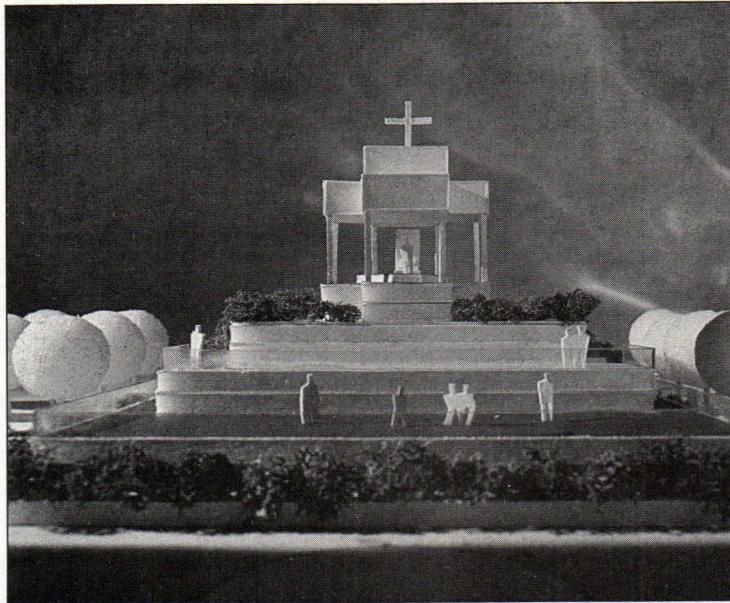
The Max Protetch Gallery, known for its architectural exhibitions, has moved from midtown Manhattan to SoHo, in order to expand its program. The 1987 fall lineup includes shows devoted to the work of SITE, Buckminster Fuller, and Rem Koolhaas. For more information call: 212/838-7436.

Downtown Moscow will be the site of a luxury hotel/apartment complex intended to be a prototype for future developments in other major cities throughout the Soviet Union. According to international trade consultant Henry A. Raab, American participation in the design, construction and, perhaps, financing of the project is expected.

Andrew Batey and **Michael Vanderbyl** have been appointed deans of the schools of Architectural Studies and Design, respectively, at the San Francisco campus of the California College of Arts and Crafts.

The Kirsten Kiser Gallery for Architecture will open this month with an exhibition devoted to the work of Austrian architect Hans Hollein. In coming months, the Los Angeles gallery plans one-man shows on Frank O. Gehry, Richard Rogers, Aldo Rossi, Michael Graves, and Arata Isozaki. For more information call: 213/876-7012.

Balthazar Korab

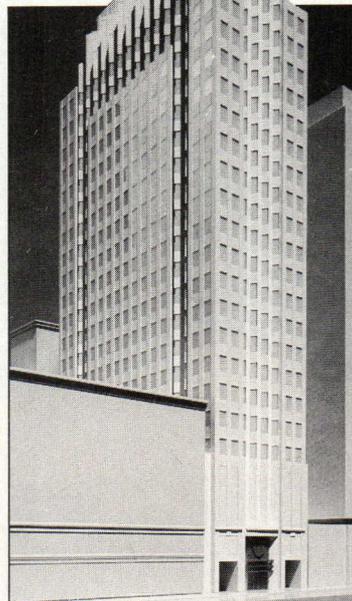


Harely Ellington Pierce Yee Associates designed the rostrum used by Pope John Paul II during his public ecumenical address in Hart Plaza, Detroit, on September 19. The Southfield, Mich., firm designed a stepped pyramidal stage that covered more than a third of an acre and culminated in a 69-foot-high cruciform canopy, or baldachin, topped with a 13-foot-high white wooden cross. The pontifical platform also accommodated approximately 150 dignitaries on the deck directly below the canopy. The Pope's 10-day visit to the United States included a stop at the Silverdome stadium in Pontiac, Mich., where the Holy Father celebrated mass from atop an "Island of Nature," 130 feet in diameter, designed by Gunnar Birkerts and Associates of Bloomfield Hills.

San Francisco "beauty contest"

After conducting a rigorous review, San Francisco planners have given the nod to three downtown office buildings, the first major projects approved for that area in two years. The city's current downtown plan includes an Office Growth Limitation Program, passed in 1985, which sets stringent guidelines for esthetics and growth, including a 450,000-square-foot cap on future development. Although the annual review—popularly dubbed a "beauty contest"—subjects proposed designs to a high level of scrutiny, the results, say local critics, are too often based on criteria other than architectural excellence, and reflect a prejudice against tall buildings even when they fit within the allowable limits.

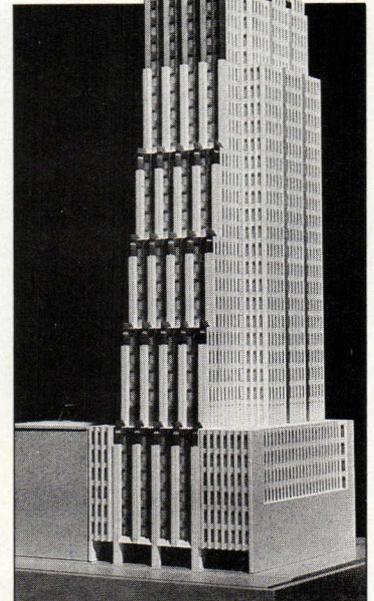
One of the buildings that passed this year, 235 Pine Street, designed by Skidmore, Owings & Merrill, (right) was rejected last year. In the interim, SOM had redesigned the top and specified a lighter limestone cladding—clearly to the satisfaction of the review committee. Although another SOM building, at 101 Second Street (far right), was widely considered the most original of the '87 contenders, its towering 32 stories probably account for its rejection. Preleasing appears to have been a big factor in the selection process this year, judging by the three "winners." The



1. 235 Pine Street, designed by Skidmore, Owings & Merrill; approved

2. 101 Second Street, designed by Skidmore, Owings & Merrill; rejected

developer for 235 Pine Street, for example, had already secured several major tenants, including the First Republic Bank. The other two buildings approved, a 19-story tower designed by Kohn Pederson Fox Associates, for the San Francisco Home Loan Bank, and a 15-story office block by John Burgee Architects with Philip Johnson, for the Gerald D. Hines Interests, were labeled



architecturally "disappointing" by *San Francisco Chronicle* critic Allen Temko. *Robina Gibb*, *McGraw-Hill World News*, *San Francisco*.

1. 235 Pine Street, designed by Skidmore, Owings & Merrill; approved
2. 101 Second Street, designed by Skidmore, Owings & Merrill; rejected

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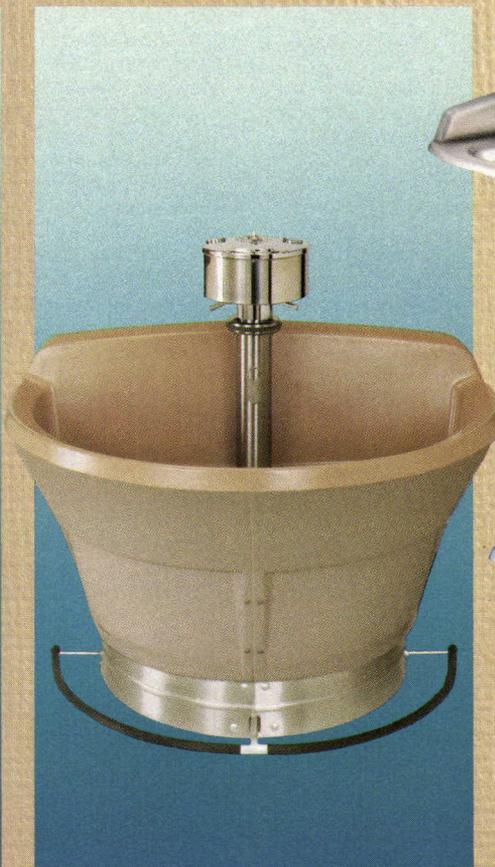
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America by Kostof

By Roger Kimball

If there were any lingering doubts that architecture has lately emerged as a fashionable subject—if the myriad books, glossy periodicals, and newspaper columns purveying the latest architectural trends were not by themselves convincing—architecture's recent forays into the exalted precincts of public television should dispel these doubts once and for all. Not that these ventures have been wholly successful. *Pride of Place*, Robert Stern's much-publicized eight-part series on American architecture, was regarded by many observers as a disaster when it ran on PBS last year [RECORD, May 1986, page 77]. This year's effort, a series called *America by Design* that is directed by Werner Schumann and narrated by the well-known architectural historian Spiro Kostof, presents the viewer with its own set of problems.

Naturally, the new series, which PBS began airing on September 28, has much in common with its predecessor. How could it not, since both are concerned with presenting an overview of America's built environment? True, *America by Design* was conceived on a more modest scale: it consists of only five episodes, for example, and lacks the pretentious photography and soundtrack that marred *Pride of Place*. But both series proceed by following their narrator around the country as he discourses on more or less the same notable buildings, picturesque parks and monuments, and important American architects. Williamsburg, Virginia; Pullman, Illinois; William Randolph Hearst's San Simeon; Thomas Jefferson's Monticello: the series make many of the same stops, and one cannot help speculating that the producers could have saved a great deal of money by sharing footage. And, like *Pride of Place*, *America by Design* is accompanied by a copiously illustrated book in which the narrator recapitulates, often verbatim, what he said on television. The real difference between the two series is that *America by Design* does not offer its viewers a blatantly tendentious account of the history and contemporary situation of American architecture. While I am not at all certain that *America by Design*—either the television series or the book—is in the end markedly more successful than *Pride of Place*, it is certainly more straightforward and responsible to the historical record.

One could only expect such virtues from Spiro Kostof. At least since 1985, when the Berkeley

Roger Kimball's critical articles on art and architecture appear frequently in RECORD, The New Criterion, The Times Literary Supplement, and other publications.

Spiro Kostof, host of America By Design, on location in Baltimore. The five-part television series is currently being aired on PBS.



Jennifer Gruber

professor published his encyclopedic *History of Architecture*, Kostof has been rightly regarded as an authoritative proponent of "the new" architectural history. This view rejects as "elitist" the traditional distinction between mere building and architecture—between craft and high art—and would have us transform architectural history into a species of social history. In my view, the deficiencies of this approach to architecture are as patent as its much-touted advantages; for one thing, it cannot but hamper the critical assessment of architecture's esthetic or artistic achievements. All the same, Kostof gets the facts straight, and—what is especially welcome after *Pride of Place*—he makes an effort to present viewers with at least the rudiments of the structure and history of American building types and architectural forms.

In substance, the five parts of *America by Design* cover the usual textbook subjects. The first episode is devoted to "The American House," and it takes us from the showy splendors of San Simeon to the pragmatic innovations of Catherine Beecher, from the urban row house to the exquisite creations of Frank Lloyd Wright. Like almost every reflection on the evolution of the American house, this episode features Thomas Jefferson's paeans to the virtues of owning property and indulges in lots of fancy talk about the house as the supreme image of the American dream. "Every house, however modest," Kostof muses, "is for its occupants a public stage and a private sanctuary. It frames our lives for a spell of time, projects our identity and self-worth, gives us a chance to express ourselves, while we dream of that ideal house, the house we

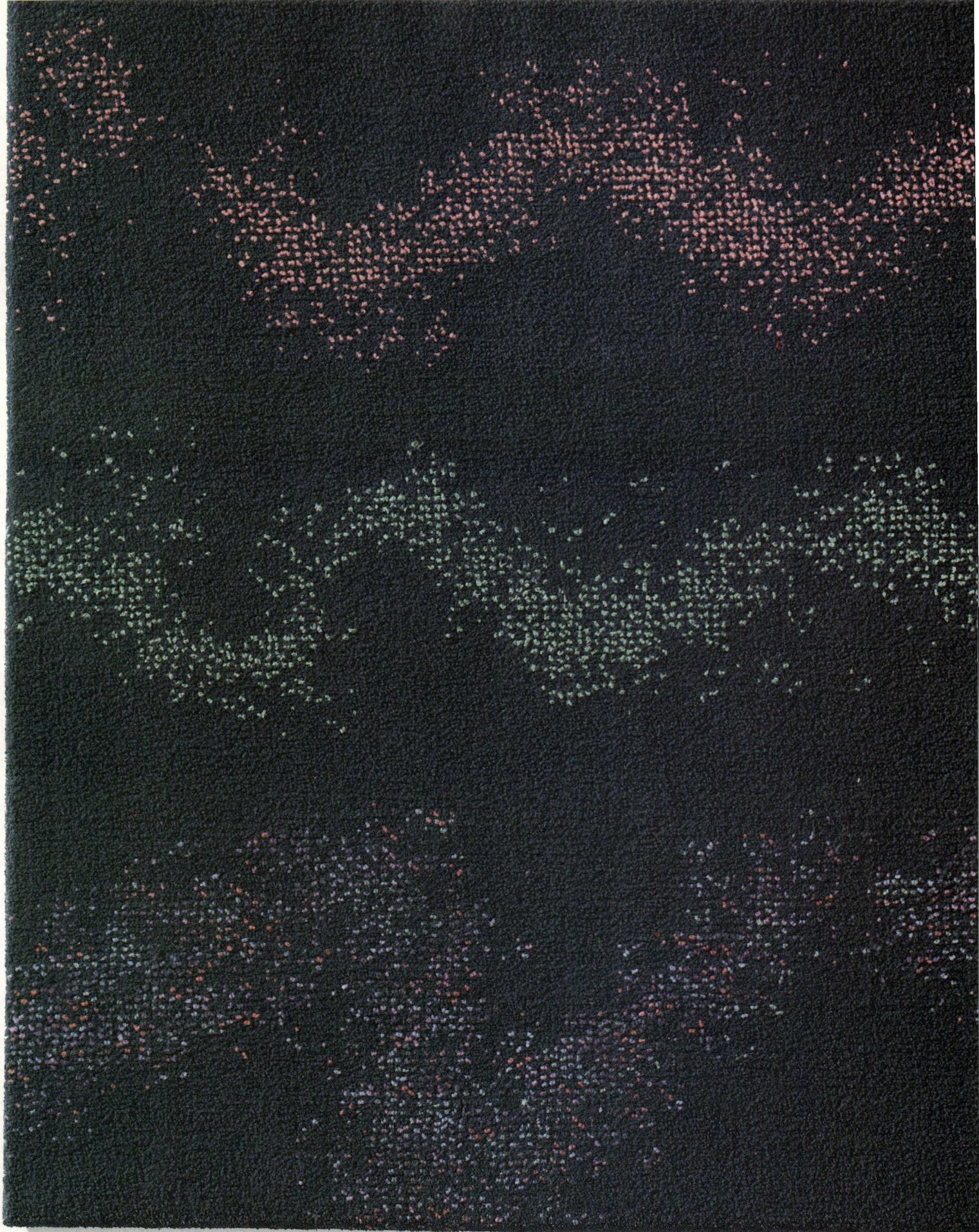
hope to own one day and might, the house we hope to own and might not. This is what makes Hearst's castle akin to the farmhouse out in the Midwest, the one-story bungalow and the suburban tract house, the shingled, wood-sided mobile home moored on the rented lot of a trailer court." Never mind that these structures are really no more "akin," spiritually or materially, than sticks and stones: Kostof's idealizing, egalitarian rhetoric makes it seem almost plausible.

The subsequent four episodes—"The American Workplace," "The American Street," "The Public Realm," and "The Shape of the Land"—also provide more or less standard surveys of their subjects. "The American Workplace," for example, begins with bucolic scenes of New England farmyards, moves on to the great 19th- and early 20th-century mills and factories, and concludes with modern innovations, from the assembly lines of Henry Ford (and the sprawling and ambitious plants that Albert Kahn built to house them) to the contemporary urban office tower. Similarly, "The American Street"—perhaps the series' single most engaging episode—begins with Pierre L'Enfant's great ceremonial plan for Washington, D. C., and then steps back to consider how the evolution of the nation's transportation system helped determine, as well as reflect, the character of our towns and cities. "In the history of American design," Kostof observes, "this is surely our finest national effort. . . . Always the road came first. Before there were houses, there had to be access; before there was political order, there had to be a pattern to inscribe it within; before there could be cities, a blueprint of streets

had to be laid out on the unmarked land to promote occupation and ensconce public life." He traces the history—and the effect on our lives—of this vast network of canals, railroad tracks, and streets from its beginnings in colonial trails and toll roads to Main Street, U. S. A., and the modern interstate highway system.

In all this, Kostof's presentation is competent, full of information, but full also of a kind of moralizing rhetoric that tends to detract from its standing as architectural history. Thus, in the episode on the workplace, he frequently pauses to wring his hands over the plight of the worker in industrialized society, and in the final episode, "The Shape of the Land," he blithely alternates between expressions of wonder at the accomplishments of modern technology and cries of distress at technology's ecological depredations. These are, no doubt, noble sentiments, but between the lessons in social history and efforts at ecological consciousness-raising, architecture is often all but lost.

A quite different, but no less vexing, problem concerns the way in which the series is presented. Not to put too fine a point on it, *America by Design* is a crashing bore. In some ways, this is a surprise. I know from experience that Kostof is an effective lecturer, and he is widely regarded as an inspiring teacher; but the charm, verve, and energy that make him successful on the podium have not rescued him from being utterly lackluster—and even, alas, a little stodgy—on television. Perhaps this is due in part to his drawing too heavily on the tactics of the lecture hall and seminar room for what, after all, is a more superficial medium; perhaps it is due to his habit of ending each sequence with an uplifting peroration, as if he were concluding a lecture for eager undergraduates. But mostly, I think, it is inherent in the project itself. It is notoriously difficult to present architecture—especially hours and hours of architecture—on film effectively. No snazzy soundtrack, no clever cinematography has managed to overcome the essential dullness of watching that much stone and wood and steel, that many rolling landscapes and impressive monuments, on film. Except in specialized cases—the examination of a particular building or subject for scholarly or technical reasons, for example—the effort seems doomed to failure. On the other hand, this may not be such a bad thing. Architecture has been much corrupted by its subservience to fashion lately, and a resistance to the blandishments of television may turn out to be its saving grace.



Streams Of Consciousness. It's time you got your feet w

The picture of health

Long accustomed to passing their rapidly escalating costs along to others, existing hospitals—and especially those encrusted by years of accretion—were brought up short by the recent shift from cost-plus compensation to a price-competitive system. Hospitals first strenuously fought the change, then lapsed into paralysis at the perceived threat to their livelihoods—and for some, their lives. After a tremulous pause, however, most have bowed to reality and moved to adapt to it by revising their policies and procedures and, not least, their physical plants.

Geared to increasing operating efficiency and attracting enough patients to compensate for reduced per-patient profit, the modifications tend to focus on the facilities needed to add patient beds, either increasing the net stock or replacing substandard units; to support those specialties exempted from the prospective payment system; and to expand such high-demand but relatively low-cost services as outpatient and emergency care and obstetrics. But such strategies go hand in hand with an equal effort to clothe the new substance in a (literally) attractive, marketable new image.

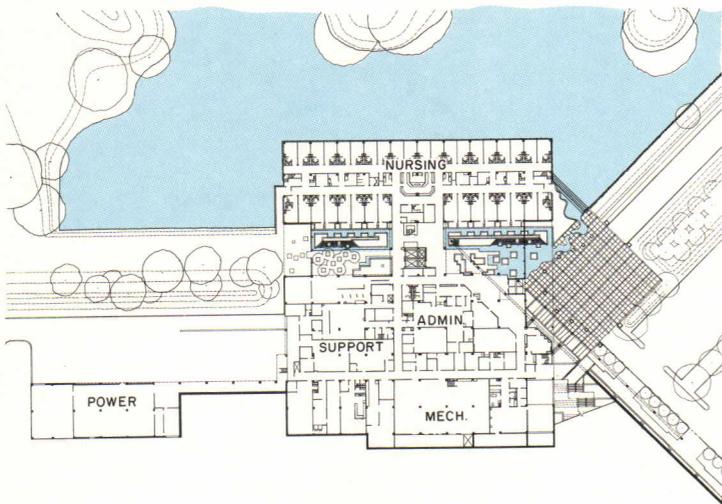
Although the remedies are straightforward, their application is often a long and painful course of treatment, requiring carefully calibrated doses of renovation and rehabilitation, replacement and addition, or both. And the most extreme cases may undergo a total transplant: moving and building afresh.

Of the hospitals explored in this study, only the Lakeland Hospital (pages 102-107) in Athens, Texas, built anew—but only after the existing hospital, which was both outmoded and, despite its small town setting, landlocked, proved to be a terminal case. Our other examples combined renovation with expansion, though under widely differing circumstances. The Hospital of the University of Pennsylvania (HUP), a large and distinguished but Topsy-built teaching hospital hemmed in by the university campus (pages 108-111), played musical chairs with rehabilitation and removal to clear a site for a high-rise addition incorporating both replacement beds and new treatment and support facilities. On the outskirts of Atlanta, the Northside Hospital (pages 112-115) revamped its existing building and all but buried itself in additions in order to cope with fast-changing medical technology, expand high-demand services, and provide more pleasing and convenient public areas.

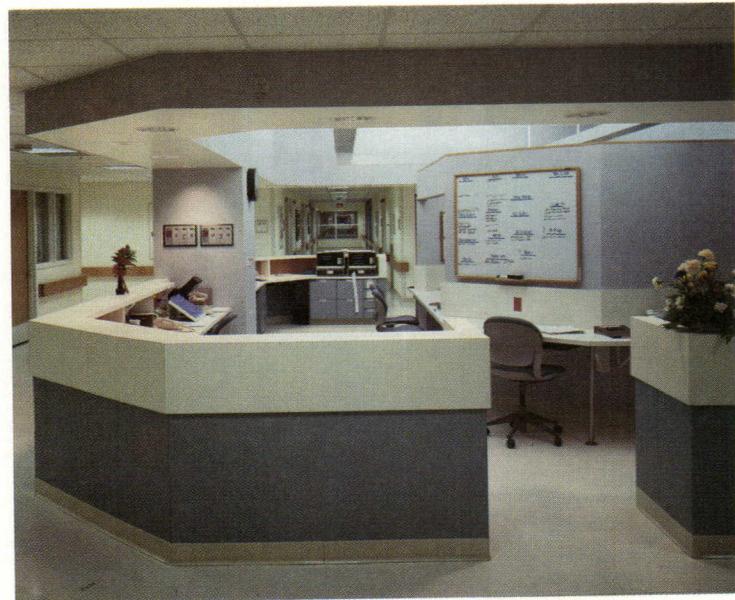
While the three exemplify the industry's quest for streamlined, high-tech function in user-friendly form, they also reflect its unexamined pursuit of a "noninstitutional look," which is fast becoming institutionalized. Because economic and management issues are so critical, it is not surprising that hospitals are adopting architectural models drawn from commerce: office buildings, hotels, and soon, we are warned, shopping malls. Given these models, the clichés of commercial cosmetics—inoffensive colors and materials, lowest-common-denominator accouterments, and the odd stab at elegance on the cheap—follow naturally. A step forward perhaps, but such exemplars deny the enduring image of the hospital as a place for healing. If in their rapid evolution, hospitals are to retain (or regain) both the appearance and reality of gentle welcome, nurture, and care, the need to redefine their physical expression is urgent. Were Louis Kahn alive, he would ask, "What does the hospital want to be?" Hospitals themselves are still unsure. Can architects answer? *Margaret Gaskie*

Burrowed into its knoll, Lakeland's "mainland" wing provides upper-level emergency and staff access to clustered diagnostic and treatment suites, as well as lower-level entry to administrative and support areas. From the patient-bed island on the north, where central nursing stations on each floor (bottom) easily command corridors on either side, rooms overlook the lake and prairie or the lush inner garden. Between

them, a dual circulation bridge bisecting the atrium steers visitors clear of staff and service traffic and subtly segregates a patient's seating terrace west of the lobby/reception area. (Visitors and staff share a secondary route to the adjacent cafeteria.) Though the airy skylit atrium with its plashing and drifting waters and abundant plant life begs no special pleading, it is also the organizing core of an up-to-date



LOWER LEVEL



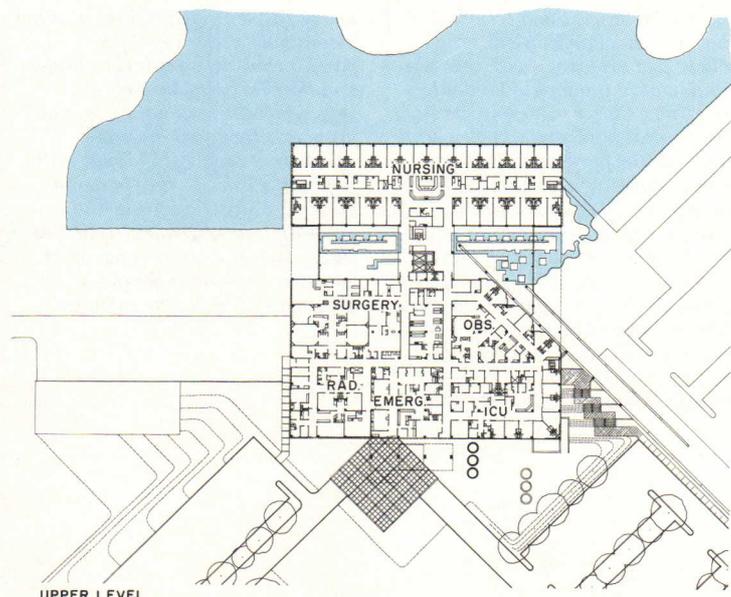
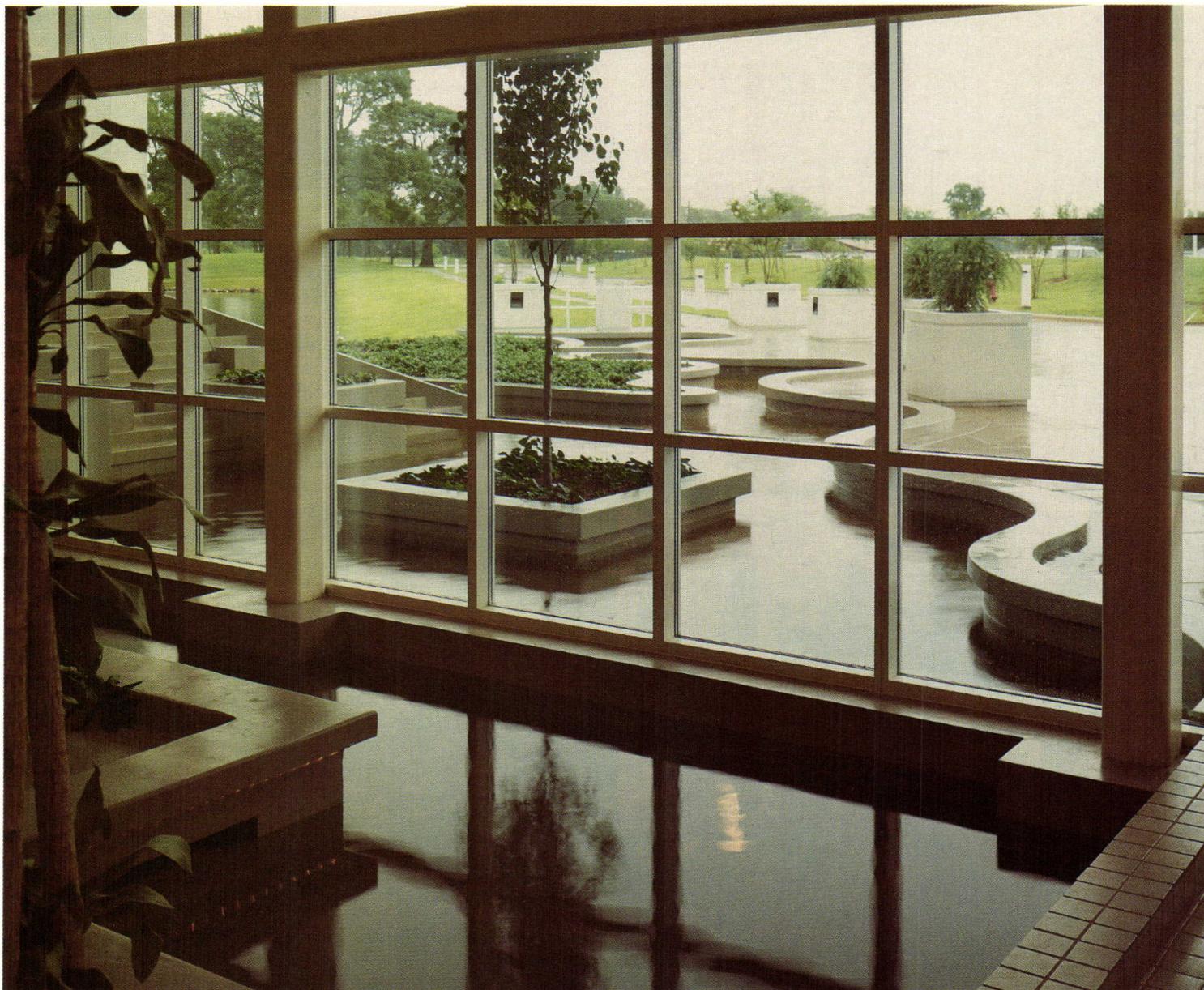
medical plant and the symbol of a patient-oriented environment also evinced in thoughtfully planned rooms with large, low-silled windows to indoor and outdoor views. The usual mix of private and semiprivate rooms is enhanced by oversized first-floor bed-sitting rooms (bottom) with patios secluded behind private waterfalls. And how many 115-bed hospitals allow a \$50,000 budget for art?

Lakeland Medical Center
Athens, Texas

Owner:
East Texas Hospital Foundation

Architects:
Ellerbe Associates, Inc.—Richard G. Hildebrand, project manager; Douglas P. Westby, project designer; John Waugh, David Norback, design team; Bryan Carlson, Gary Lampman, landscape architects

Engineers:
Ellerbe Associates, Inc.
Consultants:
Nori Umemoto (interior design)
Construction manager:
McCarthy Construction



Hospital architecture

©Paul Warchol photos



From a distance, the intricate grid of the Founders Pavilion's west face (above and top) reads as a negative version of Philadelphia's older loft buildings. Closer to, despite its size and pivotal position in the hospital complex, the pavilion's impact is diluted by bulky surrounding buildings that deny it a clear vantage point. Bridges connect the new building with existing patient wings on the east. The usual entry sequence, however, is from Hamilton Walk, a major campus pedestrian artery (lower right in site plan), through a passage beneath the north wing of the adjacent medical school,

to a sculpture plaza. Off the plaza, a modest lobby opens to the new pavilion's main circulation spine and the first of the two sets of passages joining it to the hospital proper. Although it lacks the insistent verticals of the west wall's mechanical shafts, the elevation facing the plaza (opposite and overleaf) is also strongly articulated, its broad base broken by bands of bowed windows and the two-story glass wall fronting the cafeteria.

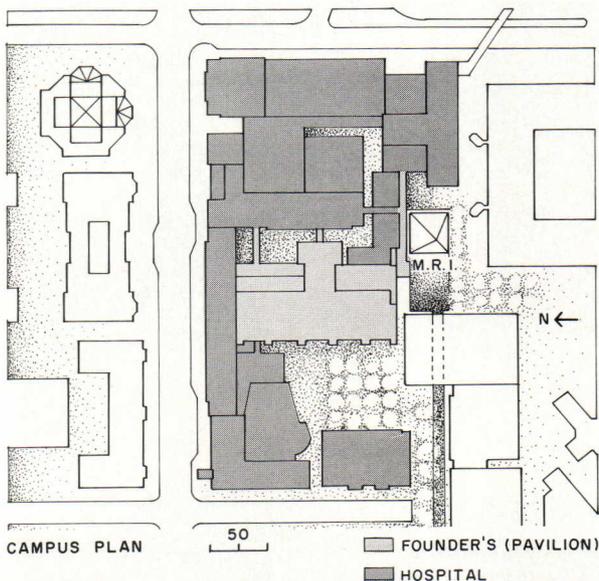
Even firms whose bread and butter is the ongoing building up, tearing down, and reshuffling by which hospitals grow and change think of university medical centers—with their hosts of personnel, protean mix of functions, sheer physical size, and too-frequent legacies of obsolete antique structures—as the worst of a difficult breed.

Yet having never done a hospital before, GBQC sailed undaunted into the tasks of master planning for the Hospital of the University of Pennsylvania and designing HUP's biggest building. Now, having successfully negotiated the passage, principal Robert Geddes can maintain with authority that planning a hospital is "like planning any other building," though in this case the client's capable in-house staff assisted with the purely technical aspects while the designers focused on "architectural values," spatial relationships, and, within preset parameters, program-as-you-go decision-making.

GBQC's general scheme for reordering the hospital's functional nodes and unscrambling its circulatory maze also set in motion the round of renovation that allowed removing enough outworn structures to open for the new building a cramped but pivotal site behind and parallel to the main hospital precinct, where its spine and connecting bridges close a newly coherent circulation loop through the complex. As the principal resource for all services except nursing and outpatient care, the building's 15 stories and 450,000 square feet encompass a staggering array of activities—surgeries and clinical labs; 220 patient beds, including 90 in intensive-care units; food service; a huge mechanical area; and administration and other support areas. Layering these disparate functions—some fixed horizontally by required adjacencies—soon revealed that their varying depths would preclude conventional vertical service cores: patient-room plumbing lines, for example, would drop through operating suites and on into the cafeteria. Elevators were easily relegated to an exterior core, but it was the familiar image of Louis Kahn's Richards laboratories just down the road that inspired pulling the mechanical shafts outside as well.

At first, the hefty 15-story-high ducts seemed only to amplify the west facade's already problematic scale. But by adding horizontal "sunshades" and breaking the resulting grid into small and smaller units accented with subtle color, the dominating verticals were softened to warp threads in the distinctive tartan pattern that reduces the oversized expanse to proportions more in keeping with its surround.

"Much of what we were able to accomplish came from our ability to take a fresh look," Geddes notes. "We didn't approach this as a hospital problem but as an architectural problem." Which may be why the building looks not like a hospital but like architecture. *M. F. G.*



Founders Pavilion
Hospital of the University of Pennsylvania
Philadelphia
Geddes Brecher Qualls Cunningham, Architects

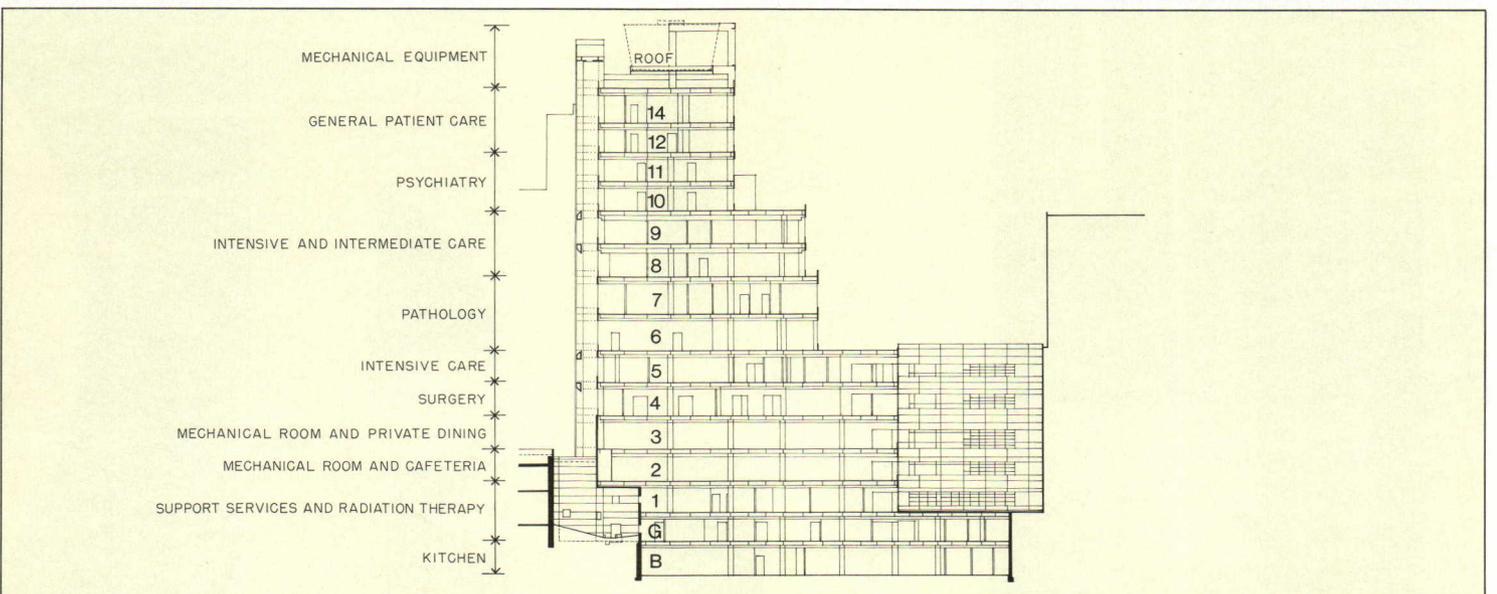
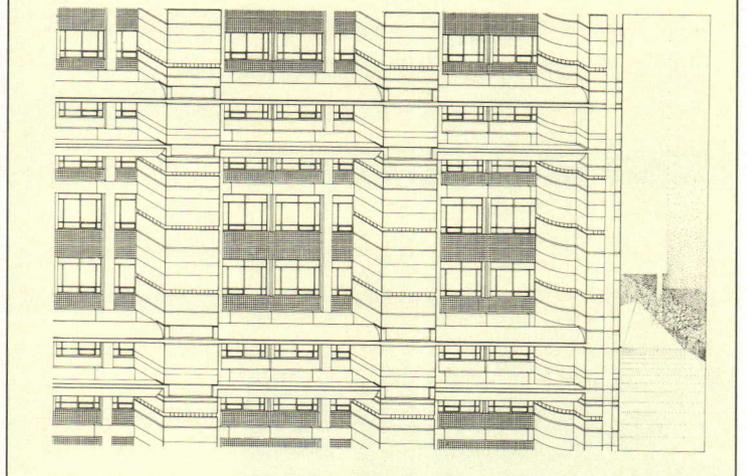
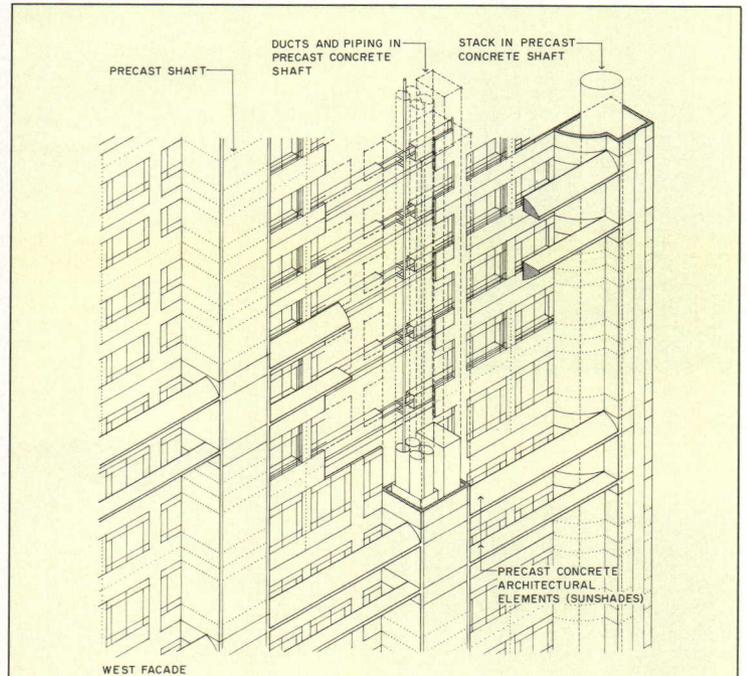


Although pulling mechanical-service cores to the building exterior made possible flexible floor layouts for disparate functions with widely varying space requirements, it also heightened the problem of relieving the west facade's formidable bulk. Thus the strong horizontal concrete members, which only incidentally act as sunshades, were designed primarily to serve as scale-giving elements and offset the mass of the

5-by-5-foot shafts, abetted by rustication of the building's concrete surfaces. Employing color in the building's basic materials—precast concrete in white and café au lait and glazed tile in terra rosa, walnut, and white—further reduces the grid to comprehensible proportions by emphasizing the smaller units within, and contributes in addition an almost Victorian polychrome palette that mediates between the

early brick-and-limestone and later precast buildings nearby. The tartan pattern of diminishing rectangular units humanizes the scale of the elevation but is also bold and intricate enough to hold its own against internal changes that might conflict with the fixed fenestration (already some windows are opaqued). An additional humanizing component is the plaza at the juncture of the older hospital

buildings, the medical school, and the new pavilion (below left and opposite). An oasis of light and air, the courtyard is brightened by the burnt-orange pyramid that roofs GBQC's magnetic resonance imaging unit beneath (steering pedestrians away from its magnetic field), and by a twisting white and orange metal sculpture the architects whimsically likened to a clump of crumpled beer cans.



*Founders Pavilion
Hospital of the University of
Pennsylvania
Philadelphia, Pennsylvania*

Owner:
*Hospital of the University of
Pennsylvania*

Architects:
*Geddes Brecher Qualls
Cunningham—Alan Fishman,
principal-in-charge; Robert Brown,
Robert Geddes, principals for design;*

*James Dill, associate for hospital
planning; Herbert Levy, associate/
project manager; Albert Clark,
project architect; Alejandro Firpi,
project designer; Brian Wait, James
Hiser, Stanley Tang, Stanley Cairns,
Keith DeVoe, Jeff Holcomb, Patricia
Lynch, project team*

Engineers:
*Geddes Brecher Qualls
Cunningham—E. Fred Brecher,
principal (structural); Caretsky &*

Associates (mechanical/electrical)
Consultants:
*Hanna/Olin, Ltd. (landscape);
Robert Engman (sculpture); Daroff
Design, Inc. (interior design);
Cerami & Associates (acoustical);
Romano Gatland (food service)*
Construction management:
Turner Construction Company



Visible improvement

E. Alan McGee Photography, Inc. photos

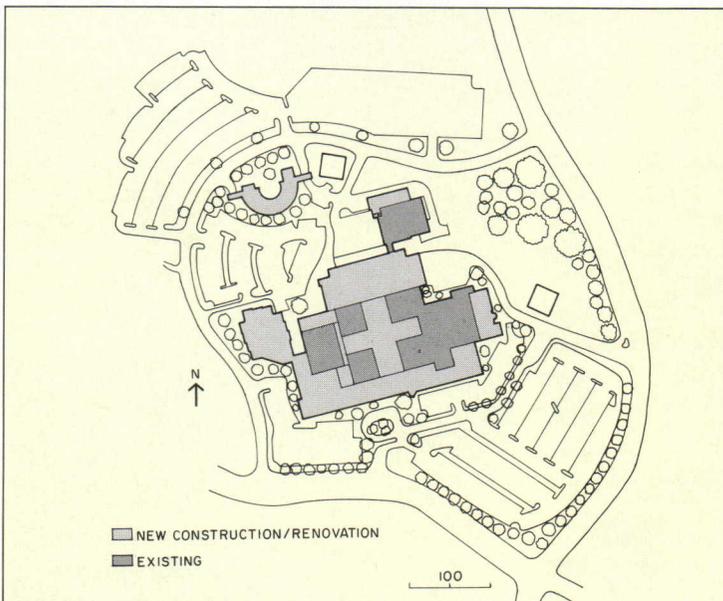


The principals of Nix, Mann and Associates, many of them dropouts from more general practices who formed the firm to focus on hospital design, characterize their frequent forays into rejuvenating ailing hospitals as “less like planning buildings than planning cities”—a process of aggregation and accretion. A recent case is the total re-do of suburban Atlanta’s 455-bed Northside Hospital, whose expansion is a competitive response aimed at boosting the hospital’s efficiency as well as refurbishing its dowdy image, with particular emphasis on expanding the obstetric and outpatient services most in demand by the young families in the surrounding community. (Even before its updating, Northside was known as the area’s “baby factory.”)

In addition to renovations that probed into 117,000 square feet of existing space, the project entailed 210,000 square feet of new construction—a two-story expansion atop the existing patient tower, an intensive-care wing, a day-care center, and a five-story wing stretched across the original frontage—that virtually buries the original tower.

The most prominent element of the expansion, the new wing paradoxically contains no patient beds (though its large obstetrics department abounds in bassinets). Instead, the addition accommodates a miscellany of treatment and support functions—from surgery to gift shop—and introduces a simplified circulation system branching from discrete bilevel entrances and lobbies for inpatients, outpatients, and visitors. To bring flexibility to the interior and a regulating element to the exterior, columns set outside the building face allow it, says designer Manuel Cadrecha, “to reach out where it needs to” with curving pods that animate the emphatic structural grid. Similarly, floors end where they need to, creating a staggered, layered profile that further abates the taint of institutionality and creates natural terraces. Although none of the spaces behind it required windows, the facade is penetrated by a central glass curtain wall to light and reveal the vertical circulation core and accompanying lobbies, while glazed “storefronts” extend from the first-floor entry, gradually receding to ribbons in administrative offices. On the upper floors, vision strips peek from behind the columns, which act as *brise-soleil* along the south-facing wall. Below, a cantilevered terrace shades the ground-level outpatient entrance, and a more substantial screen shields the first-floor lobby and supports a glazed canopy over the dropoff.

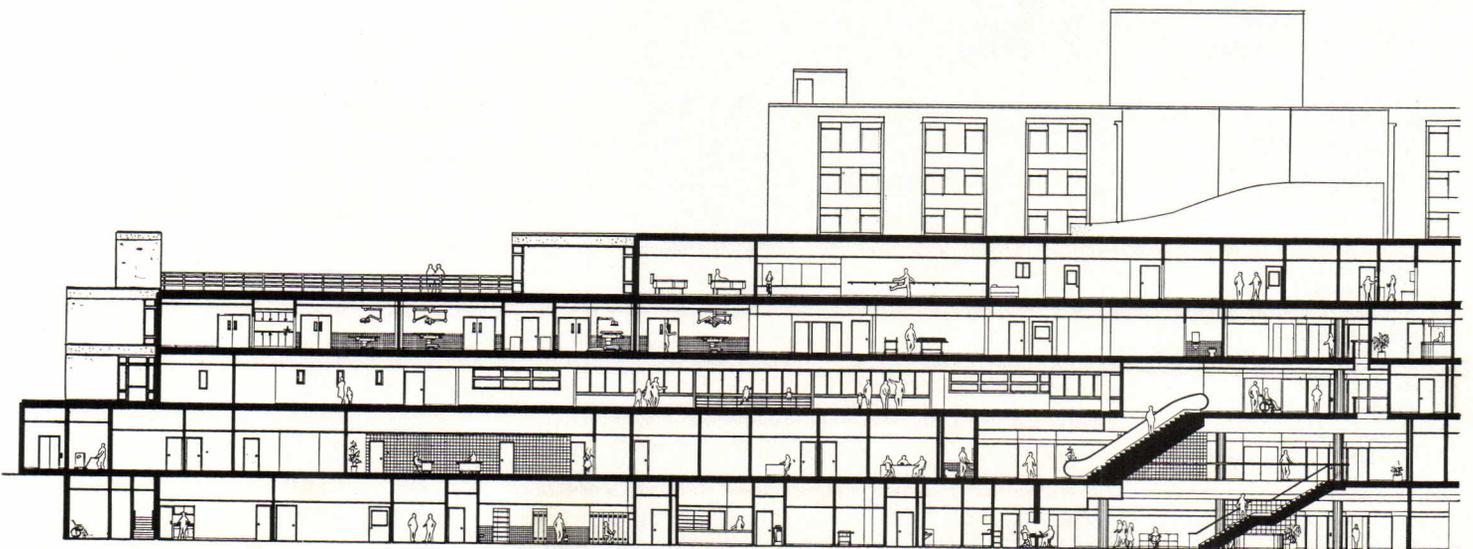
Though gratified that local people pay the new and newly revamped hospital what they take to be the high tribute of likening it to a hotel, the architects claim other rewards for their always rigorous, often tedious, sometimes frustrating specialty: “What other building,” they ask, “affects how people are born and how they die?” *M. F. G.*



Northside’s original building—a boxy cruciform tower tricked up with a meager entrance canopy and backed by a later patient wing—is almost wholly encapsulated in the new construction that accompanied renovations affecting every department. The most visible addition, however, is the 350-foot-long, five-story wing athwart the former entry, which diagrams the hospital’s reorganization in a layered structural grid filled in with projecting curved pods, creamy beige-brick panels, and tellingly placed glazing. Aided by a sloping site, the designers separated the approach to the first-floor inpatient lobby from the busy ground-level entrance to the high-turnover outpatient unit, which operates 18 hours a day, six days a week. Their uncoupling is the key to a well-

ordered vertical circulation system that ties back to the updated existing facilities and splits the new building into two parts. Each focuses on the circulation core and adjoining lobbies and waiting rooms, which are expressed on the exterior by a glass curtain wall that dwindles as it rises, reflecting their diminishing size. (Partial section opposite shows the core and major facilities to its west.)

Northside Hospital
Atlanta
Nix, Mann and Associates,
Architects



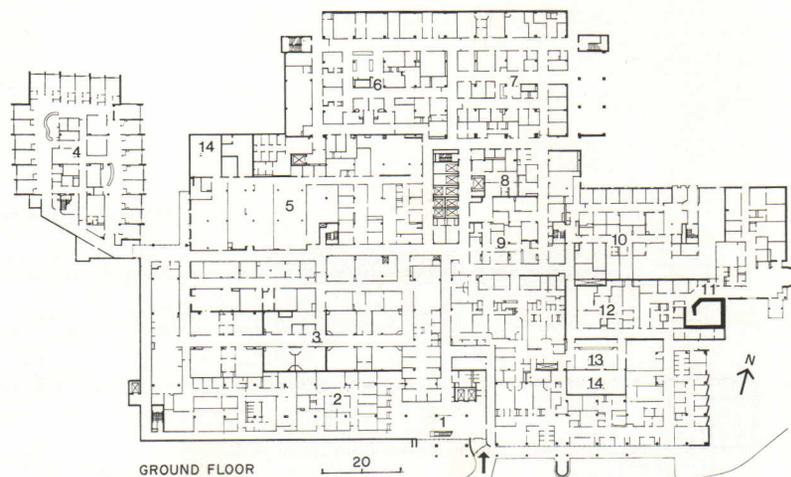
Despite problems raised by required adjacencies with nursing floors in the existing patient tower—and stingy (11 1/2 feet instead of the now customary 14 to 15 feet) floor-to-floor heights, which inspired the designers to “some cute tricks with mechanical distribution”—the new wing’s plan organization is simple and rational. The outpatient lobby and admitting area adjoin an array of ground-floor diagnostic and treatment units, with

an emphasis on ambulatory care (the main operating and labor/delivery suites, also on this floor, are an unavoidable anomaly). Both lobby and admissions have ready elevator access to the third-floor outpatient surgery and fourth-floor physical therapy departments. The second floor, reached by escalator from the main inpatient and visitor entrance (opposite) is divided between a new food-service area (with

cafeteria and open dining terraces) and a 123-bassinet nursery—the hospital’s star attraction—that includes one of the state’s few intensive-care units for infants. Because the nursery is separated from the postpartum wing in the adjoining tower, viewing of new arrivals is unrestricted, and a fine evening will bring out as many as 300 cooing friends and relatives. Pleasant but unremarkable



- | | |
|--------------------------------|---------------------|
| 1. Outpatient admitting/lobby | 22. Data processing |
| 2. Ambulatory care services | 23. Dietary |
| 3. Surgery/recovery | 24. Dining |
| 4. ICU/CCU Laboratory | 25. Gift shop |
| 5. Laboratory | |
| 6. Labor/delivery | |
| 7. Emergency | |
| 8. Employee health | |
| 9. Pulmonary medicine | |
| 10. Mental health | |
| 11. Oncology | |
| 12. C. T. scan | |
| 13. Radiology | |
| 14. Mechanical | |
| 15. Inpatient/visitor lobby | |
| 16. Administration | |
| 17. Health-information systems | |
| 18. Admissions | |
| 19. Business | |
| 20. Personnel | |
| 21. Nursing | |



interiors incorporate such touches as patient-wing corridors notched to maintain code width opposite nurses' stations, which bow forward for better floor surveillance (below), and pullman-car upholstery for seating pods along the high-use nursery corridor.

*Northside Hospital
Atlanta, Georgia*

Owner:

Northside Hospital

Architects:

Nix, Mann and Associates, Architects, Inc.—Henry A. Mann, principal-in-charge; David C. Johnson, project architect; P. Gary Swords, Manuel Cadrecha, David Hendershot, project designers; Dean Hobart, interior designer;

*Lance S. Galvin, James J. Bynum,
job captains*

Engineers:

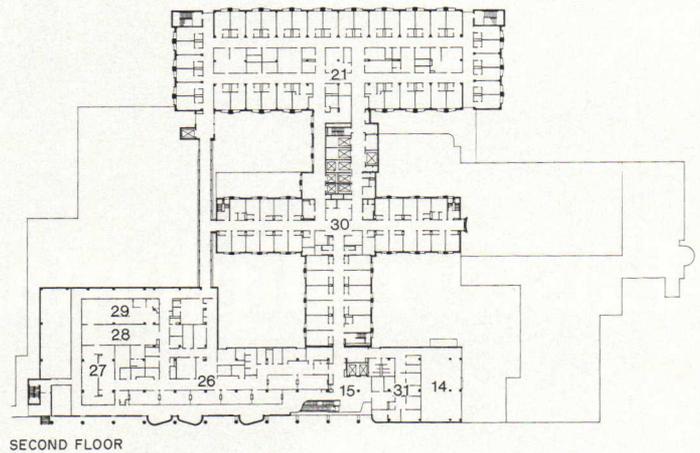
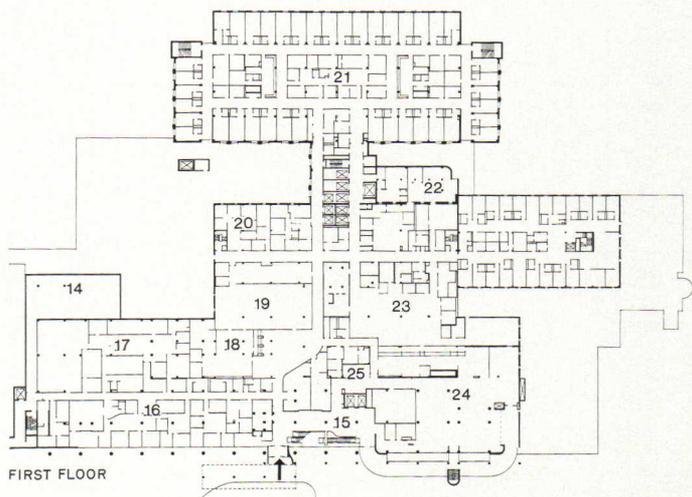
*Sedki & Russ, Inc. (structural);
Newcomb & Boyd, Inc. (mechanical);
Hibble, Peters & Dawson, Inc.
(electrical); W. L. Jorden & Co. (civil)*

Consultants:

*Comacho Associates (dietary);
Charles Sharitz (parking)*

Contractor:

Beers Construction Company



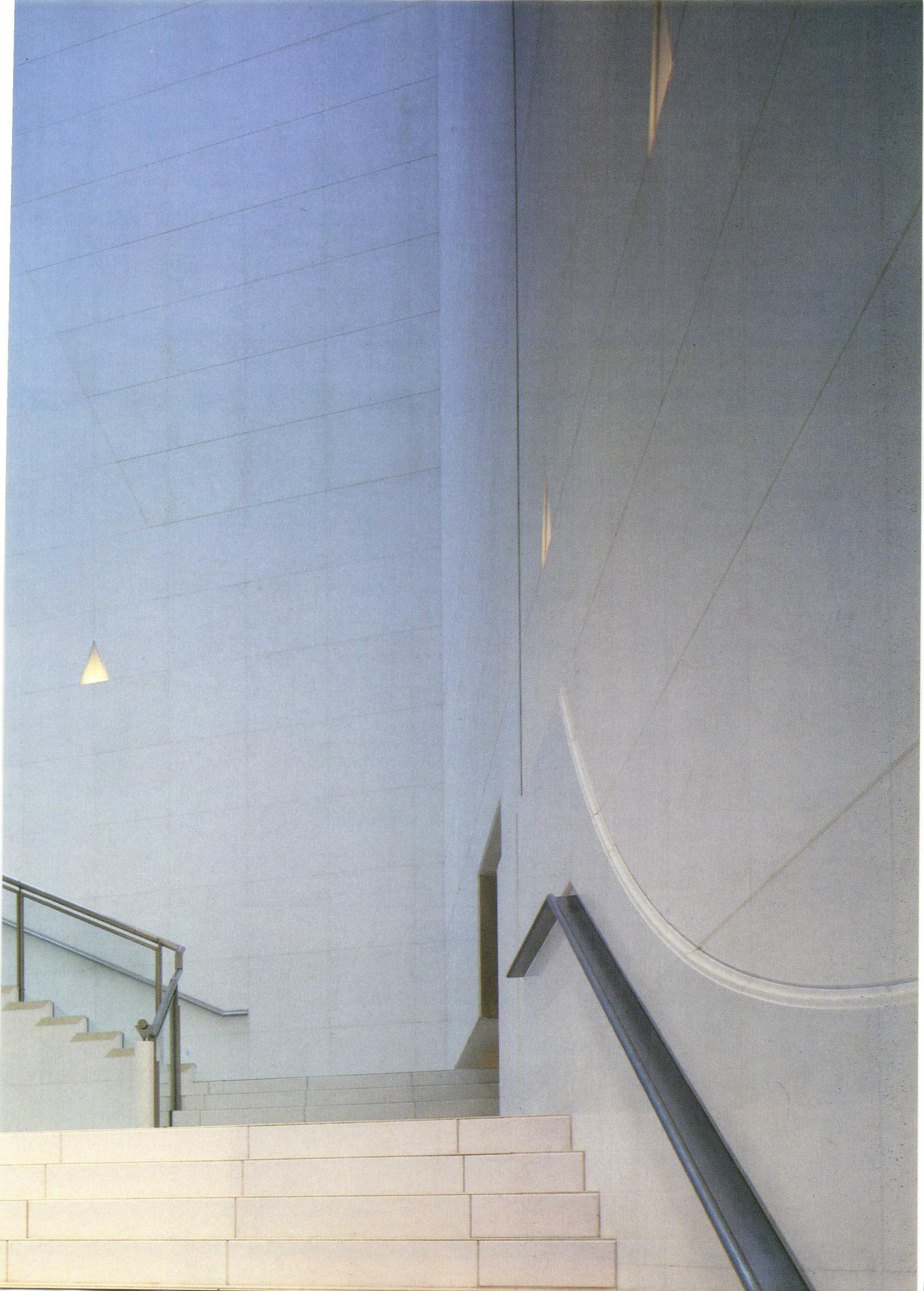


Eastern diplomacy



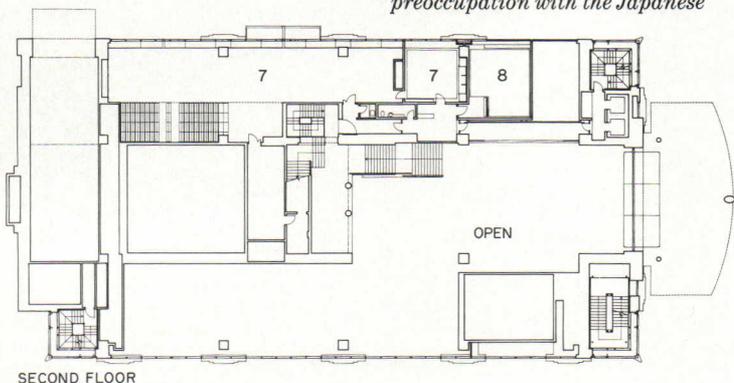
National Museum of Modern Art
Kyoto, Japan
Maki and Associates, Architects



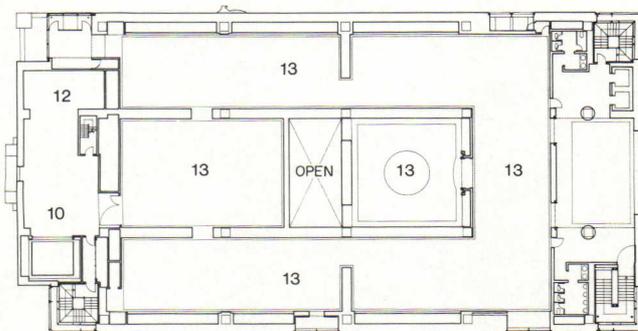


The museum's permanent collection of 20th-century Western and Eastern art is housed on the top floor in a coolly neutral enfilade of rooms (plan and opposite). Environmentally controlled cases around the perimeter display the traditional screens, scrolls, and textiles that constitute the core of the museum's Japanese artifacts (opposite bottom). Maki's preoccupation with the Japanese

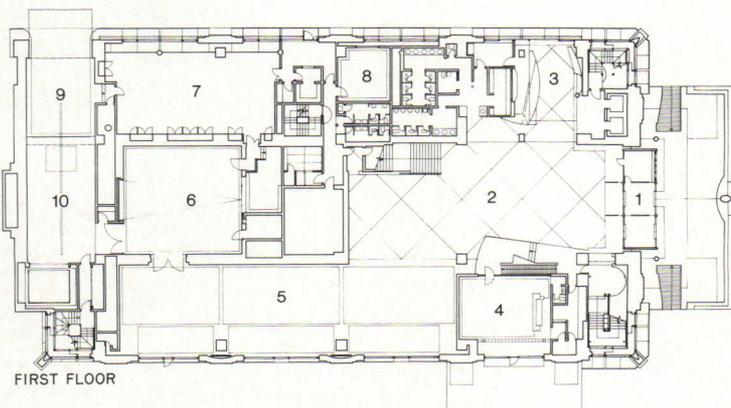
concept of *oku*, a spiritual inner sanctum, is reflected in a spectacular marble stairway carved out of the heart of the building (preceding pages and section) and in a meditative gallery crowned by a toplit oculus at the center of the top floor (opposite top). In the ground-floor reception hall, a glazed opening cut in the shape of a stylized kimono ceremoniously exposes the café (bottom).



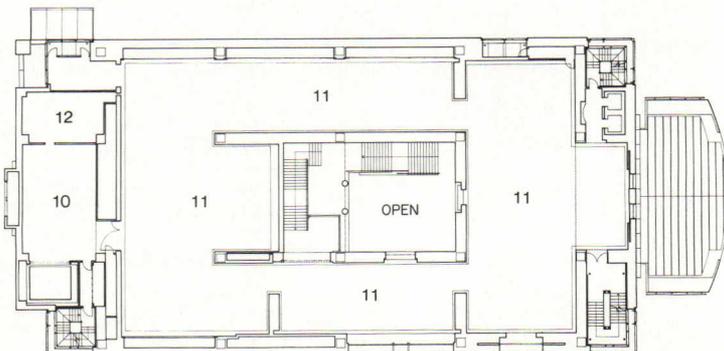
SECOND FLOOR



FOURTH FLOOR

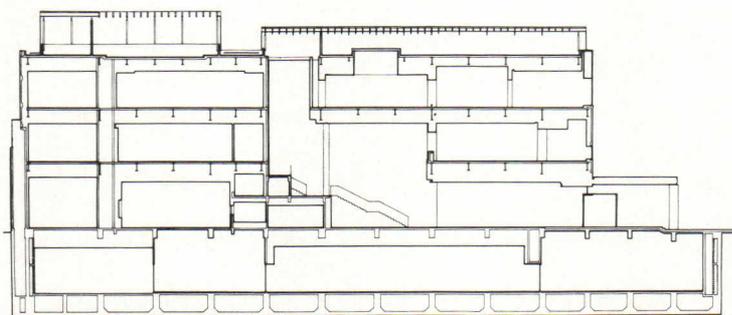


FIRST FLOOR

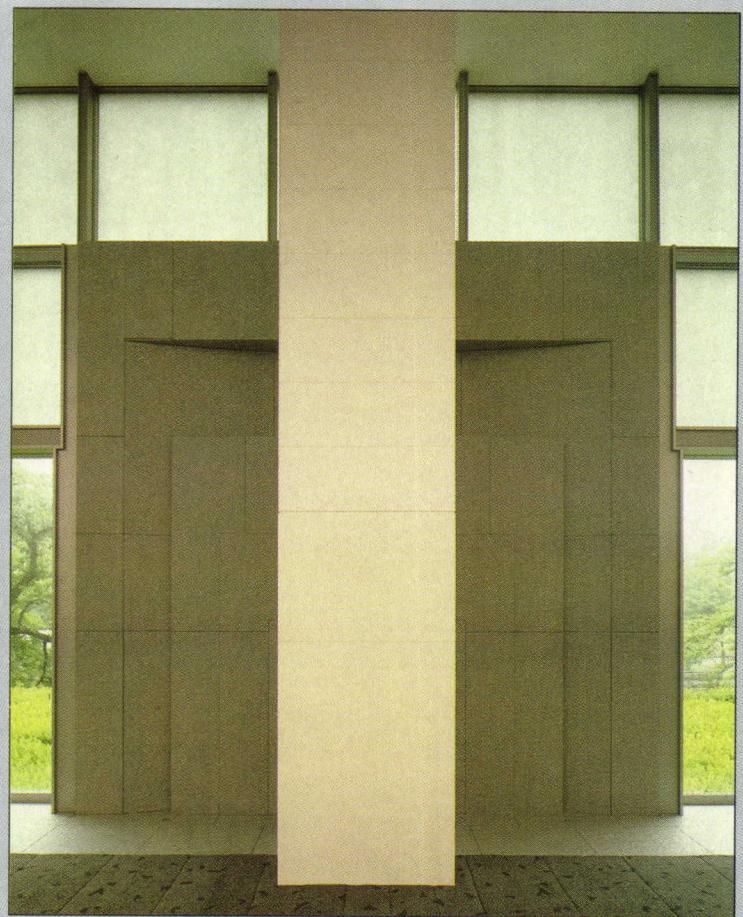


THIRD FLOOR

- 1. Entrance
- 2. Reception
- 3. Gift shop
- 4. Café
- 5. Gallery
- 6. Auditorium
- 7. Office
- 8. Meeting room
- 9. Service
- 10. Preparation room
- 11. Temporary exhibition
- 12. Storage
- 13. Permanent exhibition



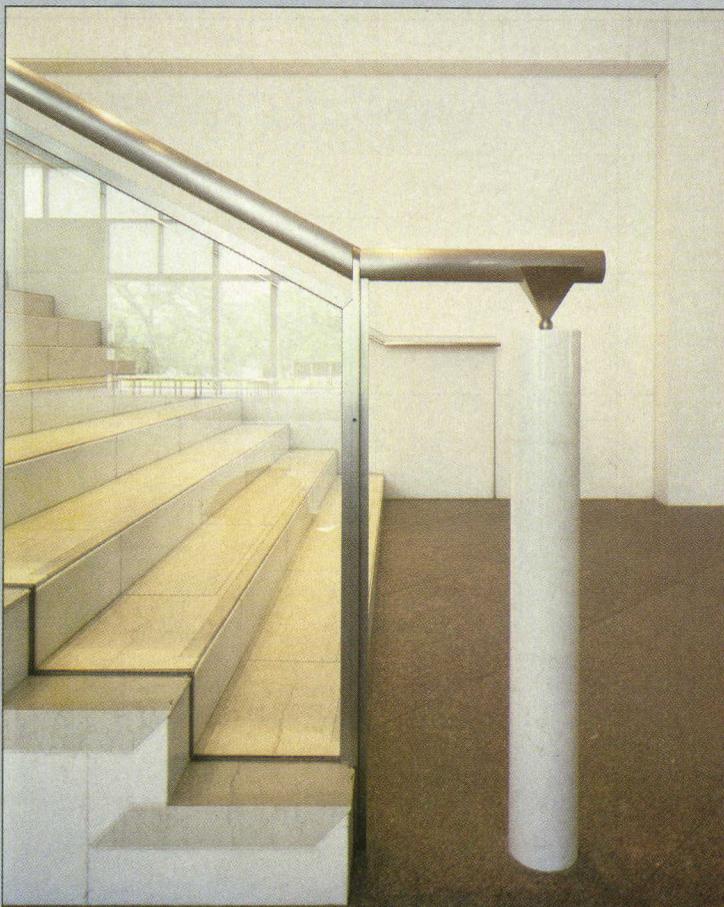




Maki's insistence on rich materials and refined craftsmanship is evident throughout the museum. The architectonic elements and sculpted furnishings that activate and enhance the quiet elegance of his interiors evoke the bold geometries of the venerable imperial Katsura villa in Kyoto. "I like designing stairways because they are the most critical joints in a building for providing movement and connection," notes

Maki. "They give a building a place of identity like a city gate or arcade." The south stair tower was assembled from tubular and planar elements as though it were a De Stijl or Constructivist sculpture, with an upright designed by Hidetoshi Ohno (above left), red columns mirroring the torii gate outside (below right), and floating platform landings (opposite, bottom left). In the grand staircase leading from the reception

hall to the third floor, Maki distinguished the handrail from the balustrade with stainless steel and glass (below left), and experimented with railings of blown glass to frame the top landing. The large rusticated granite panels at the base of the exterior are exposed inside the informal gallery at the perimeter of the ground floor (above). A lacquered wood and glass case on a terrazzo base, designed by Kazuko Fujie, is





used as a sales counter near the entrance (above). The sweeping bench of lacquered wooden slats in front of the top-floor windows (above right) is the work of Maki's color consultant and carpet designer, Kei Miyazaki. Throughout the museum, daylight is modulated by screens of translucent fiberglass sandwiched between windowpanes (bottom right and opposite).

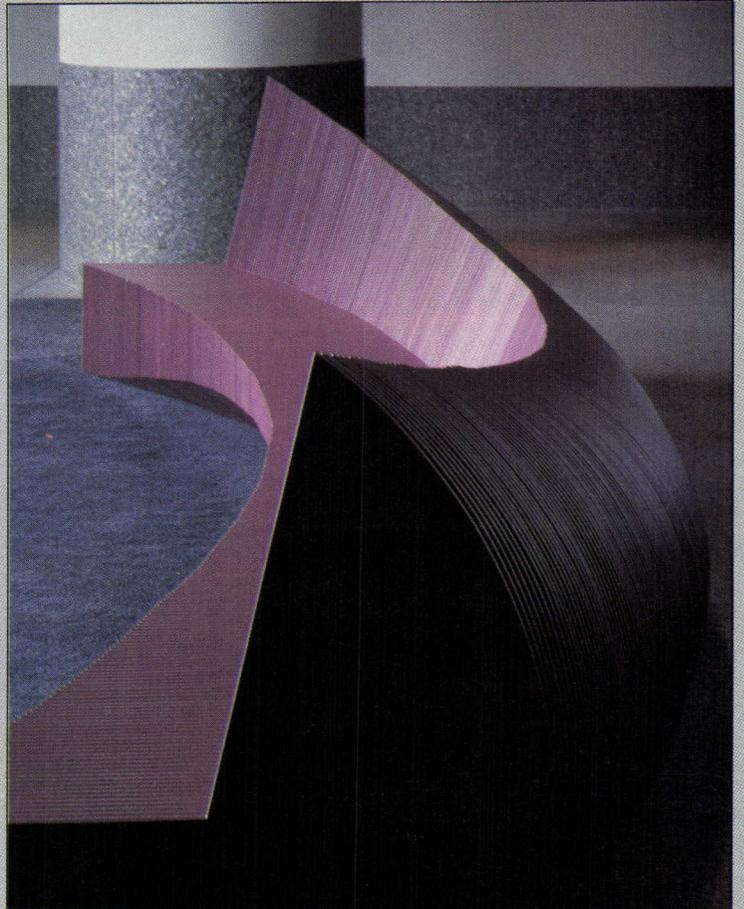
*National Museum of Modern Art
Kyoto, Japan*

Architects:

Maki and Associates—Fumihiko Maki, principal-in-charge; Tomoyoshi Fukunaga, Hiroshi Miyazaki, Kiyohide Sawaoka, Toshio Hachiya, Toshihiko Kishi, Gary K. Kamemoto, project team

Engineers:

Kimura Structural Engineers;



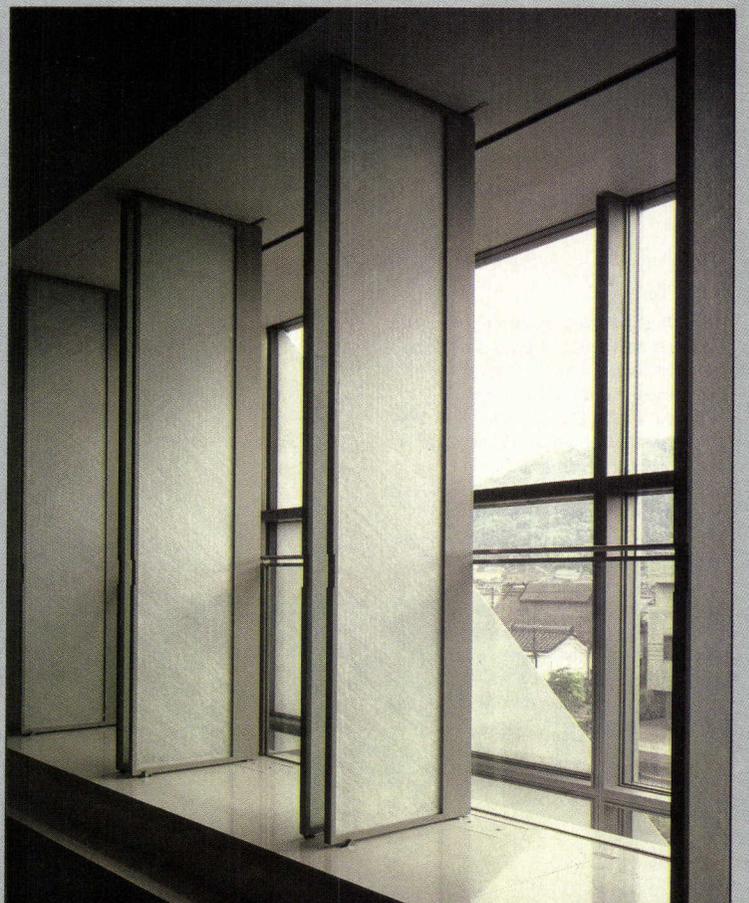
*P. T. Morimura & Associates
(mechanical)*

Consultants:

Kazuko Fujie (furniture); Kei Miyazaki (carpet and color scheme); Kijuro Yahagi (signage); Hidetoshi Ohno (lighting fixtures)

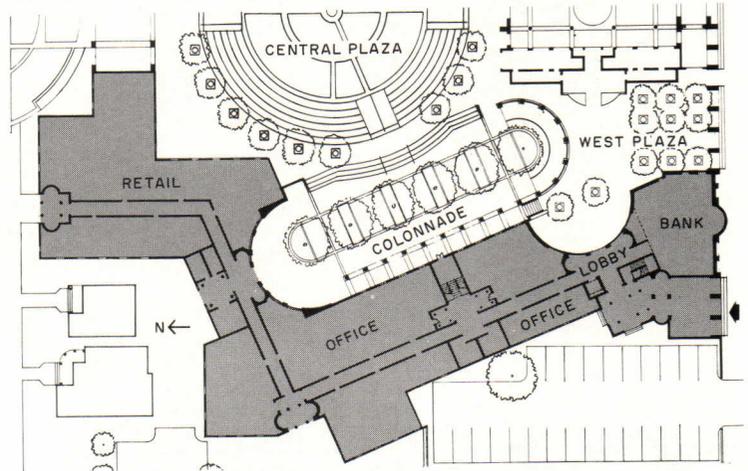
General contractor:

Joint-venture of Takenaka Komuten, Ltd., Matsumura-gumi Corporation, and Kohnoike Construction Company, Ltd.



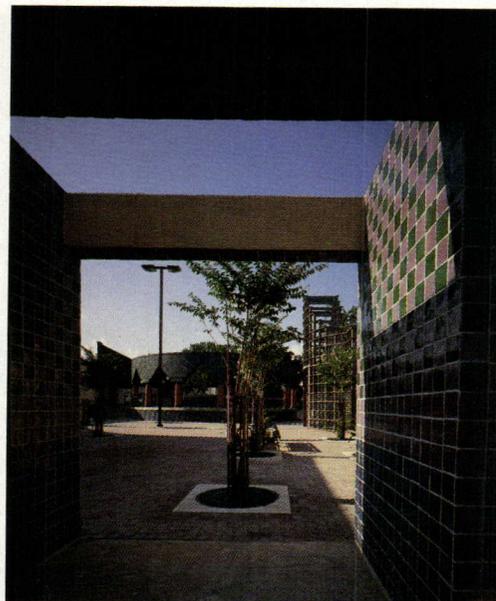
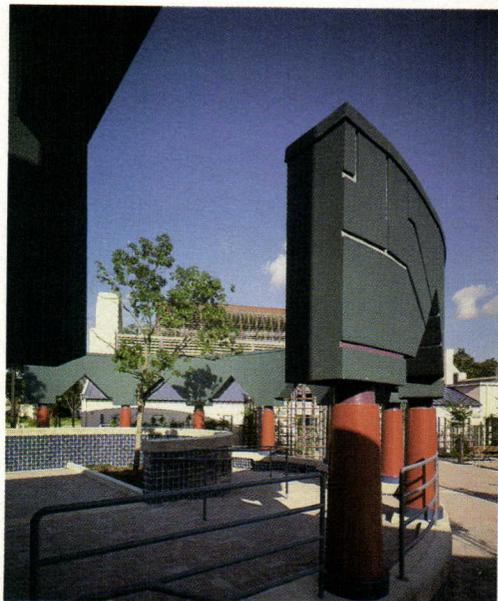
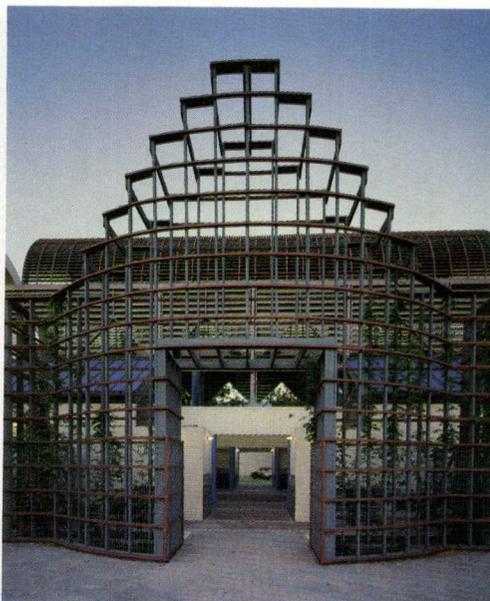
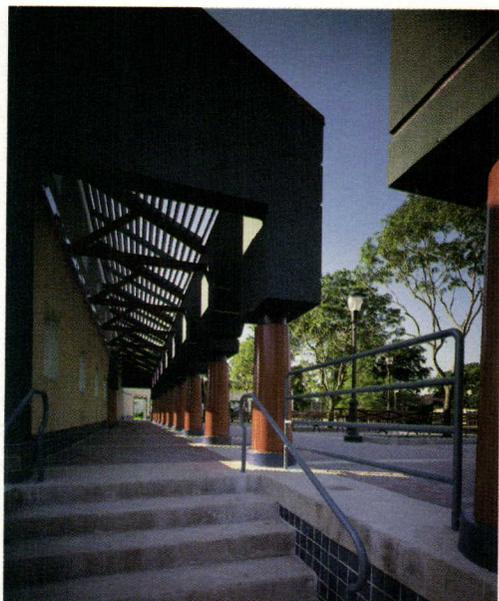
Contrasting yet blending with the lighthearted stage buildings and food pavilion, the structures that prepare the way for Las Oficinas (which is to be privately developed) are macho, Mayan-massive forms in deeper tones. On the avenue, an arcade (opposite bottom right) extends the street wall westward, retaining the main portal's deep-blue tile base but replacing its pink and blue tile checkerboard with mauve and forest

green. The arcade opens to the vest-pocket charms of the West Plaza (below), which widens to a curving outdoor lobby serving both the office building and an adjunct street-side bank (plan at bottom). On the other side of the little plaza, a tall latticed pergola, soon to be enveloped in wisteria, marks the cross-axial passage through the food pavilion. Pre-placing the two-story facade of the office-building-to-come expands



the enclosure of the Plaza Cultural and, not incidentally, controls the plaza frontage, while giving the developer a head start. The creamy stucco face of Las Oficinas shelters behind a weighty colonnade (top left) with exaggerated blue-green corbels (rusticated stucco over plywood) resting on stubby, slightly tapered, rust-red columns. At the West Plaza, the colonnade continues in a curve of even pudgier columns atop a low,

cobalt-blue tiled wall (bottom left). At the opposite end, the matching curve of a concrete-block wall completes the semi-enclosure of a parklike oval forecourt that approaches the edge of the amphitheater. Throughout, open spaces are furnished with wooden benches and planted with delicate crepe myrtle and cedar elms that complement the mature Spanish oaks and pecan trees already on the site.

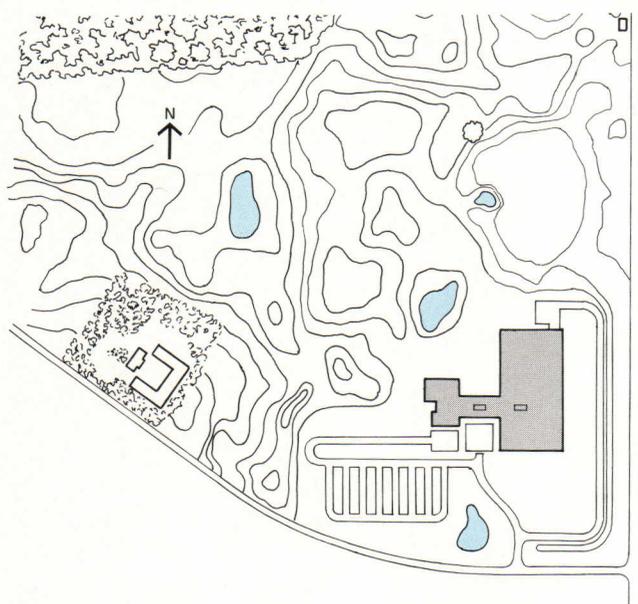
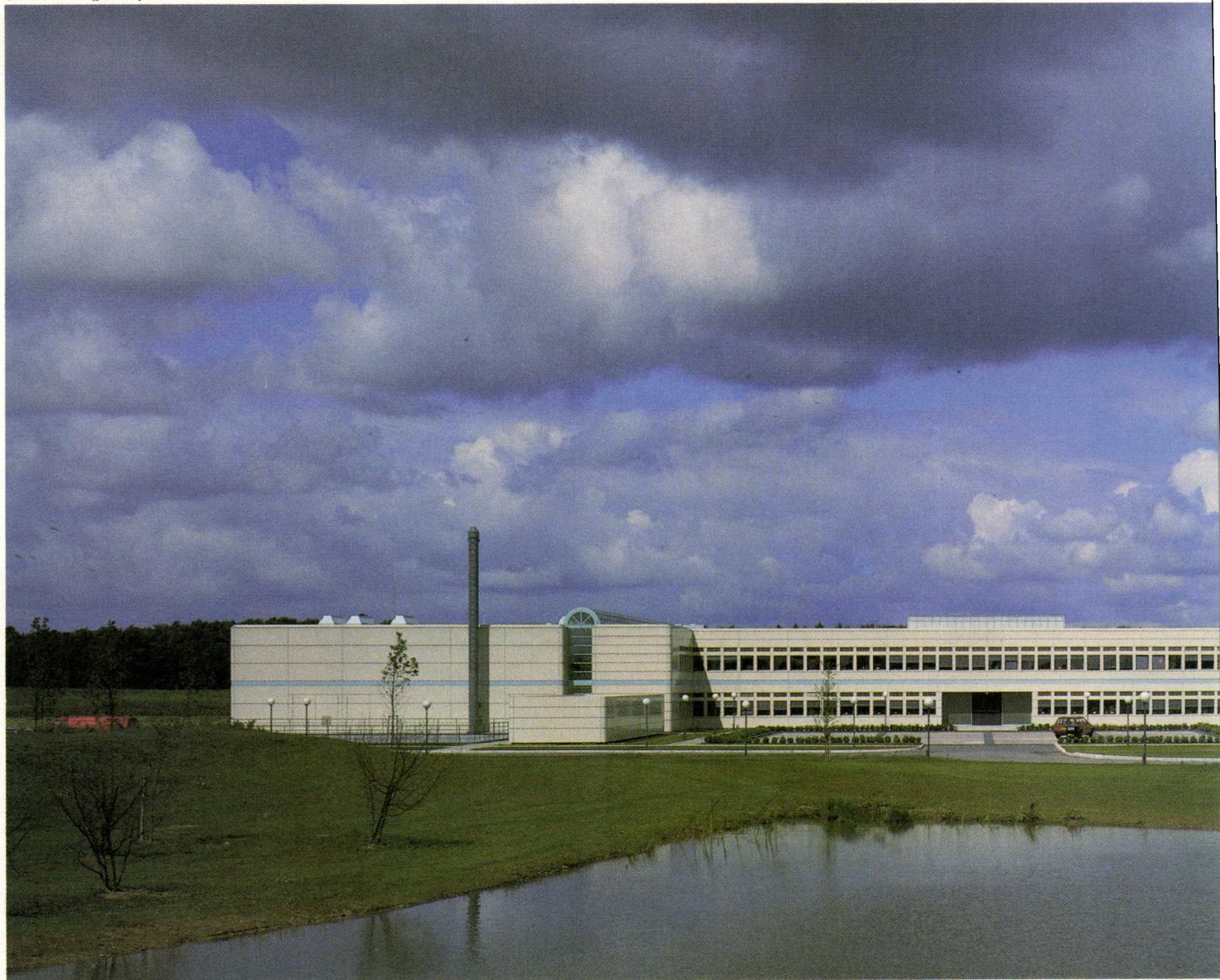


Plaza Guadalupe
San Antonio, Texas
Owner:
Avenida Guadalupe Association—
Ernest Olivares, development
coordinator
Architects:
Reyna Caragonne Architects—Elias
G. Reyna and Alex Caragonne,
principals-in-charge; Michael
Schroeder, job captain

Engineers:
Robert Harper (structural); William
Dorbrandt (mechanical/electrical/
plumbing)
General contractor:
J. J. Falbo Contractors, Inc.

Danish Modern

© Finn Christoffersen photos



Nowhere in the world has Modern architecture been embraced so unequivocally as in Scandinavia. Even though northern European architects never regarded Modernism with the utopian fervor that motivated their Bauhaus-trained colleagues in Germany, they developed a core belief in the efficacy of functional design—in what Finnish architect Juhani Pallasmaa has called “the poetics of common sense”—that still dictates how Scandinavians perceive the built environment. This sentiment seems especially prevalent in Denmark, a country whose very name conjures up teak-and-rosewood images of the clean-lined '50s and where the faculty at the Royal Danish Academy of Fine Arts views Modernism with the same unquestioned reverence that it once reserved for Classical architecture. Stylistic debate is not unknown in Denmark—witness *Skala*, a slick Danish periodical that aggressively covers the international waterfront of architectural theory—but it is muted in practice by the Danes' conviction that the lessons of Arne Jacobsen, Jørgen Bo, and others who came of age just after World War II are as relevant today as they were at midcentury.

IBM couldn't agree more. From the familiar blue-and-white stripes of its corporate logo to the crisp architecture of its vast real-estate empire, the American computer giant has fine-tuned a design program that

IBM's new software-production and office facility near Copenhagen reflects the American company's celebrated penchant for meticulous design—and the enduringly Modern sensibility of the building's Danish architects.

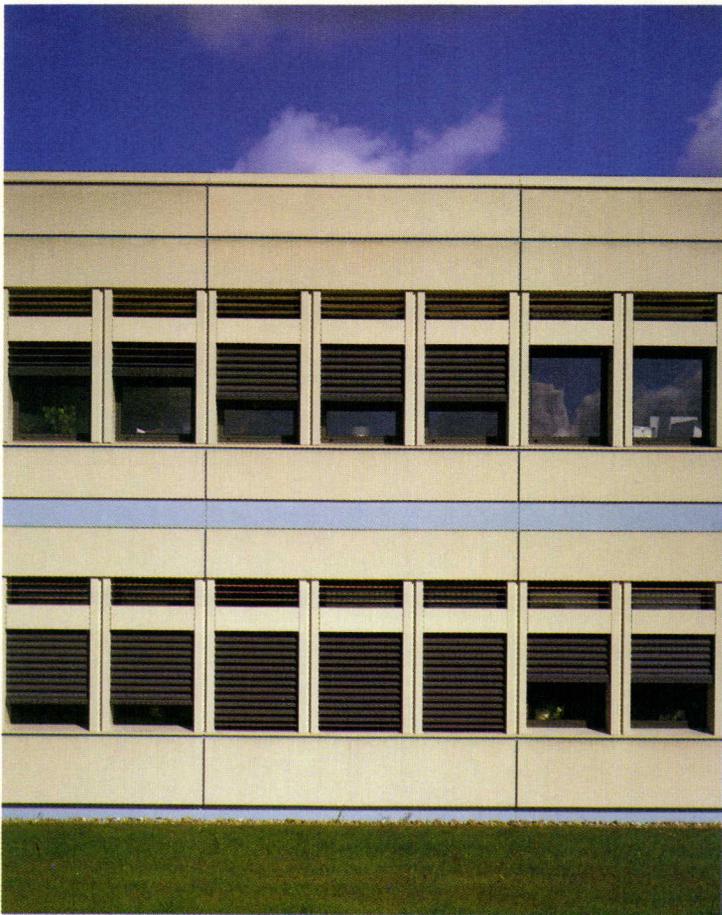


cannily spans the gulf between innovation and tradition. In 1983, IBM elected to transfer its European software-production operations from France to Denmark. While that decision was primarily determined by bottom-line financial considerations, another reason for the move—if the company had been thinking along esthetic lines—might well have been the clear affinity that exists between IBM's signature corporate image and the underlying pragmatism of Danish design. Adhering to its long-standing policy of hiring local architects for foreign projects, IBM considered 11 Danish firms before settling on Palle Leif Hansen Architects, a 10-year-old Copenhagen office headed by four partners in their 30s whose Academy-honed allegiance to the tenets of orthodox Modernism seemed in harmony with IBM's own stylistic notions.

The new manufacturing facility produces software programs for users of IBM's mainframe, mini-, and personal computers in Europe, the Middle East, and Africa. Located on a partially wooded 27-acre site in a suburb northwest of Copenhagen that over the past decade has become a center for high-tech industry, it is the quintessential industrial building for a post-industrial age. Even though the 180,000-square-foot structure exhibits the time-honored organizational trinity of a 19th-century factory—comprising (right to left in photo) an 80,000-

square-foot production and packing plant, two U-shaped administrative blocks housing 130 offices, and a service wing containing mechanical rooms and an employee cafeteria—the building's taut, ivory-and-blue aluminum-panel skin bespeaks the white-collar imagery of a late 20th-century suburban office building. (The 325 employees who work at the complex are, in fact, equally divided between production and administration.) Moreover, although the building's sleek computer-generated form might look as much at home in Denver as it does in Denmark, its exterior configuration and interior embellishment were actually shaped by a variety of local codes and customs. Allerød's 28-foot building-height limit, for example, dictated the structure's low-slung, two-story profile, while the single-loaded alignment of offices and corridors results from an enlightened Danish law requiring all workspaces to have windows. (That law was also responsible for the narrow band of fenestration in the production area and for the many skylights throughout the plant.) Inside, code gives way to custom, and Palle Leif Hansen has deftly produced a series of quietly handsome, even classic, public spaces that virtually define the corporate ethos of IBM while paying homage to the architects' own Danish Modern antecedents. The result is export-quality. *Paul M. Sachner*





Like any building worthy of the Modernist label, IBM's European software-production center tells much of its inside story on the outside. Although 2mm-thick aluminum panels conceal the facility's precast-concrete frame, exterior elevations still reveal much of what takes place behind the walls. For example, in order to underscore the functional distinction between office and production areas located on either side of a barrel-vaulted corridor, the architects varied the size of the aluminum panels, specifying two-foot-wide units for the office block and four-foot-wide units

for the larger-scaled manufacturing and distribution area (opposite). For the pavilionlike wing housing the employee cafeteria, they removed the panels and replaced them with a two-story-high, curved window wall that offers diners bucolic views (top). The random pattern of fixed louvers and electronically operable blinds on a typical administrative-wing elevation (above) produces glare-free office interiors.



Although the 80,000-square-foot production wing of IBM's software center is technically an industrial facility, the hush of computer banks reproducing software programs (above) replaces the machine-tool cacophony of a typical factory. The building's suburban location, over a mile from the center of Allerød, required IBM to provide employees with self-contained areas for time off the job. The architects responded with light-filled gathering places, including a pair of employee break spaces situated off the main stairway (opposite) and a two-story, 150-seat cafeteria (top) furnished with tables designed by Piet Hein and classic wire chairs by Harry Bertola.

*IBM Software and Publications Center
Allerød, Denmark*

Owner:

IBM Danmark A/S

Architects:

Palle Leif Hansen Architects—Palle Leif Hansen, Torben Hjortsø, Holger Bak, Steen Enrico Andersen, design partners

Engineers:

COWIConsult A/S (structural);
Birch & Krogboe A/S (mechanical);
Mogens Balslev A/S (electrical)

Landscape architect:

Svend Kierkegaard

General contractor:

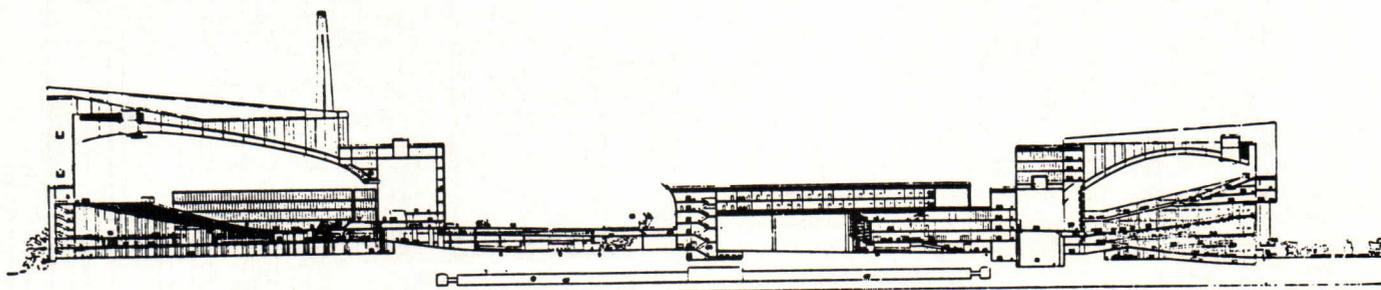
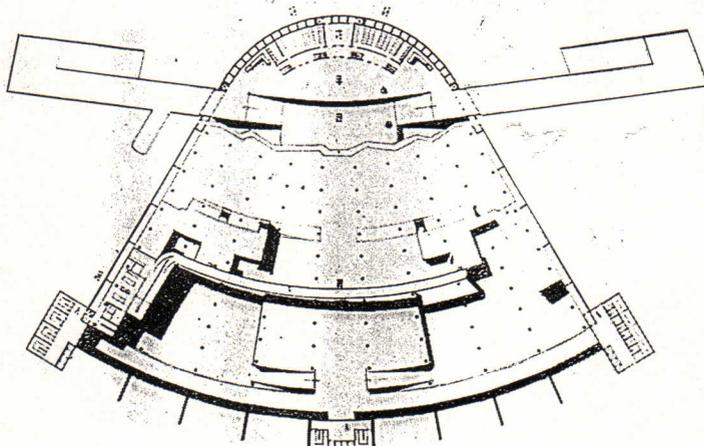
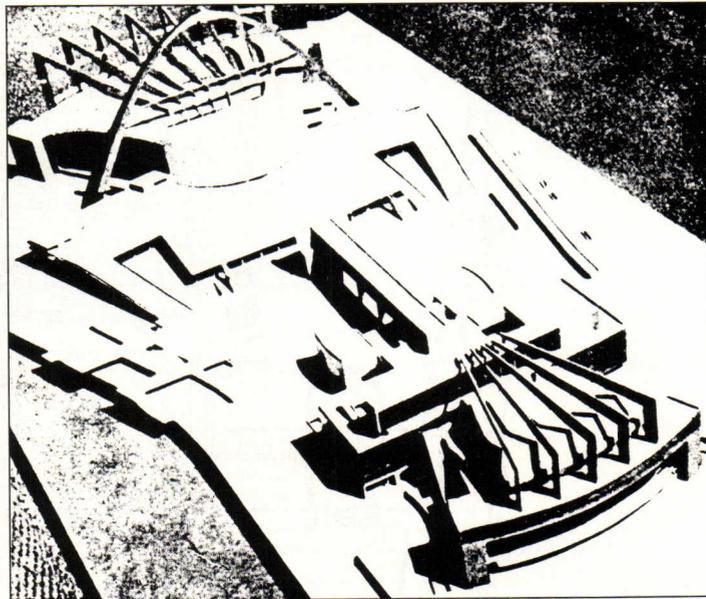
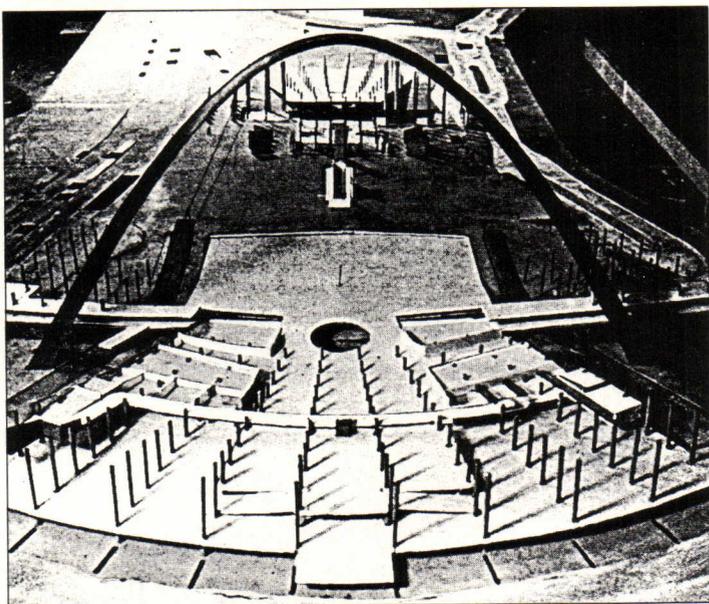
Rasmussen & Schjøtz A/S



spent his boyhood. It is touching to facade and by the porches. Le interest in mere decoration.

different uses.

mass housing.

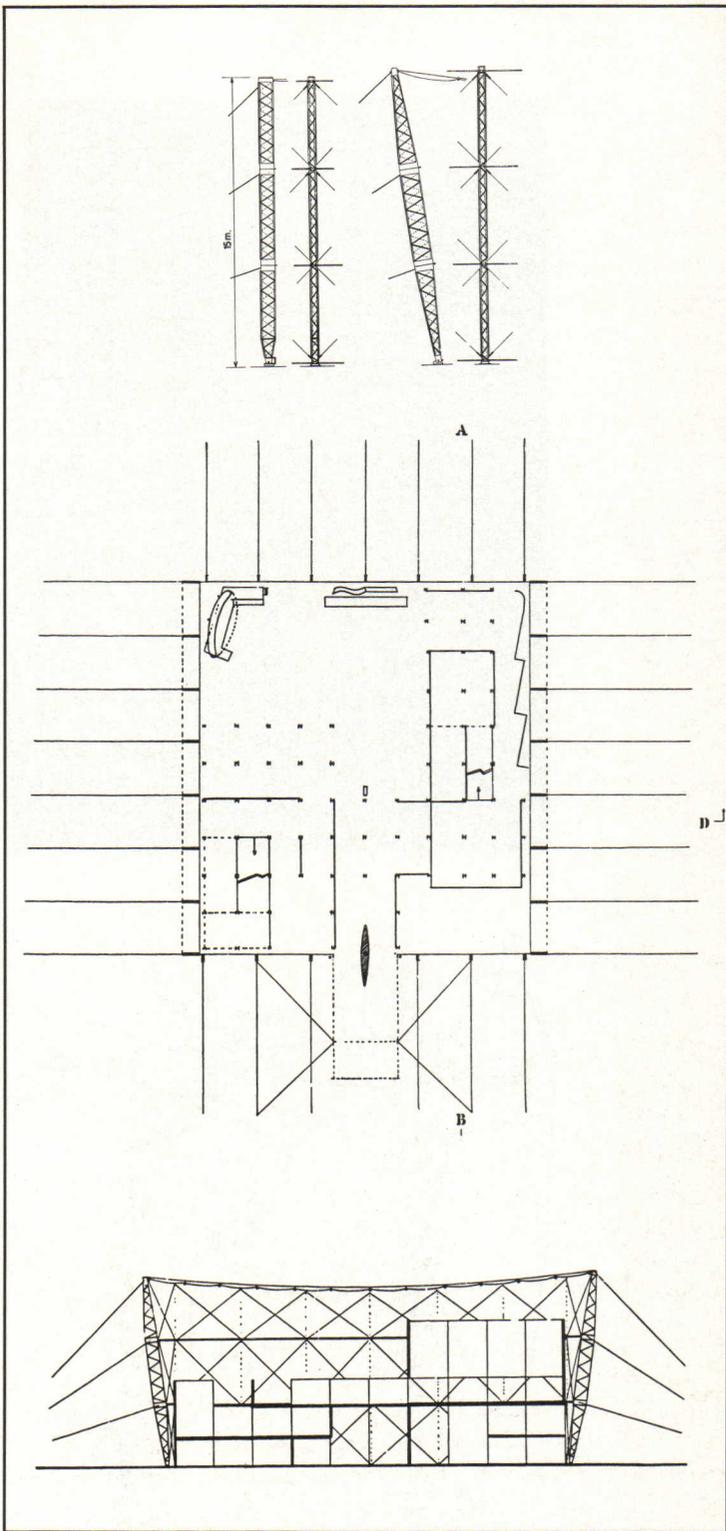


Hall of Soviets

In 1931 Le Corbusier entered the international competition for the design of the Hall of the Soviets. The program consisted of a major auditorium for 15,000 persons, one for 6,500, and miscellaneous smaller ones. A concept of structural superimposition became the central idea of the scheme, an idea first advanced in 1927 with Le Corbusier's entry for the League of Nations competition. The structure of the large auditorium (above, left photo, plan, and left-most room in section) consists of a large parabolic arch, the most ideal structural shape to support uniformly distributed loads, and was based on the system Limousin, invented in 1916 by Eugene Freyssinet for the dirigible hanger at Orly. V-shaped beams are appropriately shaped for the support of a uniformly distributed

load, and are freely supported on large concrete piers at the other end. An enormous underhung, acoustical roof shell is suspended from these concrete beams. Again, a separate structure of regularly organized, small concrete bays supporting the seating, and, as in the design of the Centrosoyus, open to accommodate circulation, is situated inside the large, cocoonlike auditorium enclosure. It might be worth noting that the large beams suspended from the arch are designed with a cantilever from which the structure of the large proscenium-type opening for the rostrum is suspended.

The structure of the small auditorium consists of a series of rigid partial frames from which the auditorium volume is suspended. As with the larger hall, a clearly articulated columnar structure supports the seating below.

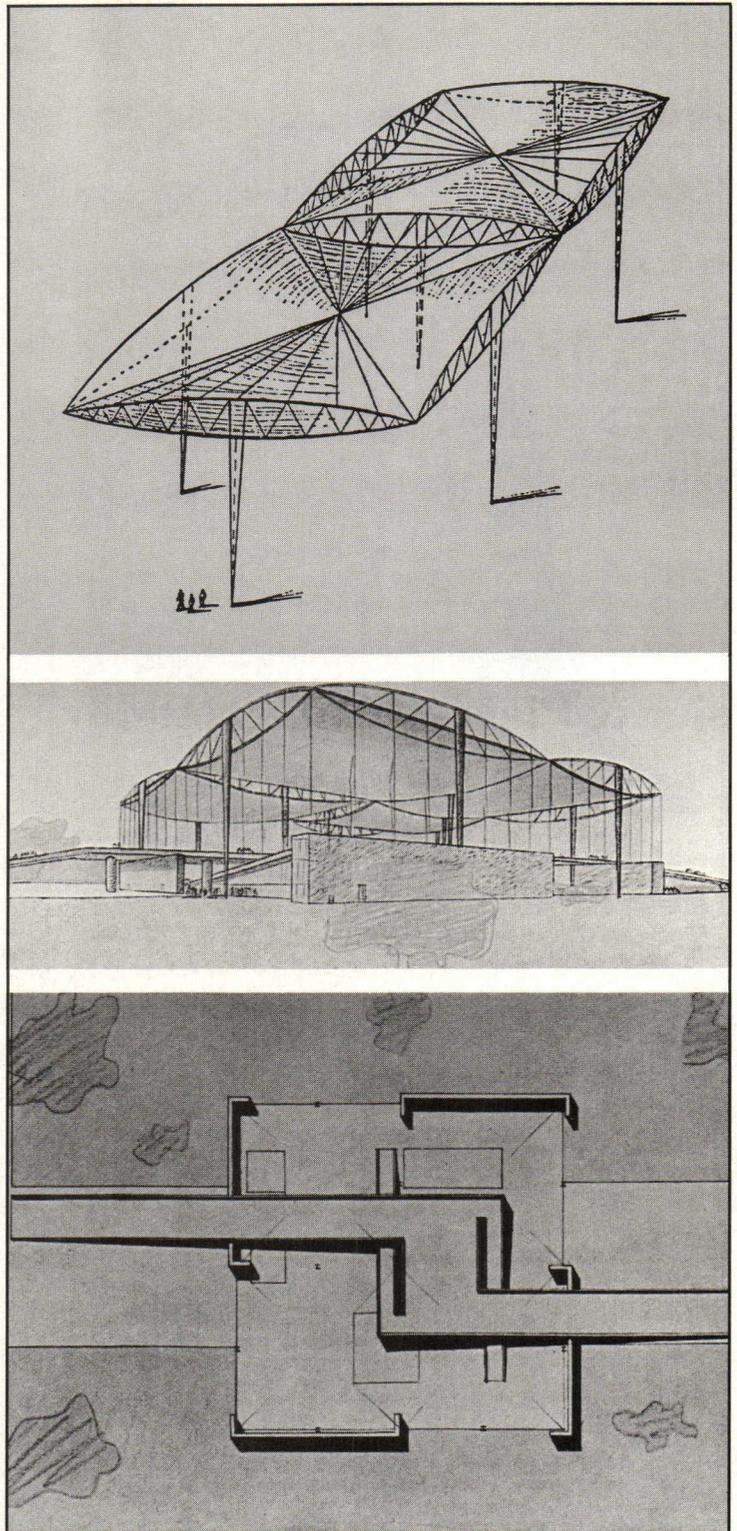


Pavillon des Temps Nouveau

Fifty years ago, in 1937, Paris held a major international exposition. Le Corbusier was given the opportunity to design four pavilions, of which the major one was for the design of a "Center for Contemporary Esthetics," a variation of his design for the Musée Mondial of 1928 and the Musée d'Art Contemporain for Paris of 1931. While "Center for Contemporary Esthetics" was not built, Le Corbusier had the opportunity for completing a smaller pavilion, "Pavillon des Temps Nouveau" (illustrated above), to propagandize the city planning ideas of C.I.A.M.

The exposition pavilion provided Le Corbusier with the long-awaited opportunity to demonstrate the architectural ideas implicit in the design of the Hall of the Soviets (facing page). The design of the

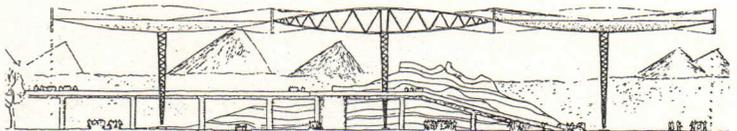
pavilion comprises a large tentlike suspension structure. Trusslike columns at the periphery of the pavilion work in conjunction with steel cables, anchored beyond the enclosure, to provide a clear span. A fabric membrane was draped over the top and sides of the structure. Within this superstructure was constructed a separate steel frame system that provided the "interior" architecture for exhibitions, thus presenting the purest possible version of the concept of interrelated, superimposed, but statically separate systems of structure. Since the design was unhampered by specific functional requirements, the enclosing pavilion served as Le Corbusier's declaration of architectural principles, while the internal exhibition structure exclaimed the rationale of the Villa Radieuse.

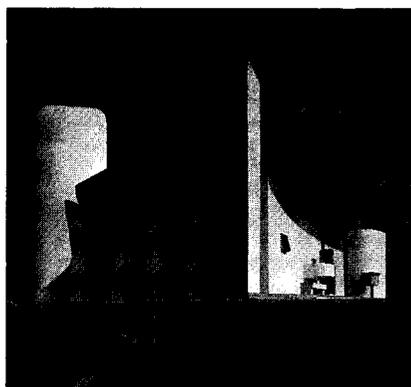
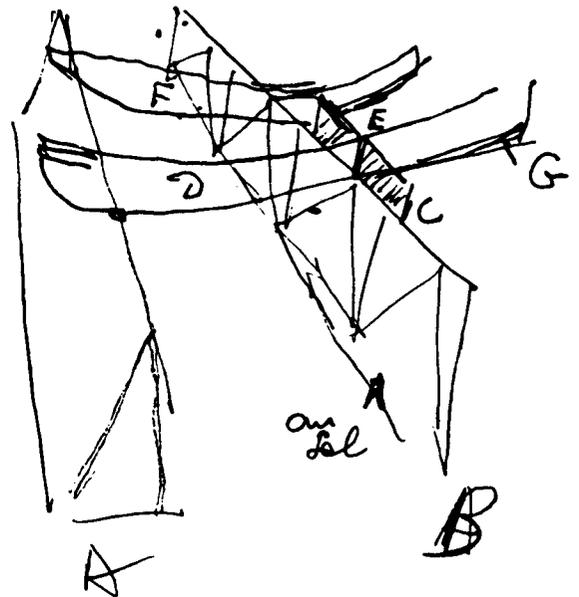
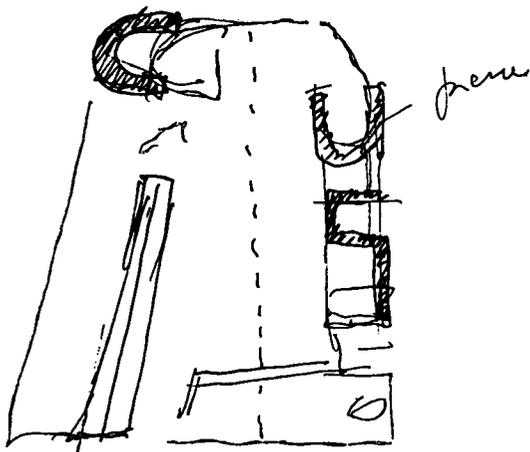
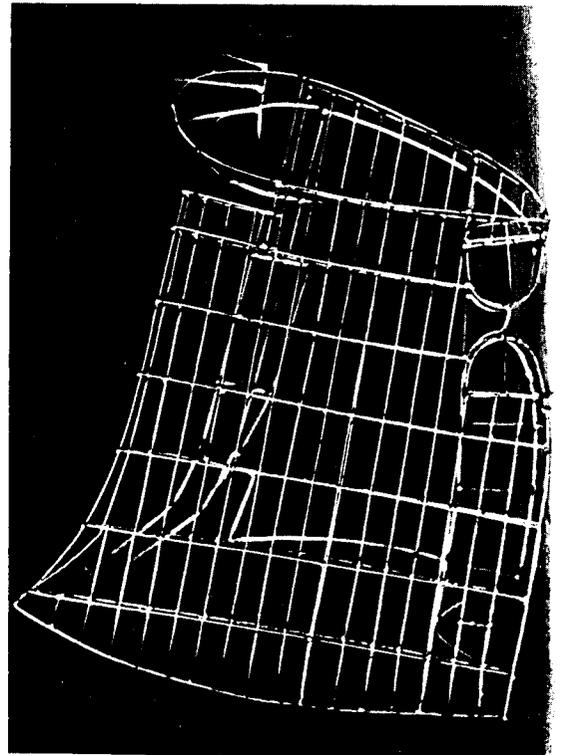
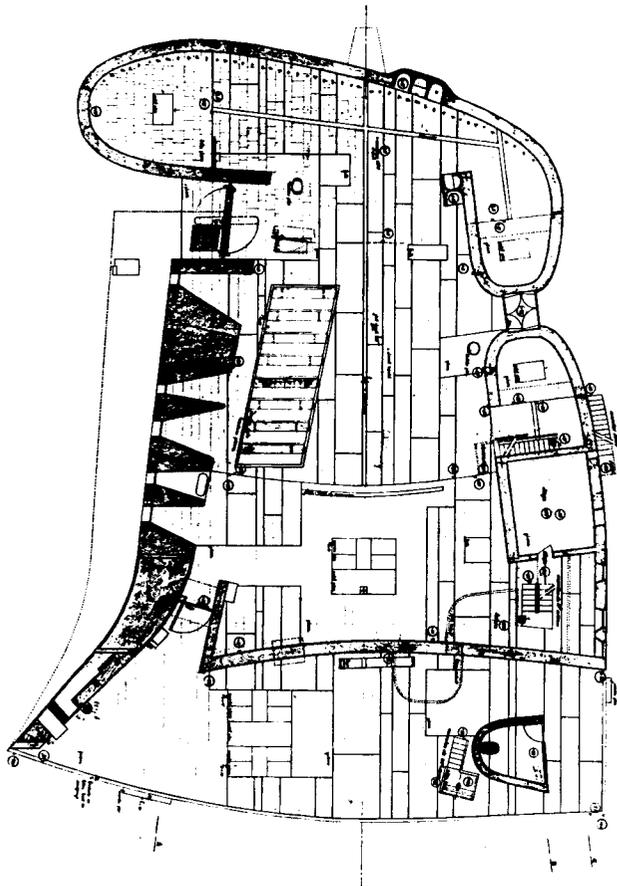


Pavillon for the Liège Exhibition

In 1939, Le Corbusier designed a very large structure for a French pavilion at the Liège Exposition. The design consists of four square structural canopies supported on columns at the center of each side, which hover like balloons over a ramp and wall system organized in a pinwheel configuration. Again, the superstructure is clearly independent of the structure below.

Le Corbusier shows two different structures for the scheme. Both seem to draw their inspiration from airplane wing-type construction. One is based on conoids (illustrated above), the other on segmented domes. These solutions fit into a long line of experiments with warped-surface structures, beginning with "Villa au bord de la Mer" and the system Monol (page 145).





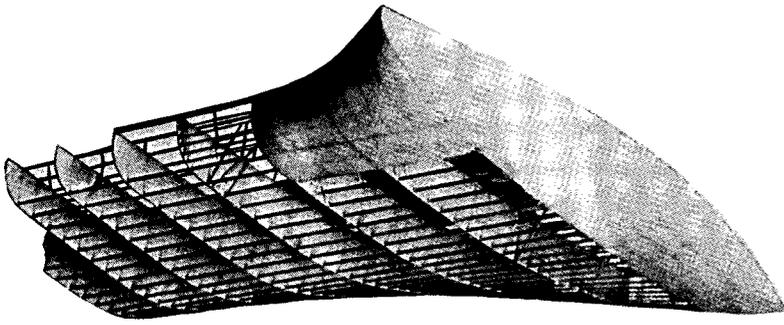
© ESTO photos

Ronchamp

In 1950 Le Corbusier received the commission to design and rebuild the church of Notre-Dame-du-Haut at Ronchamp. It should not be surprising that the design of the church follows his prewar ideas and series of constructional investigations. The constructional concept is shown in two sketches from the 1946-1952 volume (sketches above). The first drawing shows a combination of U and S shapes disposed equally distant about a center line. The pochéd areas indicate those parts of the enclosure of the church to be built with the salvaged stones from the previous church that was destroyed during the war. The elements in the drawing that are not blackened represent a different construction system. In the adjacent sketch, the continuous wall with a triangular cross section (A), representing a

stable structural element, makes an obvious reference to the pochéd elements in drawing one. The opposite wall (B) in the drawing is shown in the form of a truss, annotated with a little note "Au sol," as an indication that the wall is to be light and porous to allow the sun to penetrate. The two wall elements are covered by trusses with a convex bottom chord suggesting the way the space is to be covered.

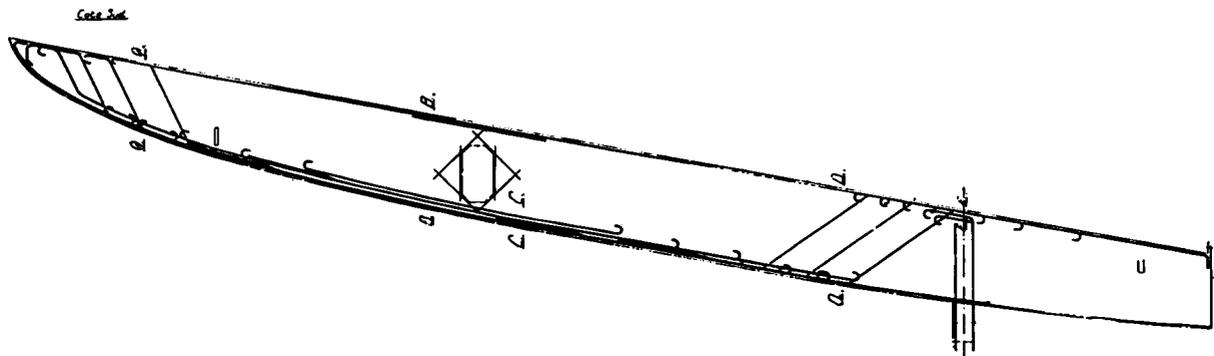
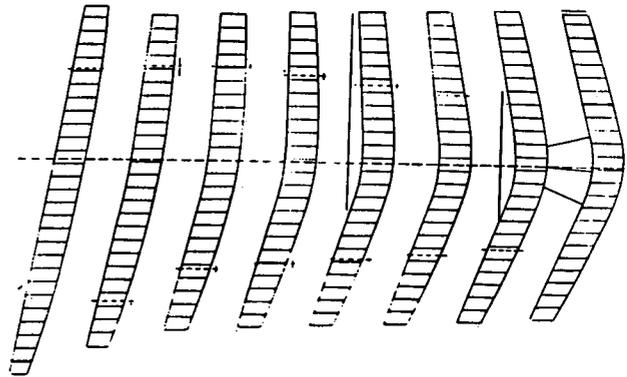
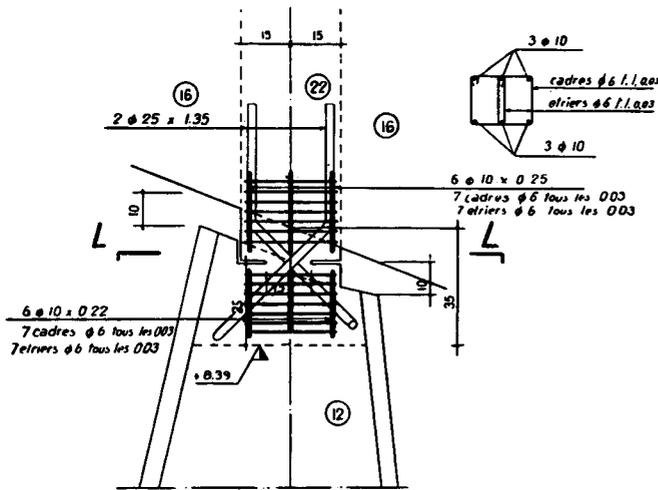
The roof structure is a conoid in shape, dropping from a slightly convex ridge at the south to a concave profile at the north. The roof consists structurally, as Le Corbusier emphasizes, of seven flat concrete beams, evenly spaced, 7-ft, 5-in. apart, connected by 360 identical precast joists. This whole assembly is covered with a concrete shell 2 1/2 in. thick. The structure rests on a series of columns



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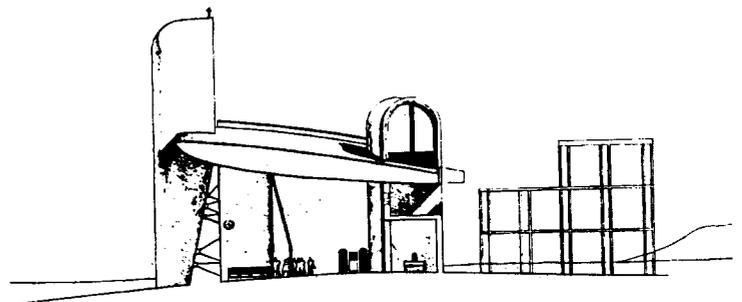
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+
180 = 360 poutrelles
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- rectilignes, standards

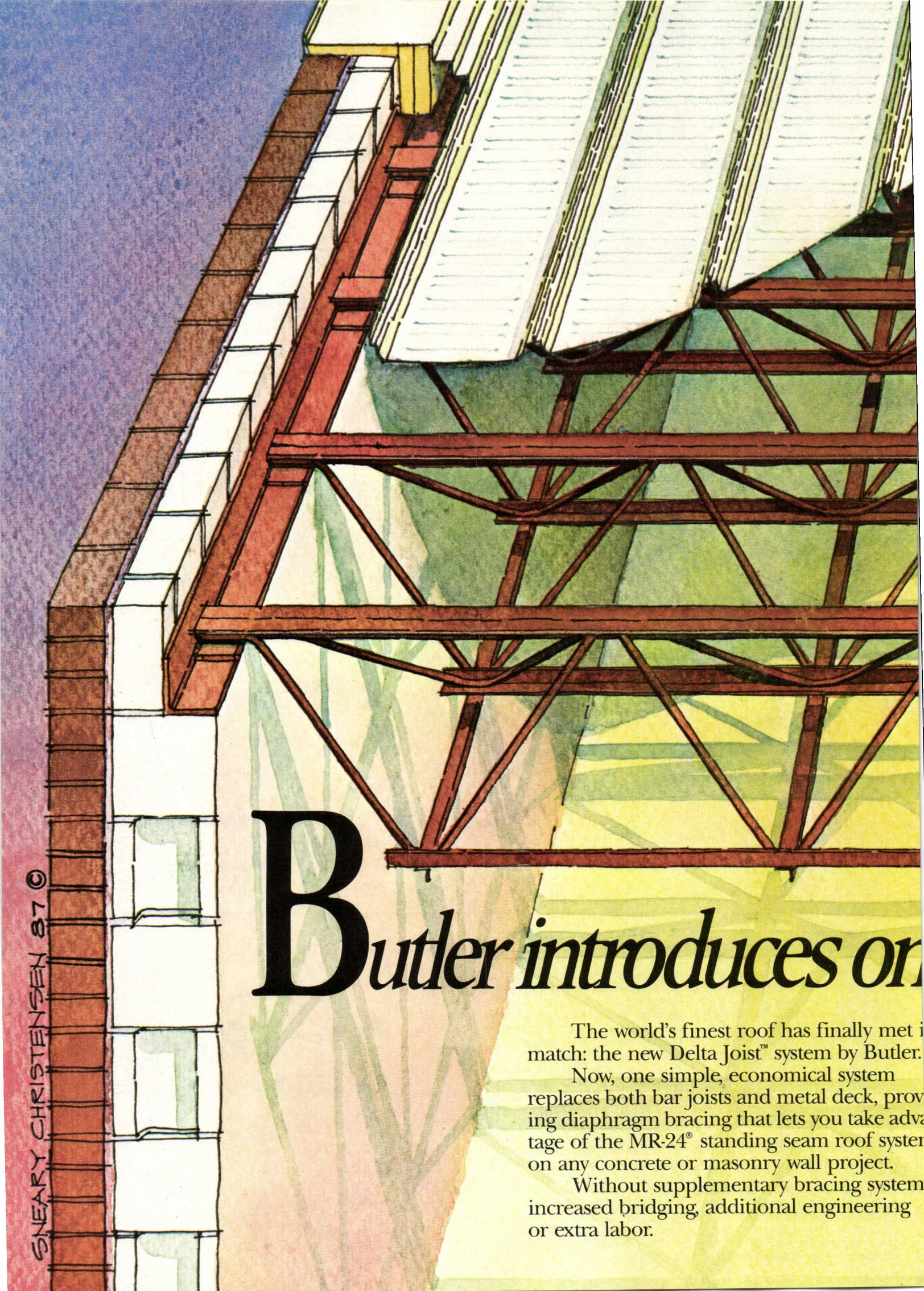
réalisent la toiture
en coque de 6cm.



embedded in the walls of salvaged stones, as Le Corbusier apologetically explains, since the walls of the reused stones would not have been strong enough to support the heavy shell. The wall shown as a truss (B in the sketch) becomes the impressive wall of light, consisting structurally of a concrete frame with its vertical, tie-like members aligned with the beams of the roof shell. Le Corbusier shows a reinforcing drawing of a typical beam and a detail of the joints between the vertical support of the wall of light and the beam, to emphasize the zero moment connection, since, typically for Le Corbusier, he intends to make the frame connection explicit in contradistinction to the bearing-wall situation. The result is a continuous strip of light between the ceiling and the wall. Furthermore, he reveals the fact of

the columns embedded inside the masonry walls, by exposing one of the columns where the roof shell extends over the outside altar, and at the line of the first of the beams embedded in the roof shell. The model of the roof shell, published by Le Corbusier, is, in my judgment, directly related to the parasol structure of the 1939 French Pavillon at Liège (page 149), and in particular, to the ideas of the Pavillon des Temps Nouveau (page 149), with its convex ceiling surface and the regular structural divisions of the stanchions and cables. What then has happened to the frame? The frame was presented in the model of the first version as a bell tower outside the enclosed space, so that instead of the polarity produced by the systems nestled in each other, they exist here side by side (section/elevation at right).



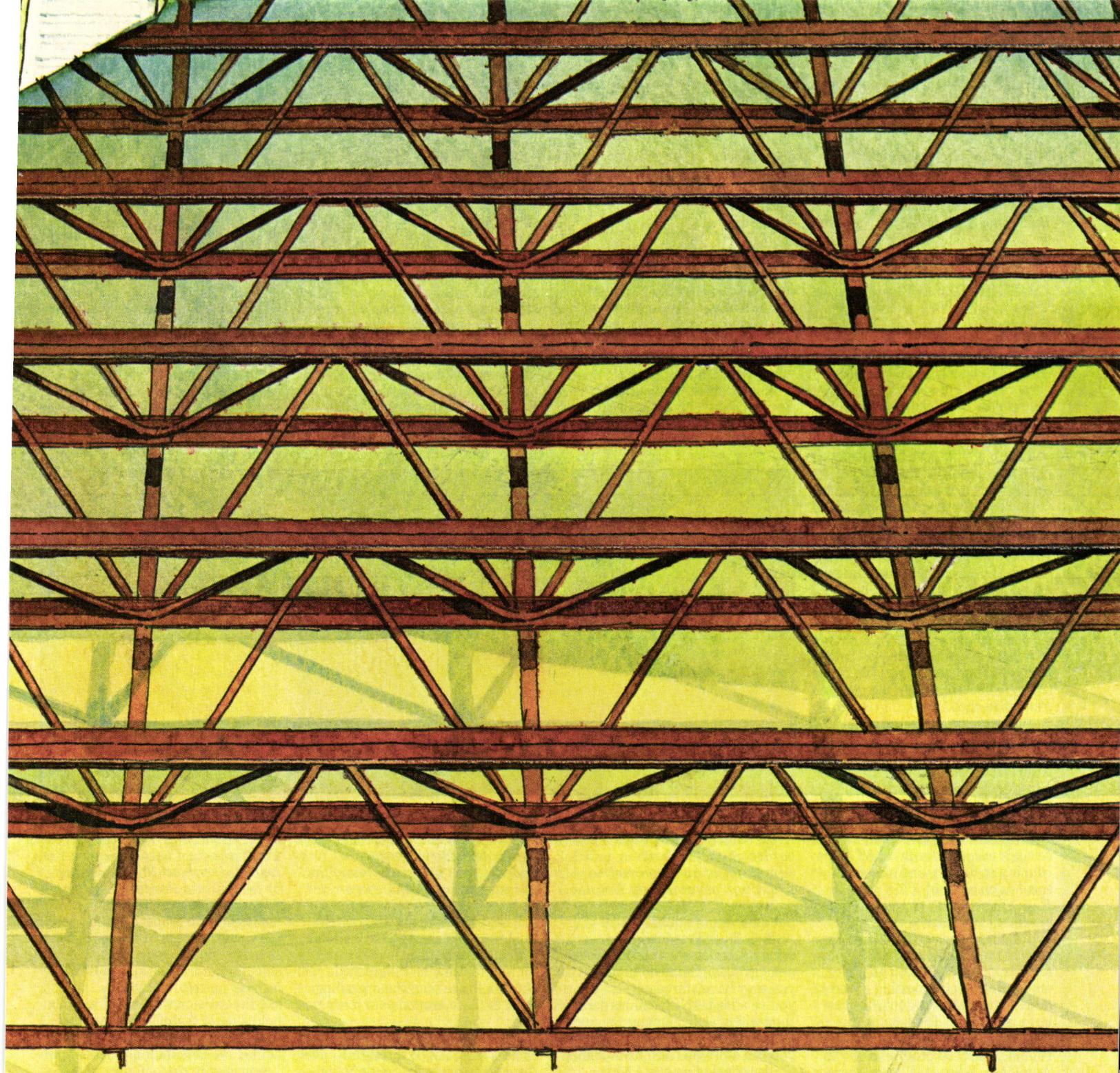


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An easy-to-use word-processing program tailored to specification writing. It can switch between CSI and Masterspec formats, and can print either format with numbered lines for legal documents. The vendor offers conversion services from current software, and promises eventual add-on products such as spelling checker, document control, and logical connections to AutoCAD and McGraw-Hill's Sweet's on CD-ROM disk.

Equipment required: IBM PC, XT or AT or compatible, 256K (640K recommended), two floppy disks (hard disk recommended to store long specification documents). Can be used with most printers, although it cannot necessarily use all their features.

Vendor: The Pinkerton/Galewsky Partnership, 290 North Tenth St., P. O. Box 2432, Beaumont, Texas 77704 (409/832-6009).

AIA Service Corps. offers it as well, with a disk-based version of Masterspec in the Spec-Writer file format.

Price: \$395. Full demo (comes with full manual and does everything but save edited documents) is \$25.

Summary:

Manual: Clear. Marred with a few typographical errors, such as F6 for goto command (it is really F3).

Versatility: Can accept documents previously typed with Wordstar and many other word processors. The vendor offers a document conversion service.

Ease of use: Good.

It is easy enough to boil down boilerplate spec documents by deleting unwanted sections. The big problem, of course, especially when working in the Construction Specifications Institute format, is renumbering paragraphs after all the deletions and additions are done.

Spec-Writer handles the renumbering with ease, and also allows users to switch back and forth between CSI, Masterspec, and legal formats. Even capitalization of headings, line spacing, and indents are automatic. Users can also add "hidden" notes to specific paragraphs in a document—notes that show up in draft copies but are deleted in the final document.

The software has many of the niceties of more-general, full-featured systems, and it reduces those niceties to ways that architects should appreciate. Just about every word processor,

for instance, will print a specific group of pages without forcing users to print the entire document. Spec-Writer allows printing only of specific sections. Users can also move around long documents by telling Spec-Writer to go to a specific numbered paragraph.

The program is menu-driven. That is, hitting the menu key, F10, opens a menu at the top of the screen, with choices like File, Edit, Layout, and Tools. Each choice has a separate "pull-down" menu that appears on the screen to guide one through subchoices. For instance, to change the layout, hit F10 for menu, L for "layout," and a pull-down menu appears that offers CSI, legal, Masterspec, and so forth.

Each choice has a key letter. Or move the cursor to highlight a choice, then press the ENTER key. There are also shortcut commands (many, like Control-Y to delete a line, and Control-B to reformat a paragraph, are similar to Wordstar commands).

Spec-Writer can handle documents originally prepared with Wordstar 3.3 or earlier (you have to convert Wordstar 4.0 documents with Wordstar's own conversion program first, I found), or documents in so-called "ASCII" format. Your document is ASCII if, at the DOS prompt (A>, B>, etc.) you can issue the command type x:filename.ext ENTER, where x is the drive where your text is stored, and filename.ext is the full filename of the text, and you can read your text on the screen. (The most widely used nonASCII word-processing program is Multimate. You can convert your files to ASCII, however, by printing it to a disk file.)

Conversion services available from the vendor, and in most cities, will turn your files into ASCII that Spec-Writer can read. You'll have to touch up the formatting, though, to teach Spec-Writer where the headings and numbered paragraphs are.

The software was tested on two systems. One, with monochrome monitor, showed underlining and boldface clearly. But the on-screen "signal" that the menu was engaged and waiting for a command is a barely noticeable change from normal to boldface text in the menu block. It would be a simple programming change to change bold to something more obvious, such as reverse-video.

On a color monitor, the menu-engage is obvious; the menu changes to a light blue. But, as with almost word processors used on a color monitor, underlined type in the text is represented by dark blue. On an old IBM color

"It has many of the niceties of more-general, full-featured systems, and it reduces those niceties to ways architects should appreciate."

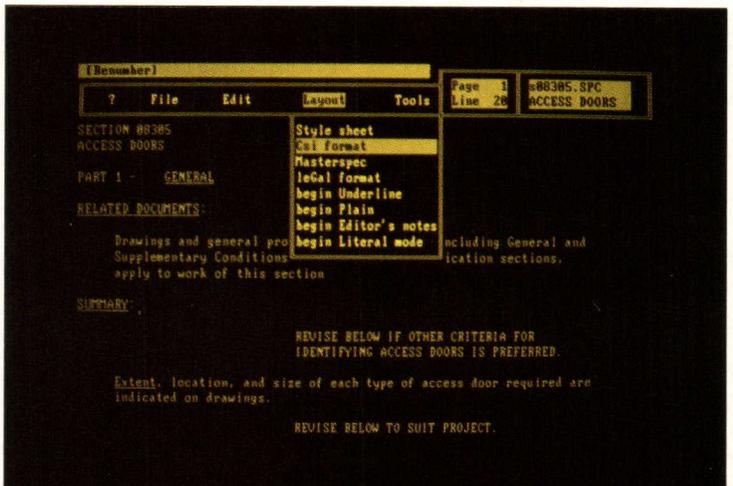
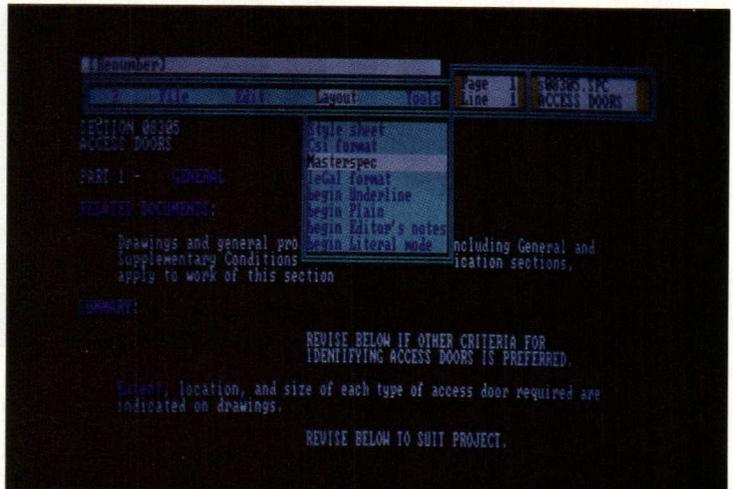
graphics adaptor-equipped monitor, the screen background showed annoying "snow." The fault is IBM's, but this monitor setup is a common one, and the problem can usually be cured by slight changes in the programming.

One annoying quirk: Users can specify a filename of longer than eight characters at the opening screen, but the computer will recognize only eight characters.

Should you buy it for handling specification writing? Maybe. Most of the alternatives, such as desktop publishing programs,

outliner programs, and add-ins to Lotus 1-2-3 and Symphony, are harder to use, more expensive, and produce files that can't be easily moved to another system. On the other hand, the "feel" of the Spec-Writer (cursor movement commands, the pull-down menus) is quite different from most other word-processing programs, and may be difficult for secretaries to get used to—even though its command "structure" is easy to grasp. Spring for a \$25 demo and see for yourself.

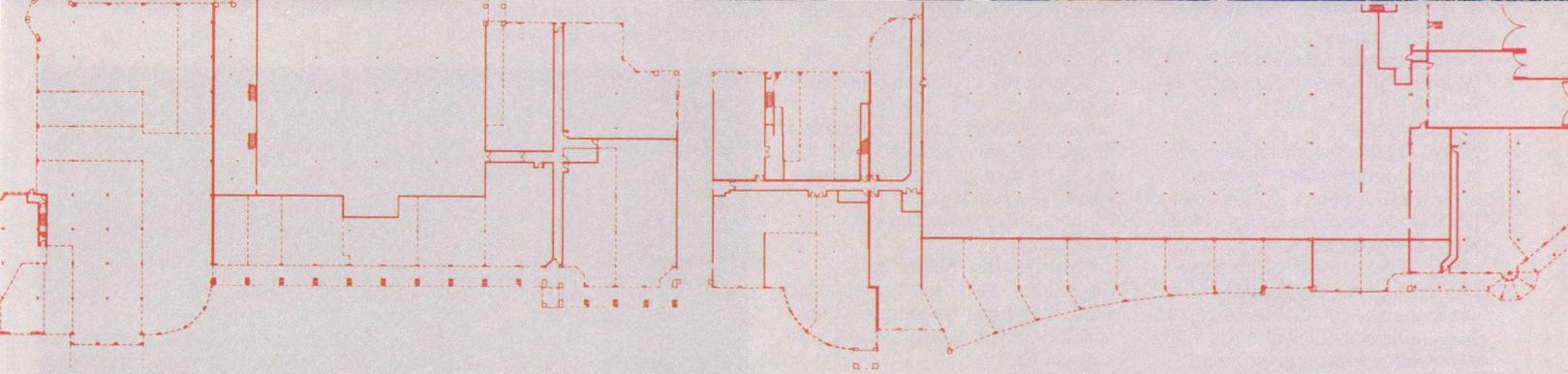
Software reviews continued on page 158



Spec-Writer allows user to switch back and forth among CSI, Masterspec, and legal formats (above). Menu-driven program has choices like "file" and "edit," each

with separate pull-down menus (top) that guide the user through subchoices. A bar turns light blue, signaling that a pull-down menu can be used.

How to Go Shopping for CAD.



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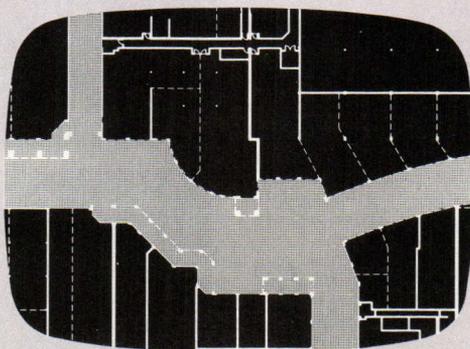
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Plans for the Corte Madera Town Center were generated on AutoCAD AEC and provided courtesy of Fielo/Gruzen Associated Architects, Rasmussen Ingle Anderson, Developer: Reining & Corporation.

*TechPointers Sept. 1986

"An easy-to-use project-management system that allows users with some project-management experience to simply load the disks and go."

PMS-II, version 8.0

A project-management system for time and cost scheduling. Provides various reports, Gantt (horizontal bar), and critical-path charts. Can handle any number of separate projects or subprojects, each with up to 3,000 tasks. Can link up to 960 of them. Excellent on-screen graphics, color-coded if user has a color monitor.

Equipment required: IBM XT or AT or compatible (AT recommended), 512K (640K if possible), hard disk, MS-DOS or PC-DOS 2.1 or later, dot matrix printer or plotter.

Vendor: North America Mica, Inc., 5230 Carroll Canyon Rd., Suite 110, San Diego, Calif. 92121. 619/458-1327.

Price: \$1,295 (includes a year of support; optional \$300 per year after that). Add-on packages include RMS-II for resource control (\$995), MMS-II (materials management, \$695); Report-II (for formatting printed reports, \$395); BPS-II (to automate the production of reports from numerous files at once, \$95); two printer-control programs (GPS-II for sideways printing on a dot-matrix system, Plot-II for four-color plotting, each \$495); Teamplan (networking software for up to 26 terminals). The software can be purchased one piece at a time, or in various combination packages at a discount. Demo systems cost \$25 for each piece except for PMS-II, \$50.

License covers use on one computer (or an in-office network with Teamplan), temporary use on a backup system, and use on a remote system at a jobsite.

Summary:

Manual:

Mainly a good tutorial on project planning. On-line help is extensive, and impressive. The material in the on-line help can be printed out by the user as a separate "manual."

Versatility: Similar to mainframe systems as far as scheduling is concerned, but slower than mainframe when a project is too big (more than 3,000 activities) to fit into one project "plan" or "network." Any number of networks can be linked by PMS-II, but the total of activities that can be allocated by RMS-II (the resource manager module) cannot exceed 32,600. MMS-II can handle up to 32,000 line items spread among up to 1,000 orders to up to 500 vendors, and even track returns and cancellations.

Ease of use: Good. Users with some project-management experience may be able to simply load the disks and go.

Error-trapping: As in mainframe

software, errors such as dangling tasks and negative slack time are picked up by the software after it is run, and not during input. But unlike most mainframe schedulers, users of PMS-II usually don't have to wait for a printout; most errors are apparent on-screen.

Have you been enticed by the heavily promoted general-business project-management software available in most computer stores, only to be disappointed at such programs' lack of versatility? You're not alone. Such software is meant mainly for projects that end up providing a service, such as a marketing plan, rather than for construction or manufacturing.

That doesn't mean that project-management software for microcomputers has to be simple-minded, however. PMS-II, which has gone through eight versions since 1980, has many of the capabilities of mainframe programs:

- Critical-path-scheduling (highlights tasks that have no slack time; they must be completed on schedule if the overall project is to stay on time).
- Provision for early and late starts of specific tasks.
- Different work days for different activities (concrete curing, for instance, would continue through weekends and most holidays). Up to five levels of calendar control per activity (for everything from scheduled holidays to snow days).
- Projects lasting up to 999 days.
- Percent complete or days remaining on any activity.
- Multiple job log and classification codes (up to six) on each activity. Variable accounting periods and overhead factors (from 0 to 999 percent) for each activity.
- Ability to print out a wide range of reports, including cost and time variances, audit trails, and so forth.

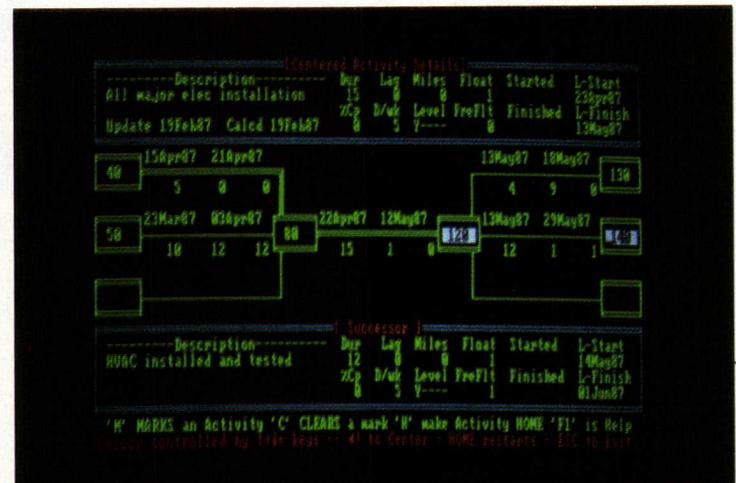
In addition to the on-line help, PMS offers the advantages of microcomputer-based software:

- On-screen logic diagram that can be edited interactively.
- Data exchange with the widely used microcomputer database programs, dBase II and III. (By the way, the manual suggests using a line-by-line "ASCII" file transfer to move program data into spreadsheets such as Lotus 1-2-3. I found during the review that transfer into dBase files, then using the file translation programs packaged with Lotus, Symphony, VP Planner, and other spreadsheet software to go from dBase files to spreadsheet, is much more reliable. You don't have to actually own dBase II or III, either.)

All this versatility comes at a price of course. And that's not just the software price. This software is

as hungry for facts as any mainframe program. Thus, even though PMS-II includes many of the niceties that many simpler programs have, such as global renaming of tasks (changing the name of a given task on all reports) and renumbering of all the nodes (task beginnings and endings), simple projects take a long time to enter into PMS-II.

You can cut some of the time by preparing "standard" activities ahead of time (all your metalwork contracts might be cut from the same cloth, for instance), or by reserving PMS-II for the big jobs—jobs that would have choked a mainframe just a few years ago.



Spot checks of a project's schedule can be made with PMS-II bar chart (top), including a look at any portion of a project's early or late start/finish schedule on a daily, weekly, or monthly date scale. "Logic" display (above) allows user to make needed changes, then view the results immediately.

New products

For more information,
circle item numbers on
Reader Service Card

Keeping with tradition

Although Hickory Business Furniture (HBF) is only seven years old—a fledgling among larger office-furniture manufacturers—it has already established itself as a source for traditional-style contract furnishing. Intent on cultivating HBF's cachet for corporate clients, Christian Plasman, president of the North Carolina firm, has been pursuing established designers to fill out his company's agenda, which he defines as "producing classic furniture with 'roots,' not reproductions of existing pieces."

Toward that end, Plasman invited San Francisco-based Michael Vanderbyl to create a collection of seating. Vanderbyl responded with the *Cambridge Series* of hand-rubbed cherry-wood club chairs and love seats (top), which are meant to recall the furniture of Eliel Saarinen and Charles Rennie Mackintosh. Last spring, HBF introduced two new chairs designed by Massimo and Lella Vignelli in collaboration with their partner David Law. Although the wood-slat *March* and *April* side- and armchairs (middle) were inspired by austere Shaker designs, the cherry and mahogany seating can be specified with upholstered backrests for office applications.

HBF's most recent direction in product development is a textile program, which will be formally introduced this month. Following the success of his two-year-old furniture series, Orlando Diaz-Azcuy was asked back by HBF to mastermind a complementary collection of upholstery fabrics. The conservative *Palladio* and *Studio Cloth* lines (bottom left) are both made from 100-percent wool and are intended to be used together, while the more festive *Kyoto* and *Echo* patterns (bottom right) are jacquard weaves made from wool blends and can be used alone or in combination. All four lines will be available in a variety of colors. Hickory Business Furniture, Hickory, N. C.

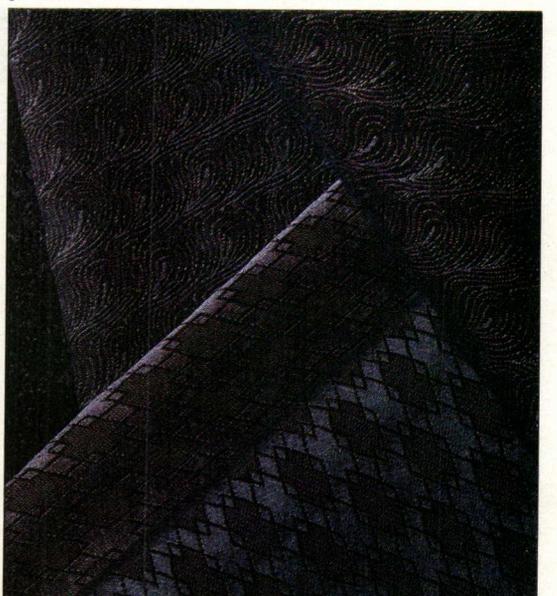
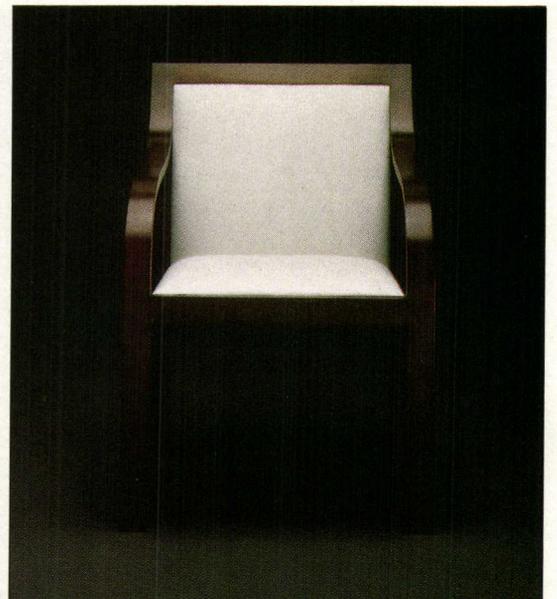
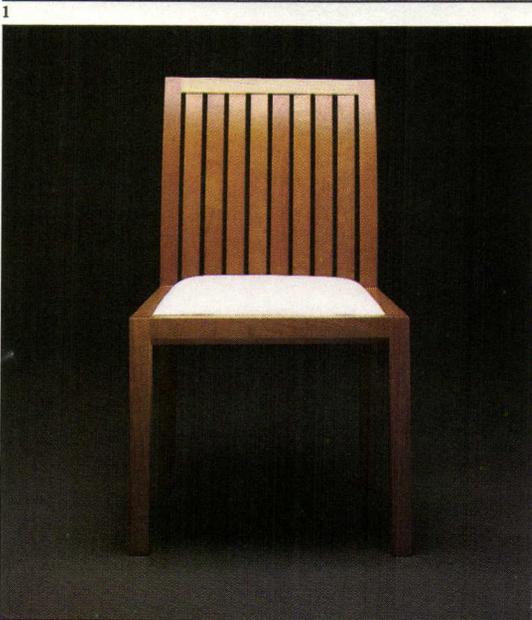
1. The Cambridge Series, designed by Michael Vanderbyl
Circle 300 on reader service card

2. The March chair, designed by Massimo and Lella Vignelli with David Law

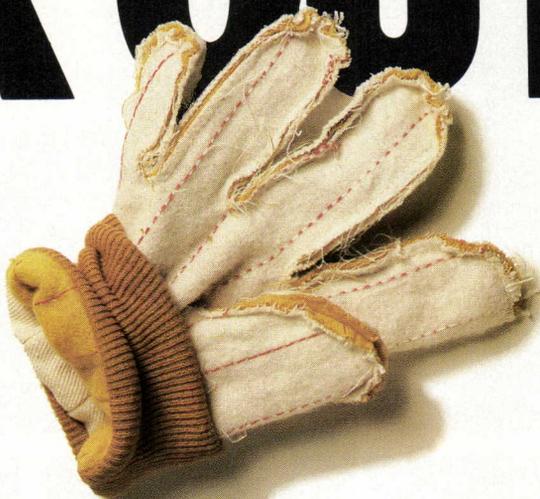
3. The April chair, designed by Massimo and Lella Vignelli with David Law
Circle 301 on reader service card

4. Palladio (striped) and Studio Cloth fabrics, designed by Orlando Diaz-Azcuy

5. Kyoto (swirl pattern) and Echo (diamond pattern) fabrics, designed by Orlando Diaz-Azcuy
Circle 302 on reader service card



INSIDE OR OUT?

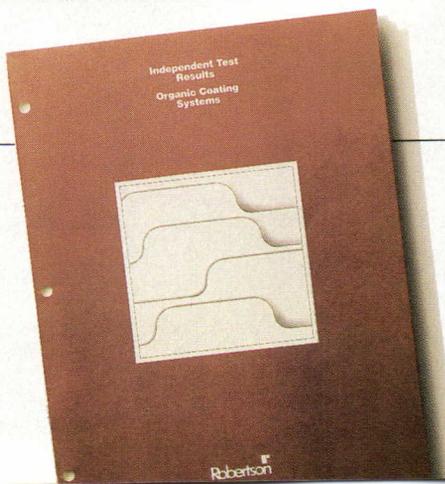


In England, Canada, Europe, in fact most of the world, 4 mils of vinyl plastisol coating is specifically restricted for use *inside* buildings. And yet, U.S. coaters ask you to believe that 4 mils is more than adequate for *exterior* protection. Come on.

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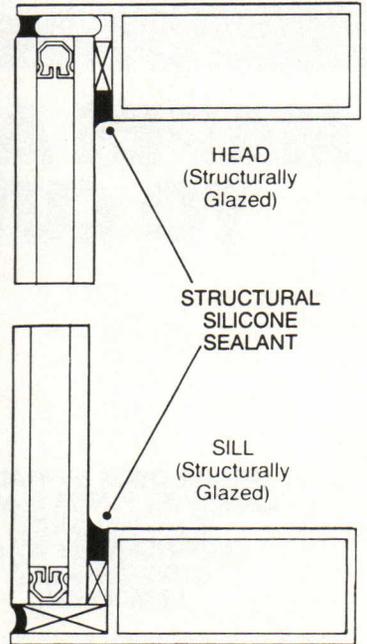
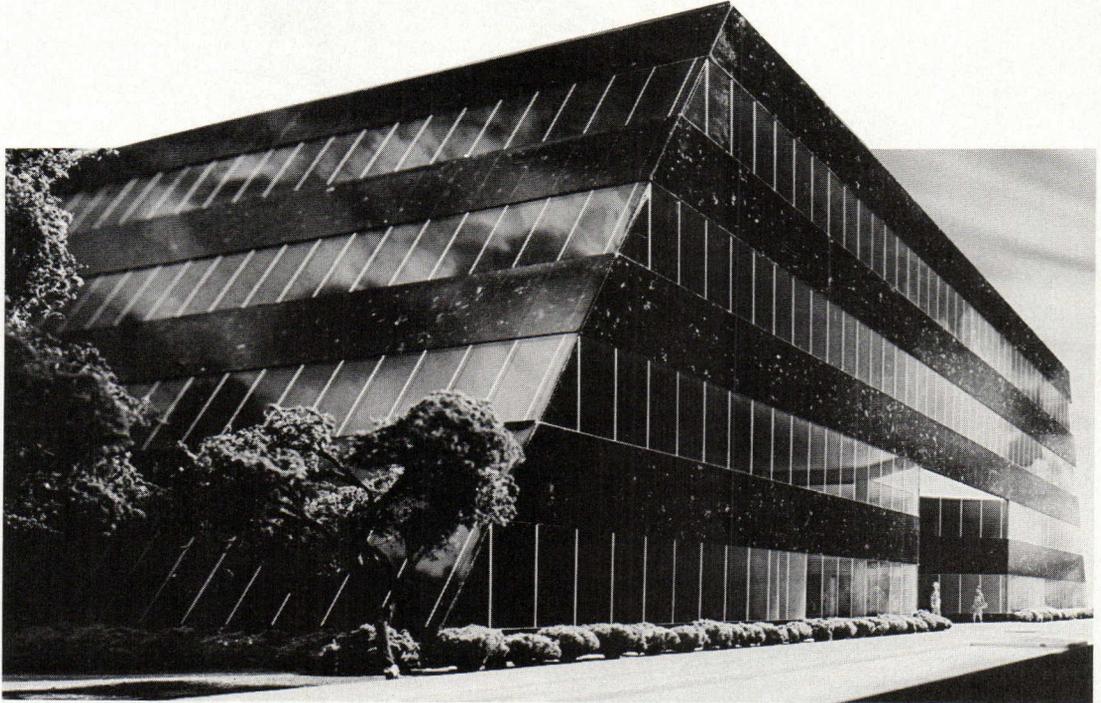
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Robertson

Stronger and thinner

Specifically for two- and four-sided structural glazing applications, all-silicone *Ultraglaze 4000* is described by the manufacturer as the strongest one-part, neutral-cure sealant available. The compound has a safety factor of 5:1, meaning that it exceeds the worst-case scenario of wind-load design—a 100-year wind on the most exposed and vulnerable portion of the building—by a factor of five. This is a stringent specification, now being considered for inclusion in the South Florida Building Code for curtain walls and structural glazing systems. The long-term adhesion characteristics of *Ultraglaze 4000* permit its use with a wide range of building substrates, including coated and uncoated glass, anodized and fluoridated metals, and painted surfaces. The specifier must submit the curtain-wall design and glazing details, along with production samples of all substrates, glass, and glazing accessories, to the manufacturer for review prior to any installation of the sealant system.



1. The architectural firm of Middleton & McMillan, of Charlotte, N. C., used *Ultraglaze 4000* in the four-sided structural glazing of steeply-sloped 4- by 8-ft panes of reflective green antique insulating glass (alternating with spandrels of 1-in.-thick Verde Esmeralda granite) on the four-story, 85,000-sq-ft Arrowpoint II office building.

2. *Ultraglaze* is available in a compatible, two-part formulation for use as a secondary seal in shop-fabricated unit glazing. Its performance characteristics are similar to the one-part product, with the added production advantages of an adjustable cure rate and easy application at low pumping pressures.

3. For on-site work, the one-part sealant is supplied in 10.3-oz cartridges, 5-gal. pails, and 50-gal. drums. The product has a 12-month shelf life, and each container is marked with a "use before" date.

4. In a typical four-sided structural glazing installation, *Ultraglaze 4000* is said to have a tensile adhesive strength 100 percent greater than that currently stated for other neutral-cure silicone structural sealants, allowing the application of a narrower bead width for the same load requirements. This ensures an even, complete cure of the sealant within five to seven days, and reduces the amount of product needed for a given installation.

General Electric Co., Silicone Products Div., Waterford, N. Y.
Circle 303 on reader service card
More products on page 175



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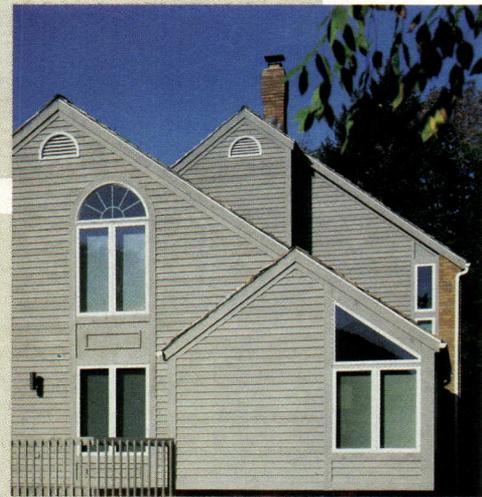
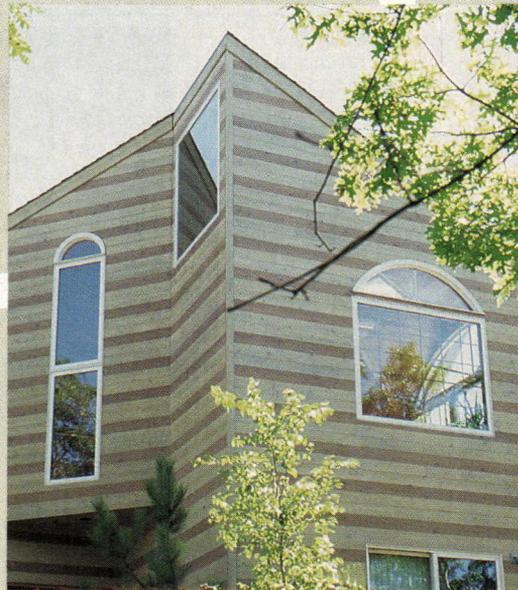
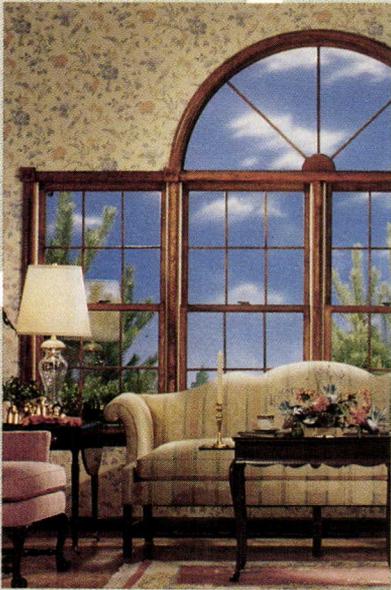


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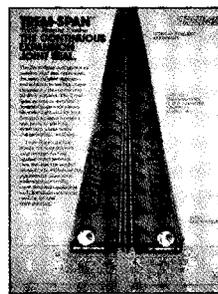
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Caradco, Rantoul, Illinois 61866

Circle 71 on inquiry card



Construction sealant
Described in a 4-page folder, *Permapol RC-2* polyurethane sealant is now available in a self-leveling version, for horizontal joints in pedestrian and vehicular traffic decks. The product has a rapid cure rate, and permits dynamic joint movement of up to 50 percent. Products Research & Chemical Corp., Glendale, Calif.
Circle 400 on reader service card



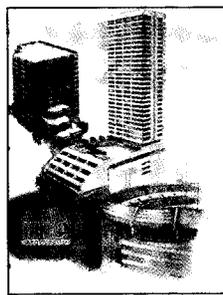
Expansion joint seal
The *Trem-Span* continuous expansion joint seal is introduced in a product folder. Designed for major traffic-bearing joints on horizontal decks, the steel-reinforced *Neoprene* pad is bolted in place. *Trem-Span* joints are said to be particularly resistant to snowplows and ice-melt chemicals. Tremco, Cleveland.
Circle 406 on reader service card



Door and window sealants
A 24-page architectural catalog covers air-stop systems for all types of doors; fire-door seals and smoke stops; and window seals. Product presentation includes detail drawings and cut-away views of head and jamb, sill, and meeting-rail installations. Zero International, Inc., Bronx, N. Y.
Circle 401 on reader service card



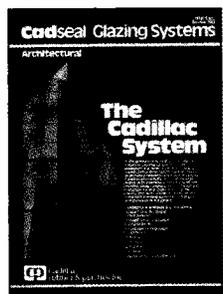
Heavy-duty coatings
An expanded line of *IronClad* primers, sealers, and finish coats for commercial and industrial structures is described in a 6-page catalog. Sample chips of all standard and special colors are included; products include rust-inhibitive, fire-retardant, and catalyzed coatings. Benjamin Moore & Co., Montvale, N. J.
Circle 407 on reader service card



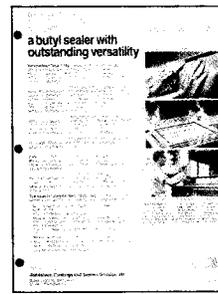
Colored coatings and sealants
Sample chips of all 9 standard colors of polyurethane, epoxy, and acrylic *Multi-I-Thane* systems are provided in a 4-page folder, which explains the manufacturer's custom-color capability. Multi-Chemical Products, Inc., South El Monte, Calif.
Circle 402 on reader service card



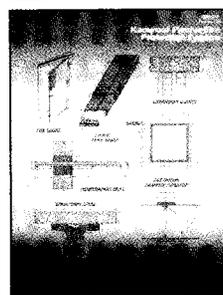
Shielding gaskets
Made of a compressible urethane foam core encapsulated within silver-coated nylon conductive fabric, gaskets seal against electromagnetic interference. A technical data sheet explains why the gaskets require minimum closing force while providing maximum attenuation. Schlegel Corp., Rochester, N. Y.
Circle 408 on reader service card



Extruded glazing systems
Cadseal structural gasket and glazing systems of extruded *Neoprene* are presented in a 4-page technical catalog. The fixed glazing technique is said to save installation time and provide superior weatherability. Cadillac Rubber & Plastics, Inc., Cadillac, Mich.
Circle 403 on reader service card



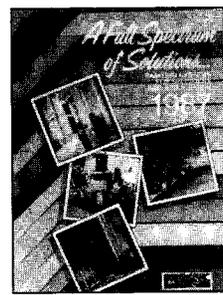
Sealant tape
Weatherban type *1202-T-NS* tape is described as a thin, low-tack butyl ribbon designed to provide a watertight seal between glass, metal, wood, and plastic. Application and physical property information is given on a product data sheet. 3M, Adhesives, Coatings and Sealers Div., St. Paul, Minn.
Circle 409 on reader service card



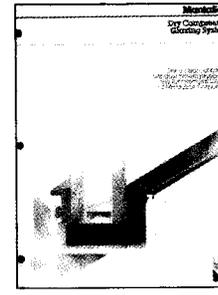
Penetration seal
Passive fire-protection products of *Kaowool* with up to a 3-hour rating (per ASTM E-119) are available for penetration sealing. A 4-page brochure from this maker's insulating products division describes cost-effective and easy-installation characteristics of fire-stop products. The Babcock & Wilcox Co., Augusta, Ga.
Circle 404 on reader service card



Thermoplastic rubber
A 12-page brochure explains the foaming technology involved in the extrusion of *Santoprene* thermoplastic rubber into precise shapes. Construction applications include compression gaskets, seals, and setting blocks in architectural glazing; skylight seals; and weatherstripping. Monsanto Chemical Co., St. Louis.
Circle 410 on reader service card



Painting systems
A 20-page brochure written for the design professional provides detailed technical information on coatings for interior, exterior, and heavy-duty maintenance use. Tables list substrates with desired finishes, and suggest primers and topcoats for each. Project case histories are included. Sherwin-Williams Stores Group, Cleveland.
Circle 405 on reader service card



Dry compression glazing
An 8-page color catalog lists the benefits claimed for extruded rubber glazing systems, including reduced total installation cost, control of workmanship quality, and attractive appearance of the in-place unit. Mantaline Corp., Architectural Div., Mantua, Ohio.
Circle 411 on reader service card
More literature on page 172

Don't let heat treating spoil the picture.

ECLIPSE® reflective glass from Libbey-Owens-Ford effectively ends tempering distortion.

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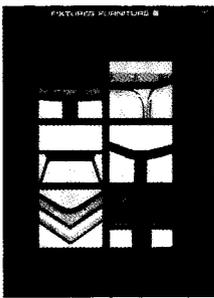
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Tables

All sorts of tables—stacking, round, folding, dining, conference, computer—are highlighted in a 24-page color booklet. Various edge, base, configuration, and surface options are illustrated. Fixtures Furniture, Kansas City, Mo.
Circle 412 on reader service card



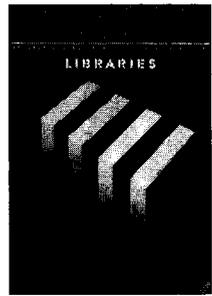
Health-care surfaces

An 8-page product folder describes how *Corian* solid polymer can be cost-effective as well as functional in a hospital setting. Code compliance and stain-resistance data are featured; installation photographs illustrate hospital and other case histories. DuPont Co., Wilmington, Del.
Circle 418 on reader service card



Architectural doors

An 8-page specification catalog supplies technical and other product data on flush wood doors for a number of architectural applications. Included are acoustical and lead-lined doors, several types of fire doors, and hollow- and solid-core institutional doors. Cal-Wood Door, Santa Rosa, Calif.
Circle 413 on reader service card



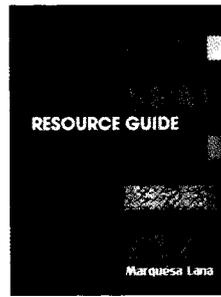
Library storage

A 6-page brochure describes the *Aurora* library storage system, said to save space as well as books. The *Quik-Lok* design needs no nuts, bolts, or sway braces: shelf supports fit into slots in the inner wall of four-post uprights. Richards-Wilcox Div., White Consolidated Industries, Inc., Aurora, Ill.
Circle 419 on reader service card



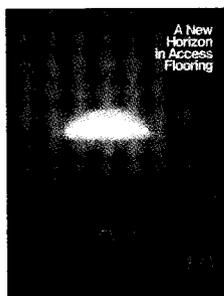
Backless chair

The *Balans* concept—a forward-slanting seat and supportive leg cushion—is said to give the body a more natural, functional posture than conventional seating provides. A catalog shows several task-oriented models used in office settings. HAG USA, Inc., Chicago.
Circle 414 on reader service card



Olefin carpeting

A 16-page Resource Guide features representative patterns from mills producing commercial carpeting of continuous-filament olefin yarn, processed with *Scotchgard* stain protector. The *Marquesa Lana* yarns are said to be particularly colorfast and resistant to bacteria and harsh chemicals. Amoco Fabrics and Fibers Co., Atlanta.
Circle 420 on reader service card



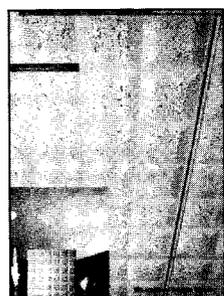
Access flooring

Designed to eliminate the hollow sound of some access floors, the *Tec-Crete* panel described in a 12-page booklet is a steel enclosure just over one in. thick, filled with lightweight, high-strength concrete. Mounting pedestals, floor vents, finish options, and system accessories are illustrated. C-Tec, Inc., Grand Rapids, Mich.
Circle 415 on reader service card



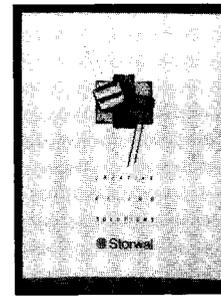
Low-ceiling HID

Based on a patented reflector said to provide superior optical performance, the compact *Elite* fixture mounts on a 15-in. stem, for use in smaller-scale spaces and with lower ceiling heights. Six fully or partially indirect configurations and 20 standard colors are illustrated in a 4-page brochure. Lam Lighting Systems, Wakefield, Mass.
Circle 421 on reader service card



Acoustical ceiling

A brochure illustrates how *Designer Prisms* ceiling panels meet the esthetic problems associated with such critical lighting situations as drop, angle, or strong indirect illumination. Panels routed to form 36 geometric modules are said to minimize lipping of light patterns. USG Acoustical Products Co., Chicago.
Circle 416 on reader service card



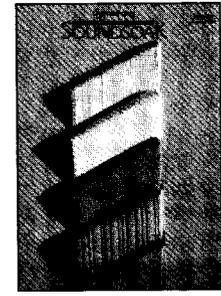
Customized storage

The design potential of office storage is discussed in a brochure on the *Select Plus* file system. Front options include traditional woods and laminates, as well as leather, synthetic stone, fabric, textured paint, and printed and metal laminates. Dimensions and interiors can be customized. Storwal International Inc., Toronto.
Circle 422 on reader service card



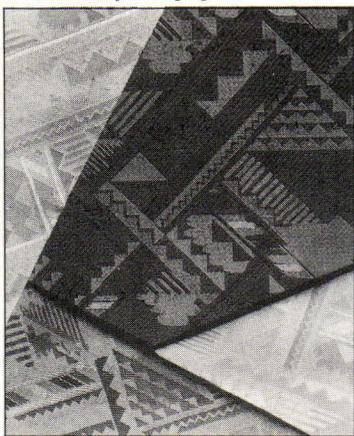
Decorative laminates

A 12-page color catalog illustrates the full line of *Nevamar* laminates, and includes technical and code information. Among the featured new pattern series is *Kaleidoscope*, a multicolored, pointillist blend available in both *ARP* wear-resistant and mirror finishes. Nevamar Corp., Odenton, Md.
Circle 417 on reader service card



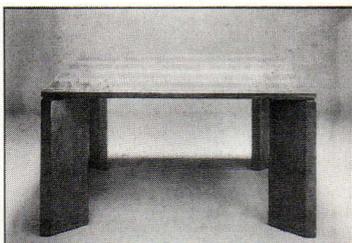
Acoustical walls

A 20-page architectural brochure explains how *Soundsoak* wall panels and appliques can help create a more comfortable, productive office environment. Standard fabric and vinyl finishes are shown in room settings; acoustic, hazard, and installation data are provided. Armstrong World Industries, Inc., Lancaster, Pa.
Circle 423 on reader service card



Cotton contract

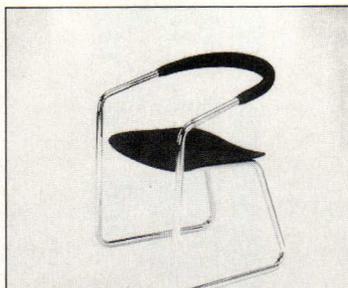
A geometric tapestry woven in France of cotton yarns, *Jazz* has been designed by Roger Arlington to have the flair of Art Deco textiles of the 1920s. The 51-in.-wide fabric comes in five colorways, and is suggested for contract wall treatments and upholstery. Roger Arlington, Inc., New York City. Circle 304 on reader service card



Conference table

Precise edge treatments and mitered joints highlight the millwork details of the *Cove* case goods series of desks, tables, credenzas, and storage components. Designer Brian Kimura uses panels set at angles to support the veneered conference top. Wood species include the cherry shown, as well as oak, walnut, mahogany, and maple. Modern Mode Inc., San Leandro, Calif.

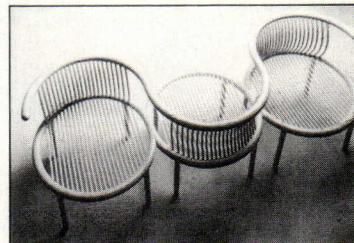
Circle 307 on reader service card



Cantilevered chair

The *Neon* chair is made with a back and seat of molded structural urethane, said to provide comfort, flexibility, and the durability needed for heavy-use contract applications. Designed by Paolo Favaretto and Giancarlo Bisaglia, the tubular frame may be specified in any of 24 *Kincote* colors plus chrome. Kinetics, Rexdale, Ont.

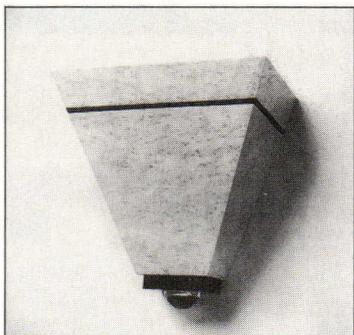
Circle 308 on reader service card



Love seat plus

Bentwood frames in a double-S have seats and backs of wooden "springs" in this three-person *Circo* bench by Jutta and Herbert Ohl. Chairs, tables, and a two-seat bench from Germany are available in a choice of finishes. Lübke International Design, High Point, N. C.

Circle 309 on reader service card
Continued on page 177



Bird's-eye sconce

Light No. One has been designed by Furnico to fit as a shade over a porcelain socket; the 12-in.-wide sconce directs light upward or, set away from the wall, acts as a wall wash fixture. For contract and residential use, the light comes in bird's-eye maple as shown, as well as faux-marble and lacquer finishes, all with black lacquer reveal, flute, and acrylic globe. Dennis Miller Associates, New York City.

Circle 305 on reader service card



Lounge furniture

The *Diesis* sofa and lounge, designed by Antonio Citterio and Paolo Nava, are again nationally available as part of the collection of contemporary upholstered Italian furniture manufactured by *B&B Italia*. Herman Miller Inc., Zeeland, Mich.

Circle 306 on reader service card

DIMENSIONAL STONE

Marble • Travertine

Granite • Limestone

Slate • Sandstone

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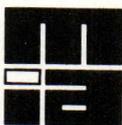
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Skillfully engineered new pantry storage options make space tailoring a snap. A metal bread box keeps baked goods out of the way. Spices are close at hand on the Omni range hood, while the cutting board/knife tray slides out of sight. Cutlery stays organized in its tray. Appliances are sheltered neatly in any of three garage models. Open shelves showcase colorful treasures.

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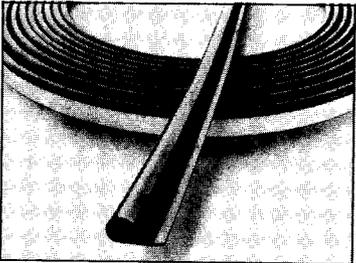
AMERICA'S CABINETMAKER



Pocket light meter

The *Type 214* light meter uses a filter that closely matches the sensitivity of the human eye with respect to different wavelengths of light, so that no correction factors are necessary for different light colors. The meter can be read directly in foot-candles, cosine-corrected for the incident angle of light. A slide switch permits selection of one of three linear scales: 10-50 fc; 50-250 fc; and 200-1000 fc. A multiplier provides for readings of up to 10,000 fc, covering most daylight conditions. General Electric Lighting Business Group, Cleveland.

Circle 310 on reader service card



Smoke gasket

Labeled by Warnock Hersey for fire-rated openings, *S-88 SiliconSeal* is a resilient, self-extinguishing silicone-rubber door gasketing that wraps around the edge of a door to help seal out smoke and fire. It is available in a self-adhesive form; the material should not crack or degrade under normal circumstances, and will not react with paint or varnishes. Pemko, Ventura, Calif.

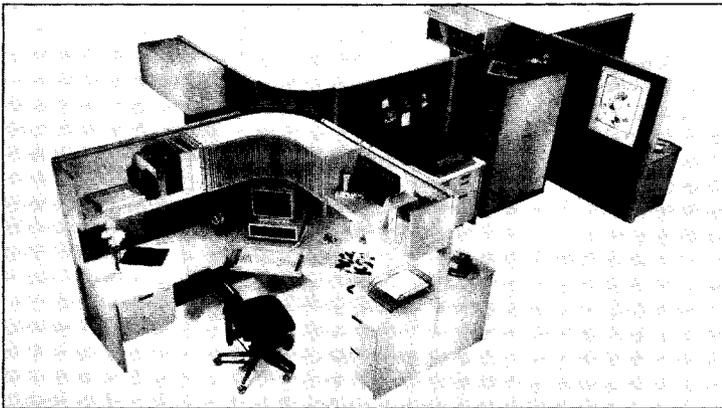
Circle 311 on reader service card



Acid-resistant epoxy grout

A two-part admixture for use with colored *S-700* sanded-joint filler, *S-110* nonflammable epoxy will resist deterioration caused by some dilute acids, alkalis, and chemicals. The sag-resistant compound can be used for grouting quarry tile, ceramic mosaics, decorative tile, pavers, and brick on either floors or walls. Summitville Tiles, Inc., Summitville, Ohio.

Circle 312 on reader service card

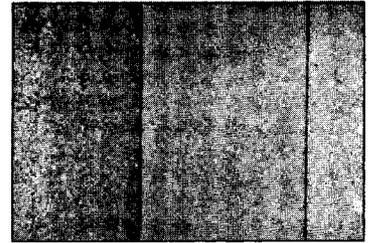


Clustered workstations

The *Kalidascope 360* office has a system of posts and interlocks that click together to form clustered workstations. A concave center stem acts as an axis for up to six areas; power and other wiring is

routed via built-in raceways from the stem's power pole. The layout is said to provide more work area in less floor space than other systems. Dennison Monarch Systems, Inc., New Windsor, N. Y.

Circle 313 on reader service card



Health-care floor

Three colorways—silver/gray, apricot/beige, and champagne—have been added to the *Medintech* line of solid sheet-vinyl flooring manufactured specifically for the stain-, chemical-, and acid-resistant requirements of clinics and laboratories. Armstrong World Industries, Inc., Lancaster, Pa.

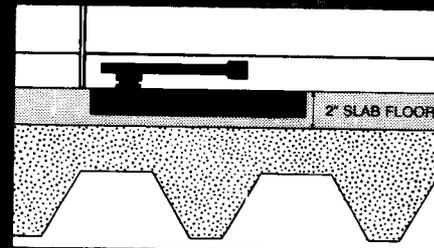
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Continued on page 179

FOR SLAB FLOORS AS SHALLOW AS 2 INCHES . . .

DOR-O-MATIC THINLINE[®] DOOR CONTROL FITS WHERE OTHERS CAN'T!

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- Concealed-in-the-floor out of sight
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- Positive stop at 90° or 105°. Hold open at 90° or 105°
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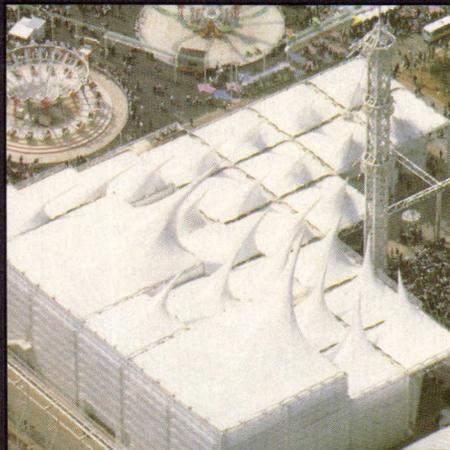
Write or call for full details.

FANTASTIC

The flame-like shapes pictured here form the roof structure for a multi-story electric power pavilion at the Tsukuba Expo. After dark, floodlights with rotating color create a vibrant effect of flickering flames. By day, the roof structure remains a striking eye-catching design, though quite different from its nighttime appearance. The white translucent fabric reduces daylight lighting requirements and conserves energy.

... curvilinear shapes of the simplest, purely functional membrane structure are dramatic and exciting. The design magic you can achieve with tensioned membrane structures is limitless. But this is only one of the reasons architects are utilizing them. Economy, minimum disturbance to the site, and speed of construction are some of the others.

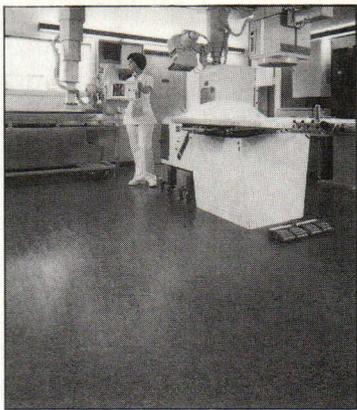
Could a tensioned membrane make sense on a project of yours? As the world leader in architectural fabric structures, Helios has the technology and experience to translate your preliminary design into workable structures. We offer a complete design, engineering, and fabrication service.



For more information, or assistance with a specific project, call or write:

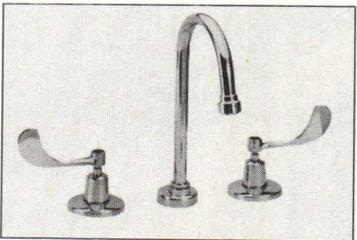


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Hayward, California 94545, U.S.A.
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Sheet-vinyl flooring

A random-pattern floor offered in 20 colors, *Smaragd* has a nonporous PVC-wear layer incorporating floating colored granules over an embossed foam surface, with an interlayer of fiberglass for dimensional stability. *Smaragd* can be either heat- or solvent-welded for seamless installations. A cushioned version provides extra foot comfort, improved acoustics, and bridges subfloor irregularities. Forbo North America, Inc., Richmond, Va.
Circle 315 on reader service card



Hospital service fittings

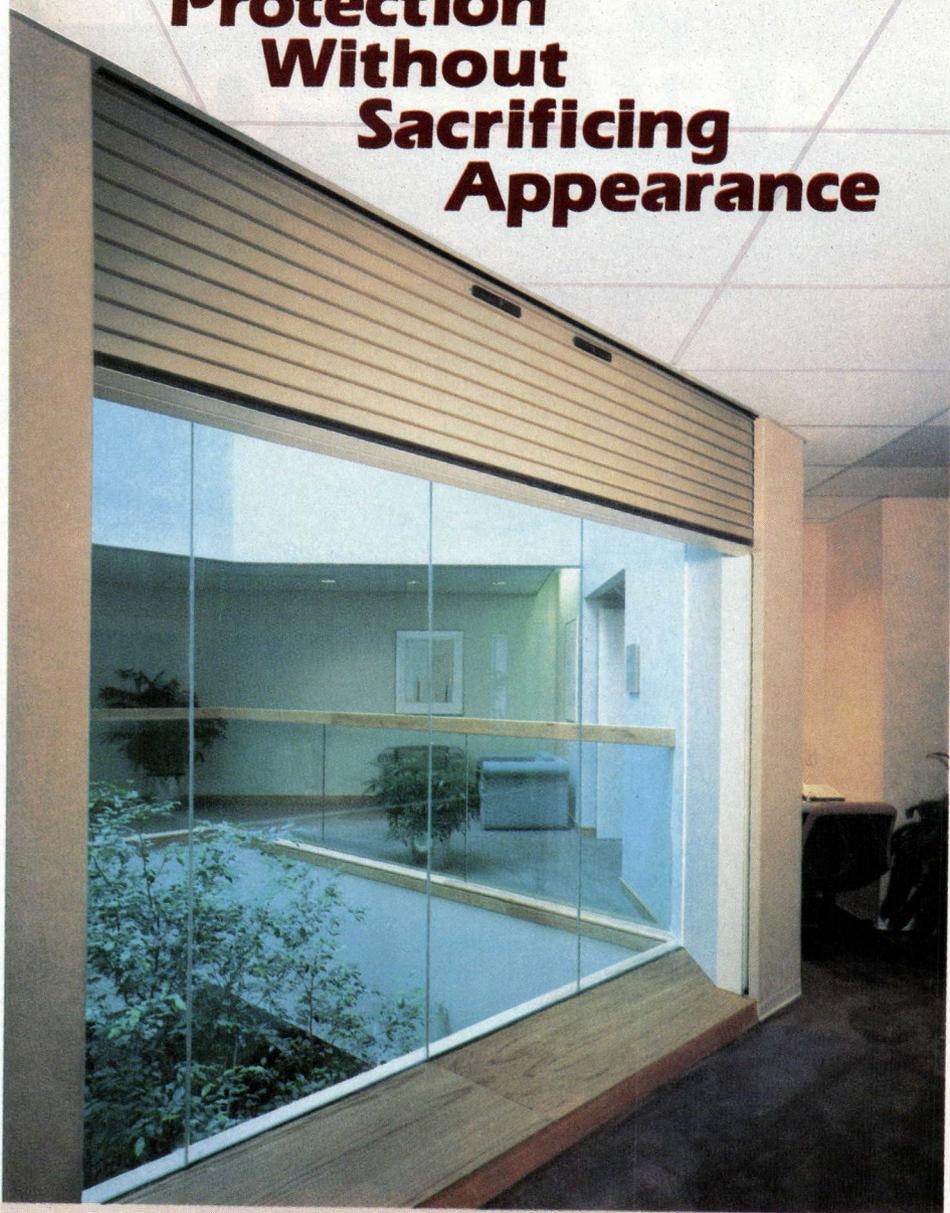
Chrome-plated brass lavatory and sink fittings for hospital and institutional service are offered with a 25-year guarantee against failure of the ceramic valves. Wrist-action handles come in 4- and 6-in. sizes; faucets may be specified with water-conserving spray outlets and *Vandl-Rator* aerators. Speakman Co., Wilmington, Del.
Circle 316 on reader service card



ICU doors

Doors for intensive-care units have a reduced profile for better patient-room visibility. While providing privacy for the patient, manual sliding doors allow immediate access and continuous observation for the medical staff. Doors come in two-, three-, or four-panel configurations; the aluminum frame may be ordered in dark bronze as well as custom paint finishes. There are models for either floor track or trackless installation; tinted glass, venetian blind inserts, and other accessories are available. Stanley Magic-Door, Farmington, Conn.
Circle 317 on reader service card
Continued on page 181

Maximum Protection Without Sacrificing Appearance



ROLLING FIRE DOORS

Recognized for dependability with exclusive Firefly® Time-Delay Release Device and new Auto-Test Control for frequent testing without resetting.

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The Headless Poke-Thru is here.

If you're an architect or interior designer we just "made your day". We finally got rid of the electrical outlet "doghouse".

If you're a specifying engineer, you'll be happy to hear that Raceway has developed the first **Flush Poke-Thru** with full capacity... two services

in a single 3" hole; 15 or 20 amp, 125V duplex receptacle power. **Plus** two individual openings for low tension wiring for telephone, signal or data communications. **U.L. Classified and Listed.**

If you're a contractor, put this into your calculator. The Raceway **Flush Poke-Thru** comes factory pre-wired, terminating in a junction box which is **integral to the fitting.** (Perfect for renovation since it installs over

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There are so many more exciting features. Color-coordinated choice of retainer ring... a sliding polycarbonate receptacle cover... but that's why we printed a brochure. It's all in there.

Send for it. Join the rush to get flush. Write or call Raceway Components, Inc., 263 Hillside Avenue, Nutley, N.J. 07110. 201-661-1116.



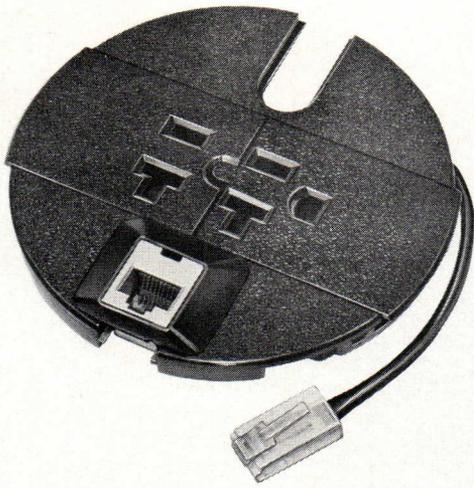
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NOW AVAILABLE WITH LOW TENSION DISCONNECT

The Raceway Flush Poke-Thru is becoming a family. Here's a new "baby" with a special low tension disconnect. Now you can instantly disconnect the data and communications links as easily as power. Abandoned fittings remain energized for future activation. No "doghouses" present unsightly impediments to the movement of furniture and people. If desired, the device's 8 pin, plug-ended cord is also easily disconnected and reconnected from service.

A special AT&T® adapter accepts a coax plug and connects into the modular disconnect jack, permitting full use of data as well as data/voice integration at the workstations.

The Raceway Low Tension Disconnect comes integrated into the Flush Poke-Thru for new installation. Or, it can be supplied for retrofit into installed Raceway Flush Poke-Thru's. Learn more about them by writing Raceway Components, Inc., 263 Hillside Avenue, Nutley, N.J. 07110. 201-661-1116.

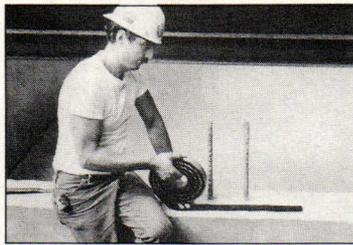
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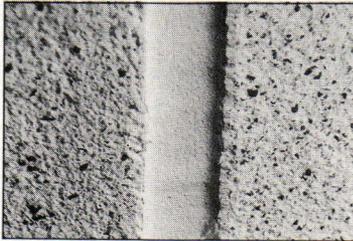
Circle 78 on inquiry card

Continued from page 179



Waterstop joint sealant

A bentonite-based sealant, *Waterstop-RX* is said to remain flexible and easy to work even at extreme temperatures. Supplied as a coiled rope, *Waterstop* is applied to clean, dry concrete between pours at footings, walls, or slab joints, held in place with nails to prevent its movement during the succeeding pour. The sodium bentonite compound swells on contact with water, preventing ground water from penetrating or migrating along the joint. American Colloid Co., Arlington Heights, Ill. Circle 318 on reader service card



Colored silicone sealant

Capable of handling significant building-joint movement, 695 *Pigmentable Silicone Weatherseal* is said to be priced competitively with polyurethane sealants. The photo shows its textured, nonglossy surface, which blends with brick, concrete, and stone; components include a pigment pack in any of 11 colors (28 additional colors are planned). The sealant will not stain or slump, and remains workable even in cold temperatures. Dow Corning, Midland, Mich. Circle 319 on reader service card



Health-care faucets

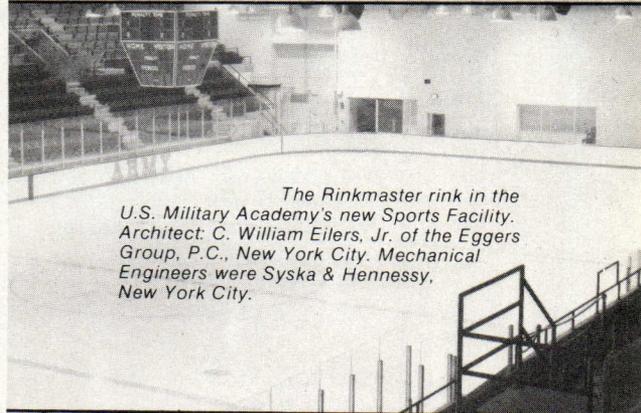
This maker's institutional and hospital gooseneck faucets are now available with the *FC* flow-control device, an internal stream regulator that prevents splashing and conserves water without providing a breeding place for bacteria. The 1-in.-high regulator fits into the base of the spout, and may be installed in existing *Chicago* faucets without replacing the entire fixture. The Chicago Faucet Co., Des Plaines, Ill. Circle 320 on reader service card

Continued on page 183

When it came to an ICE RINK



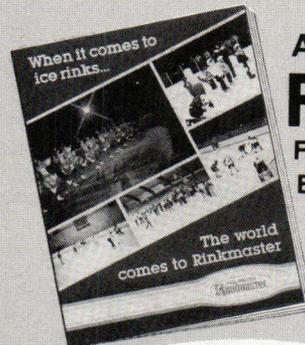
... West Point came to Rinkmaster®



The Rinkmaster rink in the U.S. Military Academy's new Sports Facility. Architect: C. William Eilers, Jr. of the Eggers Group, P.C., New York City. Mechanical Engineers were Syska & Hennessy, New York City.

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Has To Be
First**

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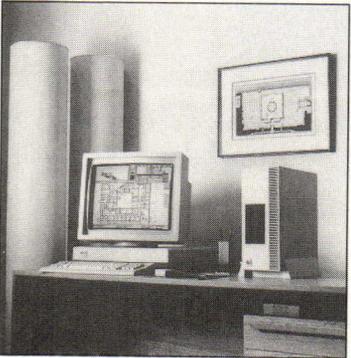
Molded chair

First marketed in 1943, and widely used in hospital settings, this molded oak-plywood chair has been reintroduced by *Thonet* with padding in flame-retardant *Pyroguard* foam. Thonet Furniture, Shelby Williams Industries, Statesville, N. C.
 Circle 321 on reader service card



Urethane sealants

For sealing and caulking expansion, isolation, and cold joints in color-coordinated ceramic tile, building panels, dimensional stone, etc., *Hydroment* one- and two-part colored urethane sealants are said to have excellent abrasion and tear resistance, and to be permanently flexible in both interior and exterior applications. Bostik Construction Products, Huntingdon Valley, Pa.
 Circle 322 on reader service card



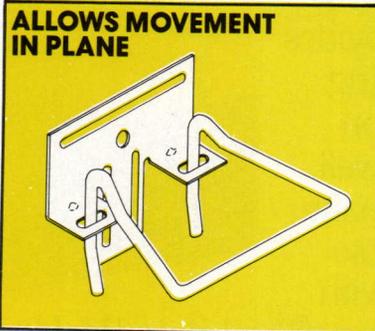
Medical design CAD

MediCADD software, for use with the *Graph/Net* UNIX-based CADD system, reportedly alleviates some of the design problems that are unique to health-care facilities. The structure-specific program provides a library of over 1,000 medical spaces and equipment symbols, such as operating rooms and CAT scan machines. An optional expert system for *MediCADD* provides code checking to alert the architect whenever existing life safety codes have been violated by a particular design. *MediCADD* is marketed turnkey with four integrated *Graph/Net* programs and a *Sun* supermicro computer. Graphic Horizons, Inc., Cambridge, Mass.
 Circle 323 on reader service card
 Continued on page 189

DUR-A-BILITY... hallmark of the Dur-O-Wal veneer anchor system

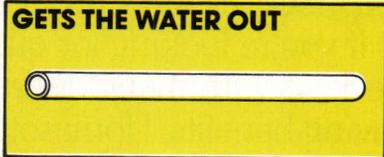
DUR-O-WAL's entire product line has been designed to reinforce and strengthen walls and facades since 1939 and its new veneer anchor system provides triple-duty durability.

1. Heart of the system is the D/A 213 adjustable speed-set veneer anchor. Unique 2-screw design doubles protection against failures due to stud corrosion or deterioration; provides 100% better back-up than ordinary anchors.



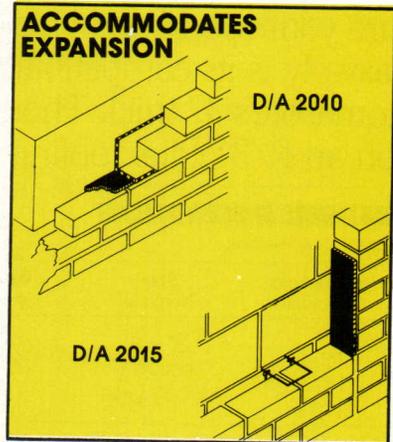
Double leg pintles give twice the strength and allow half the distortion of anchors with a single pinto leg. D/A 213 provides maximum movement control, speeds installation time and accommodates up to 3 1/2" rigid insulation. NEW FEATURES—D/A 213 is now available with No. 4 gage pintles for twice the stiffness. New options in corrosion resistant Climaseal or self tapping stainless steel screws. D/A 213 veneer anchors are available mill galvanized, hot-dipped galvanized, stainless steel or epoxy coated.

2. Easy to overlook, yet no less a part of the overall system, Dur-O-Wal's D/A 1005 clear plastic weep holes minimize moisture build-up to reduce interior corrosion.



Standard 3/8" O.D. x 4" long tube provides weep holes at bottoms of walls and shelf angles. They are virtually invisible taking on the color of the surrounding mortar.

3. And finally, the Dur-O-Wal veneer wall system features flexible joint fillers to keep mortar and other foreign material out and allow adequate expansion. D/A 2010 Rapid® Soft-Joint protects horizontal expansion joints; D/A 2015 Rapid® Expansion Joint with adhesive protects vertical expansion joints.



Dur-O-Wal's flexible joint material is closed cell neoprene and conforms to ASTM D1056 class RE41. Compressibility exceeds 50%.

Make Dur-O-Wal DUR-A-BILITY a hallmark of all your wall systems. For complete details and data sheets, call or write today.



**DUR-O-WAL®
 INC.**

3115 N. Frontage Rd. Suite A
 Arlington Heights, IL 60004
 (312) 577-6400

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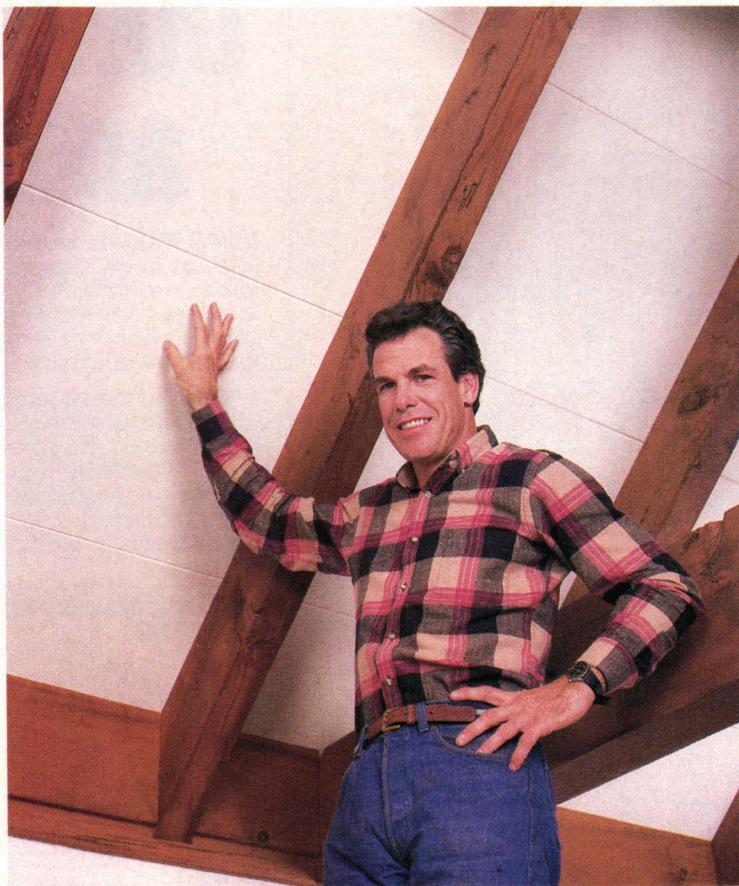
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Make a smart move up with Homasote Easy-ply® Roof Decking—the attractive roof/ceiling combination that fits in beautifully with exposed beam construction.

If you're looking for quality roof decking with many desirable, cost-saving benefits, Homasote Easy-ply® is a pretty smart choice.

It offers a structural nail base for roofing plus thermal insulation. While that in itself is pretty smart, the real beauty is the white vinyl film on the ceiling side. It provides a pre-finished decorative ceiling for exposed beam construction. And, it's a vapor retarder as well.

Another smart reason to make sure your specs read Homasote Easy-ply is its compatibility with Homasote's 4" thick Thermasote® Nail Base Roof Insulation. Together, the two give you an R/31 Plus roofing system* that's energy efficient, completely nailable and environmentally safe.



MATERIAL SPECIFICATIONS

Easy-ply Roof Decking

| Thickness Nominal | Size Nominal | Weight lbs./sq. ft. |
|----------------------|-----------------|------------------------|
| 1" | 2' x 8' | 2.4 |
| 1-3/8" | (23-1/8" x | 3 |
| 1-7/8" | 95-7/8" actual) | 4 |
| 2-3/8" | | 5 |

*Includes shingles, inside/outside air film and felts.

Whether new construction or old, Homasote Easy-ply Roof Decking will fit in beautifully with your next project. So, make a smart decision today. Call (609) 883-3300 for details. Or write:

homasote
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P.O. Box 7240, West Trenton, New Jersey 08628-0240

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6110

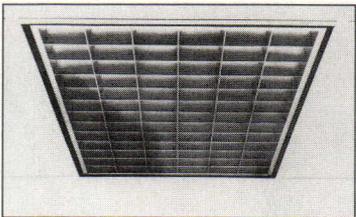
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Printing-materials cutter

From Xerox, the *Cutter 1* meters out bond paper, diazo stock, vellum, or polyester film from rolls up to 36 in. wide. Engineering-print materials are cut to the exact length keyed in, and up to 99 sheets can be cut in one operation. Xerox, Rochester, N. Y.

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VDT lighting baffle

The *Parabaffle* fluorescent fixture is an aluminum louver that combines low brightness and low glare at a sight angle of 65 to 90 deg. The energy efficiency of both the specular and semi-specular *Parabaffle* is said to place the fixture among the top three parabolics that meet IES standards for VDT applications. Available in 2-by 4-ft and 2-by 2-ft grids, the louver floats in the fixture for convenient access. Keene Lighting Products, Wilmington, Mass.

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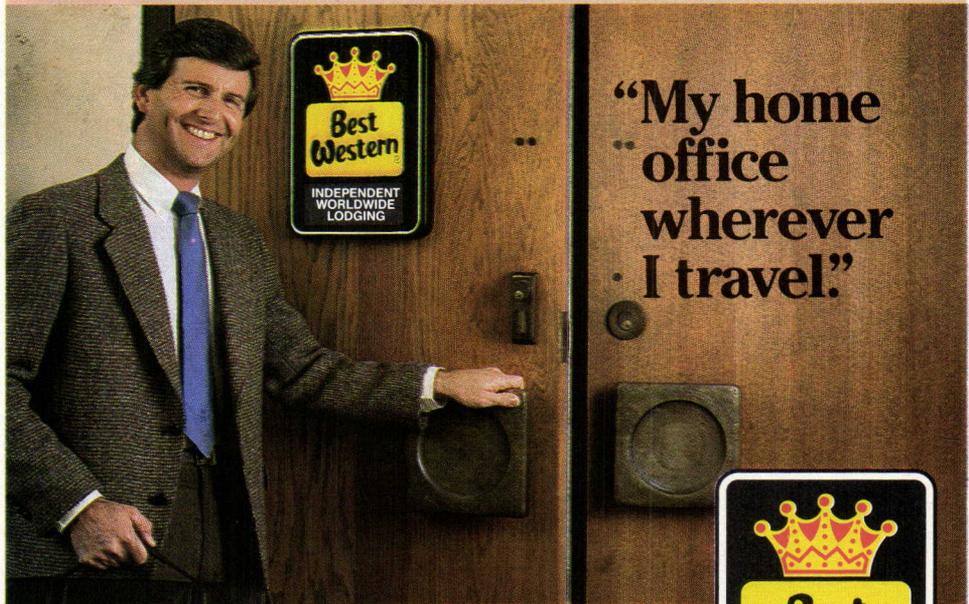


Roofing walkway pads

Versigard walkway pads are intended to prevent roofing punctures and tears, especially from the tools, traffic, and equipment required for rooftop hvac and maintenance work. Any built-up, modified bitumen, or EPDM roof is vulnerable to such damage. The 36-by 44-in. pads are designed to provide a nonslip walking surface to and around roof-access hatches, air-conditioning housings, etc. Goodyear Roofing Systems, Akron, Ohio.

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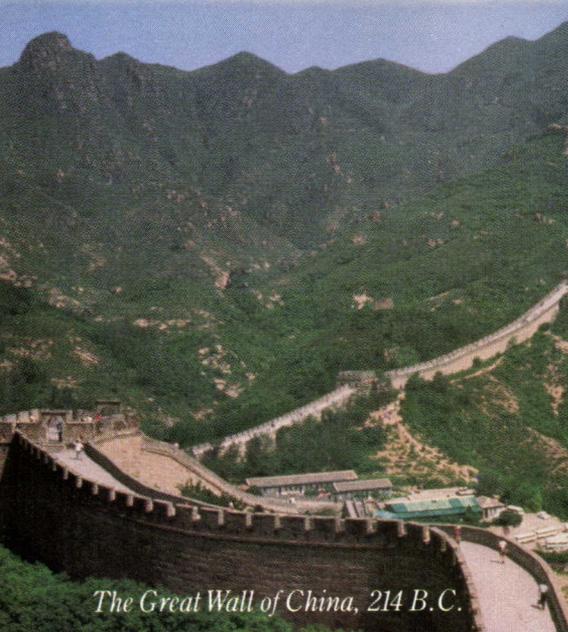
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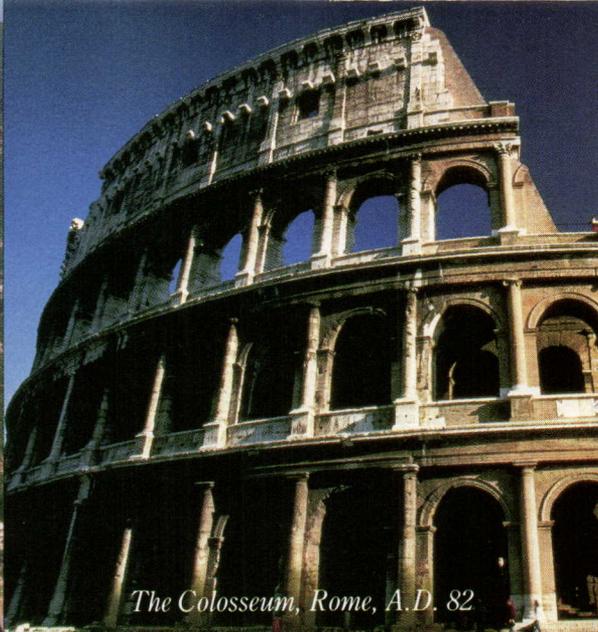
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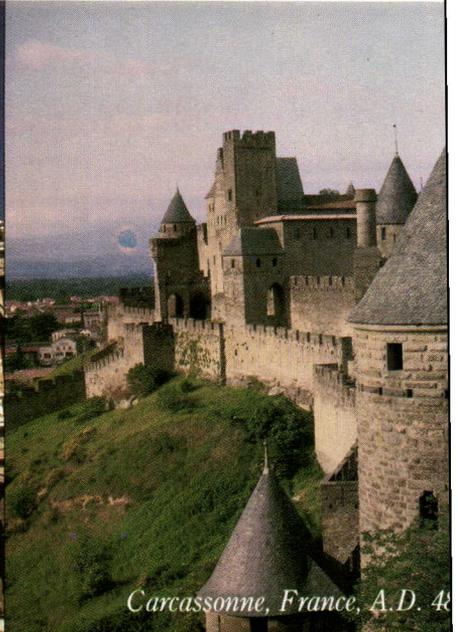
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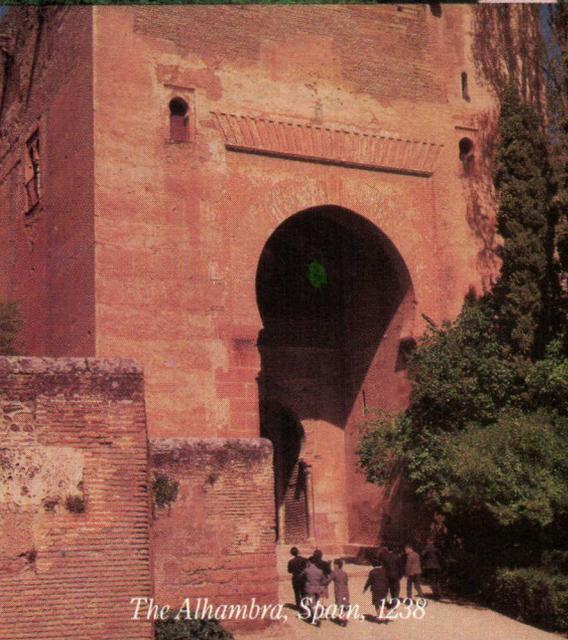
The Great Wall of China, 214 B.C.



The Colosseum, Rome, A.D. 82

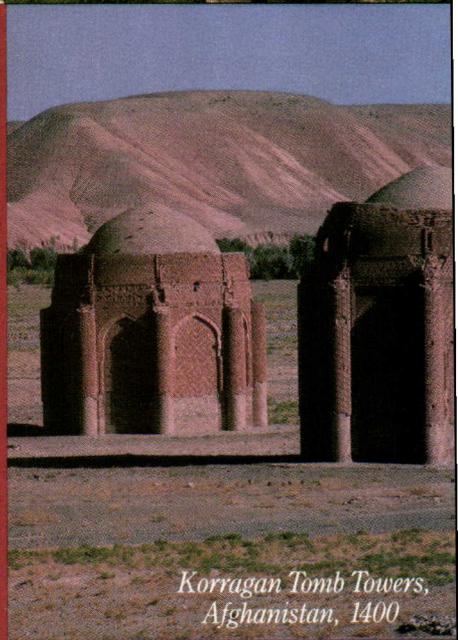


Carcassonne, France, A.D. 4

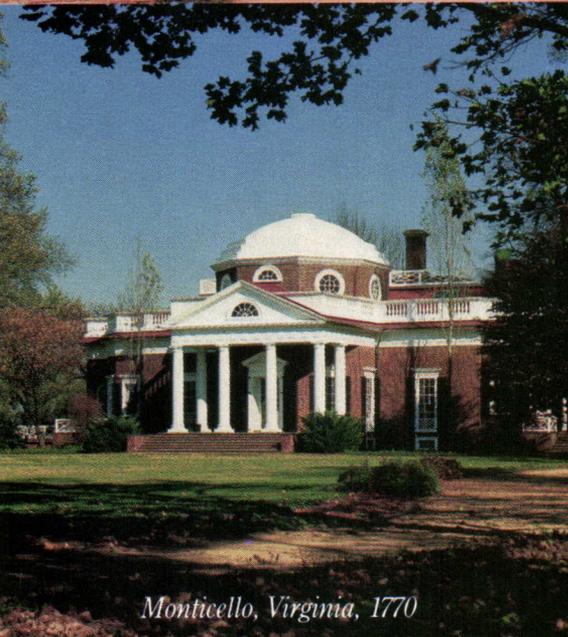


The Alhambra, Spain, 1238

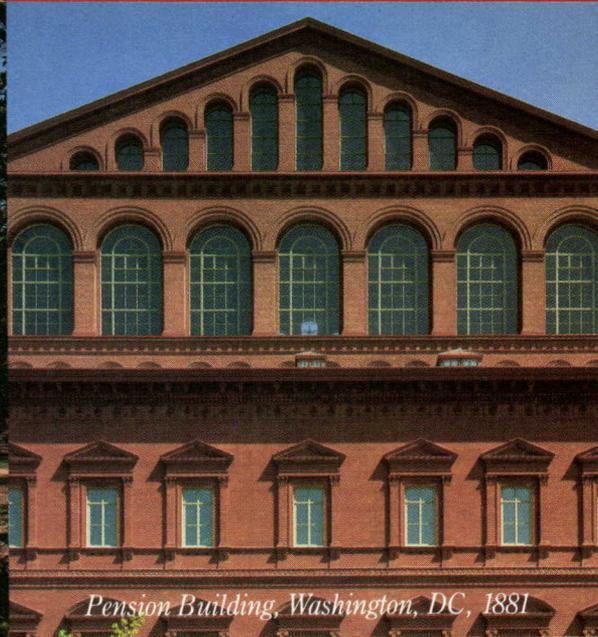
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a brick and
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can happen.



*Korragan Tomb Towers,
Afghanistan, 1400*



Monticello, Virginia, 1770



Pension Building, Washington, DC, 1881



Tycon Tower, Virginia, 1986

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