ARCHITECTURAL RECORD

Business Design Engineering
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November 1984

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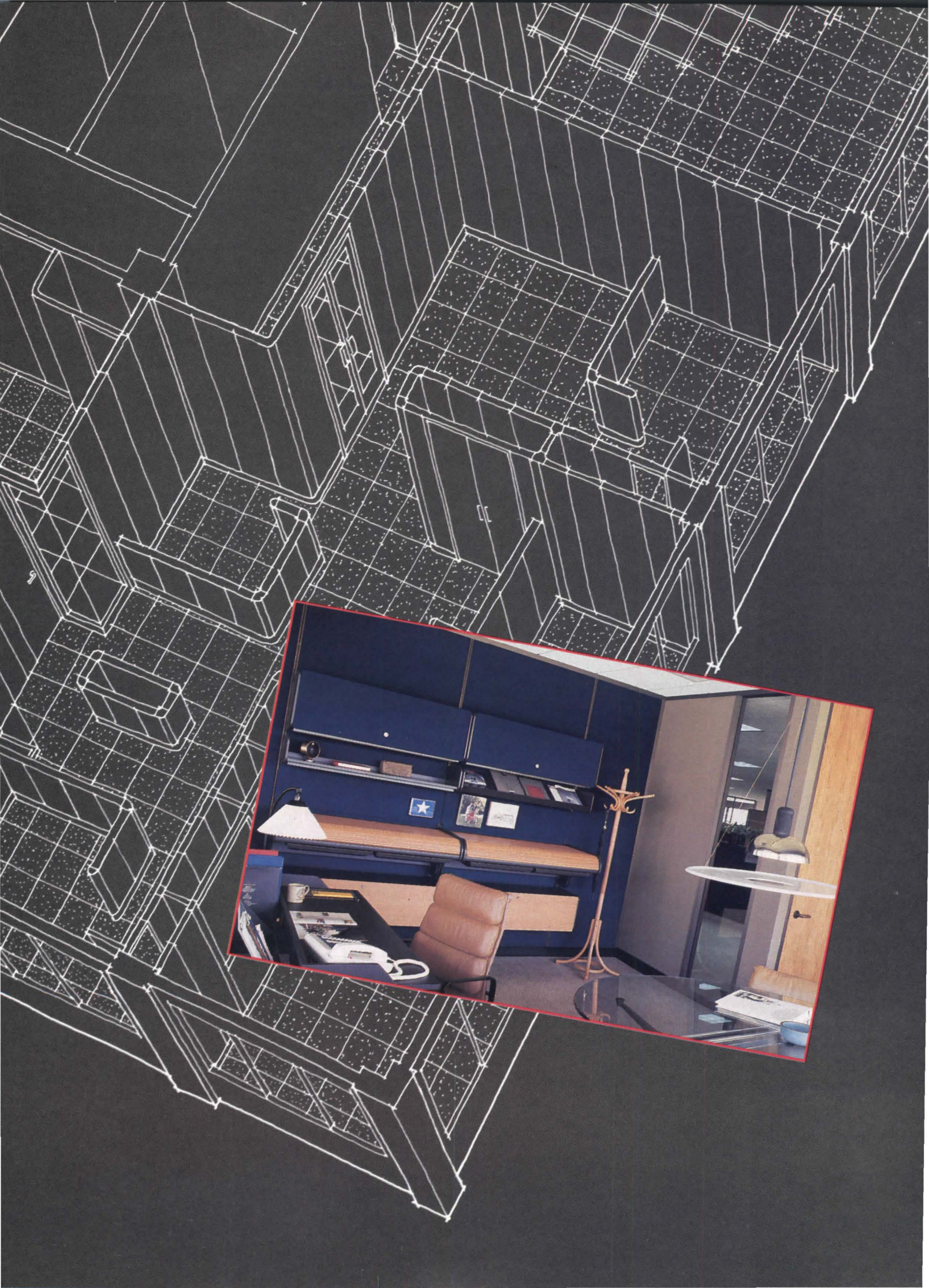

Letters

Three cheers to RECORD and Mildred Schmertz for the superb coverage of Roche-Dinkeloo's General Foods Corporation Headquarters in Rye, New York [RECORD, September 1984, pages 103-119]. About three months ago, I had the privilege of being taken on a tour of the building, and I came away with the firm belief that it is one of the finest buildings recently completed in the United States.

Every aspect of the building, be it the largest space in the employee cafeteria or the smallest private office, was sensitively thought out and executed. The use of vinyl-coated aluminum clapboard siding for the skin, commonly frowned upon by residential architects, is pure genius! The storage wall that separates the offices from the secretarial area is so clever that I wished I had thought of it first.

The design is exceptional in one other aspect: more often than not, such ambitious undertakings drive a wedge between architect and client. Yet the architects left behind so happy a client that the company is now remodeling its old headquarters. Repeat clients are a frequently ignored and underrated testimonial to a firm's level of competence.

Hats off—this is what architecture is really all about.
Rudolph Horowitz
Horowitz Associates Architects
Pound Ridge, New York

What fun your interview with Kevin Roche must have been. I too will now look for an axonometric of the General Foods headquarters on my next box of Grape-Nuts.
Bill Hubbard
Urban Innovations Group
Los Angeles

I recently read Denise Scott Brown's "Worm's Eye View" [RECORD, February 1984, page 69 et seq.] and enjoyed it thoroughly. Her lead was marvelous, and her generosity to me and others she had encountered in the last several decades was noteworthy. I also learned a good bit about her wandering that I did not know before—e.g., her early contacts with Lou Kahn.

Having been in the Department of City Planning at the University of Pennsylvania as graduate student, researcher and faculty member from 1953 to 1964, I would like to add one comment and also one further recollection. I think Scott Brown's article does not emphasize sufficiently the role that Martin Meyerson played in the early history of the department. As I remember it, he contributed a large share of the new ideas and attracted many of the department's initial researchers and teachers, including John Dyckman, Britton Harris and myself. Meyerson was also influential in the development of the concept of social planning. While his major interest was in rational, or what I would call goal-oriented, planning, that approach was the first systematic attempt to call attention to the victims (as well as the beneficiaries) of planning, and of urban development generally—and social planning was intended to help the victims. However, the initial use of social planning by city planners took place in Puerto Rico in the late 1950s, where Governor Muñoz Marín, Everett Reimer, Janet Scheff and their associates sought to compensate for the overemphasis on economic and physical planning.
Herbert J. Gans
Professor of Sociology
Columbia University
New York City

We were puzzled and disturbed by the publication of the article "Architectural Education: Mies's Greatest Bequest" in the August 1984 ARCHITECTURAL RECORD [page 47 et seq.]. The title seems to offer a scholarly approach to the subject, but on reading the piece one finds very little about Mies or the architectural curriculum he established at IIT. Instead of informative description and intelligent discussion of the educational processes and ideas of the curriculum, one finds a sensational hash of academic politics and personalities, rumor-mongering, gossip and innuendo.

The author [Gerald R. McSheffery, formerly dean of IIT's College of Architecture, Planning and Design] quotes a portion of the address Mies gave at the dedication of Crown Hall in 1956: "Let this building be the home of ideas and adventures. Real ideas. Ideas based on reason. Ideas based on facts." This shallow and self-serving article certainly falls far short of that high standard. But we are sure this was abundantly clear to all your readers. We hope your excellent magazine will find better contributions to the dialogue on the nature and aims of architectural education to publish in the future.
Pao-Chi Chung
Associate Professor, and
Alfred Swenson
Associate Professor
Department of Architecture
College of Architecture, Planning and Design
Illinois Institute of Technology
Chicago

Correction
Photographer Russell Abraham should have been credited for the two photographs on page 99 of RECORD's August 1984 issue.

Calendar

Through November 2
XVIII Convention of the Pan American Federation of Engineering Societies, "The Engineer as an Integrating Factor for the Americas," at Caracas, Venezuela. For information: Mr. Julie E. Gibouleau, Convention Secretary, American Association of Engineering Societies, Inc., 345 E. 47th St., New York, N. Y. 10017 (212/705-7459).

Through November 23
An exhibition of 47 drawings by Italian architect Carlo Scarpa; in the Second Floor Gallery, Art & Architecture Building, Yale University, New Haven, Conn.

Through November 27
Beaux Arts Chicago: The Athens of the Midwest, an exhibition of photographs, drawings and models of Chicago architecture from 1893 through the 1920s; at ArchiCenter, 330 S. Dearborn St., Chicago.

November 12-13
"Computer-Aided Design and Management Conference," co-sponsored by *Contract* and *Facilities Design & Management* magazines; at Omni Park Central, New York City. For information: Barbara Dales, Registration Manager, Gralla Conferences, 1515 Broadway, New York, N. Y. 10036 (212/869-1300).

November 17 to December 16
The Magic of Neon, an exhibition organized by the Smithsonian Institution Traveling Exhibition Service; at the American Institute of Architects Building, Washington, D. C.

November 17 to January 13
Two exhibitions, *Venturi, Rauch and Scott Brown: A Generation of Architecture* and *High Gothic Structure: A Technical Reinterpretation*, at the Art Museum of Princeton University, Princeton, N. J.

November 27-30
"International Symposium on Architectural Fabric Structures," sponsored by Architectural Fabric Structures Institute; at Hyatt Orlando Hotel, Orlando, Fla. For information: David L. Stumph, Symposium Manager, 1800 Pickwick Ave., Glenview, Ill. (312/724-7700).

January 19-24
XV Congress of the International Union of Architects, a discussion of "Present and Future Missions of the Architect," with a technical and cultural exhibition, "Archex '85"; in Cairo, Egypt. For information: Susan Allen, Office of Institute Affairs, American Institute of Architects, 1735 New York Ave., N. W., Washington, D. C. 20006 (202/626-7502).

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A new push by the National Endowment towards higher Federal design standards

Last month, the first Federal awards for design excellence were announced by the National Endowment for the Arts, which administers a new, government-wide Presidential Design Awards Program intended to recognize "exemplary achievements in Federal design in the fields of architecture, engineering design, graphic design, landscape architecture, interior design, product/industrial design, and urban design and planning." This is, in my view, the strongest new initiative to come from the Endowment in some years and potentially (if indirectly) a most valuable tool for helping the public to understand the importance of good design in everything from airports to postage stamps.

Three separate juries reviewed the entries, of which there were a total of 630 submitted by more than 50 Federal agencies, Federal contractors, state and local governments, and not-for-profit organizations that had completed design works for the government. Architect Tom Beeby chaired a jury that selected 31 (out of some 150) entries in the fields of architecture, interior design, landscape architecture and planning. The premiated designs include an addition to the Air Force Academy in Colorado Springs, several excellent HUD-sponsored housing projects, both new and renovations, courtroom restorations, national-park visitor centers; and range in size from some barn remodelings in the TVA region to the Orlando International Airport. Edward Cohen chaired a jury on engineering design, which chose 12 of some 70 projects for awards, most of them in the dam/flood control/waterway area, selected not just for the technical excellence but environmental/recreational aspects. And Louis Dorfman chaired a graphic design/product design jury that chose 48 winners (of 260 entries) ranging from the Bicentennial symbol to a new combat helmet for the Army to the new 1040 form to the new graphics in the Washington Mall.

All 91 projects selected by the three juries will receive a Federal Design Achievement Award. In addition, a "second-stage" jury, chaired by I. M. Pei, met in late October to select from the 91 premiated designs or programs the winners of the Presidential Awards for Design Excellence, which will be presented at a White House ceremony in January (and published in RECORD's February Design News section). As Tom Beeby's jury wrote: "It is clear from the submissions . . . that the Federal government affects the entire environment of this country at every scale of perception. Therefore, it is of the utmost importance that design quality be a concern of government, for it touches all aspects of our existence. We are hopeful that this awards program will . . . provide an incentive in both the private and public sectors for exemplary performance."

"Providing incentives for exemplary performance in both the private and public sectors" is not a new idea, of course. The idea of setting standards for Federal design began in 1962 when President Kennedy signed a Presidential order endorsing Daniel Patrick Moynihan's "Guiding Principles for Federal Architecture" which, among other things, placed major emphasis on "the choice of designs that embody the finest contemporary architectural thought," "the avoidance of an official style," design "flowing from the profession to the government and not vice versa," on "willingness to pay some additional cost to avoid excessive uniformity in design," and on seeking the advice of "distinguished architects prior to the award of important design contracts." That was a big step forward from the then-highly-politicized selection of architects for Federal work, and resulted directly in a host of buildings that were far more distinguished than the government had been accustomed to building.

The second major push, in the mid-1970s, was the result of a major Endowment program for higher quality which, among other things, argued that government administrators should place more design professionals at the policy level; hardened up the criteria and the standards for architect selection, specifically arguing that "selection should be based solely on professional qualifications with no undue attention to seniority or political influence"; explored the idea of design competitions for major Federal work (a matter still under study); encouraged mixed-use Federal buildings designed to foster street vitality and a lively pedestrian setting; and required that before any new Federal building was built, an effort be made to locate a worthwhile older building suitable for renovation/recycling. Under Nancy Hanks and Bill Lacy, those were exciting, idealistic, and productive days around the Endowment.

This new initiative of Presidential Design Awards, by focusing the attention of Federal administrators on the importance attached to good design by Highly Placed Officials, could, it seems to me, catalyze again the quality of design within and for the government. Three cheers for the Endowment for this splendid new effort. *W. W.*


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Fourteen years of interstitial design

Fourteen years ago, the initial application of the Veterans Administration Building System emphasizing interstitial service space was incorporated into the design of Saddleback Hospital in Laguna Hills, California.

The concept of interstitial service space has since influenced the design of hospitals, both VA and private, here in the United States and abroad. And its application has also been incorporated into the design of non-hospital structures, such as hotels and laboratories, that could benefit from the system.

The key to all interstitial service space applications has been the accessibility of services for construction, maintenance, repair, and change. The service zone has therefore been constructed with an over-all working platform which doubles as the ceiling subsystem in functional areas of the structure. This service ceiling provides a working platform, an acoustic and thermal block, support for partitions, and a fire retardant. With the added capability of being cut and patched with hand tools, the service ceiling allows easy penetration and closure for duct openings and pipe connections.

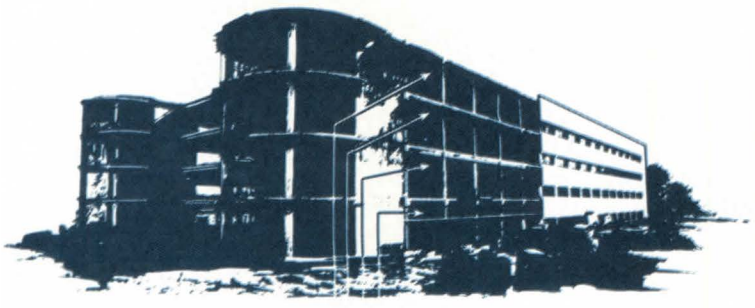
With interstitial design the question of increased cost was a consideration. The building itself would necessarily be somewhat larger and the cubage would be higher because of the interstitial space. But trade-offs in cost can be anticipated.

The service ceilings constructed for the 300,000 sq. ft. Froedtert Memorial Lutheran Hospital in Milwaukee, Wisconsin allowed work to go on simultaneously in interstitial and functional floors. Rather than having to erect scaffolding to install utility and air conditioning runs – causing an interruption of continued work in the functional floor areas – the service ceilings supported men and materials during installation. After completion of the hospital, operational maintenance in the interstitial service areas is being conducted without distrubing patient care activities on the floors below.

According to a study by the VA, the additional cost of interstitial design is totally offset by savings in construction expenses.

Contractors interviewed say the system can cut construction time by as much as 20% and also save 15 to 20% on labor costs of mechanical installation. They say fewer coordination drawings are necessary, more trades can work simultaneously, and fewer change orders are processed.

The VA hospital in Loma Linda, California, for example, came in two months ahead of schedule with labor costs cut by 25%. Service ceilings went in fast with gypsum pours reaching 5,000 sq. ft. per day.



Interstitial service ceilings on four levels

The service ceiling assembly most often specified – over 6 million sq. ft. – consists of Keydeck® Truss Tee subpurlins and Keydeck® Reinforcing Mesh manufactured by Keystone Steel & Wire. Formboard and poured gypsum complete the assembly.

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The resulting service ceiling assembly is fire resistant, provides increased insulation capabilities, and helps control noise.

Additional information and detailed literature about Keydeck service ceiling components along with a complementary truss tee deflection calculator can be obtained by writing the Construction Products Manager at Keystone Steel & Wire Company, 7000 S. W. Adams, Peoria, Illinois 61641. A toll free telephone service is also available for inquiries: 800-447-6444 (in Illinois call 800-322-2632).

Froedtert Memorial Lutheran Hospital Milwaukee, Wisconsin
Architect:
A joint venture of Stone, Marraccini & Patterson and Brust-Zimmerman
Construction manager:
A joint venture of Findorff and Hutter
Service ceiling components manufacturer:
Keystone Steel & Wire Company
Service ceiling fabricator:
Anning-Johnson Company

Keystone Steel & Wire Company

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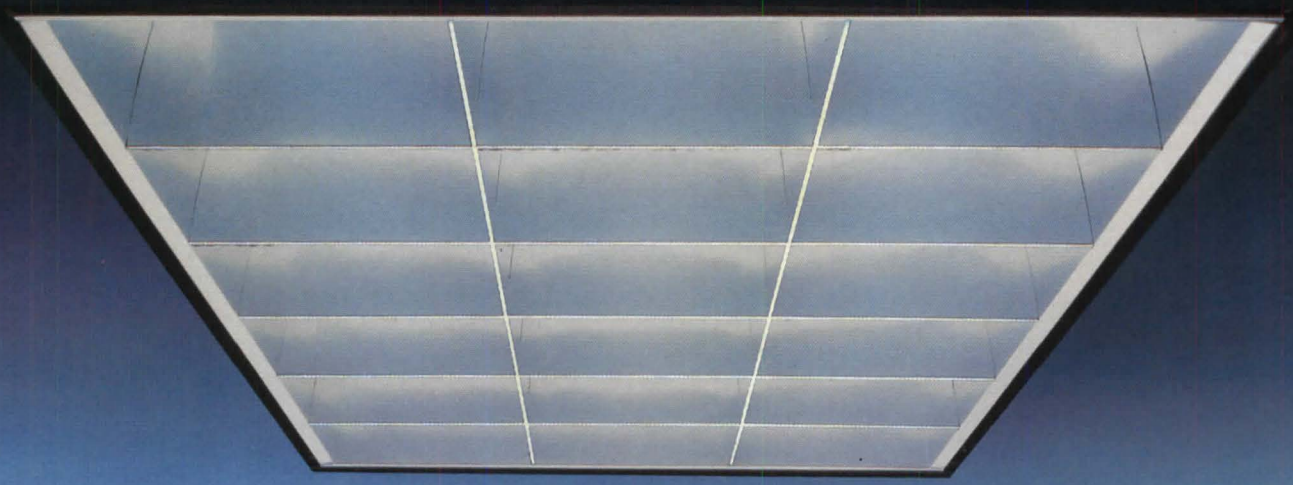

THE ULTIMATE DIMENSION

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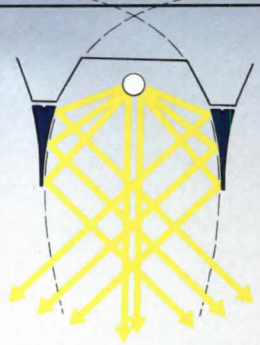

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There's more to Crouse-Hinds than meets the spec.

COOPER INDUSTRIES

CROUSE-HINDS LIGHTING

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Greater diversification seen from computer use

In his recent presentation before the Technology Assessment Board of the U. S. Congress, Harry Mileaf, director of technology for the Sweet's Division of McGraw-Hill Information Systems Company and chairman of the 4,000-member Coordinating Council for Computers in Construction, said that the accelerated use of computers for construction design will push the architectural profession toward greater diversification. He said he expects far-reaching changes in the goals and focus of architectural education and practice, and urged the profession to intensify its attention to these critical developments.

Predicting a dramatic fall-off of professionals involved in such traditional functions as drafting, Mileaf commented: "Computers in construction will improve the productivity of existing efforts, but will not generate new jobs in existing pursuits, as is the case in other industries. Construction design is highly labor-intensive. Producing architectural drawings now accounts for half of all architectural costs for a new building project. Within 15 years, computer-aided design systems will have automated the drawing process to a substantial degree."

Mileaf cited the key factors spurring the accelerating use of computers in construction: more competitive market pressures, the rapidly growing computerization of the facilities management function in owner offices, and breakthroughs in the development of artificial intelligence systems.

"To combat 'captivity' to a small group of clients (those with compatible systems), I expect architectural firms to begin financing several different types of computer systems by offering other types of services, such as facilities management. Being multiservice providers will also make it easier for architects to ride out the peaks and valleys of the construction cycle," Mileaf commented.

"A smaller percentage of engineers have jobs that are easily automated, so the impact there will be less pronounced. Building-product manufacturers will be drawn deeper into the design function as they develop software to promote the specification of their products.

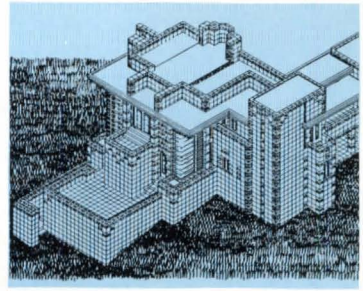
Over-all the trend will be toward smaller numbers of larger firms, reduced labor requiremants and a growing dominance of the building owners as the major influence in the construction design market," Mileaf said. "We can expect to see a great deal of confusion in the early 1990s as the industry scrambles to adjust to the new realities."

Earthquake zone gets new focus

Louis O. Giuffrida, director of the Federal Emergency Management Agency, has announced the funding of a multi-state cooperative earthquake planning effort to protect lives and property in seven states in the middle of the nation. He said scientists have identified the potential for a catastrophic earthquake along the New Madrid fault. The states participating in the recently organized Central U. S. Earthquake Consortium are Arkansas, Illinois, Indiana, Kentucky, Mississippi, Missouri and Tennessee.

The most violent series of earthquakes in the U. S. occurred along the New Madrid fault system in the winter of 1811-1812, with effects felt as far away as Washington, D. C. Obviously, architects working in this area will want to pay particular attention to earthquake design.

Frank Lloyd Wright house presented to University of Southern California



The Freeman House, a famous textile-block house (see illustration to test your familiarity) designed by Frank Lloyd Wright and built for Mr. and Mrs. Samuel Freeman in 1927, could be seen as a testimony to the long-lasting livability of the architect's designs. It has been deeded to the University of Southern California through the generosity of the current occupants, who happen to be the original ones, Mr. and Mrs. Samuel Freeman, with the aid and cooperation of the Trust for Preservation of Cultural Heritage, a nonprofit historic preservation organization.

The house is to be restored and maintained by the USC School of Architecture as a residence for distinguished architects and related professionals visiting the school, and comes with a grant of $200,000 from the owners for the building's restoration.

First Construction Materials and Technology Institute held by ACSA

This first technical institute of the Association of Collegiate Schools of Architecture was held August 18-24 at the University of Pennsylvania in Philadelphia. A continuing education symposium, it was attended by 20 two-faculty-member teams selected by the ACSA as fellows to the conference. Charter sponsors of the symposium were the American Wood Council; MasterSpec and MasterGuide; the Masonry Industry Committee; the Indiana Limestone Institute of America, Inc. and the Metal Buildings Manufacturers Association, Inc.

The institute organized intensive workshops by industry consultants and outside faculty who use innovative approaches to teaching construction materials and techniques. There were also presentations by architects with knowledge of their firm's material selection process, and field trips to outstanding buildings illustrative of the detailing and materials featured in the workshops. The program's purpose was to strike a balance between building theory and practice, and educational goals and classroom techniques. The second annual institute will convene in the summer of 1985. For more information contact the ACSA at 1735 New York Avenue N. W., Washington, D. C. 20006.

Housing longevity techniques detailed

A house can be expected to last many years with a minimum of maintenance and repair. But costly repairs may be needed if good construction principles are not used, says a new University of Illinois publication. What can happen is shown by drawings and two photos in a 12-page "Technical Note" from the University's Small Homes Council-Building Research Council. Information is based on field observations and personal contacts.

Copies of Technical Note 15, "Wood-Frame Construction—Do it Right!" are 50 cents plus 50 cents for postage and handling from Small Homes Council-Building Research Council, University of Illinois, One East Saint Mary's Road, Champaign, Ill. 61820. Also available:"Noise Control" and "Speaking of Windows" available at 50 cents and $3.00 respectively, plus the same postage.

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Dodge/Sweet's 1985 construction outlook: The building cycle faces mid-life crisis

Prepared October 1984 by the Economics Department McGraw-Hill Information Systems Company, George A. Christie, vice president and chief economist

It is now two and a half years since the current building cycle got its start. Considering that the typical cycle lasts between five and six years, this one has recently achieved the dubious status known as middle age.

A glance at the Dodge Index is all that's required to see that the symptoms of midlife crisis are already evident. The building market, although still expanding, has lost much of its earlier drive. And during 1984, its primary source of support shifted from housing to nonresidential building—more evidence of cyclical maturity. These and other signs of a peak are cause for mixed emotions.

There's much for building-product manufacturers, suppliers and contractors to celebrate as 1984 draws to a close. Over the past two years, the value of construction contracting has increased by more than 50 per cent. The record total of new construction *started* in 1984 implies a very busy 1985, as the work contracted this year is brought to completion.

But as the good times continue to roll, it's hard to ignore the prospect that for a while, at least, things won't be getting any better. Even more threatening is the realization that stability is not a natural condition for this volatile market. Once a cycle loses its momentum, it customarily enters a period of decline. It doesn't have to happen that way every time, however, and this could be one of the exceptions. There's a good chance that after a temporary setback, this aging building cycle will show that it isn't ready to call it quits yet.

Even more than most building cycles, this one has been—and continues to be—dominated by credit conditions. It got its start two and a half years ago when the Federal Reserve backed away from the extreme monetary restraint that it considered necessary to wring inflation out of the economy. As interest rates fell, housing responded almost instantly, and was followed not long after by a recovery of nonresidential building. But expansion lost its momentum early in 1984 soon after the Fed began to tighten credit again.

Although it sometimes seems that they are, interest rates aren't the only influence on the building cycle. The surprising strength of the economy's recovery from its deep recession is still supporting vigorous expansion of commercial and industrial construction. The much-improved budgetary position of state and municipal governments is speeding the transition of public works programs from Federal to local determination. Demographic change at the upper and lower ends of the age spectrum is the forerunner of increased demand for educational and health care facilities. But the potential of these positive developments for construction markets won't be fully realized unless the monetary environment becomes more supportive. Therefore, the 1985 Outlook begins by considering how Federal Reserve policy will affect this credit-sensitive market during the next several quarters.

There is a case for monetary relaxation

September brought encouragement to the building industry in the form of a one-quarter-point decline of the prime lending rate and a barely perceptible lowering of the average rate for fixed mortgages. These welcome reversals were signals that the year-long rise of interest rates is at or near its peak. Whether the credit market is leading or following the Fed in a turnaround remains to be seen, but it is becoming clear that the Fed now has more and better reasons to let rates come down than to push them higher. The best reason: The latest round of monetary restraint has done its job.

The justification for another dose of monetary restraint in 1984 had little, if anything, to do with inflation, which is temporarily dormant. In place of its earlier goal of purging the economy of double-digit inflation, the Fed is now concerned with a variety of more current problems: economic growth, the deficit, and a potential international financial crisis.

Early in 1984, when the economy was bolting ahead at a 10 per cent real GNP clip, the need to "lean against" the massive fiscal thrust of the Federal deficit was uppermost among the Fed's priorities. But now, at the other end of 1984, there is an accumulation of evidence showing that the Fed has leaned hard enough—for the time being, at least. The quarter-by-quarter downward progression of GNP growth (10 per cent; seven per cent; four per cent) is a measure of success. Other signs are more ominous: Unemployment has stabilized above seven per cent; housing starts are declining; the composite index of leading indicators recently turned negative. These are indications of excess.

Now that the economy has settled back to a more desirable growth rate, monetary policy must be modified in order to keep it there as long as possible. Sustaining a four per cent rate of GNP growth requires relaxation of 1984's tightening, and that adjustment appears to be in the making.

The continuing presence of the deficit adds another dimension to monetary policy in the mid-1980s. The threat of a string of huge deficits stretching from here to 1990 means, simply, that the economy is locked into its present "loose fiscal/tight monetary" environment until there is a major improvement in fiscal operations. This prospect greatly limits the freedom of the Federal Reserve, whose choice is not between monetary ease and monetary restraint, but merely between more or less restraint. The risk of too much restraint is "growth recession" or a close encounter with stagnation by mid-1985—an outcome that is clearly inconsistent with the Fed's current goal of sustaining the economy's growth. In the game of monetary brinkmanship, the only appropriate strategy for 1985 is to err on the side of too little restraint rather than too much.

Housing: Getting turned around again with a fall in mortgage rates in 1985

If this interpretation of monetary events is mostly on target, it carries a very important message for the construction and building materials industries: The two-and-a-half-year-old building cycle may be experiencing a temporary interruption in 1984, but the market isn't necessarily in the grip of one of its typical cumulative downward spirals. The housing recovery of 1982/83 failed to develop fully in 1984 due to a calculated move to monetary restraint, but if the Federal Reserve behaves through 1985 in a manner consistent with what it has been doing in 1984, the time is ripe for a switch to supportive monetary policy.

A tentative relaxation of monetary restraint in 1985 does not, unfortunately, translate into an avalanche of falling interest rates. The demands for long-term credit will remain strong in 1985's first half despite the economy's slowdown. The Treasury will continue to dominate the money market as its deficits persist. Meanwhile, the business sector's requirements for funds to finance ambitious capital spending plans will be increasing. While these primary demands are not likely to negate the effects of credit relaxation altogether, they will severely limit the extent to which rates can fall.

As the current change in monetary conditions works its way backwards to the mortgage market, where the response is often delayed and diffused, the sequence is likely to be one of gradual and limited improvement. Mortgage rates (in this case a weighted average of both fixed and adjustable mortgages, currently quoted at 14.1 per cent) will probably remain

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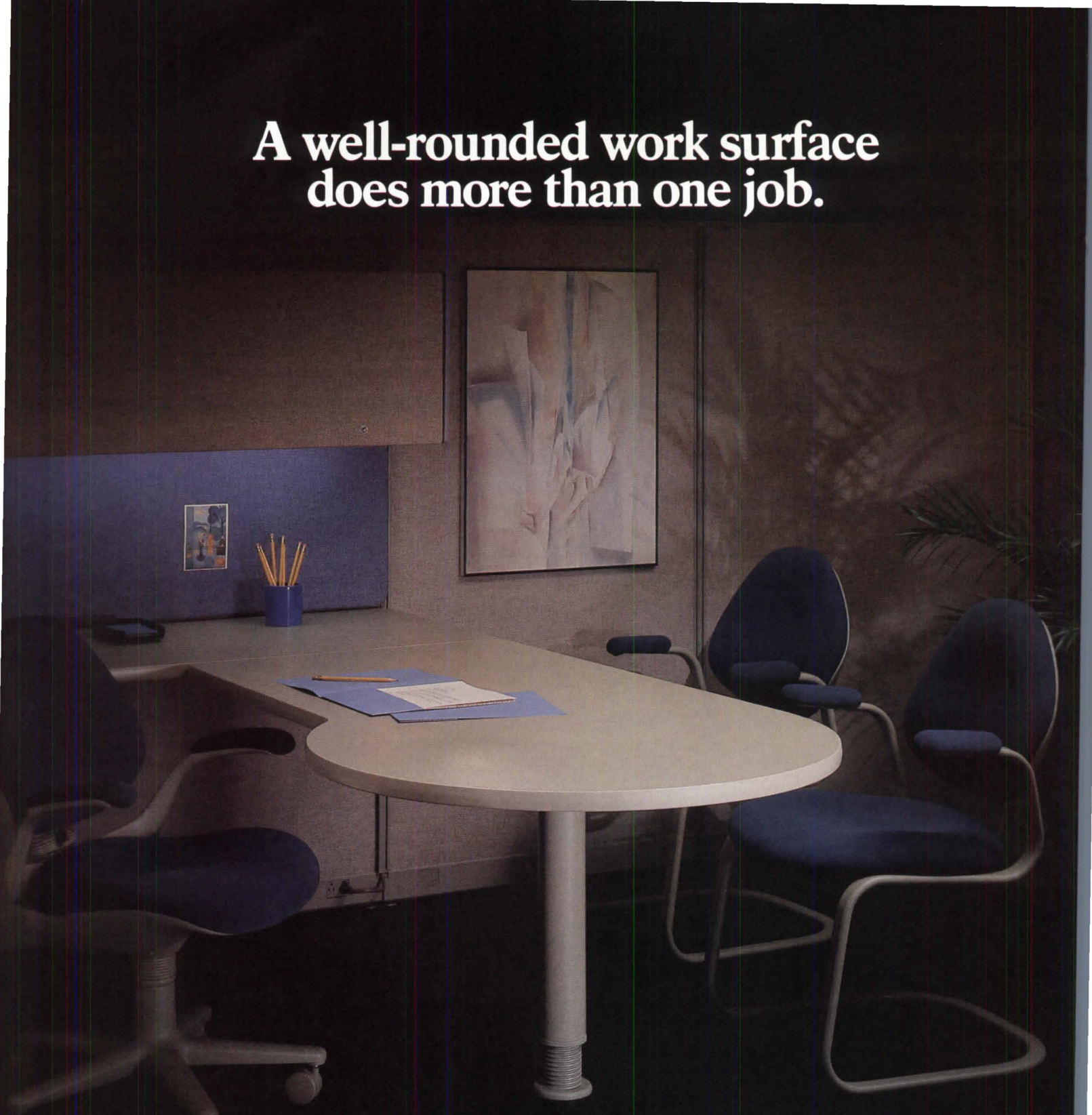

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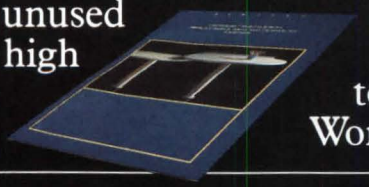

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1985 National Estimates
Dodge Construction Potentials

Nonresidential Buildings	1984 Preliminary	1985 Forecast	Percent Change 1985/84
Floor Area (millions of square feet)			
Office Buildings	300	250	−17
Stores & Other Commercial	477	476	—
Manufacturing Buildings	155	180	+16
Total Commercial & Mfg.	932	906	− 3
Educational	86	88	+ 2
Hospital & Health	75	74	− 1
Other Nonresidential Buildings	117	127	+ 9
Total Institutional & Other	278	289	+ 4
Total Nonresidential Buildings	1,210	1,195	− 1
Contract Value (millions of $)			
Office Buildings	$21,850	$19,100	−13
Stores & Other Commercial	18,275	18,775	+3
Manufacturing Buildings	7,425	9,050	+22
Total Commercial & Mfg.	$47,550	$46,925	− 1
Educational	$ 7,475	$ 7,975	+ 7
Hospital & Health	7,750	8,025	+ 4
Other Nonresidential Buildings	9,450	10,375	+10
Total Institutional & Other	$24,675	$26,375	+ 7
Total Nonresidential Buildings	$72,225	$73,300	+ 1

Residential Buildings			
Dwelling Units (thousands of units*)			
One-Family Houses	1,010	950	− 6
Multifamily Housing	760	650	−14
(*F.W. Dodge basis)			
Total Housekeeping Residential	1,770	1,600	−10
Floor Area (millions of square feet)			
One-Family Houses	1,595	1,490	− 7
Multifamily Housing	730	635	−13
Nonhousekeeping Residential	100	90	−10
Total Residential Buildings	2,425	2,215	− 9
Contract Value (millions of $)			
One-Family Houses	$66,750	$65,925	− 1
Multifamily Housing	28,250	25,825	− 9
Nonhousekeeping Residential	7,150	6,750	− 6
Total Residential Buildings	$102,150	$98,500	− 4

Nonbuilding Construction			
Contract Value (millions of $)			
Highways & Bridges	$17,300	$18,500	+ 7
Sewer & Water	7,800	8,500	+ 9
Other Public Works	8,175	8,175	—
Total Public Works	$33,275	$35,175	+ 6
Utilities	$ 3,500	$ 4,000	+14
Total Nonbuilding Construction	$36,775	$39,175	+ 7

All Construction			
Contract Value (millions of $)			
Total Construction	$211,150	$210,975	—
Dodge Index (1977 = 100)	150	150	

steady through 1984's fourth quarter, and then ease to just under 14.0 per cent in the opening quarter of 1985. Continued decline through all of next year could bring the final quarter's rate to about 13.5 per cent, leaving next year's *annual* average unchanged from the 1984 average rate except for one all-important difference: direction. Further decline to 13.25 per cent or lower by the final quarter of 1986 is tentatively assumed.

Although the prospect of a retreat of mortgage rates during 1985 clears the way for a revival of homebuilding next year, 1984's rate *increase* is still pulling the market down. The decline of housing starts, which accelerated in the second half of 1984, is not likely to be reversed before spring. By then, starts will have slipped from their 1.9-million-unit peak in 1984's first quarter to 1.5 million before beginning the next upward climb. However, the likelihood that the current decline will end somewhere around 1.5 million units, and not extend all the way to 1.0 million as in the last two rounds of credit tightening (1980 and 1982), is the 1985 outlook's most encouraging feature. It makes the difference of at least 300,000 housing starts in 1985 alone. Since one-family and multi-family building react somewhat differently with respect to mortgage rates, it is better to consider them separately.

•***Single-family houses:*** After reaching a peak of 1.1 million units in February 1984, one-family housing starts held up reasonably well through spring as mortgage rates advanced a full percentage point in less than six months. In July, however, building fell below the 1.0-million-unit threshold as *fixed* mortgage rates reached 15 per cent. Had it not been for the widespread acceptance of Adjustable-Rate Mortgages which reduced the effective commitment rate to something more like 13 per cent, the 1984 decline of homebuilding would undoubtedly have been much sharper. Although no further rise is anticipated for mortgage rates, the housing market had not fully adjusted to 1984's full-point increase by the third quarter, when starts were still averaging 975,000 units. Further decline to a rate of about 925,000 units in 1985's first quarter is expected before the next upturn begins. By the final quarter of next year, easing mortgage rates will bring one-family housing starts back to 975,000 units.

Owing to a delayed response of building activity to changes in credit markets, 1985 one-family building, at an estimated 950,000 units, will not match this year's 1.1 million. Continued recovery to 1.05 million (or a bit higher) is in prospect for 1986, however.

•***Multi-family units:*** A comparison of the current mix of single- and multi-family units with that of the previous cyclical peak (1977/78) demonstrates the dramatic shift toward multi-family building that has taken place in only half a dozen years—from 30 per cent of total housing starts to 43 per cent.

The affordability issue—played out in the substitution of condos for prohibitively priced one-family homes—explains a large part of the currently high proportion of multi-family building, but that doesn't tell it all. The rental side of the multi-family market has something special going for it, too. Since 1982, the Economic Recovery Tax Act has been responsible for channeling additional capital into apartment construction. This is only one of several types of building to enjoy the advantage of tax-sheltered investment by means of ERTA's liberalized depreciation allowance.

The outlook for multi-family building must distinguish between what is real and what is artificial in this market. Demographics, interest rates, and building costs are real; accelerated depreciation is not real. The effects of the real demand forces in the marketplace evident before ERTA will continue to support much condominium construction all through the 1980s. Tax-sheltered real-estate development, on the other hand, continues to exist only at the pleasure of Congress and the IRS.

For the near term, multi-family building is being subjected to opposing forces. Because the 1984 deficit-reduction bill brought only cosmetic changes in real-estate tax shelters, accelerated depreciation will continue to subsidize apartment construction for a while longer. But 1984's interest rate rise will be curbing the expansion of condos through early 1985, just as these rates are inhibiting one-family building. Consequently, *total* multi-family contracting is forecast to recede in 1985 from this year's extraordinary 760,000-unit volume to 650,000 units. In 1986, a modest gain in condominium building would be consistent with lower mortgage rates, but by then, real-estate tax shelters may be losing some of their current appeal.

•***Total housing starts:*** With mortgage rates leveling off late in 1984, housing starts will continue to decline into early 1985, but should be back on the path to recovery before the middle of next year. An upturn could begin even earlier than that, but hardly soon enough to head off a 10 per cent decline for 1985 as a whole.

A quarterly pattern of 1.585—1.565—1.600—1.650 million units (annual rate) through 1985 would bring next year's housing start total to 1.6 million units, going into 1986 on a rising trend. The 1985 "mix," consisting of an estimated 950,000 one-family homes and 650,000 multi-family units, would bring the proportions a step in the direction of 60:40, which is expected to be the prevailing ratio for the next several years.

Public works: There are few real gains for this sluggish sector

By long tradition, most public works construction has been *financed* by the Federal government, but *administered* at the local level through grants-in-aid to state and municipal governments. In the 1980s, however, that process is being reshaped to conform to the Reagan Administration's "New Federalism"

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1985 Regional Estimates
Dodge Construction Potentials

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	1984 Preliminary	1985 Forecast	Percent Change 1985/84
Contract Value (millions of dollars)			
Nonresidential Buildings			
Commercial and Manufacturing	$ 8,000	$ 7,800	− 2
Institutional and Other	4,250	4,550	+ 7
Total	$12,250	$12,350	+ 1
Residential Buildings			
One-Family Houses	$ 8,100	$ 8,225	+ 2
Multifamily Housing	3,600	3,425	− 5
Nonhousekeeping Residential	1,025	1,025	—
Total	$12,725	$12,675	—
Nonbuilding Construction			
Highways and Bridges	$ 2,925	$ 3,200	+ 9
Other Public Works	3,075	3,300	+ 7
Utilities	400	400	—
Total	$ 6,400	$ 6,900	+ 8
Total Construction	$31,375	$31,925	+ 2

North Central IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI

Contract Value (millions of dollars)			
Nonresidential Buildings			
Commercial and Manufacturing	$ 9,025	$ 9,150	+ 1
Institutional and Other	5,100	5,350	+ 5
Total	$14,125	$14,500	+ 3
Residential Buildings			
One-Family Houses	$10,450	$10,400	—
Multifamily Housing	3,675	3,400	− 7
Nonhousekeeping Residential	1,150	1,000	−13
Total	$15,275	$14,800	− 3
Nonbuilding Construction			
Highways and Bridges	$ 4,875	$ 5,125	+ 5
Other Public Works	3,425	3,450	+ 1
Utilities	500	600	+20
Total	$ 8,800	$ 9,175	+ 4
Total Construction	$38,200	$38,475	+ 1

policy, which aims to make local governments responsible for a greater share of the financing. The transition has not been a smooth one, but after an initial setback, public works construction is now advancing again.

At first it was easier for the Federal government to restrain its spending than it was for local governments to expand theirs in proportion. Beset by shrinking revenue due to the long and deep recession of the early 1980s, and further inhibited by soaring bond rates, municipal governments were forced to retrench while they sought new sources of revenue. Along with most other local government services, contracting for public works construction was reduced in the early 1980s—from a peak of $29.2 billion in 1979 to $24.7 billion in 1981, a decline of 15 per cent (25 per cent in constant dollars).

By 1983, the public works construction market was finding new sources of support. Once the economy broke out of recession into its strong recovery, the red ink of municipal finance turned black. As the substantial state- and local-tax increases levied during the early 1980s suddenly began to pay off, postponed public works projects could be reconsidered. It was also at this time that the Federal government launched its massive $20-billion-plus, four-year highway, bridge, mass-transit construction program, the Surface Transportation Assistance Act. Seemingly a contradiction to the New Federalism's philosophy of local determination, STAA fits into the broader scheme of public works financing because it is a self-supporting program funded by its own user taxes.

Due principally to a 25 per cent jump in highway/bridge construction, contracting for total public works projects surged to $29.8 billion in 1983—slightly surpassing the former 1979 peak. In 1984, continued expansion that was still mostly highway-related brought total contract value another 12 per cent higher to $33.3 billion. It is worth noting, however, that even with the new-found support of STAA, 1984's *constant*-dollar total of public works construction still remains below the peak volume reached in the closing years of the 1970s.

Since early 1983, highway/bridge construction has been the dynamic element of the otherwise sluggish public works sector. But it is now a year and a half since STAA began, and highway/bridge contracting, which surged from $12.3 billion in 1982 to its current $17.3 billion, has experienced most of the escalation it will be getting from this special user-tax program. For the balance of STAA's limited life (four years altogether, unless extended), highway/bridge contracting will grow only as fast as the base of fuel consumption to which its financing is linked. This means that, for the near future, continued expansion of total public works construction will depend mainly on (1) other Federal programs, and (2) increased initiative on the part of local governments. With few exceptions, neither source holds a great deal of potential for growth in 1985.

•***Highways and bridges:*** Along with its escalation to a rate of $17 billion in 1983, contracting for highway construction has become uncharacteristically volatile. Because of political controversy related to the normally routine process of reviewing the Interstate Cost Estimate (ICE), Congress adjourned last November without approving the disbursement of a substantial block of DOT grants. Contracting declined sharply in the early months of 1984, then rebounded with disbursement.

The 1983 change in the legislative process which led to last winter's interruption of disbursements could result in a different and less stable pattern of highway/bridge construction in the future. For 1985 as a whole, limitations on the growth of Federal and local sources of funding will hold next year's contracting gain to a nominal seven per cent in contrast with the extraordinary 20 per cent annual increases of the past two years.

ICE is the acronym for Interstate Cost Estimates—the process through which Congress has been monitoring the cost of completing the interstate highway network on state-by-state basis since the 1950s. Congressional approval of ICE is necessary prior to the periodic distribution by DOT of Federal highway construction grants to the individual states.

Until recently, ICE was a routine matter requiring no more than a simple *resolution* approving the states' allocations according to a set formula. But a 1983 Supreme Court decision requires that ICE must be passed as a *law*. And as a law, ICE has amendments which might not survive on their own. Controversial amendments (e.g., a "Buy America" provision) and not ICE itself, have led to extensive debate and unnecessary delay. Because Congress again adjourned without approving the Interstate Cost Estimates (for 1985), there's reason to expect another interruption of highway contracting soon after 1984's funds run out.

•***Water resources (dams and reservoirs; river and harbor development):*** The combination of Federal and local government spending, plus a small amount of private investment, has been sustaining a fairly steady $3 billion annual total of contracting for water resource development since that level was first reached in 1978.

Budget projections covering the next several years for the Federal agencies responsible for water resource development (Corps of Engineers, Bureau of Reclamation) indicate a steady flow of funding in the range of $1.1 to $1.2 billion—slightly below their outlays during 1980-1983. However, increasing responsibility of state and municipal governments, and their much-improved tax base to support the trend toward local self-determination, imply a gradually rising level of local support from the current $1.6 billion level. To complete the picture, the small but cyclically expanding private source

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1985 Regional Estimates
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South AL, AR, DE, DC, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV	1984 Preliminary	1985 Forecast	Percent Change 1985/84
Contract Value (millions of dollars)			
Nonresidential Buildings			
Commercial and Manufacturing	$18,050	$17,800	− 1
Institutional and Other	9,500	10,075	+ 6
Total	$27,550	$27,875	+ 1
Residential Buildings			
One-Family Houses	$30,625	$29,550	− 4
Multifamily Housing	13,050	11,625	−11
Nonhousekeeping Residential	3,200	3,000	− 6
Total	$46,875	$44,175	− 6
Nonbuilding Construction			
Highways and Bridges	$ 6,250	$ 6,650	+ 6
Other Public Works	5,550	5,800	+ 5
Utilities	1,700	2,000	+18
Total	$13,500	$14,450	+ 7
Total Construction	$87,925	$86,500	− 2

West AK, AZ, CA, CO, HI, ID, MT, NV NM, OR, UT, WA, WY			
Contract Value (millions of dollars)			
Nonresidential Buildings			
Commercial and Manufacturing	$12,475	$12,175	− 2
Institutional and Other	5,825	6,400	+10
Total	$18,300	$18,575	+ 2
Residential Buildings			
One-Family Houses	$17,575	$17,750	+ 1
Multifamily Housing	7,925	7,375	− 7
Nonhousekeeping Residential	1,775	1,725	− 3
Total	$27,275	$26,850	− 2
Nonbuilding Construction			
Highways and Bridges	$ 3,250	$ 3,525	+ 8
Other Public Works	3,925	4,125	+ 5
Utilities	900	1,000	+11
Total	$ 8,075	$ 8,650	+ 7
Total Construction	$53,650	$54,075	+ 1

of funding for water resource construction will help raise 1985's total contract value 3 per cent to just under $3.2 billion.

•***Water supply systems:*** Treatment facilities and transmission lines are the link between water resources and ultimate users. These linkages are provided more or less as need arises, responding to the cyclical swings of building, in contrast to water resources themselves, which are developed through long-term, ongoing programs.

In the current building cycle, contracting for water supply systems has lagged general building, as it often does, but should soon be accelerating. A strong 15 per cent advance in 1985 to $3.1 billion is indicated to catch up to the large volume of building initiated during the past two years.

•***Sewer and waste disposal:*** Stimulated by the considerable Federal support available since 1972 through the Environmental Protection Agency, construction of waste-water treatment facilities accelerated sharply during the 1970s, reaching an annual peak of $6 billion late in that decade. Since then, however, Federal budgetary restraint has led to a downgrading of EPA's water-purity standards and a sharp cutback in the agency's grants for sewage-treatment construction projects. By 1982, construction contracting had fallen more than 25 per cent to its recent low of $4.4 billion. As Federal grants stabilized and local funding increased, construction partially recovered to $5.1 billion by 1984.

Recently proposed amendments to the Clean Water Act would significantly boost EPA's construction grant program for treatment plants. However, because the 98th Congress adjourned without acting upon these proposals, Federal funding in 1985 will remain approximately the same as the amount that was available in 1984. Owing mainly to the improved capability of state and municipal governments to supplement these basic Federal grants for the construction of waste-water treatment facilities, 1985 is likely to show another modest improvement of 5 per cent, or a little better, to an estimated $5.4 billion of newly started projects.

•***Other nonbuilding construction:*** The Surface Transportation Assistance Act provides for mass-transit construction as well as highways and was instrumental in funding two sizeable rail projects in 1984. As a consequence, "Other" nonbuilding construction—which is where mass-transit projects are included, along with petroleum pipelines, domestic military construction, and a variety of other hard-to-classify work—spurted 20 per cent beyond its 1982/83 level to a record of $5.1 billion.

As contracting eases back toward its longer-term trend in 1985, a total of $5.0 billion of "Other" nonbuilding work is anticipated.

•***Total public works:*** The Surface Transportation Assistance Act—the biggest public works program to come along in many years—was largely responsible for turning the heavy construction sector around in 1983. But as the highway and mass-transit markets adjust to this multi-billion-dollar annual supplement, public works contracting is settling into an all-too-familiar pattern at a level roughly $5 billion higher than pre-STAA values.

Until the next major development (which might be the expiration of STAA, or the introduction of some new program), the increased dependence of the public works market on state and local sources of financing implies little more than nominal growth (i.e., slightly better than the going rate of inflation) from the current rate of contracting. For 1985 this means an increase of six per cent to $35.2 billion.

The next big event coming up in the public works arena is the National Infrastructure Act—a proposed 10-year, $30 billion Federal credit program with enough leverage to generate as much as $100 billion of infrastructure improvements. This plan to offer interest-free Federal loans of $3 billion per year to the states could sustain the current strong level of public works construction well beyond STAA's scheduled expiration at 1986's end.

Nonresidential building: An easing seen from the current peak

Until interest rates recede enough to enable a broadly based revival of building activity, the market will depend heavily on commercial and industrial building to sustain the current level of contracting. Two features of nonresidential building will be supportive during this critical period: It is less sensitive (than housing) to interest rates, and it thrives in an environment of general business expansion. But there are also some handicaps, and they will make getting through 1985 more difficult than it should be: Retail building (stores and warehouses) is primarily a response to consumer relocation and therefore tracks homebuilding closely—down as well as up. And the office building market is widely considered to be overbuilt and is vulnerable to decline. As these strengths and weaknesses interact during the quarters ahead, they are more apt to lead to trade-offs than to give the nonresidential building sector a clear direction.

•***Retail building:*** With allowance for a brief lag, 1984's total of 1.77 million housing starts can be expected to create a demand for approximately 425 million square feet of stores and warehouses. In view of the fact that the rate of contracting for retail building crossed the 400-million-foot threshold in 1984's second quarter, and advanced to 420 million in the third (by which time homebuilding was in decline), there is obviously little room left for the expansion of retail building until the housing market revives.

Store and warehouse construction will be reaching its peak during 1984's fourth quarter and 1985's first as the rate of contracting tops out at 425 million square feet before reacting to 1984's second-half housing decline. By the final

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quarter of 1985, contracting for retail building will be back in the current 400- to 410-million-square-foot range, leaving the 1985 full-year total at 410 million square feet—a barely perceptible improvement over 1984's total of 405 million square feet.

Early in 1986, contracting for stores and warehouses should be advancing again in response to the expected 1985 housing turnaround.

•***Manufacturing building:*** On the basis of unrealized potential, there's no better nonresidential prospect than for industrial building. From its former peak rate of 253 million square feet in 1979's third quarter, contracting declined for 14 quarters through the prolonged recession and industrial trauma of the early 1980s to a cyclical low of only 90 million square feet in the beginning of 1983. During the economy's vigorous 1983/84 recovery, contracting rebounded to the current rate of 170 million square feet (third quarter of 1984), but this still left the industrial building market closer to its former trough than to its next peak.

A long look backwards to the early 1960s shows that each cyclical peak of industrial construction is lower than the one before it. The next cyclical peak, which is tentatively due in 1988 when the rate of manufacturing capacity utilization reaches its cyclical limit of 87 per cent, will be 225 million square feet—about 10 per cent below the 1979 peak. To get from here to there, contracting for industrial construction needs several more years of expansion. In 1985, an estimated 16 per cent gain to 180 million square feet will be the second step toward that.

After its long decline, the industrial building market has reawakened in 1984. With few exceptions, manufacturers are expanding, modernizing, and relocating their plant facilities in preparation for the markets (and the competition) of the second half of the 1980s.

Pacing this year's over-all 42 per cent gain in contracting for industrial construction are the following industries:

Metals: Up 78 per cent with primary producers expanding faster than fabricators

Bulding materials: Up 61 per cent with forest products lagging

Transportation: Up 53 per cent with auto makers doubling last year's building

Close to the all-industry average for 1984 is:

Machinery: Up 45 per cent with electrical machinery holding an edge

Industries with below-average gains, but with gains nonetheless:

Chemicals: Up 32 per cent

Food/Tobacco: Up seven per cent

•***Office buildings:*** Contracting for office buildings reached its cyclical peak two years ago—long before most other categories of commercial and industrial building had even begun to turn up. From the all-time record rate of 357 million square feet in 1981's third quarter, contracting retreated temporarily to a more "digestible" rate of 250 million square feet, but then took off again, rising in 1984 to a peak that is rivaling the 1981 high.

Indicators of the demand for office space—growth of office-worker employment, average space per worker, relocation, replacement of losses from the stock of office buildings, etc.—say that the most the national market can absorb on a continuing basis is about 250 million square feet per year. Yet contracting for new office space has equaled or exceeded that volume in every year since the 1980s began.

There is an abundance of explanation for why the actual rate of office building in the 1980s continues to confound econometric expectations:

The *space/worker ratio*: Floor area per worker is increasing due to the need to make room for high-tech office equipment.

Frostbelt spread: The boom which began in the Southwest may be over, but it has more recently taken hold in the Northeast and Midwest.

Real-estate tax shelters: ERTA's accelerated depreciation provision gave the waning office boom a second life in 1983 and 1984.

These rationalizations contain enough credibility to justify the high rate of building that still prevails at the close of 1984. It would appear, however, that the demand for tax shelters has become more important than the demand for space itself. Until depreciation rules are modified, it must be expected that the subsidy they currently provide will continue to stimulate a higher volume of new construction than the underlying forces of the office market would otherwise call forth.

The reality of an accumulating surplus of office space is the strongest argument for a reduced volume of office building in the years immediately ahead. On the other hand, the artificiality of tax accounting remains a powerful incentive to ignore rising vacancy rates a while longer. A decline of contracting is still the "must" forecast, but the expected decline should make allowance for the upward bias of ERTA.

A forecast of 250 million square feet next year implies more optimism on the part of developers than market conditions would ordinarily justify, but these are not ordinary times. The alternative—the "sudden collapse" scenario—has a low probability, but it cannot be ruled out altogether. That was exactly how the REIT-sponsored boom of the early 1970s concluded.

The surprising 1984 rebound of office building to a near-record 300 million square feet looks a lot like the 1981 boom all over again. It's not. Despite many similarities, there are some interesting differences:

The 1984 "re-boom" is more widely disbursed. In 1981, more than one-third of the national total of newly added office space was concentrated in only five cities. This year's top five account for one-quarter of total building.

The lineup of top cities has changed, and 1984's market speaks with less of a Southwestern accent. This year's number one city is Washington, and 1981's leader, Houston, isn't even among the top ten. New to the nation's first five list in 1984 are San Francisco and—take your pick—Chicago or New York, which are tied for fifth place.

Unquestionably the two most durable office building markets in the 1980s, holding positions two and three in *both* 1981 and 1984 are Dallas and Los Angeles. The other leaders this year: Atlanta, Denver, Phoenix, Boston, and Miami in that order.

•***Institutional building:*** The temptation to underrate the institutional building market is hard to resist. Its dreary trend of steady decline began as long ago as 1970, when contracting was still a healthy 400 million square feet per year. Demographic support for educational building waned, and volume slipped to only 300 million square feet by the end of that decade, with still worse to come as the early 1980s brought additional woes. Federal budget cuts, extremely high interest rates, and the erosion of tax revenues by recession combined to undermine publicly financed building. By 1982, contracting had fallen to only 256 million square feet.

The long decline of institutional building may finally be turning around. Mostly because the downward pull of educational building appears to have ended, the direction of total institutional building is likely to be generally upward in the years ahead.

It is still too early to be looking for a surge of educational building, because the initial effect of rising enrollments will be simply to fill empty desks. What's more, interregional migration—the major source of demand in the late 1970s—has slowed considerably. But the long-term forces that were responsible for a decade of declining school construction are now beginning to form the base for eventual expansion, beginning with stability for the next few years.

Liberated from the drag of educational building, the modest growth potential of several other categories of institutional building is becoming dominant. In 1985, a five per cent advance to 280 million square feet is expected to be the start of a rising trend of contracting that will bring the annual total of institutional building to 300 million square feet before the 1980's end.

•***Total nonresidential building:*** With one major nonresidential building market still expanding vigorously, another just reaching its peak, and yet another on the brink of decline, the 1985 total of nonresidential building contracting could be up... or down. But whichever way it goes, next year's change will be more in the *composition* than the size.

Office building, about which there is the greatest uncertainty, holds the key. In the unlikely event that the office boom collapses suddenly, it would take total nonresidential building way down.

The more credible prospect of a gradual winding down of office building over the next two or even three years would leave 1985's nonresidential building total virtually even with the 1984 volume at an estimated 1.2 billion square feet. Assuming an average construction cost increase of five per cent, contract value would increase to $73.3 billion next year.

Construction in 1985: It will be the decline that doesn't happen

The construction market lost its momentum in 1984 when rising interest rates put a chill on the housing sector. Offsetting gains in commercial and industrial building sustained total contracting through the latter part of the year, but the risk of yet another credit-inspired cyclical decline in 1985 could not be ignored.

With interest rates now beginning to turn around, the 1985 outlook becomes more positive than it was only a few months ago. As rates retreat during 1985, the next several quarters are likely to look something like a replay of 1984 *in reverse*:

- Housing starts, in counterpoint to declining mortgage rates, will be weakest as 1985 begins and pick up strength in the second half—opposite to 1984's quarterly pattern.
- Nonresidential building now peaking at an annualized rate close to 1.3 billion square feet, will be settling back in 1985 as some of the current support of office building diminishes—also the opposite.
- Public works construction, which recently reached a new plateau, will be showing little change next year (in constant dollars) and, consequently, will have minimal influence on the direction of total construction activity.

One result of these developments will be to sustain the total of newly started construction in 1985 at a value very close to 1984's record $211 billion. More important, though, is that once the handicap of rising interest rates is removed, some of the earlier momentum that was lost in the summer of 1984 will be restored. Quarter-by-quarter strengthening of construction contracting through 1985 should bring the building industry into position for a solid advance in 1986.

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Legal perspectives: Breach of contract or negligence— If you're sued, where's the distinction?

By Arthur Kornblut, Esq.

It is often stated that a professional's liability is determined on negligence; judicial precedents are replete with decisions that architects and other professionals are liable if they fail to meet the ordinary standard of care.

Conversely, the courts have rejected allegations that a person who renders professional services implies a warranty that the services will be fit for an intended purpose. Even the existence of a contract between a professional and a client normally does not convert the professional's liability from one involving negligence concepts to one involving breach of contract, *as long as* the professional has not agreed to achieve a specific result. Here, too, it has often been stated that the professional will be liable only for negligently performing the contractual obligations.

The seemingly arcane distinction has real significance for design professionals

Unlike other professionals, architects and engineers regularly use written contracts to define their professional obligations to clients. Although other professionals (such as doctors and lawyers) may use brief letters or forms to somewhat define their relationships with patients and clients, the use of formal, detailed contracts remains a characteristic primarily of the design professions.

For architects, contract terms obviously will have a bearing on professional liability in the event claims arise out of the project. Therefore, care must be taken to clearly define the type and scope of services to be rendered (*i.e.*, the duties to be undertaken by the architect) without creating obligations that the architect cannot perform or agreeing to results that cannot be achieved or controlled by the architect.

If, for example, an architect agrees to design a building that can be constructed for a stated cost, the architect will be held liable for any damages suffered by the owner if construction costs exceed the agreed upon amount. As it is the contractor who ultimately determines construction costs, an architect would be taking a significant (and uninsurable) risk by "guaranteeing" that a project could be built for a stated price.

With construction costs often being a primary concern of the owner, the AIA owner-architect contract document B141 goes to great lengths to define the architect's obligations and liabilities when the owner wishes to impose cost-related limitations on the architect. The contract stays completely away from any language that could be construed as a "guarantee" that the architect's design can be constructed for any stated or implied amount, containing, in fact, a specific disclaimer about any warranty or guarantee of construction costs by the architect.

If the owner has a limited budget and the budget is a condition of the design, a "fixed limit of construction cost" must be agreed to in writing by the owner and architect. But, the "fixed limit" is *not* a cost guarantee. If there is an agreed upon fixed limit, the architect is given flexibility in selecting building materials and systems to keep costs within the fixed limit. The owner cannot fix the budget and also control the scope and/or quality of the project. If bid prices come in too high, the contract sets forth various options, including revisions to the design, rebidding or rebudgeting to enable the parties to proceed. As long as the architect has complied with the contractual obligations, he would not be held liable simply because construction costs exceed the owner's budgetary restrictions. With the language contained in the AIA contract, there would be no implied warranty about construction costs staying within the owner's budget because of the clearly defined scope of duties and the disclaimer of any warranties. In addition, the courts have been very reluctant to hold that professionals impliedly warrant any aspect of their services.

As long as caution is used in the contract, the courts have tended toward leniency

Several years ago, the Minnesota Supreme Court recognized that architects and other professionals are not subject to implied warranties when they perform their services. Clients cannot expect satisfactory results merely because they have retained a professional's services. The Minnesota case involved a leaky basement, and the court rejected the owner's allegation that an architect had impliedly warranted that the structure designed by the architect would be free from defects. The court said:

"The reasoning underlying the general rules as it applies both to architects and other vendors of professional services is relatively straightforward. Architects, doctors, engineers, attorneys, and others deal in somewhat inexact sciences and are continually called upon to exercise their skilled judgment in order to anticipate and provide for random factors which are incapable of precise measurement. The indeterminate nature of these factors makes it impossible for professional service people to gauge them with complete accuracy in every instance. . . . Because of the inescapable possibility of error which inheres in these services, the law has traditionally required, not perfect results, but rather the exercise of that skill and judgment which can be reasonably expected from similarly situated professionals." The court recognized that many factors over which a professional has no control can cause the results to be less than perfect; thus, professional liability is based on the negligent performance of services.

In a recent case, the Supreme Court of Kansas ignored these long-standing principles and ruled that an engineering and architectural firm was liable for failing to "insure" a result. *Tamarac Development Company, Inc.* v. *Delamater, Freund & Associates, P. A.*, 675 p.2d 361 (1984). This case involved a claim by a developer against the engineering/architectural firm because grading had been done improperly which led to drainage problems. The developer alleged that the firm had "breached an *oral* contract to supervise the grading construction and to check the grades on completion to insure their accuracy."

The key issue before the court was whether the design professional's failure was negligence or breach of contract. If negligence, the claim would be barred by a two-year statute of limitations in Kansas. If breach of contract, the claim would not be barred because the applicable statute of limitations was longer.

When caution is not used, the Kansas court's decision demonstrates the perils

The Kansas court noted that the difference between a tort (negligence) and contract action is that a breach of contract is a failure of performance of a duty arising or imposed by agreement; whereas, a tort is a violation of a duty imposed by law. Unfortunately, in cases such as this case, both standards can apply. Because there was an allegation of oral agreement between designers and client—that the designers would insure the accuracy of grading—the agreement could be construed either as a contract for a specific result or as an implied warranty to inspect and supervise in a workmanlike manner. In response to this, the engineering/architectural firm argued that it merely had been negligent—that it had violated the duty to use reasonable care—and the action should be barred by the statute of limitations.

Ruling against the design professional (by holding that the developer client's claim was not barred by the two-year statute of limitations), the court found that if the firm had contracted to provide a specific result, rather than contracting to plan and inspect the grading work in general, the action would be based on the contract rather than in tort. Not content to remand the case on that basis alone, the court proceeded to discuss the developer's contention that the oral contract carried with it an implied warranty of workmanlike performance. In language that is bound to be troublesome for architects in Kansas and elsewhere if given credence by other courts, the Kansas Supreme Court said: *". . . it can be said certain professionals, such as doctors and lawyers, are not subject to such an implied warranty. However, an architect and an engineer stand in much different posture as to insuring a given result than does a doctor or lawyer. The work performed by architects and engineers is an exact science; that performed by doctors and lawyers is not. A person who contracts with an architect or engineer for a building of a certain size and elevation has a right to expect an exact result. . . . The duty of the architect is so strong and inherent in the task, we hold it gives rise to an implied warranty of workmanlike performance."*

The court in Kansas apparently gave no weight to the reality that the "exact result" in construction projects is something over which architects have no ultimate control. The resulting work is the product of a contract between the owner and a contractor. If nothing else, this case highlights the importance of two things: the avoidance of oral contracts because they do not define the scope and limits of an architect's duties, and the importance of not promising "results," whether in written or oral contracts.

Mr. Kornblut is a registered architect and practicing attorney in Washington, D. C.

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Costs:
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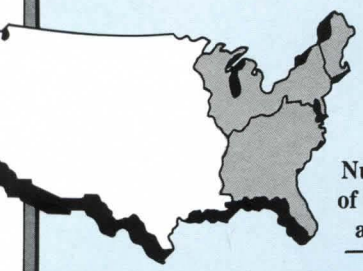
Summary of Building Construction Costs



Districts Eastern U. S.

	Number of metro areas	4/84 to 7/84	7/83 to 7/84	1977* to 7/84
Metro NY-NJ	18	0.76	4.31	1618.03
New England States	33	0.99	4.44	1583.66
Northeastern and North Central States	120	0.60	1.89	1601.96
Southeastern States	106	0.65	2.88	1658.95
Average Eastern U. S.	277	0.67	2.73	1622.63

Western U. S.

Mississippi River and West Central States	122	0.60	3.30	1619.03
Pacific Coast and Rocky Mountain States	106	0.43	3.57	1707.94
Average Western U. S.	228	0.52	3.42	1660.36
United States Average	505	0.61	3.04	1639.67

* Using only cities with base year of 1977

With the prediction of a shifting emphasis from residential to other types of construction in the third quarter of 1984, material costs seesawed but, in the end, all changes in costs came out to be below one per cent difference—up *or* down—from the second quarter. As was noted in the last report (see RECORD July 1984, page 33), the domination of housing as a leading market force coupled with sluggish nonresidential activity produced much the same noninflationary effect.

The downward trend in housing construction that accelerated from July to August created a distinct downward trend in lumber prices. This should be felt more noticeably in the report on this final quarter, which is due out in January. By contrast, the prices of gypsum, a material that is used both in residential and other types of construction, held steady. Over-all, material prices are expected to rise moderately in the range of 1.5 to 2 per cent in 1985, at which point they should plateau with some prices higher in the regions of most demand, namely the South Atlantic, Pacific and West South Central regions, where the leading number of building permits are being issued.

The current recovery in building without the usual inflationary consequences has been aided by an unprecedented number of freezes on union wage rates and a continued trend toward changes in work rules for greater productivity. While the struggle between open and closed shops continues, it is obvious that the strong showing by open-shop forces is having some positive effect in keeping the wages that have soared in past recoveries from once again taking off.

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

Cost Information Systems
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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 1st	1983 2nd	1983 3rd	1983 4th	1984 1st	1984 2nd	1984 3rd	1984 4th
Atlanta	1171.5	1712.6	1925.6	2098.6	2078.0	2360.6	2503.5	2421.4	2478.5	2456.7	2506.6	2473.0		
Baltimore	1018.4	1107.7	1304.5	1446.5	1544.9	1639.5	1683.8	1702.4	1705.0	1689.7	1673.3	1668.5		
Birmingham	1029.7	1142.4	1329.9	1407.2	1469.9	1468.1	1491.0	1518.9	1540.0	1535.7	1570.6	1567.0		
Boston	1028.4	0998.6	1236.0	1283.7	1432.5	1502.0	1553.7	1547.7	1557.1	1569.9	1607.1	1606.1		
Chicago	1007.7	1032.8	1199.7	1323.6	1344.7	1425.8	1415.6	1433.3	1459.0	1439.5	1459.7	1465.7		
Cincinnati	0848.9	0991.0	1323.9	1385.2	1350.4	1362.6	1376.8	1445.3	1459.1	1430.8	1444.9	1474.9		
Cleveland	1034.4	1040.8	1287.5	1388.2	1459.5	1511.4	1462.1	1523.2	1521.0	1475.9	1451.9	1461.5		
Dallas	1042.4	1130.6	1431.9	1481.9	1750.6	1834.3	1816.9	1847.8	1892.8	1925.9	1962.8	1957.8		
Denver	1038.8	1100.4	1495.6	1487.4	1632.2	1679.1	1684.6	1745.9	1755.7	1800.1	1819.5	1819.5		
Detroit	1018.1	1087.3	1275.3	1447.4	1580.3	1638.0	1649.5	1654.4	1652.9	1672.1	1665.1	1661.6		
Kansas City	1023.5	0951.5	1125.8	1233.2	1323.4	1381.8	1347.4	1390.8	1400.6	1407.5	1418.8	1435.6		
Los Angeles	1022.5	1111.0	1255.3	1387.5	1474.3	1503.3	1506.0	1506.1	1501.4	1523.9	1548.7	1529.8		
Miami	1004.5	1080.9	1330.1	1380.6	1369.1	1392.1	1429.6	1458.9	1473.5	1467.6	1491.1	1505.6		
Minneapolis	1060.2	1196.8	1286.9	1327.7	1442.6	1576.8	1586.2	1631.8	1632.5	1624.6	1635.0	1634.8		
New Orleans	1001.3	1138.8	1291.9	1505.7	1572.7	1616.9	1618.0	1624.8	1631.0	1650.5	1682.4	1689.0		
New York	1005.4	1043.0	1247.1	1319.4	1419.2	1491.8	1563.7	1623.1	1622.3	1672.5	1677.3	1666.6		
Philadelphia	1013.8	1074.2	1487.5	1539.5	1660.7	1769.4	1754.9	1759.7	1815.9	1819.5	1860.5	1893.0		
Pittsburgh	1016.1	1015.0	1227.0	1341.7	1493.2	1479.5	1486.7	1491.6	1488.8	1497.2	1506.7	1565.1		
St. Louis	1039.1	1198.8	1275.9	1320.0	1397.3	1451.2	1453.5	1498.1	1508.6	1524.9	1552.5	1575.7		
San Francisco	1083.2	1326.8	1473.4	1644.8	1776.4	1810.1	1814.1	1851.9	1856.8	1856.8	1855.7	1921.3		
Seattle	1142.5	1137.9	1373.4	1616.8	1814.9	1962.7	1986.6	1982.7	1974.5	1979.0	1934.2	1939.0		

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.) 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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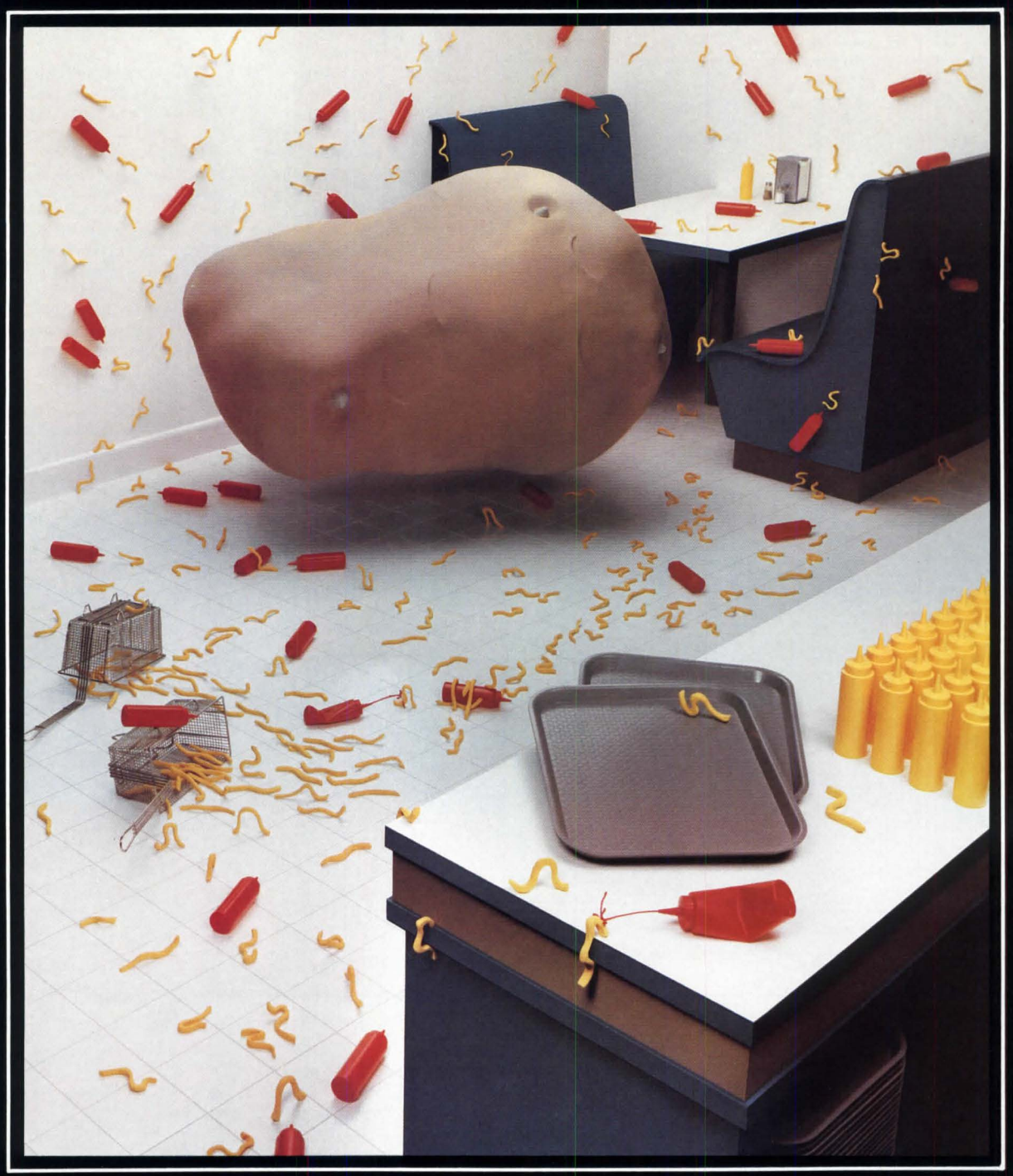

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Architectural education: A vivid challenge to the status quo

Now chairman of the Department of Environmental Design at Parsons, iconoclast James Wines presents some highly provocative views on teaching architecture. The school, though not yet accredited, is becoming a lively one, and Wines's arguments give considerable pause for thought

By James Wines

James Wines was appointed in 1983 as chairman of the Department of Environmental and Interior Design at the Parsons School of Design in New York City. He is also design director and president of SITE, founded in 1970. Mr. Wines is a graduate of Syracuse University in sculpture and art history and worked as a sculptor in Rome from 1955 through 1967. He has lectured and taught at a great number of schools throughout the U. S.

This essay has been excerpted from James Wines's book entitled De-Architecture, *to be published in the fall of 1985 by W. W. Norton and Company. This section on education forms part of a chapter dealing with "Architecture and the Crisis of Communication."*

For the past twelve years I have been lecturing extensively and teaching intermittently at architectural schools in the United States and a half-dozen European countries. Basically an outsider in the academic arena (meaning I have not depended on a college salary for survival), I have had the luxury of indulging in an unbridled and vociferous critique of design education. I have complained relentlessly to the point where finally an associate, weary of my diatribes, suggested that I put my efforts where my mouth is and take on a real commitment to help solve this perceived crisis. At the further encouragement of trusted colleagues like Massimo Vignelli, John Saladino, Bill Lacy, and David Levy (who assured me that education is "fun"), I decided to follow this advice and accept the chairmanship of the Department of Environmental Design at Parsons School of Design.

A new architecture program is a big challenge

This was a sobering and illuminating decision indeed. There may be the perfect word to describe the educational administrative experiences, but "fun" is not the first one that comes to mind—exciting, challenging, intriguing, demanding, yes... but fun? Not exactly. In this new role, for the first time, I began to get a handle on the many problems that had provoked wrath; but this knowledge has not necessarily endowed me with the ability to solve them. In some respects, I am even more frustrated (if a bit wiser in the labyrinthine ways of academe), because I have finally been given the opportunity to make a contribution, even including the development of a new architecture program, and I am still desperately searching for avenues that may lead to a more perfect learning environment. What makes the compulsion to succeed even greater is the endorsement I have received from Parsons' Executive Dean David Levy and the New School President Jonathan Fanton, who have been both supportive and encouraging, giving me a latitude that may well be unprecedented. But still the light at the end of the tunnel is invariably an oncoming train.

I have certainly been humbled by my first year at Parsons, and I have become more realistic in my demands and expectations, but I remain undaunted in my vision of a new kind of architectural education. I am also confident that, if it can be accomplished anywhere, Parsons should be the place for this to succeed.

As a preface to the following critique of architectural education and some proposed solutions, I should include here a brief summary of the problems I perceive in the profession as a whole. These larger issues, plus my view of the future of architecture, certainly inform my educational objectives.

Real communication in architecture is lacking

The last decade has produced a greater variety of architectural images and a (seemingly) larger audience for buildings than the original Modern movement ever enjoyed. The public has been innundated with the manifestos supporting Postmodernism, Neo-modernism, Rationalism, Structuralism, etc. etc. and the media has promoted certain architects to the status of cult figures, voraciously devouring each new stylistic convolution with a rapidity that has left the audience gasping. Every major city in the United States now boasts the presence of an architectural critic on its newspaper and a curator in the museum. And, finally, the entire subject of architecture (only a few years ago equated somewhere between accounting and dentistry on a conversational interest chart) has become one of the requisite topics of debate on the cocktail circuit.

This frenzy of activity has created a long-awaited and valuable focus on the profession; but it does not mean that all of the attention has produced any fundamental changes in the definition of architecture itself, or really increased the communicative level of this most public of all the arts. Also, like the degeneration of the Modernist ideologies which originally fueled this recent revolution in design, there is now evidence of a similar decline in creativity and energy—or, simply, a situation of more style than substance.

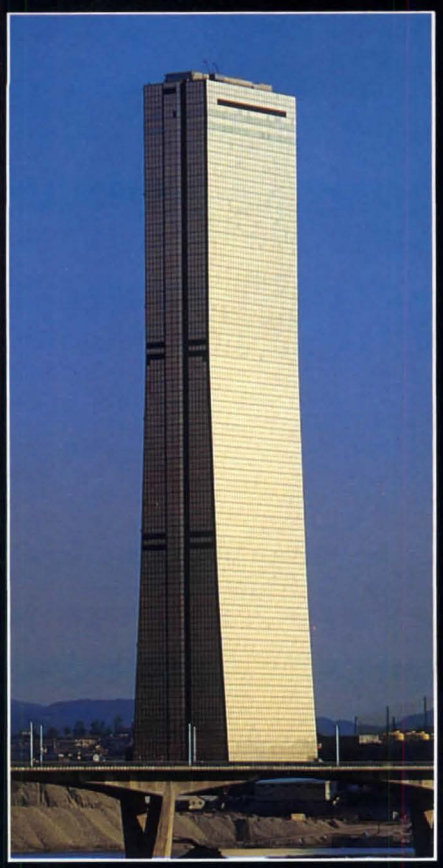
In my opinion, the continuing vitality of architecture in the future will demand a rethinking of its premises and objectives. Therefore, design education in the 1980s should be creating the groundwork and encouraging young people to participate in this important mission. From the dissipation of Modernism in the 1950s to the waning days of Postmodernism in the 1980s, architects have been involved in preoccupations that have, in my view, resulted in a poverty of visual language, a self-imposed limitation of inspirational sources, and, as a result, a crisis of communication. Architecture is, after all, the only legitimate and natural public art, all others, like painting, sculpture, and crafts, being only incidentally, or by conscious choice, a part of the public domain. Because of their functional characteristics, buildings are constructed whether they have anything to do with art or not and, accordingly, must be reconciled as an intrinsic (but often unnoticed) part of everyone's daily life. This omnipresent status makes architecture the perfect vehicle for conveying messages about society's values and motivations—as it certainly did prior to Modernism—yet, this socio/critical potential is seldom acknowledged or taken advantage of by the majority of designers. Instead, architects of the past 50 years who have subscribed to the formulas of the Modern movement (and I mean "formulas" not "essence of meaning"), unlike painters, dramatists, film makers, and poets, have persisted in treating their work as an exclusively formalistic exercise in the manipulation of volume, space, and structure; or, more recently, the same objectives with an overlay of historical references. Rarely have contemporary buildings addressed the sociological and psychological issues that underlie, say, a Samuel Beckett play, a Magritte painting, or a Chaplin film. This entire notion of multilevel mental connections has been rhetorically dismissed by most designers as inappropriate to the true purposes of architecture, which they perceived to be an art of strictly abstract principles.

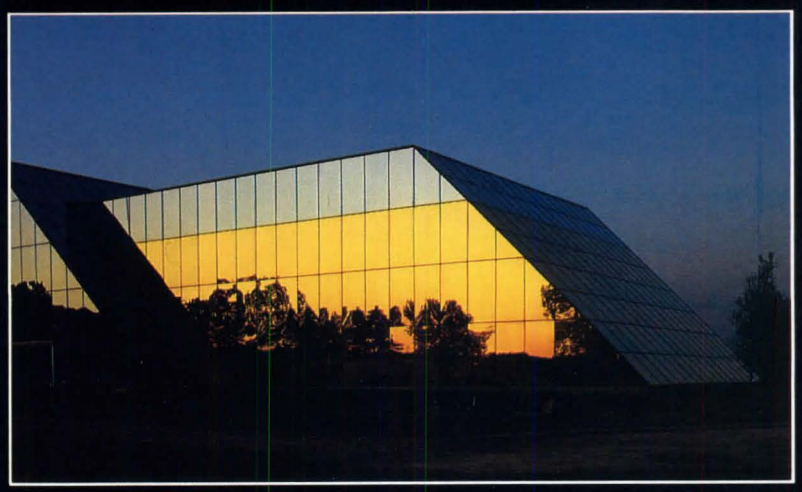
Many school curricula result in esthetic repression

My philosophy of education, therefore, is guided by my interest in expanding the definitions and perspectives of architecture, disassembling those presumptive, etched-in-granite, notions of what *is* and *isn't* architecture, and exploring more flexible horizons for this essential public art.

Probably more than any single cause, the training of young architects has been responsible for the misguided direction of the profession for the last three decades. Most architecture school curricula have all of the flexibility of a military drill routine and the restraints imposed on students, when compared to any of the other arts, are tantamount to esthetic repression. The educator Udo Kultermann summarized this predicament more moderately by asking whether the traditional notion of design education still suffices, "for that which is taught as architecture in the schools and seen as such by the public no longer corresponds to our present-day reality." Ironically, if one trusts the most obvious evidence of current construction practice, it might seem appropriate for colleges to continue

Continued on page 53





Top Left—DLI-63 Building, Seoul, Korea; Glass: Polarpane Gold Reflective; Architect: C.M. Park; Glazier: Shindong—AH Const. Co. Ltd.; Rep: Engitech Resources, Inc., NY.
Top Right—Mary Kay Glamours Bldg., Dallas, TX; Glass: Polarpane Silver Reflective and Polarpane Gold Reflective; Architect: Foster Meier Architect, Inc.; Glazier: Haley-Greer, Inc.
Center—Kennedy Office Center, Palatine, IL; Glass: Polarpane I/ST Butt Glazing System; Architect: Linden & Linden, Waupauka, WI; Glazier: Harmon Glass & Glazing, Elk Grove Village, IL.
Above—Albuquerque National Bank; Glass: Polarpane Gold Reflective; Architect: Stevens, Mallory, Pearl & Campbell; Glazier: PPG Industries.
Left—Maryville Centre, St. Louis, MO; Glass: Polarpane Silver Reflective and spandrel; Architect: Robert L. Boland & Assoc.; Glazier: Rainbow Glass Co.

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to crank out technically skilled robots to build unscrupulously profit-oriented real estate. Art has no place in such a world. On the other hand, if one believes that architecture can deal with complex social/psychological issues, prefiguring a society of esthetic diversity and intellectual challenge, then the educational process is a disaster area!

A totally professional mindset is needed

What further compounds and complicates this problem is the fact that, of the handful of architectural schools dedicated to artistic excellence, the more practical aspects of management and construction are placed in low esteem, and students are often encouraged toward an anti-professional mindset. This is not to say that students from these colleges are not technically proficient upon graduation. However, because their learning experience has been over-saturated with elitist prerogatives, they end up with such an inflated and unrealistic view of their role in professional practice that they are not able to translate artistic visions into actual buildings. Idealism becomes, for them, a form of impotence. These young Utopians tend to look upon every imposition of construction economy and client relations as the enemy of their artistic integrity. Rather than put invention at the service of constraints, they assume that all practical applications are the equivalent of subjugation, thus claiming it is better to stand aloof from the banalities of the marketplace and practice architecture exclusively as a condition of elevated theory.

The polar opposite to this problem, as already suggested, is the programmed automaton produced by the college where a concept of dutiful professionalism is considered the ultimate attainment. The employable entity nurtured in this type of educational environment is preordained for service in some architectural mega-firm of 200 or more employees. The typical young designer caught up in such a system is destined for a career of architecture-as-business and a leisure spent on golf courses drumming up clients. The concept of architecture as art is usually so remote from the working-day reality of this type of practitioner—and, for that matter, so is any intellectual commitment beyond the politics and macho exchanges of "good old boy" backroom commerce—that a middlebrow Germanic Modernism is virtually the only historical style that fits his objectives. This is what he learned in school and this is what influences the esthetic parameters of the some odd 50 million square feet or high-rise office space that he inevitably goes on to design for the corporate world.

These two scenarios have been included (and obviously exaggerated to make a point) because they are the antithetical results of the same insular education. As a demonstration, and for the record, it is instructive to review this training process from the beginning.

The ideal is to be an artist yet make a good living

Most architectural programs in the United States are part of graduate studies and are usually pursued after either an undergraduate preparation in design, or after an initial four years spent in a liberal or fine arts background. Unlike other arts studies, which are generally viewed as idealistic and economically perilous, architecture is frequently chosen as a profession because it combines an aura of solid respectability, a sound economic future, and a basis of esthetic commitment. For a young person who is artistically inclined, it is the most likely choice to be greeted with enthusiastic parental endorsement. From a career standpoint, architecture is less secure than the conventional doctor/lawyer route; but, then, every tuition-burdened parent has probably read *The Fountainhead,* and the thought of a son or daughter triumphing over the corporate world through sheer dedication and panache carries a romantic appeal that seems to justify the investment. Whether these early visions of the profession have anything to do with reality is not important. What matters is that young people embark on their education with the dual expectations of becoming artists and, at the same time, making a good living. In most of the other arts—with the possible exceptions of acting and popular music—the economic rewards are viewed as somewhat superfluous to the objectives and improbable if one lives up to the standards of a true visionary genius.

Although not as ingenuously idealistic as the nascent poet, the potential young architect entering college usually brings to the task a fortifying measure of optimism concerning his/her eventual artistic ambitions. The profession, because of cautionary texts in school catalogs, is not viewed naively. Students are mentally prepared for a heavy dose of technical courses, math, history, theory, etc.; but the future is still perceived, if not exactly in the mold of Howard Roark, as something at least approximating this level of esthetic commitment.

In some of the more technically oriented colleges, these artistic ambitions are thwarted within the first few weeks after registration. Students are told what will be expected of them in the "real world" if they ever hope to gain employment, and this message remains locked in the subconscious as a portentous reminder of their obligations until graduation. The pursuit of art is characterized by a pragmatic teaching staff as nothing more than irresponsible frivolity that distracts from architecture's moral obligations to serve the practical needs of clients. A student processed through such a program may never encounter (except through such subversive media as *Domus*) even a hint that the summit of architectural achievement could ever be anything more profound than a well-designed plumbing system. At the core of this type of training there is an implicit trust in that old Modernist panacea of "functionalism." The state of usefulness (as a synonym for all gain in terms of power, profit, and property) is translated to students as the nearest equivalent in American culture for transcendental spiritualism. Under the circumstances, the entire concept of the possibility of buildings evoking a psychological response is suppressed with the same puritanical vigilance that the Moral Majority might reserve for pornography.

Pluralistic teaching is often an illusion

But this militant view of design education is now more the exception than the rule. The humanitarian and political pressures brought to bear on American society during the 1970s forced all but the most recalcitrant colleges to restructure curriculum and embrace pluralistic and multivalent principles. In architecture this meant expanding course electives in philosophy, psychology, painting, sculpture, crafts, social sciences, and the dramatic arts. In addition to these interdisciplinary opportunities, there was also more emphasis on questions of civic responsibility, historical preservation, public space planning, urban renewal, low-cost housing, and energy conservation.

In the last few years, reading over curricula might lead one to believe that, indeed, architectural education had become one of the most democratic and responsive areas of higher learning. This is, unfortunately, an illusion. The schools have used the facade of ecumenism to subvert the profession in even more subtle and repressive ways. The game of "let's-play-interdisciplinary" has served as little more than a superficial appendage to a business-as-usual curriculum. When it finally boils down to the actual information imparted by teachers in the design studios, nothing has changed. Students are told emphatically what is and isn't permissible in architecture and these definitions are all but engraved in the walls. Influences and sources outside of architectural practice are discouraged either by denunciation as irrelevant or damning with faint praise. Manneristic clichés are proffered as the exclusive means of visual expression, and a detachment from the chaotic complexities of contemporary life is considered a prerequisite for membership in the pantheon of "good design."

What makes this situation even worse is the tendency of architectural education to function as a self-perpetuating continuum. Professors teach as they have been taught, using the same objectives, assignment structures, and evaluation techniques that shaped their own narrow perspectives. This has the effect of compounding creative restraints and then passing them on, intact, to a new generation of designers.

There is no creativity in thrice-removed imitation

Presumably the function of a "design studio" is to foster creativity. In all architecture colleges it is the nucleus around which the courses in engineering, construction technology, theory, history, and electives revolve. So, a school is pretty much as good as the work emerging from its studio. The studio assignment structure usually proposes a series of design problems, ranging from simple enclosures to major urban planning schemes, depending on the level of competence and experience of the students. Right from the outset, (and this applies to colleges with even the most liberal claims) these problems tend to characterize architecture as nothing more than a compendium of styles. Student projects are evaluated in terms of a professor's own work (as influenced by this teacher's favorite architect) and the qualifications of critique are based on how nearly their efforts correspond to what must then be called a "thrice-removed imitation." One cannot comprehend the magnitude of this rampant plagiarism without having witnessed examination week in a typical architecture school. As far as the eye can see, every drafting table is a veritable sea of easily recognizable stylistic clichés. There is also plenty of evidence of a

Continued on page 55

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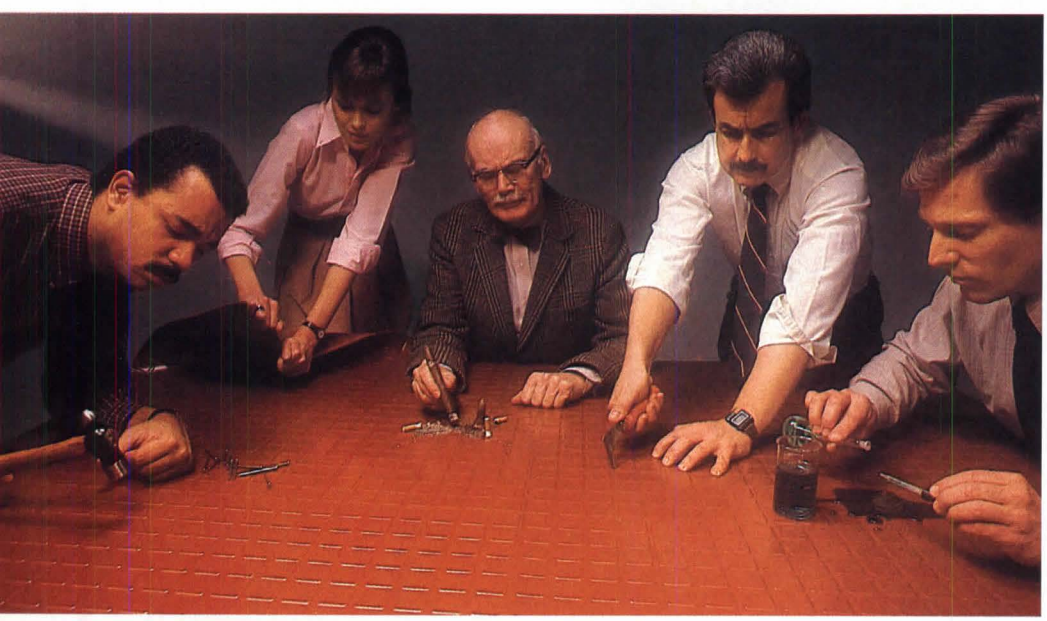

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prevailing style which, for lack of better definition, I have to call "Eisenhower Era Ennui" (in memory of that battle-weary bland chapter of American history). This is a tired composite of all styles (20th-century ones that is) and manages to remain totally free of any discernible identity whatsoever. It vaguely emerges from the 1950s (late Cubist/Rationalist/Brutalist), but includes enough identifiable features from the 1930s (Corbusier ribbon windows/piloti/corkscrew stairways) to form a bridge to the present (faintly historical references).

Art is an exploratory extension of observations

It is enough to say, in summary, that what is lost in this kind of education is the essential motivation for creativity. Imitation can be a valuable learning tool, providing the student turns directly to a world-class architectural master, rather than a teacher/clone, for inspiration, but the duplication of style for its own sake is totally counterproductive. The student is never forced to think about art as a profoundly exploratory extension of his/her own observations of the world and, therefore, never faces the challenge of inventing an appropriate visual means of communicating these insights.

A second major problem is that students are rarely brought into confrontation with the nature and meaning of shelter. Style and methodology, as the main focus of study, tend to obscure the research into why Mankind erected independent buildings. From this kind of study, were it to become a part of early architectural education, young designers would be compelled to address the origins of architecture and begin to perceive the configuration of historical buildings as an extension of the need to communicate. In effect, this might be a little like reinventing the wheel; yet, it would have valuable impact on students, bringing them into an awareness of the evolutionary conditions that produced habitat, before it was self-consciously seen as "architecture." Style, then, would be placed in its rightful perspective as only a superficial manifestation of a deeper meaning.

The conclusions to be drawn from the education situation indicate the need for architectural training to re-orient itself toward three interrelated purposes. The first is to provide an incentive for students to approach design problems from the standpoint of cultural and environmental observation, rather than the usual slavish reliance on obsolete styles and role models. The second purpose is to offer an interdisciplinary curriculum structure with ready and natural access to all of the visual arts, philosophy, literature, and the social sciences. The third objective is to provide a superior grounding in engineering, technical drawing, office administration, client relations, and other operational skills; but, taught with the understanding that while these are a necessary kit of tools, they are not sufficient in themselves to create good architecture.

Because my tenure at Parsons Department of Environmental Design has just begun, I cannot claim a track record of improvement to either justify my earlier criticisms of design education, or demonstrate that the policies I advocate even work. I think I can say, in all fairness to my modest contributions, that the spirit of the school has improved measurably. And certainly, by drawing on the talents of my distinguished colleagues in art and architecture, Parsons had one of the most spectacular lecture and conference series last winter that it has ever been my pleasure to witness in a design or architecture program. Since the circumstances were casual and the students eager for information, all of the major figures who visited—Robert Venturi, Scott Burton, Francesco Dal Co, Stanley Tigerman, Massimo Vignelli, Bernard Tschumi, and Ward Bennett, to name but a few—offered intimate insights and highly personalized dialogue with the audience that more formalized lecture series seldom provide. Hopefully this policy of casualness and intimacy will prevail in the future, as it has proven to be an exceptionally productive learning experience.

To change policies is a long-range objective

For the remainder of this commentary on architectural education, I shall outline some of the philosophy and policies behind the changes at Parsons and describe some long-range objectives.

As the title "Environmental Design" implies, this is an umbrella term which includes the three major disciplines covered by the curriculum—architecture, interior architecture, and product design. Although each of these traditionally separate fields can be studied as a major, it is the ultimate purpose of the department to train the complete designer, capable of performing in all of these areas. The theory supporting this multi-emphasis reflects the actual tendencies of current—and, from all indications, future—professional practice. For example, it was determined several years ago in a survey conducted by the American Institute of Architects that more than 77 per cent of all architectural firms in the United States still employ fewer than ten people. This is a marked contrast to the perceived megafirm propensity of the 1950s through the early 1970s. These statistics clearly suggest that emerging young designers still prefer the small, manageable, esthetically oriented, and diversified type of practice more suited to the 1980s. It is, therefore, our purpose at Parsons to prepare students for the highly competitive and demanding intellectual requirements of this kind of commitment.

There must be an expanded view of design

The major philosophical direction in Environmental Design supports a strong relationship between the visual arts and architecture. This does not refer to some antiquated notion of "integrating" painting, sculpture, and buildings, but, rather, proposes a fusion of conceptual ideas and exploratory attitudes in order to break down traditional separations and rhetorical definitions in these fields. This emphasis also does not imply a reduction of educational focus on the importance of function, service, and crafted excellence in the creation of buildings, interiors, and industrial products. What the program does offer is an encouragement for students to take an expanded view of "design" which will help them absorb and communicate the rich variety of new sources of content which are all around them today.

Naturally none of this can succeed without a greater exposure to the arts and humanities. This access is being developed in cooperation with the New School for Social Research, Parsons' parent university, and, within the next year or so, it is anticipated that students will be able to take courses in virtually any related subject. Whenever possible and feasible, we plan to mount these courses within the department itself, and then request that instructors in elective subjects tailor their material to reflect the visual interests of architects and designers, as well as coordinate topical subjects with the ongoing work in the studios.

As in most schools, the studio program is the spine of curriculum at Parsons and both required courses and electives are intended to offer organized input. Courses other than studio, taken concurrently, are developed to provide reinforcement for each other. For example, topics such as structures and lighting offer assignments in studio classes during any specific period. This same alignment of topical material also holds true for drawing, model building, history, theory, and (I hope soon) all of the related electives.

The ultimate goals of this education are to help students see the vast potential for interrelationships between ideas and disciplines, to encourage them to confront all new problems of design in terms of dialectic (as opposed to formula), to generate a spirit of cooperation and intellectual respect for other fields that will ultimately help them work in a profession that requires collective input.

In designing a curriculum, I stand advised by Alvin Boyarsky, head of the A. A. in London, with whom I had dinner several months ago. At that time I was agonizing over the new course structure for my department and he cautioned, "Don't waste a lot of time working out a curriculum, since the qualitative measure of a school is who you hire—after that, curriculum will take care of itself." Thus far, at Parsons, the curriculum is very simple and to-the-point, reflecting the standard requirements of studio, technical studies, and electives necessary for a student to graduate as an interior designer or product designer; or, for the student entering the five-year architecture degree program, a greater emphasis on engineering, math, professional practice, and construction technology. The big push, following Boyarsky's advice, is to try to recruit the best possible teaching staff that budget and the powers of persuasion will attract. Fortunately the word is getting out that Environmental Design at Parsons is becoming a lively scene, so I anticipate that our ongoing good fortune in getting top talent will continue.

One aspect of the studio program that will be put into practice this fall is the concept of a logical and progressive structuring of assignments on the basis of ascending complexity during the entire four or five years of education. The basis of these assignments will be generic modules, formulated by the collective decision of studio instructors. These modules will only suggest the areas of information that students should be learning at any point during their development, and it is up to the individual instructors to apply their own creative interpretations of the actual problem assigned in class—just so long as these assignments fulfill the learning requirements at any given stage. This progressively

Continued on page 57

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more demanding structure will start with the most basic origins of habitat and conclude with problems as complex as future city planning. Since each of the studio levels is taught by a team of four or five instructors, this approach will be expected to focus a great diversity of viewpoints on each problem module. It is inevitable that teachers will reflect different philosophical positions, demonstrating to students the potential for a productive dialectic and helping them to begin to understand the value of their own views and insights.

One of the major problems with contemporary education in general is that curricula and programs become homogenized and seek common denominators to accommodate the mythical "average" student. Obviously such programs make the task of administration much easier; but they are seldom flexible and variable enough to satisfy the diverse needs of individual students.

Clearly, students learn in different ways, at different rates of speed, and respond very personally to different environments. At Parsons, there is an effort to maintain a clarity of objectives and the ascending assignment schedule outlined above, yet there is also an intention to orchestrate a learning experience composed of contrasting rhythms, episodes, and events. For example, Environmental Design studios sponsor a series of ongoing themes which can be plugged into at any time with outside lectures, visiting critics on both short- and long-term schedules, field trips led by professionals, special workshops respondent to products industries, and various other spontaneous projects that allow for an educational change of pace.

All programs should be clearly integrated

On the more practical side, studios are structured to accommodate technical courses as a reflection of creative projects. Construction documents, lighting, hvac, etc. are not intended to be viewed as mere reinforcements of design ideas, but, instead, are treated as integrated elements with infinite flexibility and their own implications for artistic interpretation. The discovery of their specialized applications is taught so as to be assimilated gradually, based on each student's simultaneous discovery of architecture as a continuously evolving esthetic language. In this way these courses can be put to creative (as opposed to simply supportive) service and will help to expand young designers' capacity for seeing the expressive and communicative potential of every ingredient in architecture.

Various expansion programs are either ongoing or in the planning stages. There will be a closer cooperation with Parsons' sister college, Otis/Parsons, in Los Angeles, where Michael Pittas has just assumed deanship. The Paris campus, which includes an extension of the Environmental Design Department, is accommodating approximately a dozen exchange students from the New York program each year along with a highly diversified student body. There is a potential exchange of faculty and students with the Domus Academy in Milan also under consideration. Grants from the National Endowment and the new International Design Center will support a conceptual and product-oriented, computerized, library of design to be located in the I.D.C. facilities. There will be a series of special workshops with distinguished professionals where students will address real-world design problems under the guidance of top practitioners in various fields. And, finally, plans are being formulated with Editor Andrew MacNair to incorporate his design journal, *EXPRESS*, into the department as a Parsons publication, to offer students an opportunity to participate in editorial and writing assignments, and to involve the school further in an international dialogue on architecture and related subjects.

To summarize this new departmental mandate, it is intended to produce a generation of young designers who are—in the words of Parsons professor C. Ray Smith—"professionally trained and culturally exposed." The processes of learning and creative experimentation are taught so as to be regarded as simultaneous endeavors; and the concept of "environmental design" is meant to describe an integrated, multi-disciplinary, sensibility reflective of the actual demands of professional practice for the next decade.

I realize, in glancing back over this description of the Parsons program, that it may resemble that of any progressive design school today, and I know that I am hardly alone in my critical sentiments over the state of architectural education. However, this has more to do with the choice of available rhetoric to describe educational policies than with my actual intentions. If I were not so profoundly conditioned by ethics of democracy and its implied restraints, I would probably proceed in a much more aggressive way to achieve my goals. I feel a compelling urgency about preventing even one more misguided student from entering the professional world with the creative, technical, and psychological inhibitions that have been the legacy of architectural education for the past few decades—inhibitions that continue to plague the profession.

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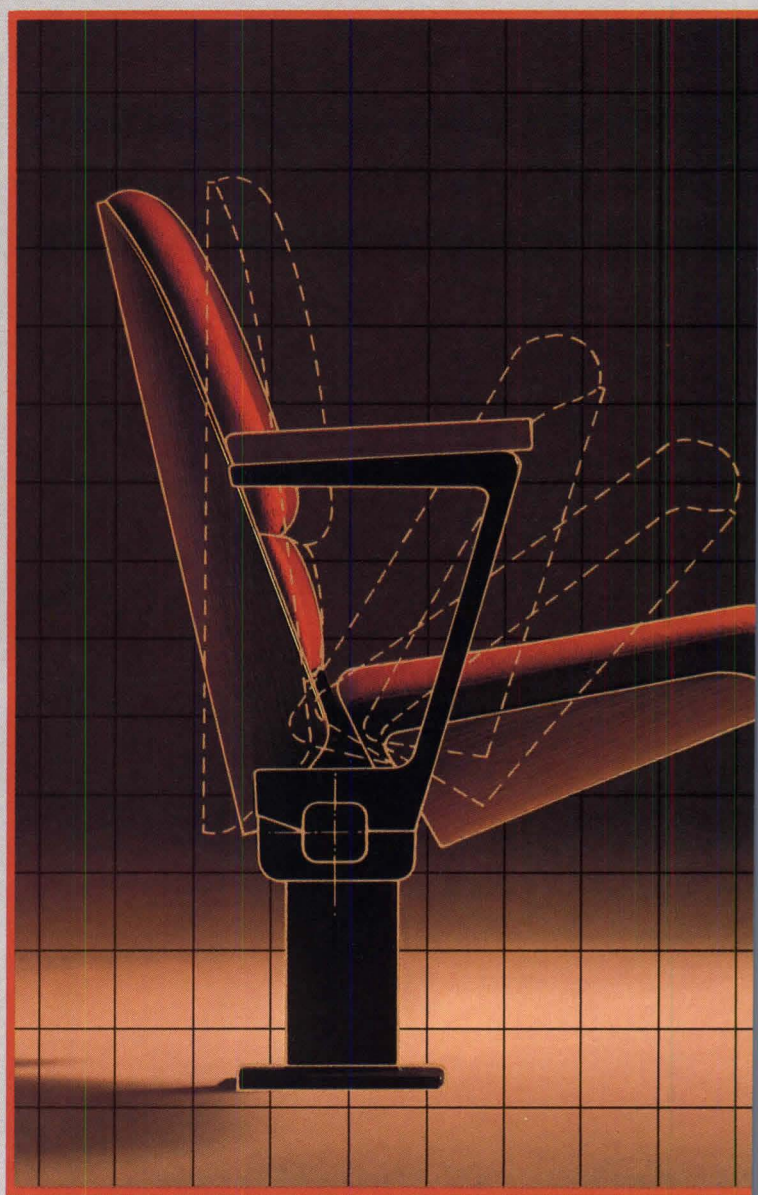

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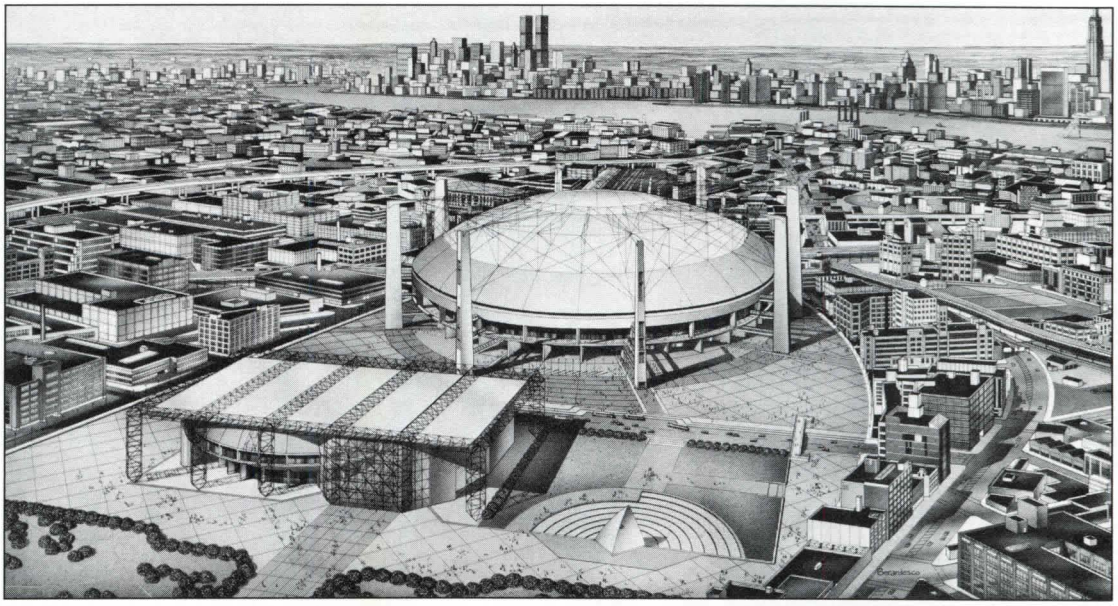
High-tech sports complex proposed for Queens site



Now that the New York Giants and Jets football teams have abandoned the city for the greener pastures of New Jersey (and with rumors persisting that the Knicks and Rangers might do likewise), the city and state of New York have begun to study the feasibility of developing new professional sports facilities somewhere within the five boroughs. The most architecturally intriguing proposal unveiled to date comprises an 85,000-seat covered stadium for baseball and football, called The Appledome, and a 24,000-seat arena for hockey, basketball, indoor track, and boxing. Designed by Stephen Lepp Associates and planned to occupy the air rights above the Sunnyside rail yards in Long Island City, Queens, the stadium features a semi-rigid, cable-supported dome whose center portion can be raised during good weather. The structure will be clad in brushed aluminum panels, and its concrete pylon cable towers will house elevators to the upper levels. An internal cable tension ring situated between the dome and stands is proposed to reduce outward thrust. The adjacent arena, tentatively dubbed New York Garden, will feature a structural system of open steel trusses. Completion is scheduled for 1989.

Rus in urbe

Although the smart Riverdale section of the Bronx remains one of New York's most desirable neighborhoods, the postwar construction of luxury high-rises has robbed the area of some of its bucolic charm. In an effort to stem overdevelopment and preserve the area as a greenbelt within the city, James Stewart Polshek & Partners have designed a group of freestanding and attached English manor-style residences nestled into the 10.5-acre grounds of the former Delafield estate. In addition to 33 new dwellings, the project includes the conversion of the Delafield mansion into three housing units and the creation of an underground road that fits in discreetly with the landscape. Polshek calls the enclave "something urbane, not urban. . . a return to the romantic ideal of the suburbs."

UIA conferees to convene in Cairo

"The Present and Future Missions of the Architect" will be the theme of the 15th congress of the International Union of Architects (UIA), scheduled for January 19-24 in Cairo. In addition to keynote speeches by Charles Correa, Leon Krier, and Richard Meier, the conference will include workshops on professional practice, architectural competitions, education, and architectural criticism; more specialized sessions on construction for the homeless and urban development in Arab countries; presentations by the five UIA regions; and ARCHEX 85, a technical exhibition and round table series by international trade manufacturers. All members of the AIA are eligible to attend both the conference and AIA-sponsored, post-congress tours of Egypt. For information contact Susan Allen at AIA headquarters (202/626-7502).

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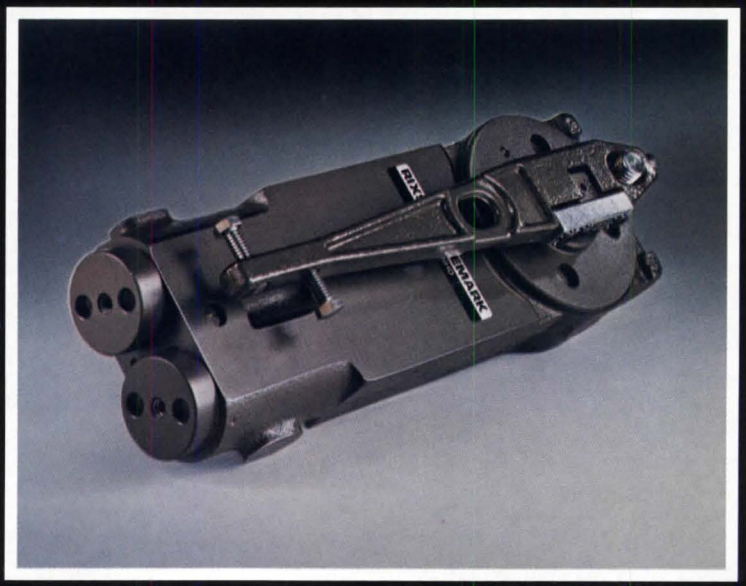

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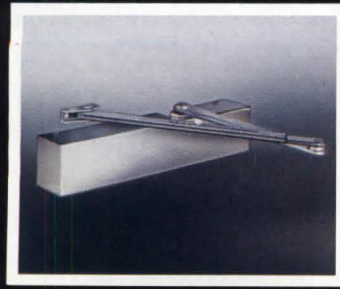

New York turns out for Designer's Saturday

East side, west side, all around the town... twosomes, foursomes, even groups of six and more trooped about with eye-catching shopping bags—persimmon-colored from Pace, black-and-white from Jack Lenor Larsen, white and pouch-shaped from Artemide—causing even jaded New Yorkers to turn and (afraid they were missing some fun) ask what was happening. By virtue of numbers, Designer's Saturday was an event to be reckoned with in a city that doesn't usually notice such things. Participants had come from as far away as Europe and Mexico to tour 51 (up from 49 last year) show rooms that welcomed them with music, video displays, and food—and, of course, such new designs as the *Ethospace* office system at Herman Miller, the Venturi collection at Knoll, architect Steven Holl's "linear" dining table and chairs at Pace, and the *Millennium* collection of fabrics at Jack Lenor Larsen. (These and other new items shown are on pages 170-171.)

As in previous years, the first day of the four-day event was devoted to facilities management. Lawrence Lerner, chairman and president/CEO of Environetics International, presented some ideas on "The Office of the Future." Lerner predicted that as advances in the computer industry resulted in smaller terminals, printers and other hardware, less paper viewing and reviewing space will be required. He showed an open-plan office with clusters of workstations arranged according to operational function. Rather than a traditional desk, the main working area for each workstation was a lectern-shaped unit containing a file drawer at its base, with a bookshelf for computer manuals, a drawer for small personal items and a laser printer above. This was topped by a bolster or cushion for visitors to lean on for stand-up conferences. Projecting from this unit was a light deflector, a large computer screen divided into nine page-size areas, a keyboard that could be moved around, and a footrest. Some workstations would also have a second unit, consisting of a table that could be adjusted vertically, a CPU, mini-disk access, and another keyboard, file drawer and bookshelf—again topped by a bolster. For privacy, Lerner proposed a fabric enclosure in the shape of a baby-carriage hood that could be raised to cover the whole workstation and connect with the hvac system or lowered out of sight.

Franklin Becker, Associate Professor in the Department of Design and Environmental Analysis at Cornell University's College of Human Ecology, challenged the audience by asking: "As facilities managers, do you really know what business you're in?" A facilities manager is not in the business of wire management, or overseeing space planning or moves; rather, those are simply means to an end, which is organizational effectiveness, he said. Using wire management to illustrate his point, he explained: "Unsightly wire is a minor problem unless you can demonstrate that employees work less effectively when wire is visible. But not being able to run wires where you want them, or having to disrupt the furniture to install them (which inhibits the flow of communication or forces you to organize your staff in inappropriate locations or group sizes) is a major problem because it directly undermines organizational effectiveness. For facilities people to be recognized as real managers in the organization, they must begin to make such distinctions."

Kenneth Kirsch, a banker who is vice president/headquarters building project of Goldome, which quadrupled both assets and buildings in just three years, said much the same thing. "Grab hold of that interpretative role with vigor and excitement," he said. "Senior management is desperately looking for people who can understand the big picture, the over-all corporate plan. People who can provide a facility that meets the needs and expectations of the company."

In a lighter vein, at a program entitled "Meet the Trendsetters," Suzanne Slesin, assistant editor of *The New York Times* Home Section, discussed some current trends—"chaos, disorganization, spontaneity," "the personal vision of the artist or designer," and "traditional with a twist"—referring to such disparate evidence as a Calvin Klein billboard showing a model wearing torn jeans, a post-modern child's bedroom, and a new hotel with rooms designed to look like anything but hotel rooms. And Martin Filler, editor of *House & Garden* magazine, showed a film that he and his wife, architectural historian Rosemarie Haag Bletter, had made for German television entitled "Beyond Utopia: Changing Attitudes in American Architecture." Robert Venturi and Denise Scott Brown, Michael Graves, Frank Gehry, Peter Eisenman, and Philip Johnson all appear in the film, which Filler hoped "would give a broad, pluralistic view of contemporary themes and stimulate thinking and controversy." He succeeded, for not only did the Designer's Saturday audience find the film provocative, if a bit irreverent, but Filler quoted Richard Meier as complaining: "You can't release this film. It makes us all look like fools." *N. G. G.*

Reviving a classic

When McKim, Mead and White designed the former Louis Sherry ice cream store on New York's Madison Avenue in 1928, the Beaux Arts classical revivalism that the firm helped popularize earlier in the century was beginning to give way to the modernistic influences of the Art Deco. An intriguing hybrid of the two styles, the facade of Louis Sherry was largely destroyed during a modernization project in the 1950s. Plans by The Limited, a women's specialty retailer, call for the restoration of the building's original design elements—including limestone piers, fluted bronze columns and doors, and black and gold terra-cotta work—in addition to the construction of a sympathetic "period" greenhouse that rises above the existing roofline. Architects for the restoration are Beyer Blinder Belle.

Babylon revisited

If the new Filmcorp Center near Los Angeles appears as a lavish contemporary adaptation of an ancient ziggurat, it is probably no accident: buildings erected by the southern California entertainment industry have never been known for their understatement, and exotic modes of the past have historically inspired architects working in the area. The elaborately terraced, eight-story structure in Culver City was designed by Maxwell Starkman Associates and features an atrium lobby that rises 90 feet to an enormous sloping skylight. Clad in bands of light and dark granite and gray solar glass, the 400,000-square-foot project will house offices, screening rooms, bars, restaurants, retail facilities, a research library and—an essential amenity in the fast-paced entertainment world—a stress-reduction center.

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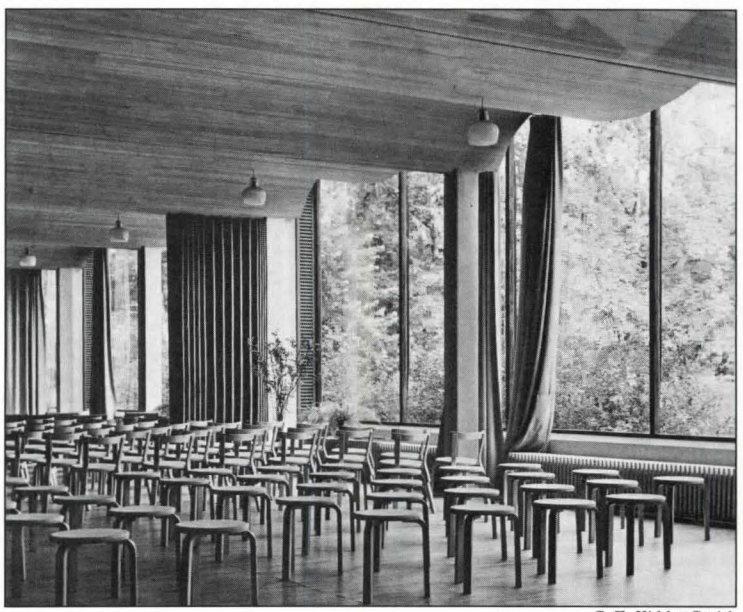
Exhibition report: Alvar Aalto at MOMA

1. Lecture hall at the Municipal Library in Viipuri, Finland, furnished with Aalto's L-leg stacking stools, 1932-33.
2. Cantilevered armchair, birch with lacquered seat, 1931-32.
3. "Paimio" armchair, laminated birch with molded plywood seat, 1931-32.

Reviewed by Barry Bergdoll

If architect Alvar Aalto's name is a household word in design-conscious America, it has less to do with a tuberculosis sanitorium or a town hall in two unpronounceable Finnish cities than with a simple three-legged wooden stool and a squiggly glass flower vase. The L-leg stool is, in fact, more familiar from everyone's local library than it is from the interior of the library at Viipuri, for which it was created in 1932; and few people realize that the ubiquitous curving "Savoy" vase was named for the Helsinki restaurant where it was first seen in 1936. If the "Aalto stool" and "Aalto vase" seem a consecrated part of the international modern interior, it has a great deal to do with the Museum of Modern Art, which has played such a vigilant role in sanctifying the "classics" of modern design and proselytizing them in this country. In 1938, just two years after Aalto's bent plywood furniture was first marketed in New York and in the same year that the undulating wall of his Finnish pavilion was being erected for the New York World's Fair, declaring the introduction of natural material and organic shapes into the hard-edged world of modernism, the MOMA devoted a show to Aalto. Today, the Aalto stool is still one of the Museum's icons of good design, and it seems only appropriate that the Modern (in conjunction with International Contract Furnishings, which has represented Aalto's furniture in the United States since 1962) mount the first complete retrospective ever of Aalto's furniture and glass as the fourth in a series of exhibitions devoted to those architects MOMA herself helped elevate to the status of "seminal architect/designers." In the past few years the Museum has presented retrospectives on the furniture of Charles Eames, Marcel Breuer, and Mies van der Rohe—exhibitions that not only reasserted the Modern's continued devotion to the Masters but which also permit us to relocate those architects' familiar iconic pieces in the context of an individual career and a sustained investigation of design problems. The Aalto stool and vase are indeed but privileged moments in the artist's life-long exploration of a deliberately restricted set of formal and technical problems that he was investigating simultaneously in architecture: *i.e.* the use of wood, which he considered "the form-inspiring, deeply human material," and the free-form organic curve. Aalto never totally abandoned the rationalist ethos of modernism or its desire to democratize and standardize, but he sought at the same time to humanize modern design and to make it more accessible, more lyrical.

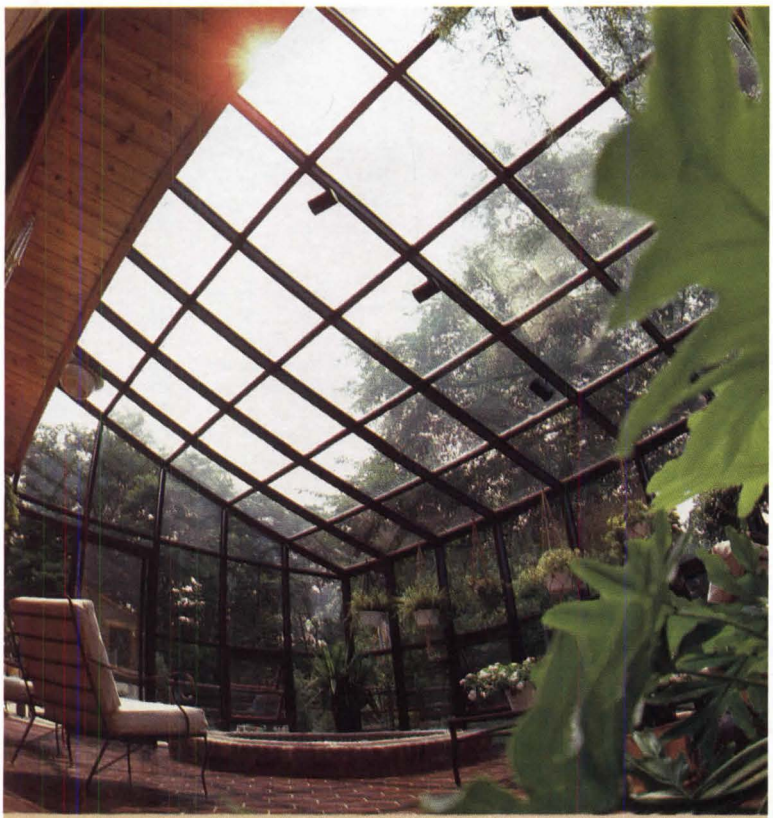


G. E. Kidder Smith

Seth Joel

The great accomplishment of curator J. Stewart Johnson's handsomely installed and sensitively designed exhibition is the way that it places those modern icons in an historical sequence. An opening series of virtually unknown drawings for Aalto's earliest "Nordic classicist" furniture and his first experiments in 1929 for stackable bent plywood furniture not only reveal the systematic experimentation that led to the renowned Paimio lounge chair of 1931, but also underscore the extent to which Aalto consciously set out in a new direction during the early 1930s. The Paimio Sanatorium was indeed the commission that catapulated Aalto into the international constellation of modern design, and he exploited it fully both to assimilate the lessons of contemporary continental modernism and to seek an esthetic of his own. Overnight, Finland had a much-acclaimed monument of rationalist architecture, as unexpected as it was fresh and challenging. Significantly, the commission also crystallized Aalto's interest in furniture. Inspired by recent designs of Mies and Breuer, he took advantage of the large range of furniture types required for the sanitorium to experiment with tubular steel—that *sine qua non* of modernist furniture—on everything from examination tables to stacking stools, in which the essential idea of the library stool is already apparent. Aalto abandoned tubular steel almost immediately afterward, declaring that despite its virtues "from technical and constructive points of view . . . steel and chromium surfaces are not satisfactory from the human point of view. . . . The rational methods of creating this furniture style have been on the right track, but the result will be good only if rationalization is exercised in the selection of materials which are most suitable for human use." Although the Paimio chair is clearly indebted to Breuer's 1925 "Wassily" chair and its principle of suspended seat within a frame, Aalto translated chrome and leather into bent plywood. The curvilinear designs of seat and frame echo one another like the mysterious curves of a Möbius strip, so that this two-piece construction seems almost by the natural ease of its formal and structural balance to be wed into a single continuous figure. Seen in strict silhouette as we enter the exhibition, this chair's profile alone symbolizes Aalto's creation of forms which at once have an autonomous abstract finality and are resonant with the demands of human comfort.

Continued on page 69



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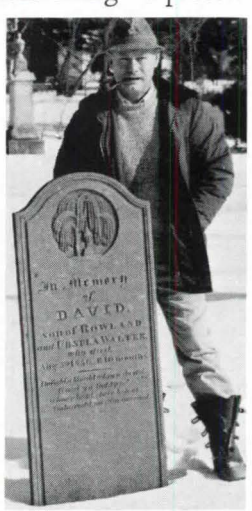

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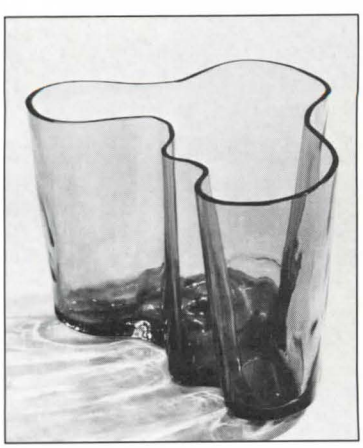
Design news continued from page 63

That chair, moreover, heralded the experiments with bent laminated wood which were to preoccupy Aalto for the rest of his career. Its ribbon frame was to be remolded in a variety of forms, from the famous C-frame for armchairs to a sensually curved chaise-lounge frame that pushed the bending to its limits. The Paimio chair was also to host a variety of seats, from canvas and leather webbing to zebra-striped upholstery. Beginning with the famous L-leg library stool of 1936, Aalto further developed a system of curved joints by creating a means of interlocking sandwiches of laminated wood glued together and pressed into even the most switchback of curves. The techniques that continued to determine all Aalto's furniture designs are lucidly explained in a short film for the exhibition made by the museum at the factory in western Finland where Aalto's furniture is still produced by a unique collaboration of machine production and hand-tooling. The technique, like the furniture itself, is as poetically simple as it is flexible and inventive. Like the gothic vault, the system, once invented, was destined for a long career of experimentation and embellishment. Perhaps the most lyrical of its manifestations is the famous fan-leg that Aalto developed in the late-1940s and early-1950s. This design combines in a single flowing form not only the vertical support and horizontal seat, but also two wooden supports set side by side.

These flowing, curvilinear lines, which seem as much inspired by natural forms as by their own self-perpetuating energy, posed a challenge to the Deco world of 1930s America. They are complemented by Aalto's free-form glass designs. There, too, a personal style was combined with a notion of practicality. Not only is each design developed in a series of expansions on a single theme that seems a veritable record of a systematic mind, but each system also is literally interlocking. Glasses and bowls are as stackable as the library stools. And like the stools, the stacked bowls form a composition in which the natural analogy that inspired the individual unit's design is made manifest in the progressive chain of forms. The stacked stools are not simply furniture in store; they form a graceful helix that evokes the ways biological units are linked into greater forms. Likewise, Aalto's famous "flower" bowls are, once stacked, each the petal in a larger flower. It was through that persistent and individualist experimentation—and Aalto stands apart throughout his career from the other modern masters—that he transformed the ethos of the modern movement into an organicist poetry. As he himself expressed it, "The best standardization committee in the world is nature herself, but in nature standardization occurs mainly in connection with the smallest possible units, cells. The result is millions of flexible combinations in which one never encounters the stereotyped."

The exhibition, which is accompanied by an eloquent brochure by Mr. Johnson, will travel after it closes at the Modern on November 27 to the Mary and Leigh Block Gallery in Evanston, Illinois (January 25-March 24, 1985); the Akron Art Museum in Akron, Ohio (August 25-October 6, 1985); the Musée des Arts Décoratifs in Montreal (November 11, 1985-January 6, 1986); the Massachusetts Institute of Technology in Cambridge (March 7-April 18, 1986); and the Chrysler Museum in Norfolk, Virginia (June 19-August 17, 1986).

Barry Bergdoll, who is completing his dissertation at Columbia University on the French 19th-century architect, Léon Baudoyer, writes frequently about architecture.



(Top) Fan-leg stool, laminated ash with leather seat, 1954.
(Above) "Savoy" glass vase, 1936.

steelcase

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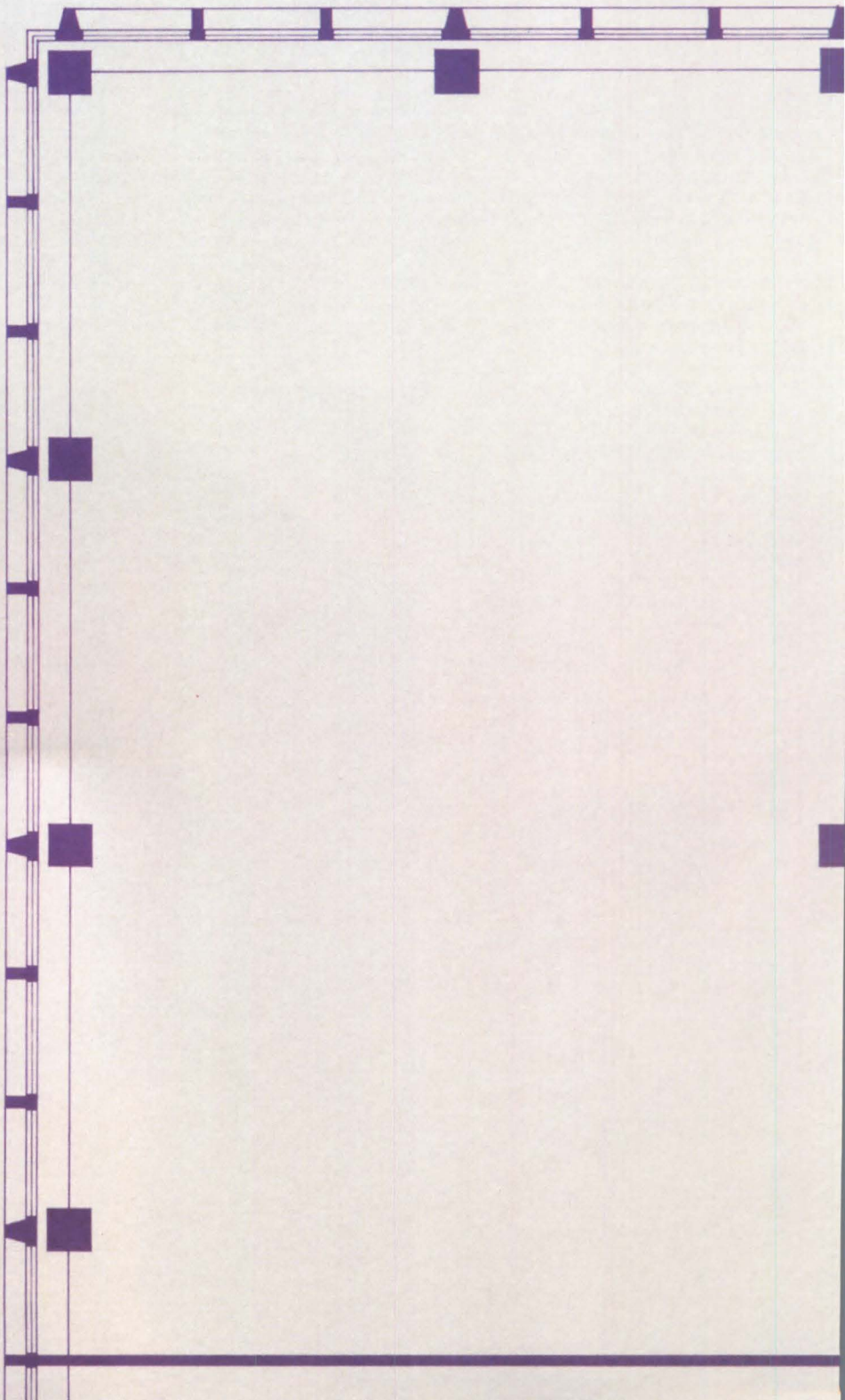

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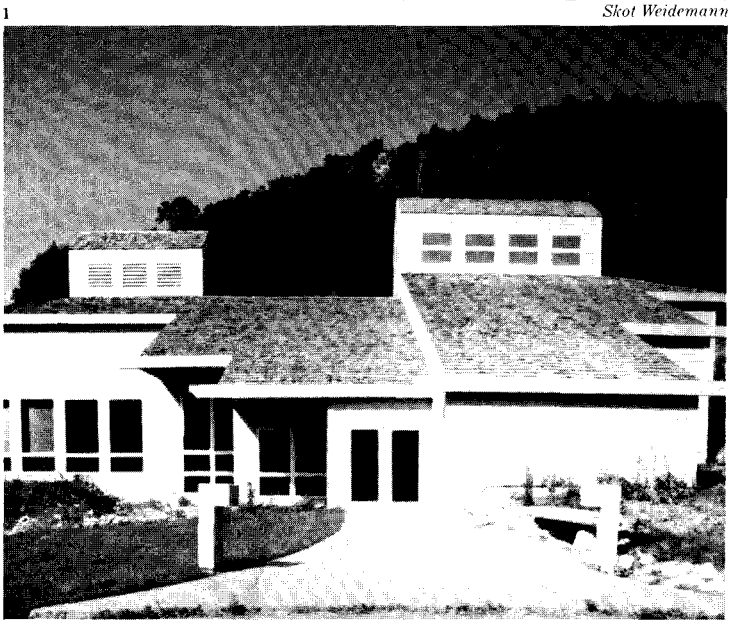
Design awards/competitions: Wisconsin Society of Architects 1984 Honor Awards

A conscious awareness of context, history, and the benefits of adaptive reuse characterized the eight prize-winning projects cited by the Wisconsin Society of Architects in its 1984 honor awards program. Jurors reviewing the 62 entries were Thomas Beeby of Hammond Beeby & Babka in Chicago, Milo H. Thompson of Bentz/Thompson/Reitow in Minneapolis, and Harry C. Wolf of Wolf Associates in Charlotte.

1 *Skot Weidemann*



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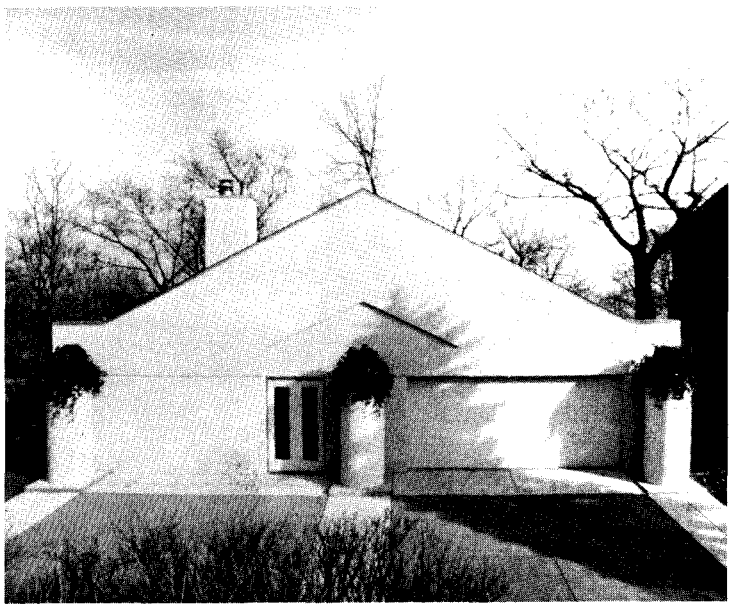


3

4 *Joseph M. Valerio*

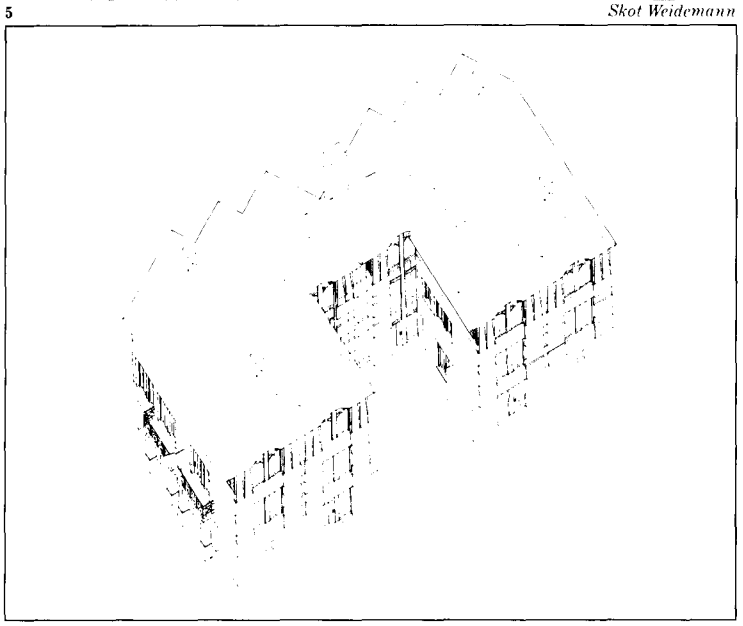
1. Hayes Block Restoration, Janesville, Wisconsin; Planning Associates, Architects (Honor Award). Once a dilapidated eyesore on a prominent downtown site in southern Wisconsin, a four-story brick commercial building erected in 1855 was saved from the wrecker's ball and rehabilitated into a retail and office complex. After the structure's masonry exterior was cleaned, repointed, and repainted, the architects replaced unsympathetic shopfronts added in the 1950s and '60s with a unified street-level facade. A new western entry was added to provide stronger orientation for patrons approaching the building from a municipal parking lot, and a former air shaft was converted into a three-story, skylighted atrium that illuminates professional office space. The renovated structure "should be a source of civic pride" noted the jury.

2. Thrune Nature Center, Coon Valley, Wisconsin; HSR Associates, Architects (Honor Award). Energy considerations and the Norwegian heritage of its rural southwestern Wisconsin location influenced the design of a 4,000-square-foot visitor information center. The architects took advantage of the earth's insulating properties by nestling the structure into the side of a hill and by designing roof monitors that draw cool air through the center during the summer. The building's repetitive stepped massing and the gabled shape of the monitors are meant to evoke architectural forms found in the clustered farmsteads and stave churches of Norway. The jury called the center "wonderful" and praised the way the structure "recalls a lifestyle that is indigenous to the region."

3. Herz Residence, Shorewood, Wisconsin; Chrysalis of Wisconsin, Architects (Honor Award). A narrow, steeply sloping building site on Lake Michigan dictated the Janus-like quality of a house near Milwaukee. Seen from the top of the hill, the dwelling appears as a serene, late-modern version of a typical suburban ranch; viewed from below, however, the house exhibits a rather urban, three-level plan behind a complex, cutaway facade overlooking the lake. The interior is organized around an open curved stairway articulated by three tiers of stylized columns—a "monolithic object," in the architect's words, that dominates everything else in the house. The jury admired the structure for its "brilliant sense of spaciousness and beautiful definition."

4. Dragos Residence, Bayside, Wisconsin; Joseph M. Valerio, Architect (Honor Award). The owner purchased an unfinished shell in a new suburban development of single-family houses and hired the architect to complete the interior. The over-all intention of the design, according to Valerio, "was to bring an idealized interior into the chaotic landscape" of the housing tract. Toward that end he organized the rooms around a set of incised columns topped by simple, circular disks—a system of ornamentation that was also applied to window and door surrounds. The jury called the design "spectacular" and lauded the architect for making "a positive impact on the quality of the living environment and the experience of the space."

5 *Skot Weidemann*



6

7 *John Meyer*

8

5. City Hall and Police Station, Oconomowoc, Wisconsin; The Durant Group, Architects (Honor Award). The program called for the restoration and expansion of a small-town, Romanesque Revival municipal building, designed in 1886 by George B. Ferry. Because the existing facades had deteriorated badly, the architects resheathed the building in new brick that matches the color of the original material. Major additions to the structure include a belfry placed atop a once-truncated clock tower and a new police department wing whose gabled form and brick detailing appear as an unbroken extension of the existing building. The jury called the project "a significant architectural statement about how smaller communities can preserve important buildings."

6. Kilbourn Row Town Houses, Milwaukee, Wisconsin; Chrysalis of Wisconsin, Architects (Honor Award). Massing, materials, and detailing reminiscent of the Richardson Romanesque characterize the design of a U-shaped town house development consisting of eight duplex and triplex units arranged around a shallow courtyard. Located on a 60- by 127-foot lot in central Milwaukee, the project was designed both to contrast with the existing modern commercial and civic buildings along Kilbourn Avenue and to harmonize with a 19th-century women's club situated directly across the street. The jury called the design "brilliant and sensitive... an excellent example of how an architectural solution can substantially enhance urban living."

7. 341 State Street, Madison, Wisconsin; Martinsons/Zeck/Meyer, Architects (Merit Award). Located at a prominent diagonal intersection once occupied by a service station, a two-story retail structure, part of a downtown shopping mall, won praise from the jury for its "beautiful detailing and workmanship." The 39,000-square-foot building is sheathed in a combination of brick, stone, and terra-cotta, and has small shopfronts that are meant to harmonize with the low-rise scale of adjacent older structures on the pedestrian-oriented street—a concept that the jury found "meritorious in its reinforcement of the existing buildings." A broad stone fascia visually unifies the structure.

8. Pabst Brewing Company Corporate Headquarters, Milwaukee, Wisconsin; Zimmerman Design Group Architects (Merit Award). An underutilized Streamline Moderne bottling plant erected in 1946 was converted into a four-story office facility for a major brewery. Original metal and glass-block fenestration was replaced by dark-tinted glazing to provide better insulation and enhance the structure's horizontal appearance, while linear "blue ribbon" lighting around the perimeter of the building refers to the company's logo. The architects retained and softened the industrial character of the interior by adding extensive plantings and pastel-colored paint, fabrics, and carpeting. "A successful and sensitive building reuse," commented the jury.

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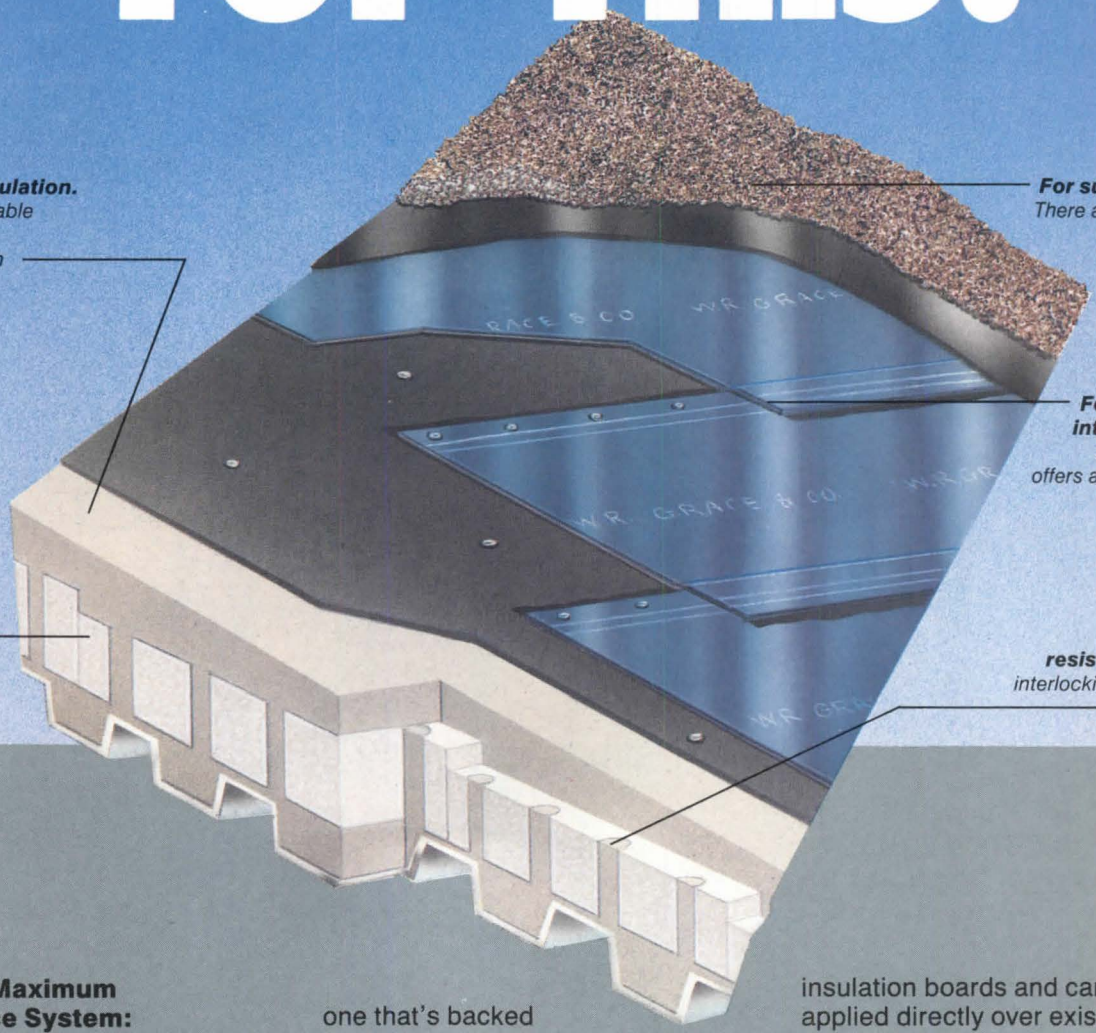

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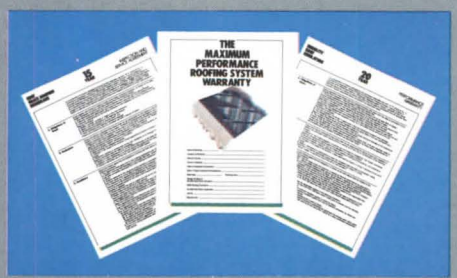

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Books

New York 1900: Metropolitan Architecture and Urbanism 1890-1915, by Robert A. M. Stern, Gregory Gilmartin, and John Montague Massengale. New York: Rizzoli, 1983, $60.00.

Reviewed by Warren A. James

By the end of the 19th century, New York was already *the* established American metropolis, comparable to such European world capitals as London, Paris, and Vienna. As the social, economic, and architectural center of the United States, New York has also been one of the few American cities where new building types and urban design schemes have been tested and eventually adopted elsewhere, very much like an urban laboratory. The row house, the modern hotel, the luxury apartment building, and the skyscraper, for example, are four building types that arose in the city as a result of constant experimentation among architects, and it was during the years around the turn of the 20th century in particular that New York achieved its international stature.

In their book *New York 1900,* Robert A. M. Stern, Gregory Gilmartin, and John Massengale present a lavish, comprehensive architectural history of the city between 1890 and 1915. They state in their preface that "our intention is not to sit in judgment, but rather let the period make a case for itself," and they do so convincingly well. The authors quote heavily from sources of the time, primarily from an emerging group of architectural critics that includes Montgomery Schuyler, Herbert Croly, Russell Sturgis, and Mariana van Rensselaer. Handsomely illustrated with over 500 photographs—some of which had never been published—and well documented with 1,700 footnotes, *New York 1900* is an important and valuable volume. Moreover, although the book is a component of a three-part series devoted to the evolution of New York's architectural and urban history in the so-called Metropolitan Era (a 75-year period extending from the end of the Civil War through the Great Depression), it clearly can stand on its own.

New York 1900 focuses on the architecture of the city's five boroughs in three major building categories—public, commercial, and residential—and even a quick scanning of the book reveals the astonishing amount of important work that emerged from the brief period covered. Pennsylvania Station, Grand Central Terminal, the Manhattan and Queensboro bridges, the Metropolitan Museum of Art, the New York Public Library, and much of the city's elaborate subway system are a few of the building projects discussed in the first category, in addition to numerous churches, monuments, schools, and civic structures.

The commercial category includes office buildings, banks, department stores, and, perhaps most significantly, the construction of such scale-breaking skyscrapers in Manhattan as the Flatiron, Woolworth, Singer, and Metropolitan Life buildings. The development of recreational facilities as socially and architecturally diverse as the Times Square theater district, men's and women's clubs, and Coney Island is also addressed in this section, in addition to the construction of such large-scale hotels as the Plaza and the St. Regis.

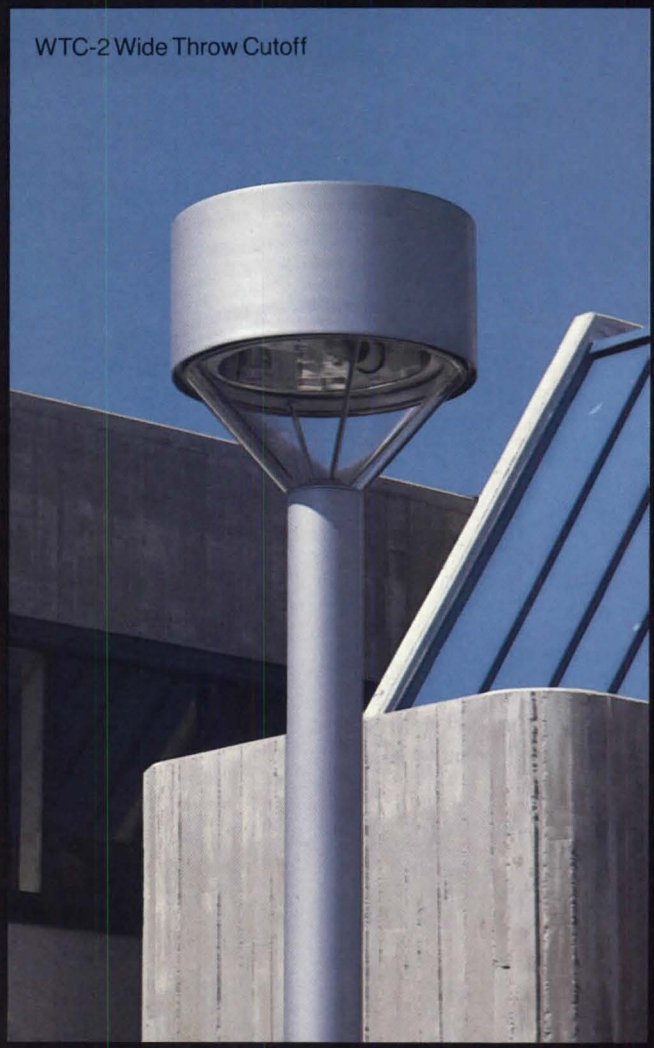
In the last part of the book the authors review the maturing of the city's residential districts, which were pushed steadily northward as downtown and midtown Manhattan became increasingly commercial. Turn-of-the-century urban living included new luxury apartment buildings—the Dakota, Apthorp, Belnord, and Astor Court are the most notable examples on the West Side—or town houses designed in a mind-boggling array of architectural modes ranging from elaborate French chateaux along Fifth Avenue to more modest Italianate and neo-Greek row houses erected throughout the city. Outside Manhattan, but still within the borders of the newly consolidated five boroughs, some of New York's most attractive "suburban" residential areas were also built up at this time: Forest Hills Gardens in Queens, Prospect Park South in Brooklyn, and the Riverdale/Fieldston section in the Bronx, to name three of the most architecturally distinguished examples, became classic streetcar suburbs whose appeal remains as strong today as in 1900.

Despite its vaguely romantic overtones, *New York 1900* represents the most complete chronicle to date of the city's architecture during the most prolific period in its building history. As such, it is essential reading for architects, engineers, scholars, and students—or, for that matter, anyone enamored of the American metropolis.

More books on page 77

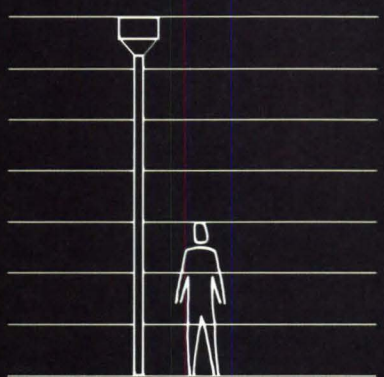
"Mr. Garfine? You'd better call the architect. It's something about the perspective. Everybody who goes down this corridor comes back five inches tall."

Warren A. James is an architect who lives and works in New York.



Type V Square Pattern

Type III Asymmetric Pattern



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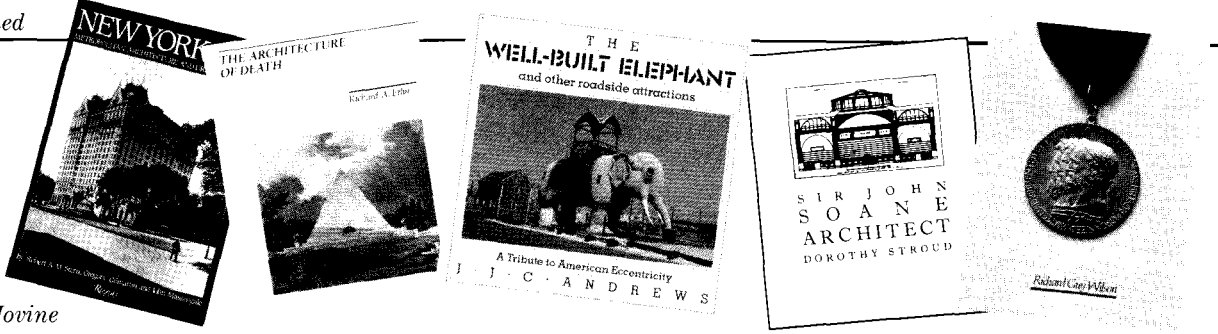
Books



Reviewed by Julie V. Iovine

The Architecture of Death, by Richard A. Etlin. Cambridge: The MIT Press, $37.50.

Richard Etlin sets out to detail the history of cemetery reform in Paris between 1744 and 1804, culminating in a description of Père Lachaise as an apotheosis of 19th-century cemetery and landscape design and adding a postscript on later developments in England and America. His method is all-inclusive in the manner of Michel Foucault; the result is a sharply drawn rendering of the times viewed through the attitudes, architecture, and laws regarding burials.

Virtually unchanged since medieval times, Parisian cemeteries in 1744 had all the skull and bones imagery and charnel houses known as *une architecture terrible.* The Cemetery of the Holy Innocents was not just a burial ground but the neighborhood refuse dump until it was closed down by city ordinance in 1780 as efforts for cemetery reform began in earnest.

As the new spirit of humanism and a heightened sense of hygiene developed in the 1770s and 1780s, the notion of cemeteries as landscaped retreats gained popularity. People were still buried in mass graves, but monuments were now added along with a properly bucolic setting where the living could visit and be comforted by the restful repose of the departed. Eschewing the "grim reaper" mentality of the past, the new ideal invoked the architectural sublime: The eternal shapes of the pyramid, sphere, and dome—especially as conceived by Boulée—embodied the spirit of death and life, twin aspects of the Vital Force.

The next logical step was to design an idealized setting for these sublime monuments, and the second half of Etlin's engrossing study is an even more fascinating account of the development of the Elysian Fields of Rest. The idea to put tombs in a picturesque landscape first arose in England and was appropriated by French designers who began to equate the expansive garden with the fecundity of the spiritual afterlife. Just before the Revolution, the elite in particular borrowed from England ideas about how to dot a landscape with monuments to friends; after the Revolution, more thought was given to the population at large, with the over-all intention of incorporating a public burial ground into a picturesque landscape. The ultimate was achieved at Père Lachaise in 1804 where all the makings of a successful landscape—hill, valley, bosquets, and slopes—combined with monuments and sepulchers to form "a terrestrial paradise."

The Well-Built Elephant and Other Roadside Attractions, by J. C. C. Andrews. New York: Congdon & Weed, $16.95.

This delightful book is just what it ought to be: a breezy catalog of "roadside programmatic buildings" (as the scholars would say) fast vanishing from our highways and byways, and a tribute to the zany ingenuity of American roadside architects. The author describes his interest in pop architecture as "my magnificent obsession," originally fueled and financed by his job road-managing rock-and-roll bands. After catching a few duck-, igloo-, and hot-dog-shaped buildings in his rearview mirror, Andrews decided to go back and methodically photograph all the roadside attractions he could find before they disappeared.

With a minimum of extraneous comment, Andrews carefully accounts for the buildings he has documented in terms of their date of creation, their mode of construction (many of the early classics are of wood planks, wire mesh, and stucco; more recent structures are poured concrete or fiberglass), their ownership, and present status. Whenever possible, plans and sections, whether they be of dinosaur or orange, are included. It turns out that milk cans put up by dairies in the 1930s are a common occurrence, while tepees, ships, and coffee pots were also favorites, along with other barrel shapes that might be constructed like ships. In a rare instance of hypothesis thrown out from left field, Andrews wonders if the earliest strip structures might have been built by retired seamen.

The grand prototype of all pop architecture, notes Andrews, is Lucy the Elephant, built for the Margate, New Jersey, resort crowd in 1881. She stands 65 feet tall with a body 80 feet around and has been variously used as a restaurant, hotel, tourist attraction and now, a designated historic landmark. Behind every donut, whale, and three-story shoe, Andrews seems to have found some individual who approached the building of one of these lovable oddballs as if it were his destiny. A certain Mr. Ball, who spent 10 years and $250,000 constructing a Jurassic brontosaurus from 1,200 sacks of concrete in the deserts of Cabazon, California, is just one of the many characters introduced in the pages of *The Well-Built Elephant.* This book is as important as a record of an endangered species—pop architecture—as it is a testament to the exuberant spirit of American entrepreneurship and Andrews's earnest, but fun-loving, dedication to architecture in all its disguises.

Sir John Soane, Architect, by Dorothy Stroud. London: Faber and Faber, $73.00.

Sir John Soane's distinguished career as an architect was made possible by a king's traveling fellowship, the 18th-century equivalent of the Prix de Rome today. The son of a provincial builder, Soane made enough contacts on that one trip to sustain his entire career, while he absorbed the Roman landmarks that would inform his style and, ultimately, make him the obvious choice to become the Architect and Surveyor to the Bank of England, a post he held for 45 years.

In a brief biography that accompanies an updated version of her catalog raisonné, out of print for 20 years, Dorothy Stroud writes the life of an architect known in his own time as "the Father of the Profession." As a youth Soane saw the annual competition sponsored by the Royal Academy as his only chance to establish himself as an architect of distinction. He set out methodically winning first silver, then gold medals for his bridge and monument designs. When he finally won the coveted king's fellowship in 1788, his mentor, Sir William Chambers, advised him to go to Rome and accomplish three things: get rid of English prejudices, "find your own style," and get to know Piranesi, which is exactly what Soane did.

It wasn't until the last years of the 18th century that Soane's career took off, and the distinctive "Soane style"—elaborately painted domed ceilings and shallow cross vaults, and "primitive" columns with upright brick triglyphs—emerged at a time when Gothic Revival was the orthodox look. Although major commissions began to come his way, beginning with the Bank appointment, Soane seemed happiest designing his country manor, Pitzhanger, and refining his London office at 12 Lincoln's Inn Fields, which became the Soane Museum upon the architect's death in 1837.

The second half of Stroud's book provides a complete list of Soane's works, including where possible the date and circumstances of each commission in addition to a description of the project, how much it cost, and its status today. Not all extant projects are photographed, however, although there is an impressive number of illustrations of drawings, plans, sketches, and actual buildings. What is missing most is a close analysis of Soane's "idiosyncratic" style by an author who so clearly knows more than anyone else about Soane, the architect.

The AIA Gold Medal, by Richard Guy Wilson. New York: McGraw-Hill, $50.00.

The AIA Gold Medal was established on the Institute's 50th anniversary in 1907. Now, in commemoration of the award's first 75 years, *The AIA Gold Medal* has been published to "honor and illuminate" the 44 architects who have received the Institute's highest citation. The book is part of an ambitious project by the AIA to establish an archive that will also include videotapes, drawings, sketches, and photos documenting the life and works of all the gold medalists.

Selected by a committee of AIA fellows, author Richard Guy Wilson is not satisfied with a mere log of accomplishments and biographies. He has tried instead to identify the trends and directions that these award-winning architects have influenced and obeyed. Admitting that architecture is by nature a most conservative profession and that an institute such as the AIA is not inclined to capricious decisions, Wilson does not try to define the gold medal as an arbiter, or even an indicator, of the latest in architecture. In fact, throughout much of its history, the Institute has been so notorious for reserving judgment that the presentation of the gold medal has had a kind of "kiss of death" reputation for being awarded to architects long past their prime.

In the first of five essays, Wilson reveals that the initial six medal winners, including McKim, Victor Laloux, and Henry Bacon, represented the American infatuation with Beaux-Arts classicism. Wilson's second group of winners, among them Sir Edwin Lutyens and Bertram Goodhue, suggest the influence of the arts and crafts movement between 1925 and 1933, while in his third essay on conservative moderns from 1938 to 1958, the author discusses Cret, Saarinen, Wright, and Sullivan. Following an essay on the radical modernists of the 1960s and '70s, when more than half of the awards went to such Europeans as Gropius, Mies, Corbu, and Aalto, Wilson describes the most recent presentations to Philip Johnson, I. M. Pei, Romaldo Giurgola, and Nathaniel Owings as a new synthesis more attuned than ever to social responsibility, the rejection of dogma, and a search for variety. While Wilson hastens to qualify his categories—none are meant to suggest definitive truths—he has used them to make what might have become a tedious laudatory exercise a much more sharply focused and perceptive study.

Julie V. Iovine is a freelance writer.

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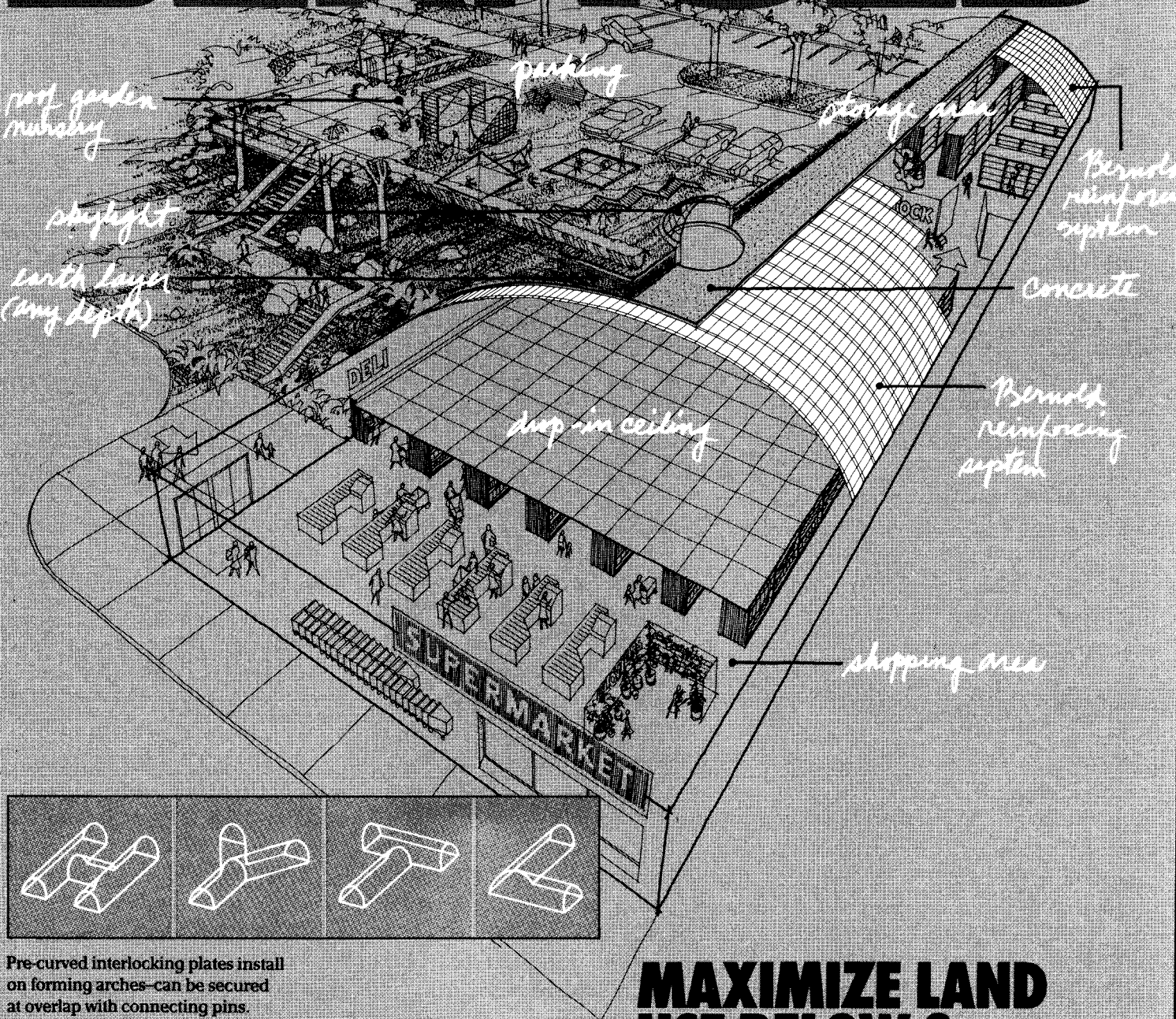

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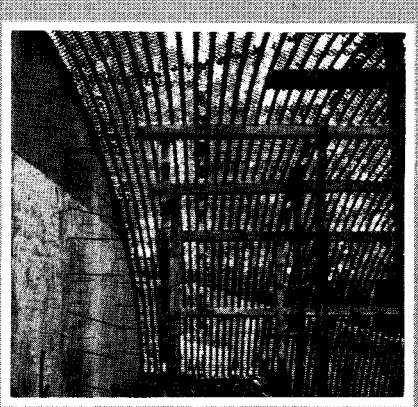

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The Shakespearean soliloquy. The high C. The arabesque penchée. The flying trapeze. Performers, capable or not, cannot resist these things—partly because of their chanciness, mostly because audiences *love* them, especially when they come off with style. Apart from sports and live opera, television, with its smooth obliteration of human error, cannot match the tension created by the interaction of risk and success, performer and watchful spectator. And audiences' appetite for the tension of these endeavors may well account for the outgrowth of new performing arts centers, even in the face of TV. The range of performance possibilities is merely suggested by the buildings on the following pages (no flying trapezes, unless somebody restages *Barnum*).

At one end of the spectrum, Roy Thomson Hall has every intention of making a major cultural statement for Toronto. A world-class symphony orchestra and an equally impressive resident chorus deserve nothing less. The size of the building and the subtle splendor of its decor manifest the city's respect for its musicians.

At the other end of the spectrum, the little RPI Playhouse cannot be easily dismissed as only a club for undergraduate amateurs; the audience may consist largely of proud families and friends, but neither productions nor technical efforts are pusillanimous or cheap. However amateur, these theater people have nerve, too.

And strung along the spectrum, each with its own color, are the Bagley Wright repertory theater and the Joyce dance theater. The first aimed at giving its resident professional company the most sophisticated production equipment obtainable and decent shops for its support facilities, and at coddling equally players and playgoers. The Joyce Theater is a showcase for small, unaffluent dance companies, both ballet and modern, but though the budget was modest, *showcase* remained the operative word. Neither dancers nor audiences need blush for an amateurish or second-class environment.

The architectural issues raised by this building type include a great deal more than esthetic design, however. For one thing, theaters pose a classic problem of double circulation—auditorium and public on one side of the curtain, dressing rooms and performers backstage (though select portions of the public may be allowed backstage in the Green Room when the performance is over). Moreover, circulation problems proliferate when fire safety is added to the audience side and when dressers, prop men and stage managers are accounted for backstage.

And budget. Even at the well-funded Toronto concert hall, the designers made sacrifices. Performers, though they want able colleagues and happy, expectant audiences, also want enough equipment and enough room for *great* productions. *Grace Anderson*

The Joyce Theater
New York City
Hardy Holzman Pfeiffer
Associates, Architects

The Arkansas Office

For dancers exclusively

The nationwide mania for dance has hit New York City with special pressures on available theater space. While a team of break dancers can make do with a cardboard square and a street corner, ballet and modern dancers need a more protective environment. At the same time, only a few dance companies have any money to speak of, and even promising groups have to settle sometimes for such marginal performance milieus as church basements. The Joyce Theater, which aims to provide good dance facilities for small and medium-sized dance companies at reasonable cost, has as its major tenant the Eliot Feld Ballet, but caters to modern dance companies as well.

Converted from a 1941 movie house, the building required major changes inside and out. The face needed some sprucing up, but architect Hugh Hardy found the patterned brick facade with its stone medallions so pleasing that he extended it along the sidewalk and copied the brickwork for a large square above the marquee. The exuberant lettering and lighted doorway are essentially a 1980s homage to pre-War joie de vivre. The entrance surround consists of two vertical stacks of glass block, which sandwich blue and white neon tubes whose refracted brightness shines on the sidewalk and then repeats itself inside the lobby.

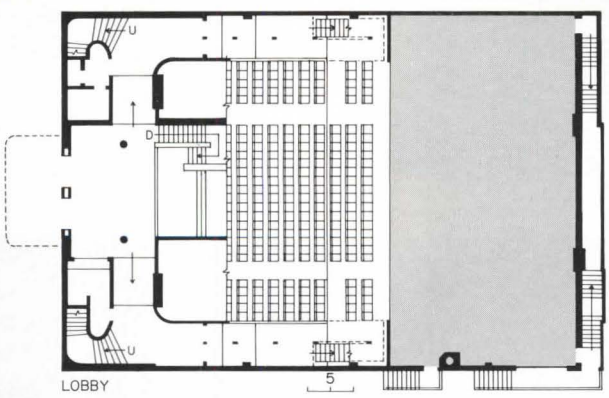
The inside of the building needed more radical alteration and was entirely gutted. First of all, unlike a movie theater, the house needed a fairly large stage. Moreover the movie theater had used a shallowly raked main floor and balcony. To improve sightlines, a mandatory requirement for dance programs, the architects replaced earlier seating with a single level arranged like a deep dish so that spectators in each row can without difficulty see over the heads of people seated in front of them. Along the brick side walls, additional seating occupies narrow shelves, where movable chairs allow spectators to adjust their sidelong sightlines to the stage.

In the interest of economy, production facilities make no pretense of emulating the Metropolitan Opera House. There is, for instance, no orchestra pit since most companies that perform here use recorded music for accompaniment; live musicians, if any, share the stage. Nonetheless, the facilities do include some special kindnesses for dancers. The wood stage floor, which is sprung, has two retractable linoleum covers, one with rosin for ballet dancers, the other without rosin for barefoot modern dancers. A large warm-up room below the theater also has a resilient floor. To keep leg muscles warm, fin-tube radiators were installed in the wings as well as in the warm-up room; stacked one above the other, the radiators extend to waist height.

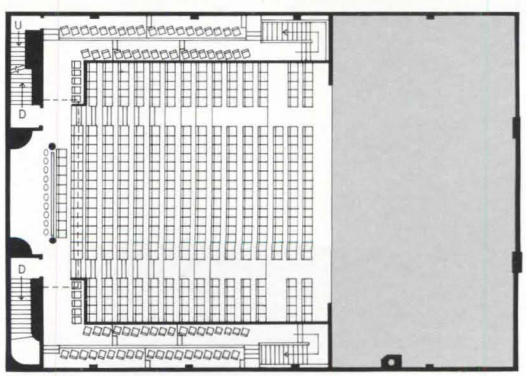
The 475-seat theater cost about $4 million.

Norman McGrath photos except as noted

The inventive ability to find new architectural meaning in existing structures has been the standard practice of Hardy Holzman Pfeiffer, as has been the application of everyday, off-the-shelf, even nonarchitectural, materials. At the Joyce Theater, for example, fascias for the side balconies are corrugated steel familiar on renovated storefronts, painted pale blue with automobile paint and cove-lighted with type-T incandescent bulbs. The same corrugated metal sheathes columns in the lobby. Proscenium ornament consists of dark heavy expanded-metal sheets divided into a 3-foot-square grid with steel angles, backed with black velour; if a director should want a narrower proscenium opening, he can bolt spare metal and velour panels to either side. Steel trusses found above the movie house's dropped ceiling became lighting supports accessible from new catwalks. The seat backs were custom-designed, the bowed frames stained a deep blue. Upholstery fabric and carpeting were designed by Jack Lenor Larson. While lobby space is not vast, only 475 people will need it at intermission; another lounge expands the space downstairs, where the ceiling over the stairs follows the underside of the seating.

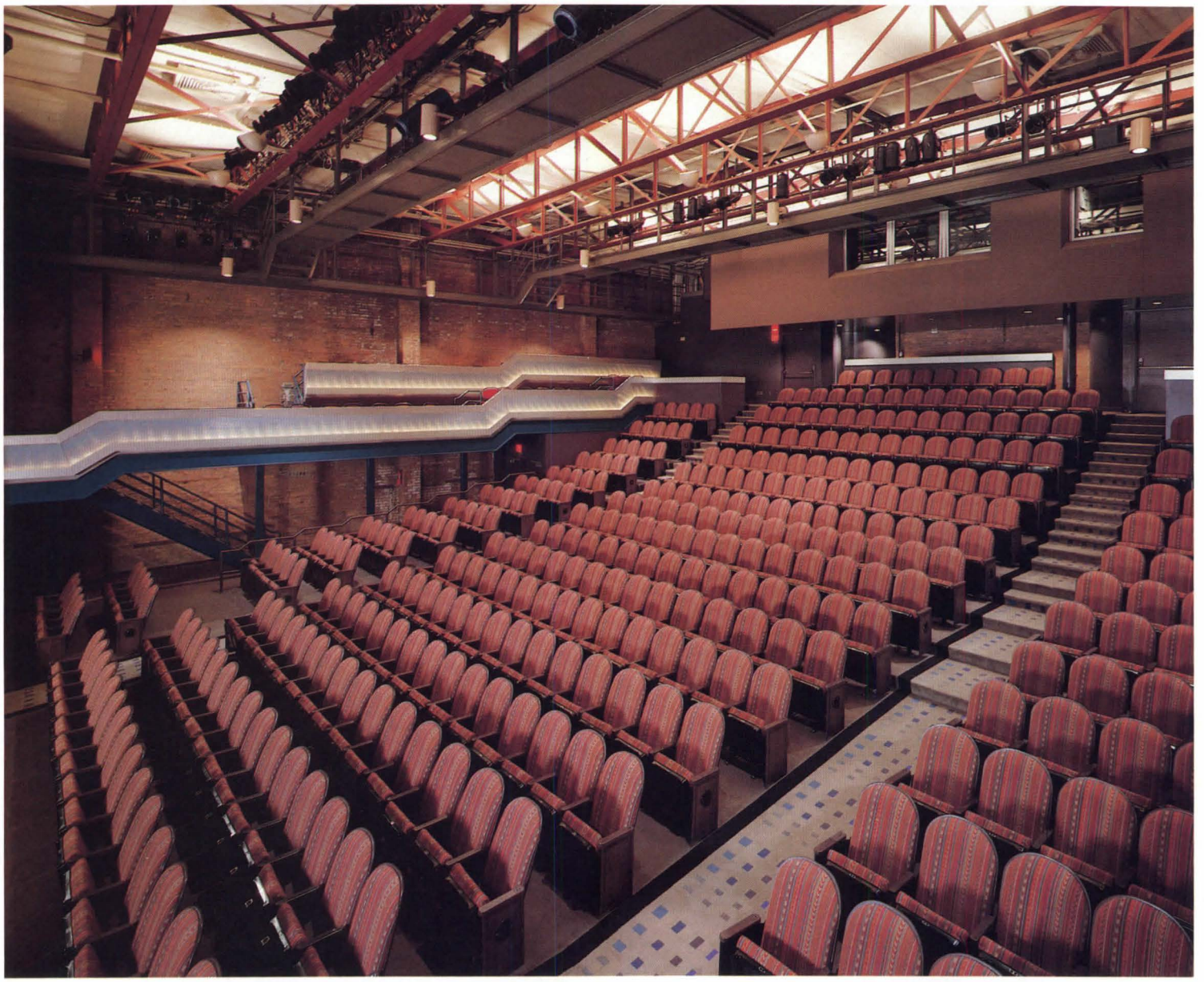


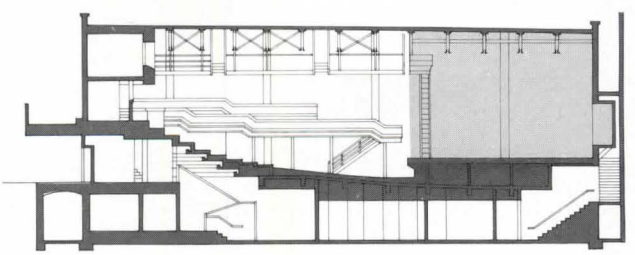
LOBBY



THEATER

The Joyce Theater
New York City
Owner:
Elgin Theater Foundation, Inc.
Architects:
Hardy Holzman Pfeiffer Associates—Hugh Hardy, partner-in-charge; Victor Gong, administrative partner; Todd Sklar, Maurice Farinas, project architects; Donald Billinkoff, project designer; Charles Gifford, construction architect; Jim Despirito, Dan Lansner, Monica Morrow, Lynn Redding, Richard Rose, John Van Mulders, project team
Engineers:
Stanley H. Goldstein (structural); A. I. A. Collaborative (mechanical/electrical)
Consultants:
Peter George Associates, Inc. (acoustical); Jules Fisher Associates (theater)
General contractor:
Yorke Construction Corporation





For a rep group

Bagley Wright Theatre
Seattle
The NBBJ Group, Architects

Seattle is definitely a theater town—its citizens as playgoers support eight resident theater groups, among which the Seattle Repertory Theater is the ranking member. Indeed, the group ranks high nationally as well: a Boston critic recently included it among the country's eight most outstanding regional theaters. Founded in 1963 by Bagley Wright, it occupied the playhouse built by Seattle for its 1962 world's fair until its new house opened last season.

The bright green colors on its stucco facades set the building apart from the rest of the city, which aside from occasional flourishes like the Space Needle and the accordion-pleated roof of the sports arena is generally staid in its demeanor. But as designer Patrick James observes, "Nothing could be better for a rep group than a notorious building." Notoriety was not on NBBJ's mind as it designed, however. The architects first aimed at holding down building costs within the $6-million budget (final cost was $6,097,378). Seeking appropriate colors for the stucco facade, they rejected blue and white because those colors tended to turn dreary under Seattle's often gray skies, and terra cotta because it looked oppressively heavy. Despite the team's resistance to the showy spring green, that color kept recurring, and samples tested on site demonstrated that it retained its lively spirit in the face of the region's climatic vagaries.

The stripes that punctuate the facade's gradations of green consist of expansion-joint reglets, 3/4-inch deep and painted a brownish-red. The red refers to the bark of the indigenous madrona tree, while the greens recall sauterne, Granny Smith apples and, more immediately, a row of poplar trees at the edge of the front lawn. The maroon reglets continue through the glass wall at the box office entrance to lay stripes across gypsum-board lobby walls. The madrona color is also carried indoors, where it warms carpeting and upholstery (see page 109).

At nighttime, a red neon sculpture adds still another punctuation above the prowlike facade. The asymmetric form, sculptured by Stephen Antonakis, swoops outside the building line to act as an identifying marquee. The outcome of a competition, it results from Seattle's 1% for Art law governing new building.

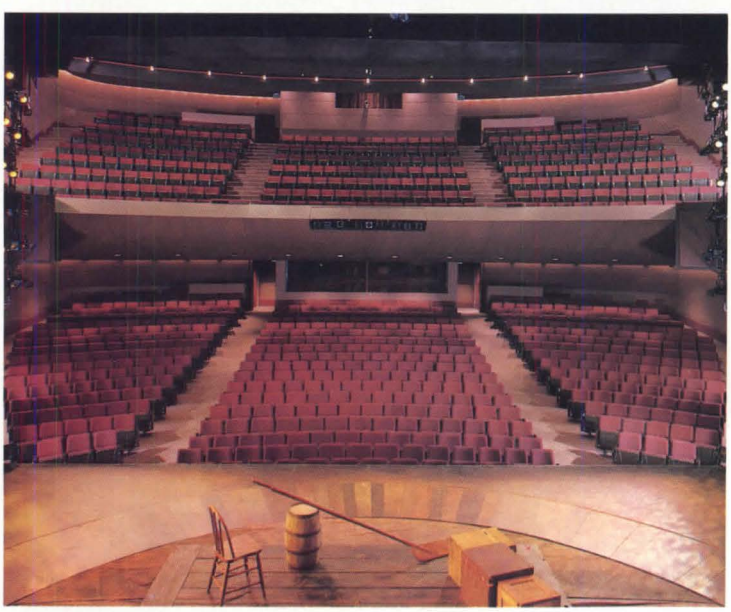
Equally as important as the house, ancillary facilities for what producing director Peter Donnelly calls "theater's cottage industries"—set carpentry, costume sewing, wig making, cobbling and the like—earlier had to find scattered shops around town. The facilities acquired space on the lower floor of the building, where a sloping skylight provides all workshops with daylight. An existing zigzag concrete retaining wall on one side of the shops was treated as "found ruin," though as a survival of the world's fair it is only 20 years old.

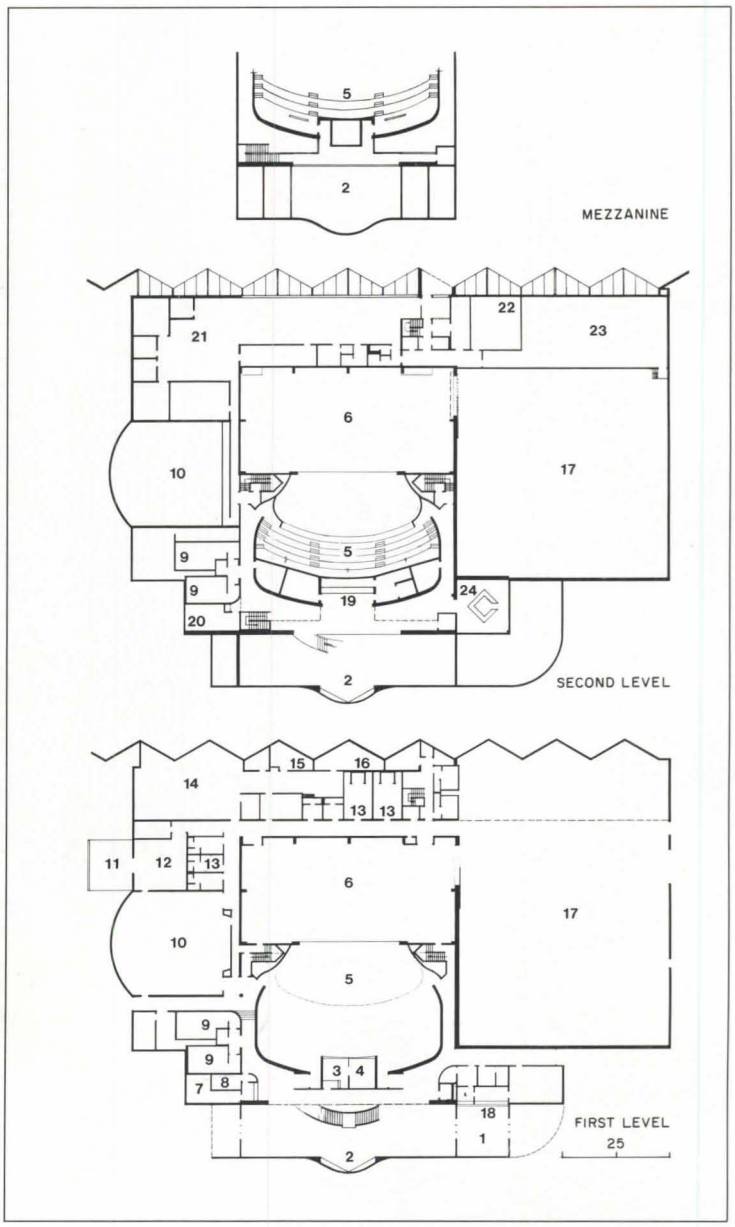
Dick Busher photos except as noted

Karl Bischoff


SEATTLE REPERTORY THEATRE
THE BAGLEY WRIGHT THEATRE AT SEATTLE CENTER

The Seattle Repertory Theater specifically asked for an intimate Broadway-type theater with state-of-the-art production facilities. At 862 seats, all having an easy view of the proscenium stage from no farther than 54 feet, the house has intimacy, though the tall atrium would seem wonderfully roomy to the New York playgoer snatching a quick smoke between the acts out on the cold sidewalk. Technical facilities include four catwalks for lighting—three above the seating, one behind the proscenium arch—as well as a pair of grids mounted on side walls just outside the proscenium (directly below). On occasion the grids become part of the stage set: in one recent production, a grid turned into a house with piano and fat pianist on one floor. The auditorium acoustics were designed with special care to favor the spoken word, having sound-absorbent fabric-covered panels on the walls and cloth screens on the catwalks; the soffit of the deep balcony took highly convex form to bounce sound to the audience seated beneath it.





Bagley Wright Theatre
at Seattle Center
Seattle

Owner:
City of Seattle, Seattle Center

Architects:
The NBBJ Group—William Bain, Jr., FAIA, partner-in-charge; N. Sue Alden, AIA, project architect; Patrick T. James, project designer; Peter J. Damento, associate designer

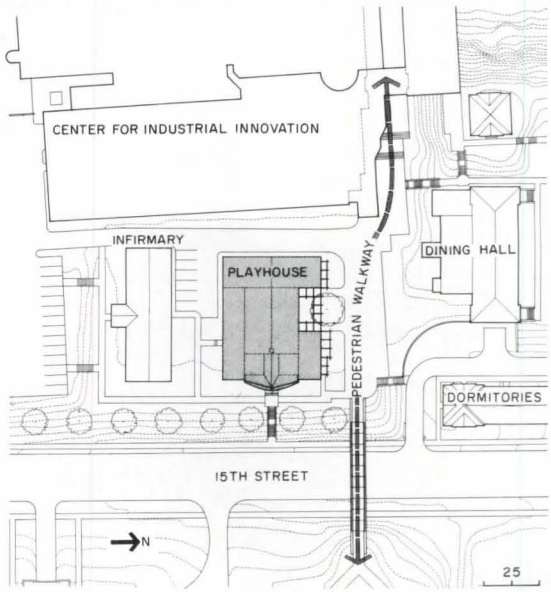
Engineers:
Skilling Ward Rogers Barkshire, Inc. (structural); VFT/Division of Coffman Engineers, Inc. (mechanical/electrical)

Consultants:
Business Space Design (color and custom furniture design); Project & Cost Management (cost control); S. Leonard Auerbach & Associates, Inc. (theater); Purcell + Noppe + Associates, Inc. (acoustics and audio)

General contractor:
Atlas Construction Company, Inc.

1. *Foyer*
2. *Lobby*
3. *Light booth*
4. *Sound booth*
5. *Seating*
6. *Stage*
7. *Coatroom*
8. *Manager*
9. *Restrooms*
10. *Poncho Forum*
11. *Patio*
12. *Green Room*
13. *Dressing rooms*
14. *Costume shop*
15. *Wig/millinery shop*
16. *Dye shop*
17. *Scene shop*
18. *Box office*
19. *Concessions*
20. *Lobby Shop*
21. *Administration*
22. *Rehearsal room*
23. *Design office*
24. *Bar*

Otto Baitz photos



For undergraduate enthusiasts

RPI Playhouse
Troy, New York
Bohlin Powell Larkin Cywinski,
Architects

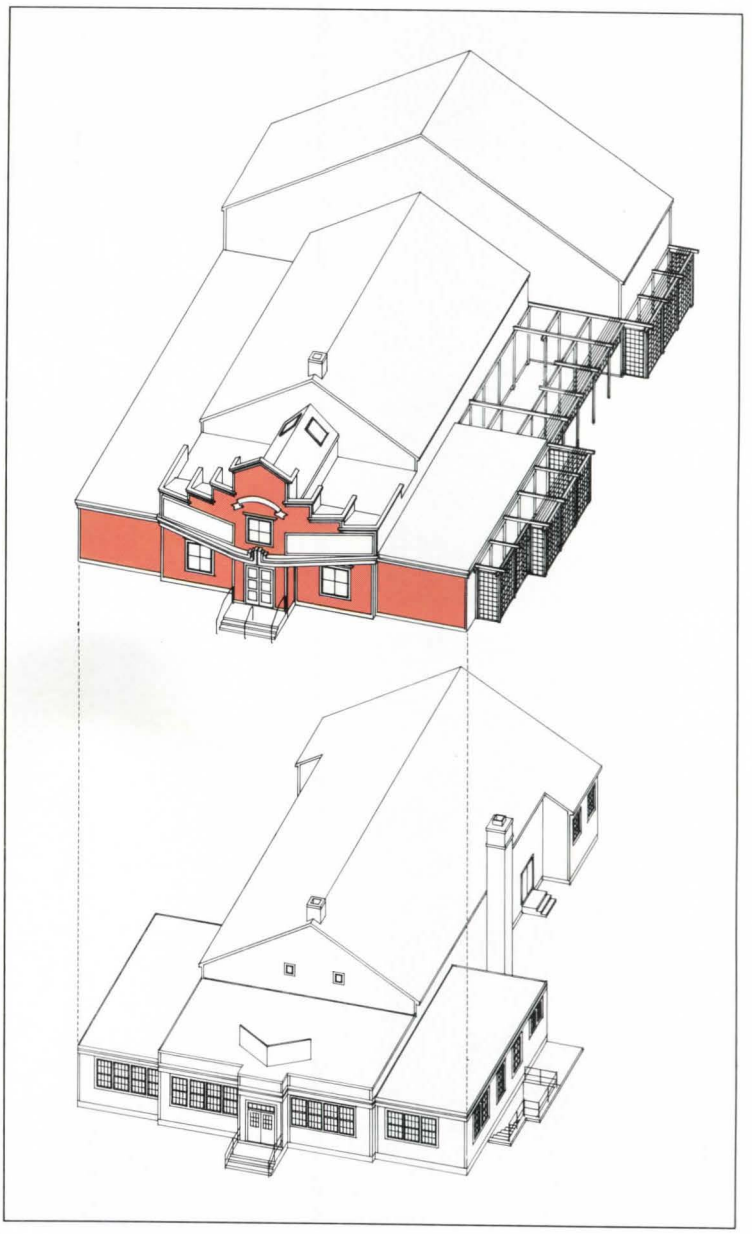
The RPI Playhouse is as much club as performing arts center, where the undergraduate members tend to hack around as they prepare one production or think about the next. In the absence of a drama school, the players number mostly engineering students, who pursue their avocation with enthusiastic ambition—this season's offerings include *Sweeney Todd* and *West Side Story.*

After examining such alternatives as a new building, the university and architect Peter Bohlin concluded that the most practical course would be to renovate the World War II USO building taken over by the RPI Players some years ago. The crying need was more space. Even for undergraduate amateurs, the theater's backstage had to be called pitiful, with inadequate dressing rooms located directly above the stage. Bohlin heightened the roof over the stage to create fly space (see axonometric drawings at right). In addition, a small wing on the left was extended to meet the stagehouse for dressing room and wardrobe.

In the auditorium, the 300 seats sufficed, though the chairs are new. But working facilities in this area, like those backstage, had to increase. A new mezzanine at the back of the house, supported by two new wood columns, contains two control rooms, one for sound, the other for lights (see overleaf). The university staff theorizes that these rooms constitute a major draw for nonacting engineers who like to play at special effects.

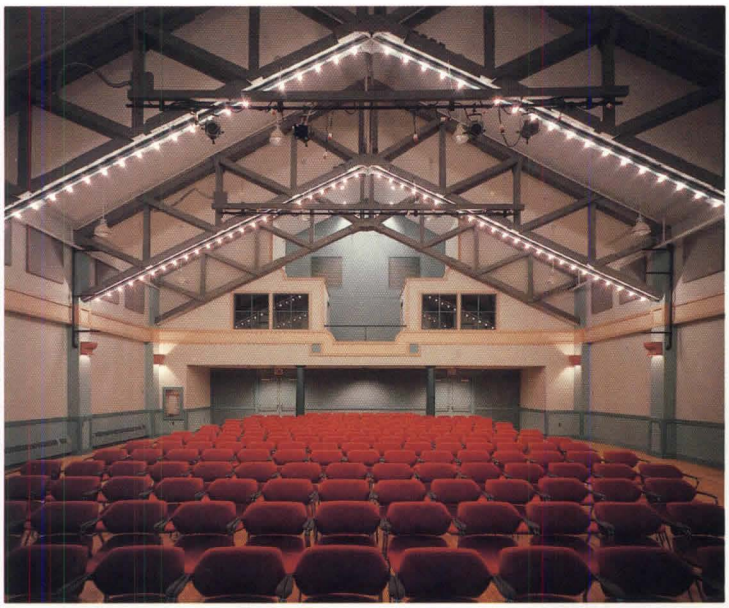
However modest the theater, it seemed only fair that both actors and audience should be conscious of the building's specialness. Bohlin attacked this problem differently on interior and exterior. Inside, using very modest means—paint, inexpensive carpet, architect-designed couches—he depended on the fireplace and hushed pastels for a hint of the grandeur associated with theater attendance. The same pastels appear on wainscot, on sconces, and on the carefully composed moldings around proscenium and the mezzanine.

The architect handled the exterior color scheme more boldly: what had been an extremely plain building acquired a bulging barn-red front with white-trimmed gables. The rest of the building is painted a less assertive sage green. The declarative red clapboard, the new pergola on one side of the building and the general liveliness of the facade have implications for the site that are not yet wholly evident. A much-trafficked pedestrian bridge at one corner of the playhouse carries students from housing on the other side of 15th Street to academic buildings back of the theater. Further, a very large Center for Industrial Innovation, designed by Mitchell/Giurgola and now under construction, will set this corner of the campus apart. The pergola will become part of a new plaza fronting the refurbished faculty dining hall.



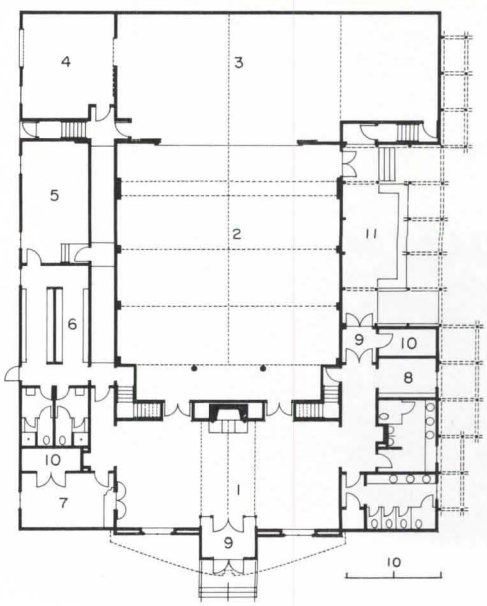
At the same time the RPI Playhouse acquired its jaunty facade, it gained much-needed new space. The most important new addition was a stagehouse that increased height and breadth at the back of the old building (above), which now contains a scene shop and adequate space in the wings for actors' entrances. The playhouse also acquired a trellised deck and pergola at one side (immediate left) that presently serves as a lounge at intermission and in future will face a plaza at one end of the pedestrian bridge (see site plan). Construction cost about $800,000, including theater equipment and fees.

The exposed wood trusses remind audiences of the playhouse's humble beginnings and modest present. In front of the stage, an identical truss was added to double support for the new and larger stagehouse (see double pilaster in photograph at bottom below). At the back of the auditorium, a new mezzanine contains control rooms—sound on the left, lights on the right (photo at right below). Architect Bohlin raised the lobby ceiling and installed skylights to add headroom and to give a small measure of importance to an existing fireplace (opposite). The calm pastel color scheme indoors contrasts deliberately with the vivacity of the facade.



RPI Playhouse
Troy, New York
Owner:
Rensselaer Polytechnic Institute
Architects:
Bohlin Powell Larkin Cywinsky—Peter Q. Bohlin, FAIA, partner-in-charge; Rob Lewis, project manager; David Wilson, John Coleman, Margaret Bakker, James Devers, project team

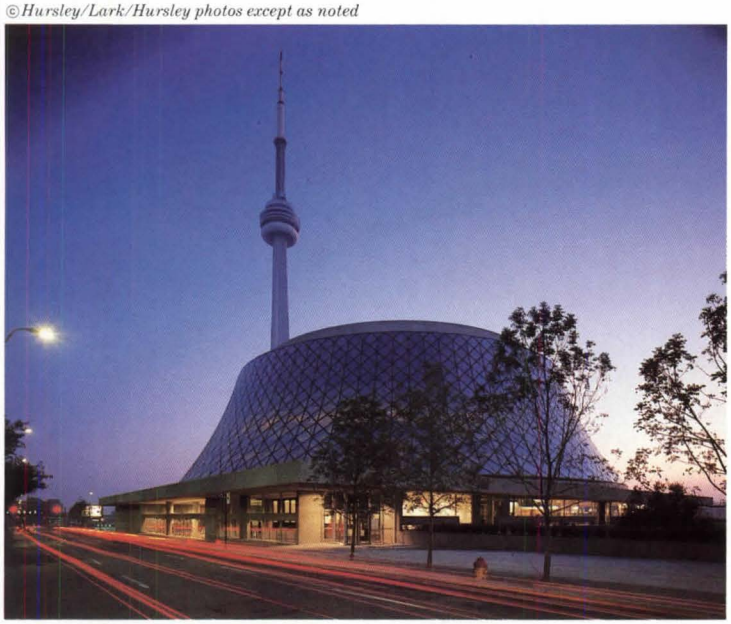
Engineers:
Evan Biggs Associates (structural); Vinokur Pace Engineering Services (mechanical/electrical)
Consultants:
Brannigan-Lorelli Associates (theater); Jaffe Acoustics (acoustics)
General contractor:
Beltrone Construction Company

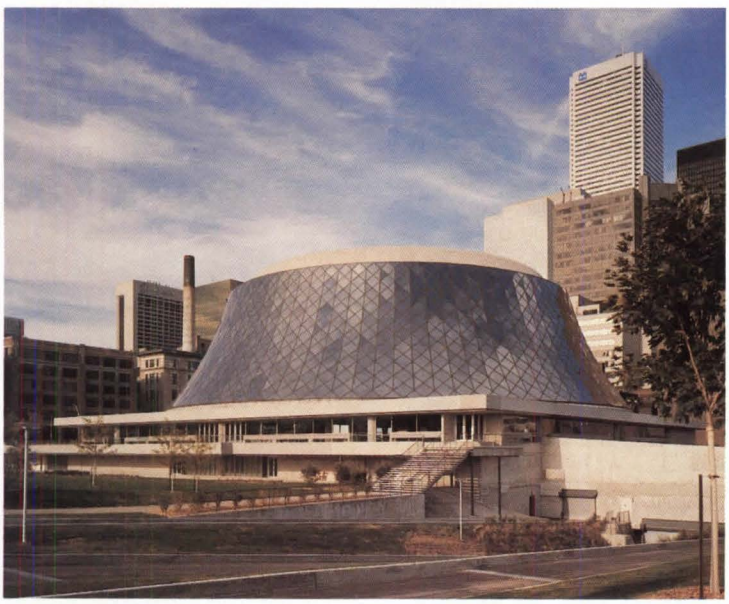


1. *Lobby*
2. *Auditorium*
3. *Stage*
4. *Scene shop*
5. *Wardrobe and Green Room*
6. *Dressing*
7. *Box office*
8. *Coatroom and vending*
9. *Vestibule*
10. *Storage*
11. *Deck*

Roy Thomson Hall
Toronto
Arthur Erickson/Mathers & Haldenby,
Associated Architects

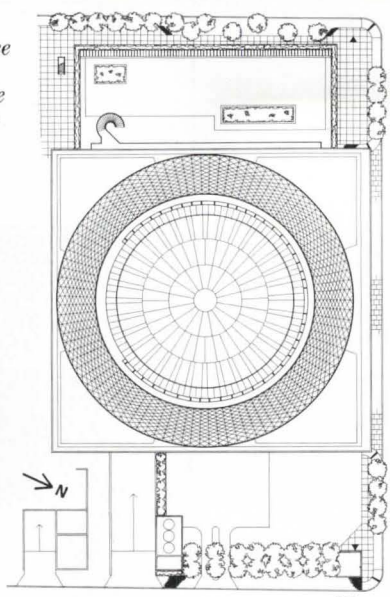
For a world-class orchestra





Fiona Spalding-Smith

Roy Thomson Hall, seen from the front (at top) has its lighted box office at one corner, with Toronto's convention center and highly visible Space Needle behind. Seen from the back (directly above), it reveals a lower floor for musicians and administration and a second floor for strollers at intermission. A sweeping glass-railed stairway (opposite) has a twin that sweeps upward in the opposite direction. The splendor of the stairways, the tubular steel structure, the Space Needle, and the reflections of all these sights suggests an imposing entrance, though in fact the area is found as an extra surprise at the back of the hall.



The principle of modern architecture that would have buildings designed from the inside out took an unexpected twist at Toronto's Roy Thomson Hall: the inner auditorium was designed, scaled and modeled in all details, down to the colors, even before the owner had selected a site. The building's external form—a tentlike glass canopy curving down to a flat rectilinear base—thus results from a combination of the rectangular site that was finally chosen and the egg-shaped core that had already been prepared for it.

The shape of the core grew out of a lengthy examination of possibilities by architect Erickson and acoustician Theodore Schultz involving some 10 or 12 schemes. Complaints about the impingement of city noise at Massey Hall, the former home of the Toronto Symphony and the Mendelssohn Choir, suggested the double concrete shell, which isolates the concert hall from invading external sound; the plan has sound locks at every entrance (see plans and section on page 118). Controlling factors for the design included the orchestra's board of governors' requirement for a very large hall—at least 2,800 seats (they got 2,812, less 119 when a chorus occupies the loft at the back of the orchestra platform). That's too many seats, in Schultz's opinion, for a conventional shoe-box-shaped hall, which would inevitably leave some of the audience too far from the stage for good sight and too far from sound-reflective vertical surfaces for good sound. By fanning petal-shaped balconies to focus on the orchestra platform, the designers achieved good sightlines throughout the hall, placing no customer farther than 107 feet from the stage.

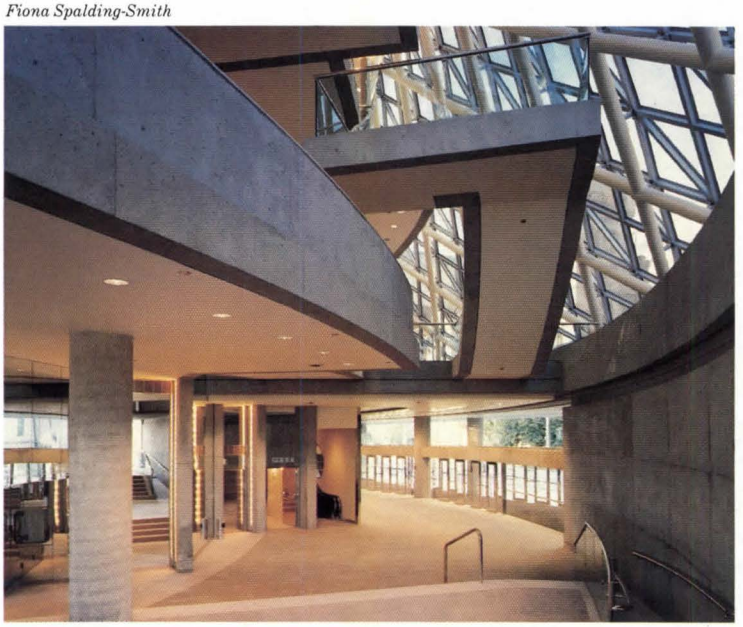
Because a fan with evenly curved walls is not the happiest shape for a concert hall, Erickson and Schultz took special pains with the forms and textures of walls, balconies and ceiling. The walls and balconies around the hall are cast-in-place concrete. Not only is concrete of this density (144 pounds per cubic foot) an effective reflector of sound; the designers also manipulated the shapes of the components to deliver sound where they wanted it. Thus each of the wall panels is concave to reflect sound back into the hall from multiple surfaces, while the balcony fronts are convex to reflect sound to listeners on the main floor. Moreover, the balcony soffits take a slightly convex shape to reflect sound down to the people seated beneath. The arsenal of devices mounted on and hung from the ceiling performs a great number of acoustic and visual functions (see pages 118-119).

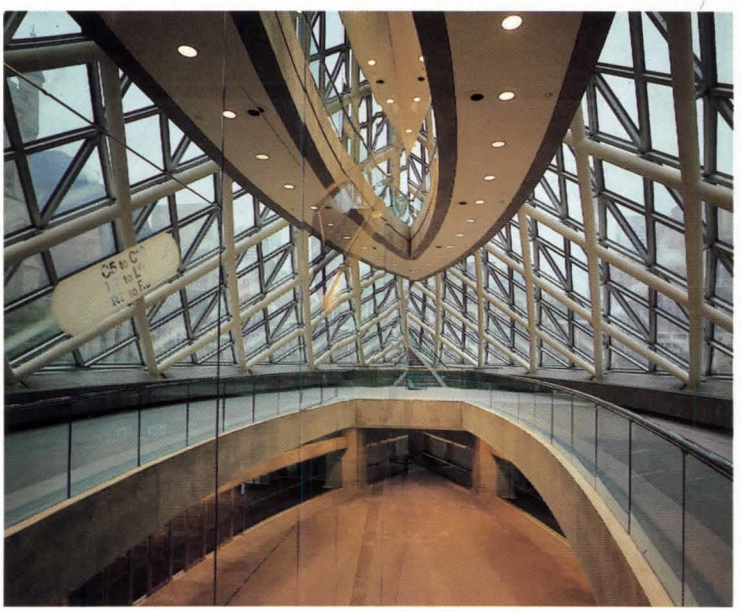
The tapering cone that now roofs the building was not Erickson's first choice. He had envisioned a mullionless glass tent that would drape from a circle at the center above the auditorium to straight edges on all four sides of the rectangular roof. In the eyes of glass manufacturers bidding for the contract, however, this amount of butt-glazing, requiring many diamond-shaped panes in differing sizes, was not feasible. Nonetheless, Erickson by this time had his heart set on a glass roof, reflectively faceted by sun and clouds in the daytime and made sparkling at night by lights and people on stairs and balconies. The glass wall as finally fabricated consists of preglazed aluminum frames around double panes, the outer light of heat-strengthened reflective glass, the inner light of laminated safety glass. On the inside of the glass wall/roof, structural support is provided by tubular steel diagonal members, welded together on site to form a web around public spaces, the web visually doubled by the mirrored walls.

The hall, on a 2.5-acre site near Toronto's financial district, faces a major theater and restaurants across a reflecting pool at the front and has the city's convention center and Space Needle at its back. Leased from Marathon Realty Company Limited, it has as neighbor an area that its landlord intends to develop and that Arthur Erickson has already designed to frame his concert hall: a large park and three office towers (at left off site plan at left).

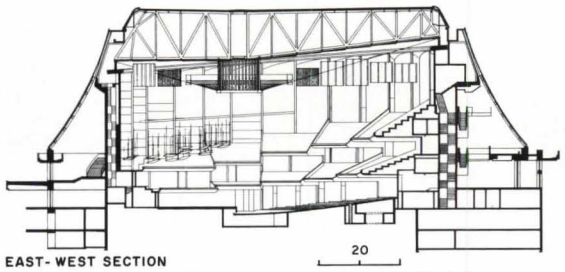
The building cost about $39 million (Canadian) raised from private sources, including the family of Roy Thomson, and from federal, provincial and municipal governments.

Fiona Spalding-Smith

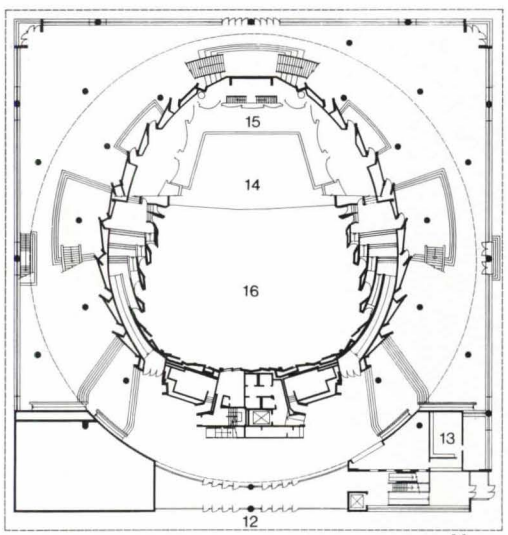




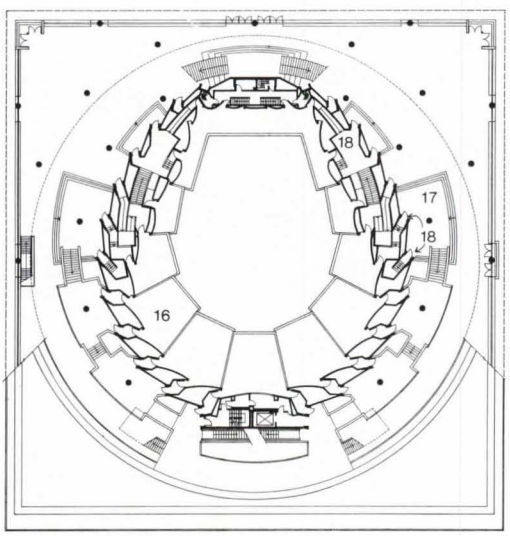
Erickson's staff allows that it spent "hours and hours" selecting the silver-gray colors in both lobby and auditorium. The main point of reference for color was the concrete, sandblasted for a velvety, opulent finish. But the search for harmonious carpet and upholstery often faltered as the sun came out or went in, or as light changed from morning to evening or from incandescent to fluorescent. Though the main entrance (both photos above) has a relatively low ceiling, its volume is visually expanded by mirrored soffits and a mirrored wall that screens escalators. The generosity of the public space lends itself to post-performance receptions and other parties as well as to Sunday afternoon recitals.



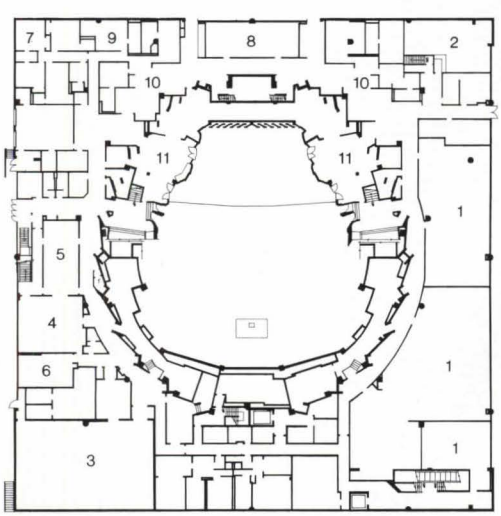
EAST-WEST SECTION



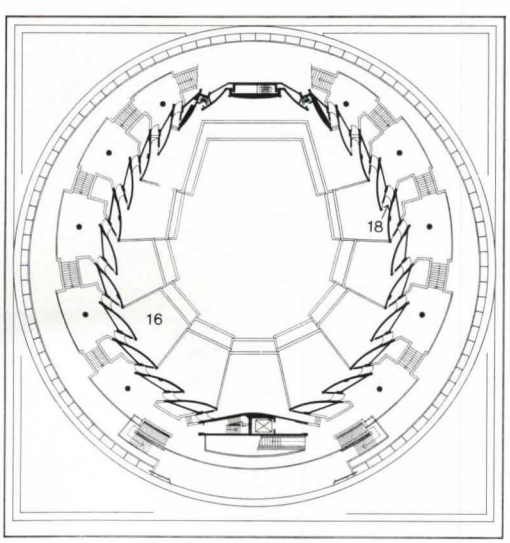
LOBBY LEVEL



MEZZANINE LEVEL

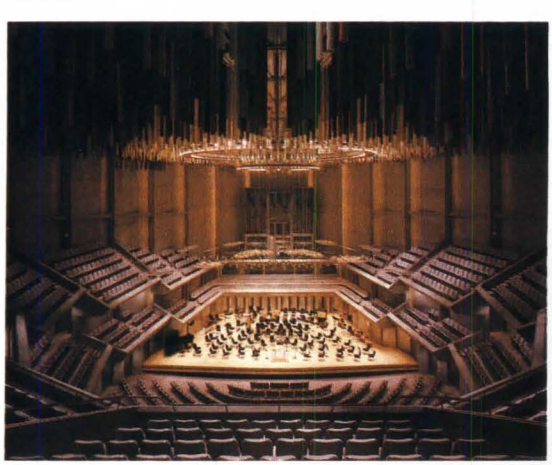


MUSICIANS LEVEL



BALCONY LEVEL

1. *Offices*
2. *Library*
3. *Rehearsal hall*
4. *Board room*
5. *Green Room*
6. *Catering*
7. *Artists' rooms*
8. *Lounge*
9. *Locker room*
10. *Warm-up area*
11. *Storage*
12. *Entrance*
13. *Box office*
14. *Orchestra platform*
15. *Choir loft*
16. *Seating*
17. *Access galleries*
18. *Sound locks*

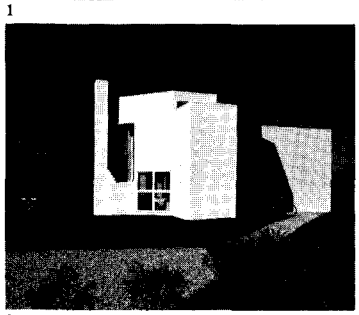


Esthetically, the many lighting and acoustic devices suspended from the ceiling of Roy Thomson Hall can be likened to a gigantic chandelier adorning the huge space—one million cubic feet. At the center, a stainless steel drum conceals loudspeakers, which rise into the trusses above when not needed. Around the drum hangs a circle of jewel-colored fabric-covered tubes connected to each other by fabric membranes, an object that Erickson and sculptor Mariette Rousseau-Vermette call a "three-dimensional tapestry." The tubes are made of stiff cardboard and insulation, with a layer of fiberglass for those meant to absorb sound. (In tuning the hall's acoustics, a process that Schultz says he not only expected but looked forward to, the absorbent wool socks and membranes are now being designed for replacement with metal mesh that matches the colors and apparent texture of the fabric. This action increases the tapestry's acoustic transparency to benefit the large, newly built organ, in which the hall takes especial pride.) An array of acrylic saucers above the orchestra platform provides early reflected sound especially to benefit listeners in the center of the main floor and at the front of the first balcony. Like the tubes, which are lowered to decrease reverberation time for recitals and Classical music, the reflectors can also be raised or lowered: all the way to the ceiling for organ recitals, about 30 feet up for standard orchestral works, about 22 feet up for chamber music, or clear down to the stage for cleaning.

Roy Thomson Hall
Toronto
Owner:
Roy Thomson Hall Board of Governors
Architects:
Arthur Erickson/Mathers & Haldenby, Associated Architects—Arthur Erickson, design architect; Douglas C. Haldenby, executive architect; Keith Loffler, project architect; James S. Webster, project coordinator; J. Michael Barstow, Michael Jones, Richard Stevens, Margaret Holland, Anne Vezina, project team; Francisco Kripacz, interior designer
Engineers:
Carruthers & Wallace Limited (structural); Crossey, Langlois, Firman Inc. (now Crossey Engineering Limited) (mechanical/electrical)
Consultants:
Bolt, Beranek and Newman, Inc.—Theodore Schultz (acoustics); Claude R. Engel (lighting)
Landscape architects:
EVM Limited
Construction management:
Eastern Construction Company, Limited

The white album

1



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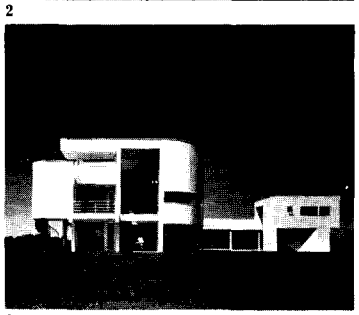

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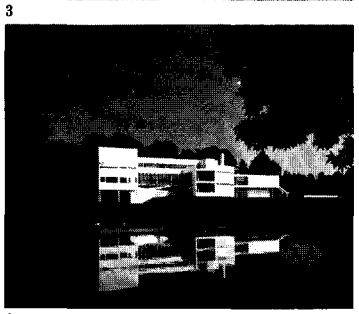

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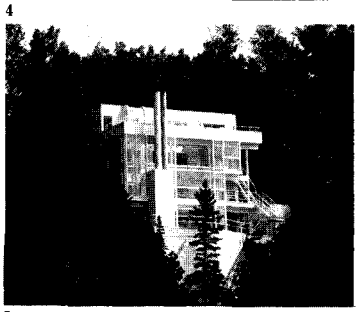
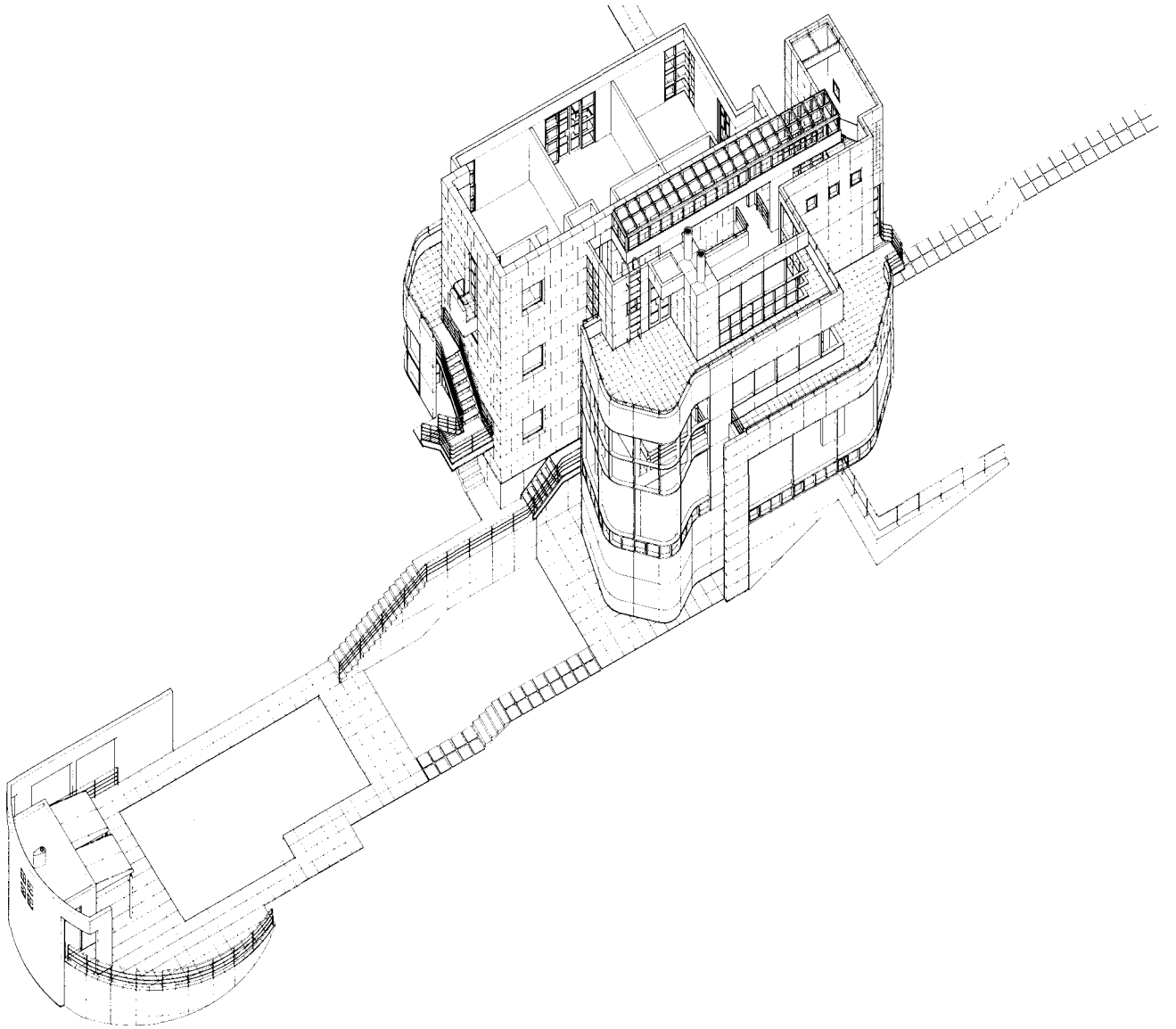


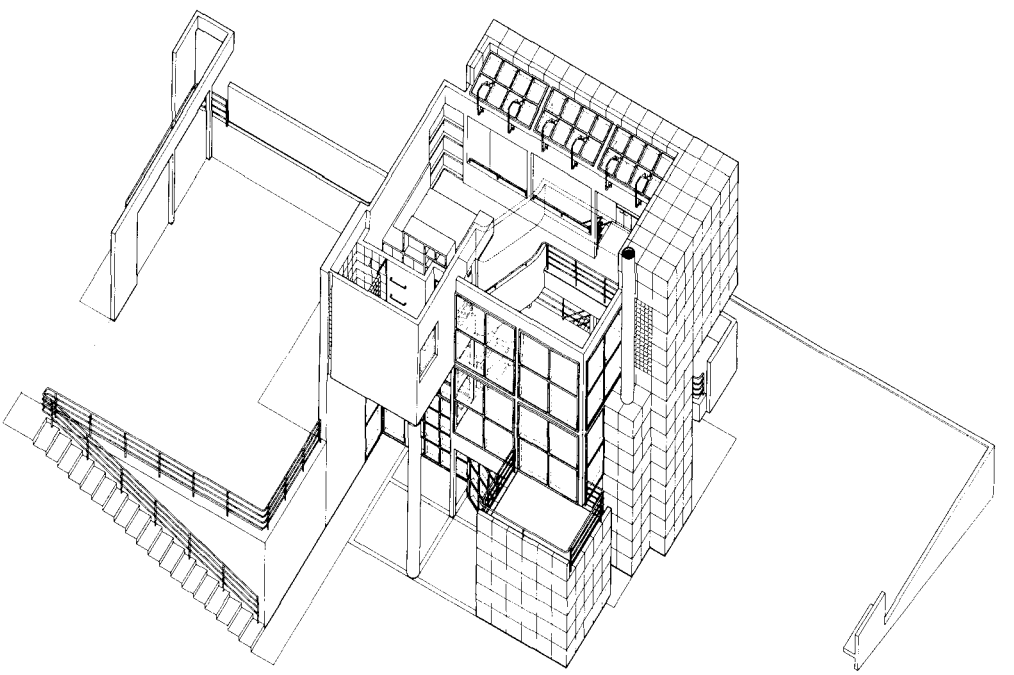
5

1. *Smith House, 1967*
2. *Hoffman House, 1967*
3. *Saltzman House, 1969*
4. *House in Old Westbury, 1971*
5. *Douglas House, 1973*
6. *House in North Salem, under construction*
7. *Giovannitti Residence, 1984*

The first decade of Richard Meier's career—like the first decade of the careers of generations of young architects before him—was filled with a succession of single-family houses. And what a succession it was. After getting off to a respectable, though not remarkable, start with three little-known houses (including the obligatory one for his parents), Meier hit his stride with the Smith House on the north shore of Long Island Sound (figure 1). The now 17-year-old house established the then 33-year-old architect as a major talent, and set the pace for the five houses to come: Hoffman in '67 (figure 2), Saltzman in '69 (figure 3), Old Westbury in '71 (figure 4), Douglas in '73 (figure 5), and Shamberg in '74 (not shown). And then—after these six houses were exhaustively documented not only in the professional and popular presses but in a 1976 Oxford University Press monograph entitled, appropriately enough, *Richard Meier, Architect*—the houses stopped. Meier purportedly "soured" on residential commissions after two sets of complete working drawings were shelved at client request. "And they were on budget," adds a still bitter Meier. During the hiatus that followed, Meier moved on to the well-known large-scale commissions—the Bronx Developmental Center, the Atheneum, the Hartford Seminary, the High Museum—that won him the 1984 Pritzker Prize at the unprecedented age of 49.

Somewhat surprisingly, considering the current eminence of his reputation, Meier has now returned to designing houses: at present he has three in design development, in addition to the two included in this portfolio (see axonometrics at right). Another, in Palm Beach, could have been added to this collection, had the client for this much-talked-about house not balked at the prospect of the post-publishing pilgrimage of architects and students who invariably appear on the doorsteps of Richard Meier's houses. His reasons for returning to the domestic scale are the classic ones: "It's a way of constantly reminding people in the office that we're doing things on a human scale... and when you go back and work on a larger-scale project you still think about the small details that people come into contact with every day." The recently completed Giovannitti house and the now-under-construction house in North Salem are the first entries in the second generation of Meier houses. And since houses, as a building type, are traditionally the first place where designers register a change of stylistic heart, we look to these two late additions to the Meier White Album for possible signs of change. For those expecting traces of revisionism, however, the look will be disappointing. For unlike his former colleagues from the "New York Five" days—fellow builders Graves and Gwathmey—we find Meier conspicuously unimpressed by the arguments so energetically put forth over the last decade. The tides may have turned away from the pristine white wood and shimmering glass structures that Richard Meier made and built his reputation on, but they have not turned for this architect. And while the ubiquitous vertical wood siding and flat roofs of the '60s and '70s have given way to shingles and clapboard, dormers and gables, and while energy considerations and esthetic preferences have now supplanted billboard-scale plate glass with six-over-six double-hung, Richard Meier appears unperturbed. Though one is quick to note that he too has abandoned vertical wood siding, the replacement is porcelain enamel metal panels. In short, as Robert A. M. Stern would no doubt not approve, Meier still creates "spaces," not "rooms." (One hastens to add, however, that the walls of glass are now double-glazed.) What the Giovannitti and North Salem houses show us is that Richard Meier is sticking to his architectural guns. And while aficionados will undoubtedly note subtle refinements—the material palette has expanded, the spatial gymnastics are more complex—there is no about-face. Which will come as little surprise to many—particularly those who recall a very early comment Meier made after attending a show of drawings and models by a well-known Swiss architect: "I can't be Le Corbusier. But I damn well can be Richard Meier." *Charles K. Gandee*

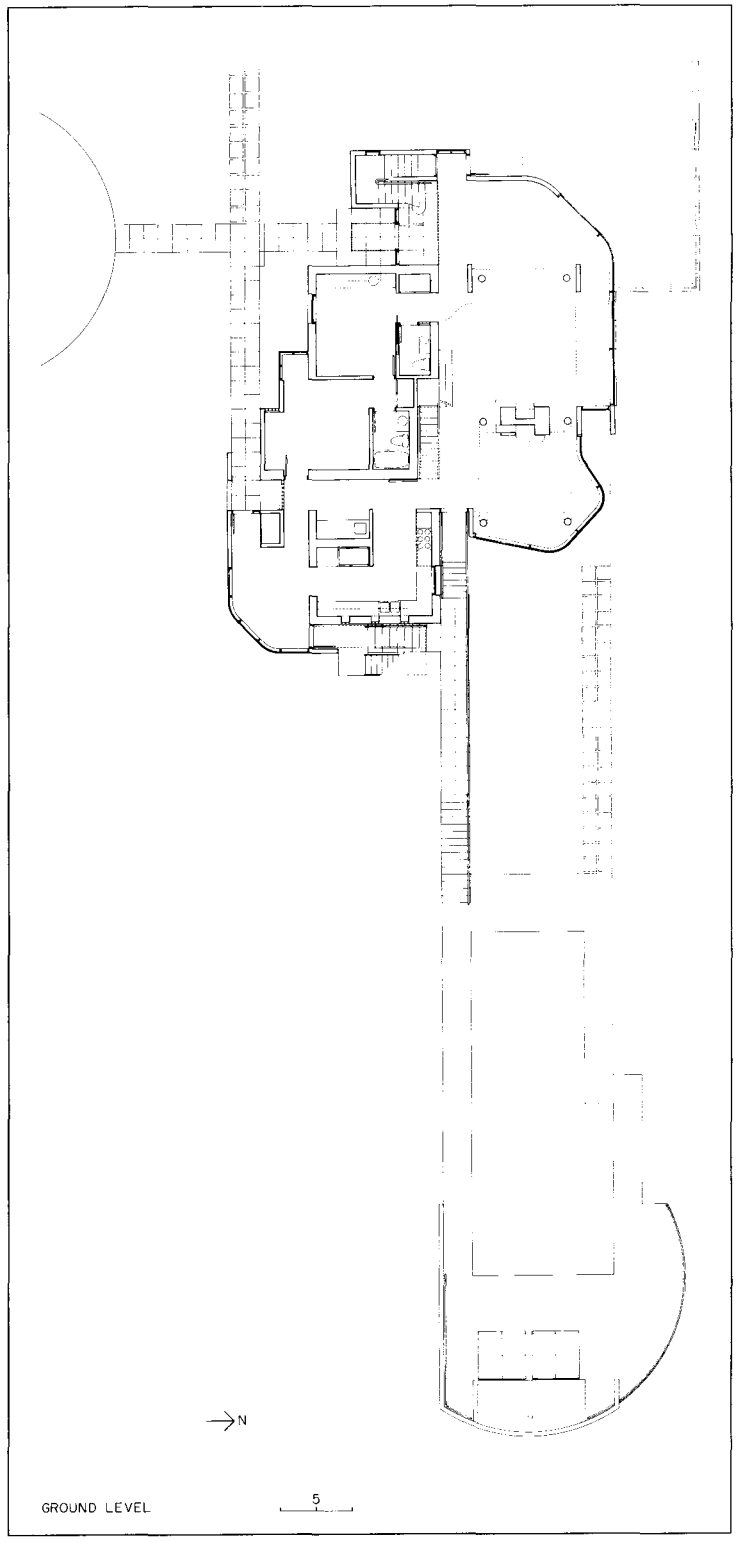


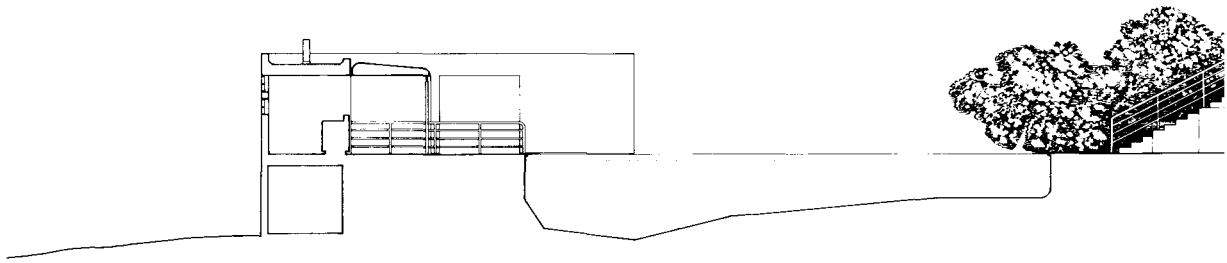


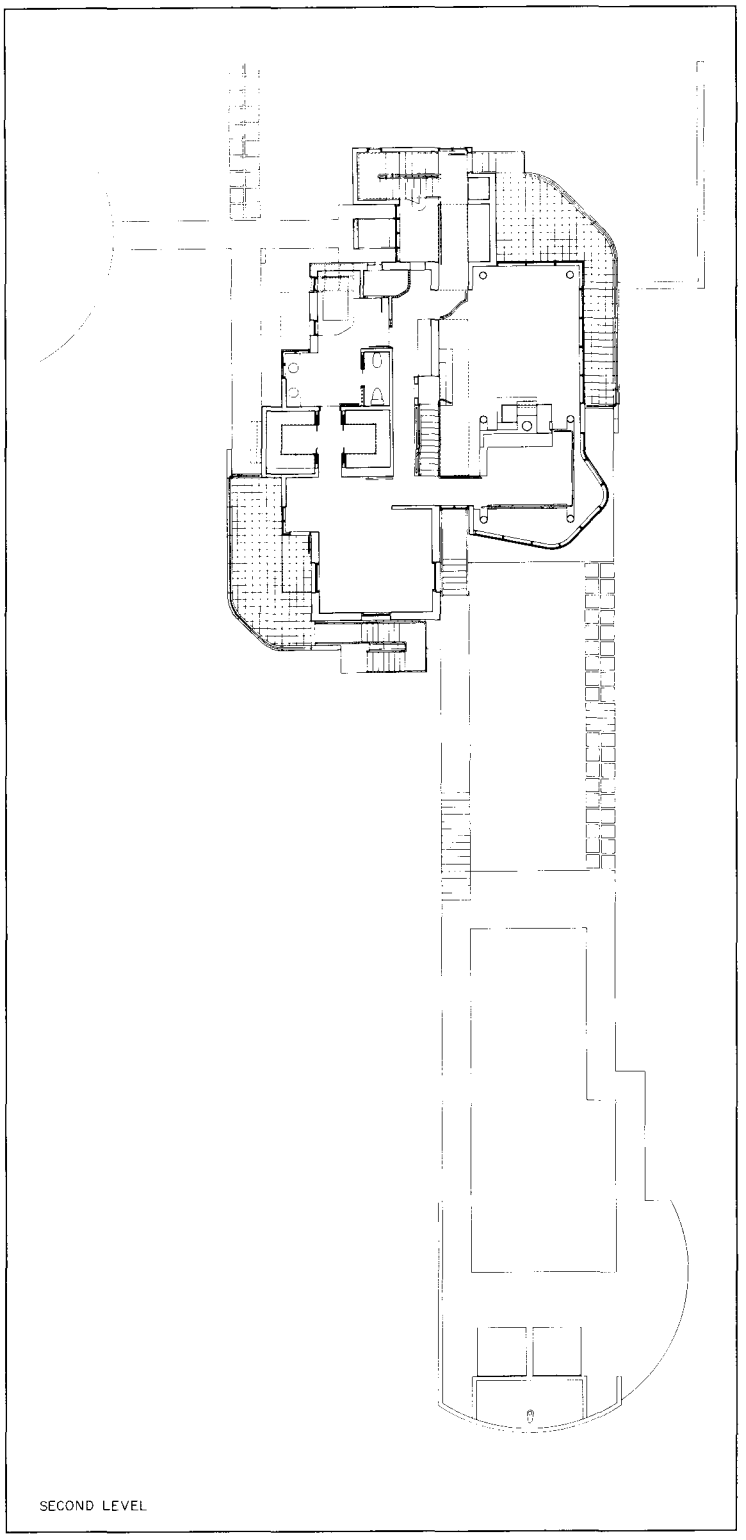
6,7

House in North Salem
North Salem, New York
Richard Meier & Partners, Architects

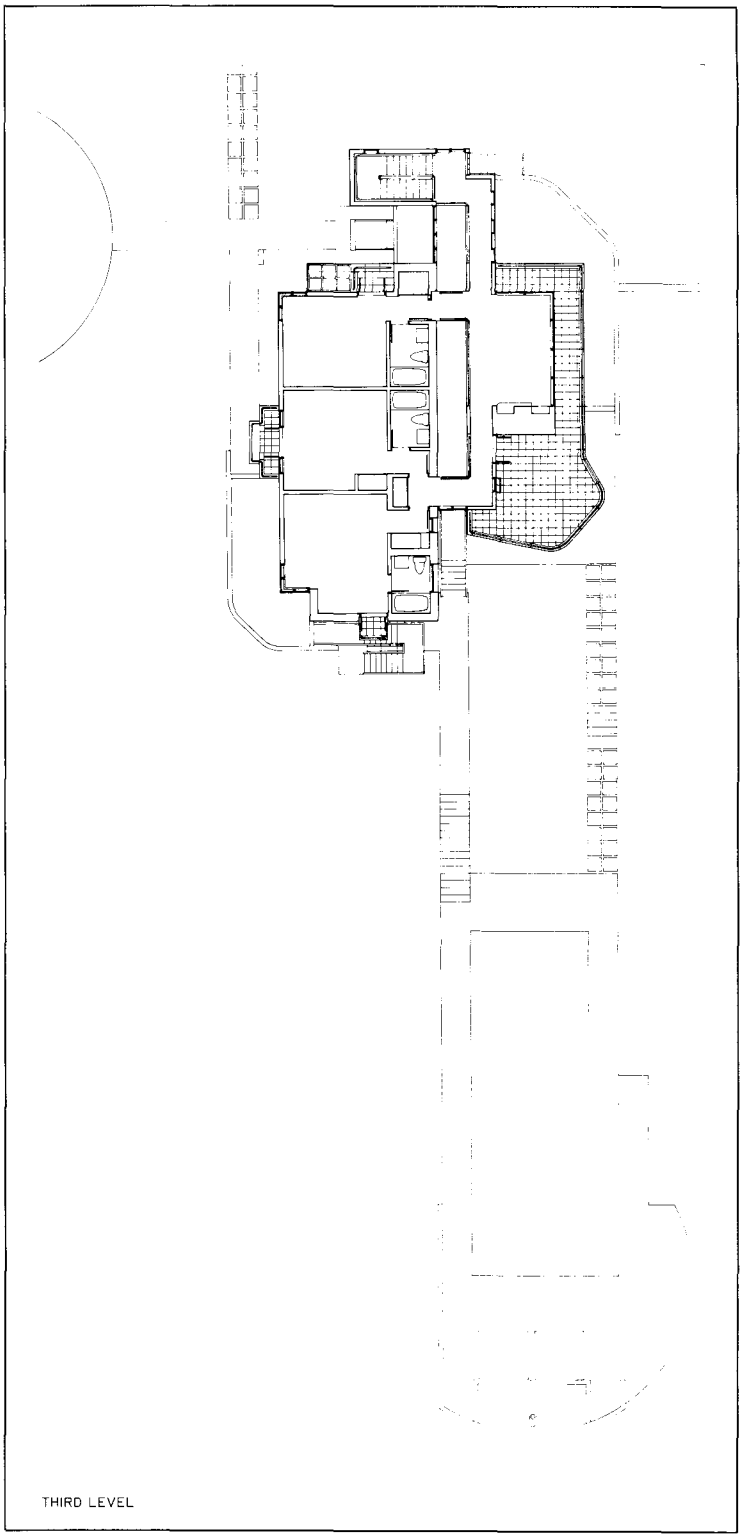
Unlike the relatively modest Giovannitti Residence in Pittsburgh (overleaf), the house in North Salem is much more along the lines of what we expect—in terms of site and scale—from the post-Pritzker Prize Meier. Scheduled for completion next June, the 6,400-square-foot house looks out over 115 idyllic acres of upstate New York farmland. As in many of Meier's earlier houses, this house is organized horizontally: the "private" areas (bedrooms) are contained in a distinct three-story enclosure that fronts the house, and the "public" areas (living, dining) are contained in a less geometrically rigid two-story annex on the back. It is a familiar Meier diagram, right down to the skylit circulation axis separating the "public" and "private" zones. The circulation axis continues through the house—finding its eastern terminus in a poolhouse, its western terminus in a garage (not shown). As opposed to the earlier, primarily wood-and-glass houses, however, Meier has expanded his material palette to now include not only white porcelain enamel panels and stucco, but concrete block. The running bond masonry will wrap the three-story rectilinear mass at the center of the house and offer a distinct counterpoint to the curvilinear metal-and-glass skin that encloses the public zone. (Meier associate Michael Palladino reports that the office is not completely sorry that the budget dictated the concrete block—as opposed to the intended granite—as the 8x16 block module will "make the house look more handmade.") Meier aficionados will take note of the entry: in earlier houses one would penetrate the solid "public" facade; here, one snakes along the masonry wall, entering off to the side.



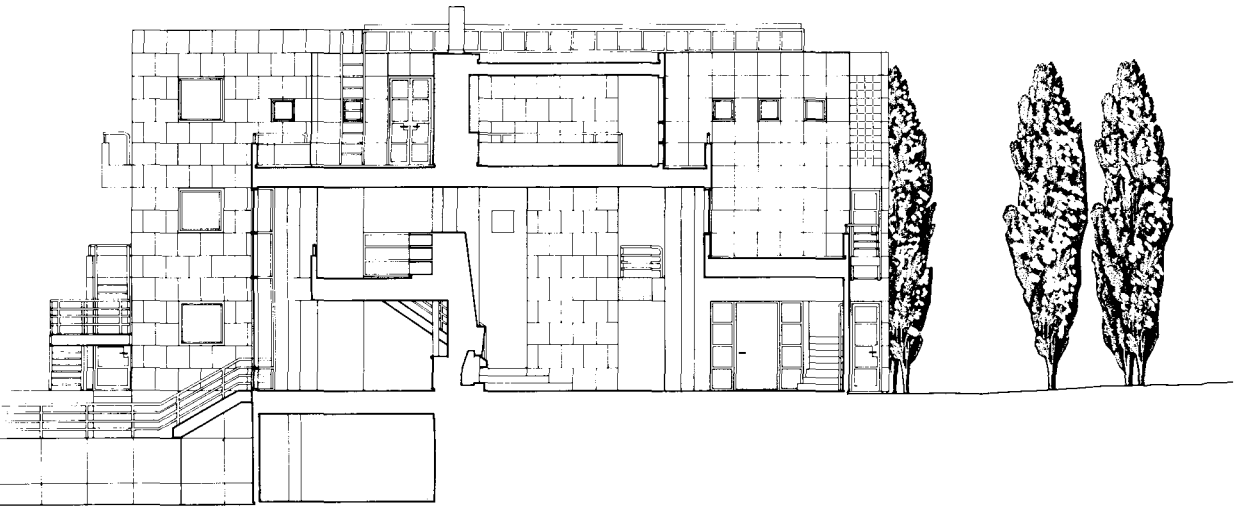




SECOND LEVEL



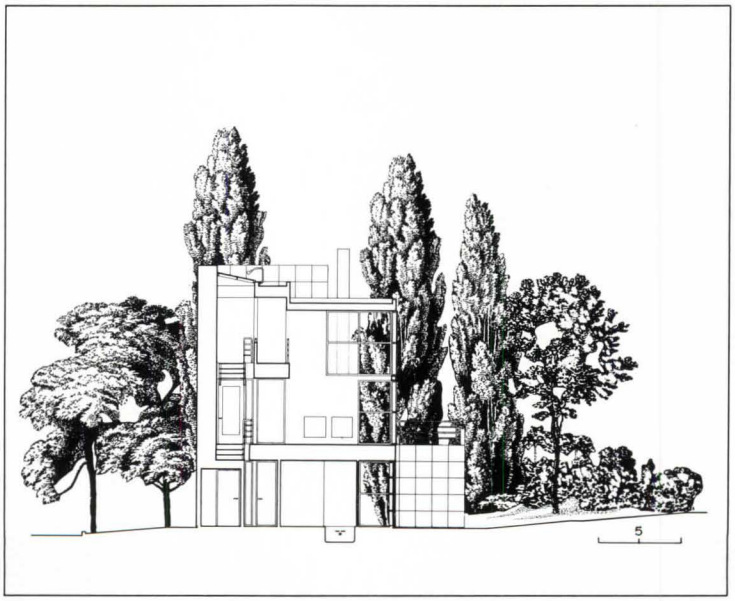
THIRD LEVEL



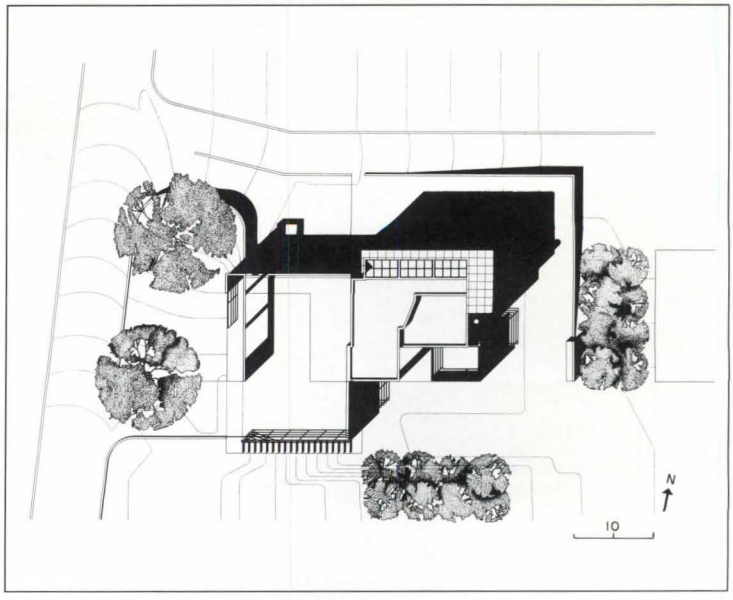
LONGITUDINAL SECTION

Giovannitti Residence
Pittsburgh, Pennsylvania
Richard Meier & Partners, Architects

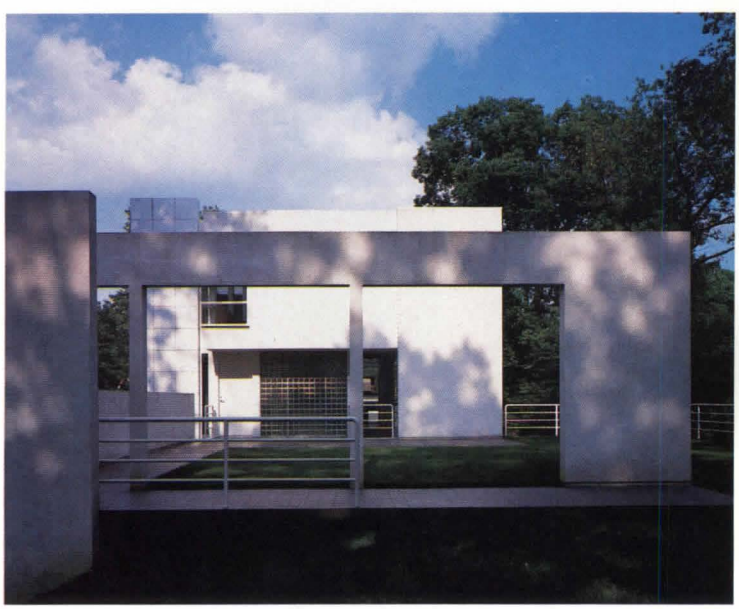
Though owner Frank Giovannitti refers to himself as "Richard's 'plain Jane' client," there's nothing remotely plain about his house—at least from the south (facing page) and east (photo right). Meier acknowledged the tight site and the dangerously near neighbors by making "as minimal a massing statement as possible." The house is a compact 32-foot double cube, "eroded" at the corners to take advantage of diagonal views to the leafy corners of the site. The obvious exception is the south elevation: heavily glazed, and open to a small terrace and yard off the ground-floor dining area, the south facade is problematic; i.e., the small terrace and yard (as well as the spaces contained within) are appreciably less private than planned. The culprit can be found in the row of evergreens intended to work in conjunction with the tiled retaining wall to shield the south from view. Unfortunately, the evergreens planted are substantially younger than the evergreens drawn; consequently privacy will continue to be a problem until nature takes its course. The primary and secondary orders of the house are registered in the window mullions: the large-scale grid over the living room identifies that space as the "radiant center" of the house; the small-scale grid over the dining area identifies that space as secondary. At least part of the allure the Giovannitti Residence holds is in the play between the solids and the voids, the opaque and the transparent. From the south, this is most apparent in the juxtaposition of the massive volumetric pieces against the more framelike planar pieces: the smooth stucco cube (containing the third-floor master bathroom) and porcelain-enamel-panel cube (containing the mechanical room) against the lacy filigree of the window wall. The small balcony projecting from the east facade not only terminates the entry axis, but situated as it is—at the corner—reinforces the diagonal vista. The Juliet-style balcony also offers a rare vantage point from which to ponder the current state of architecture: directly across the lawn is a recently completed house by Venturi, Rauch and Scott Brown.

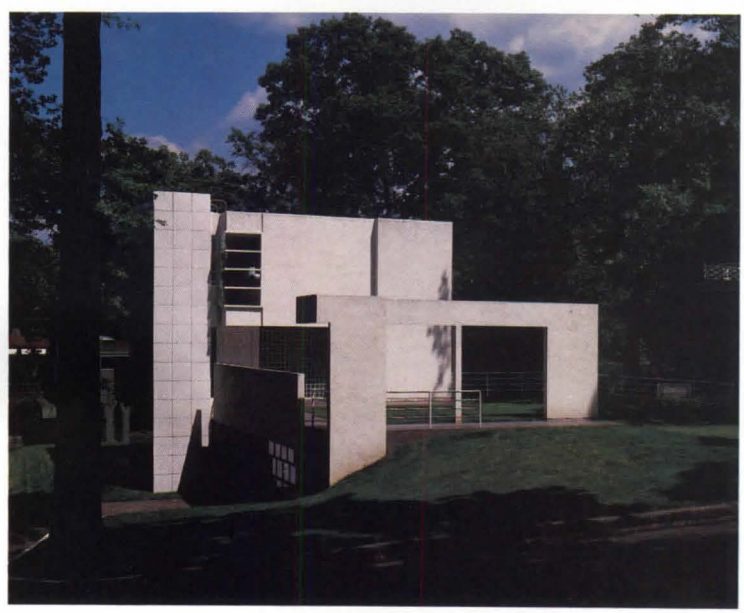


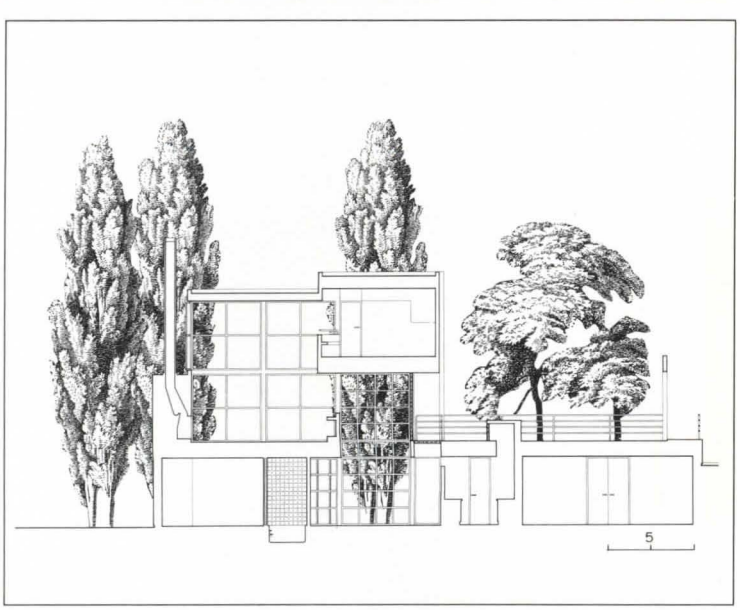
Whether attributable to 20 years of exceptionally good fortune in sites, or 20 years of exceptionally artful composing by photographer Ezra Stoller, Richard Meier's houses are rarely seen in any context other than unobstructed landscape. The Giovannitti Residence is the exception. Because the site is a diminutive quarter-acre in a venerable neighborhood, with neighbors close by, Meier resolved to keep the house as compact, and as recessive (at least from the street) as possible. The house does present a surprisingly modest face to Woodland Road (photo below). The west ("public") facade is a variegated composition: vertical and horizontal stucco planes, a corner window with streamlined mullions, a neat line of porcelain enamel panels, a wall of glass block. Except for the metal panels, the year could be 1934.

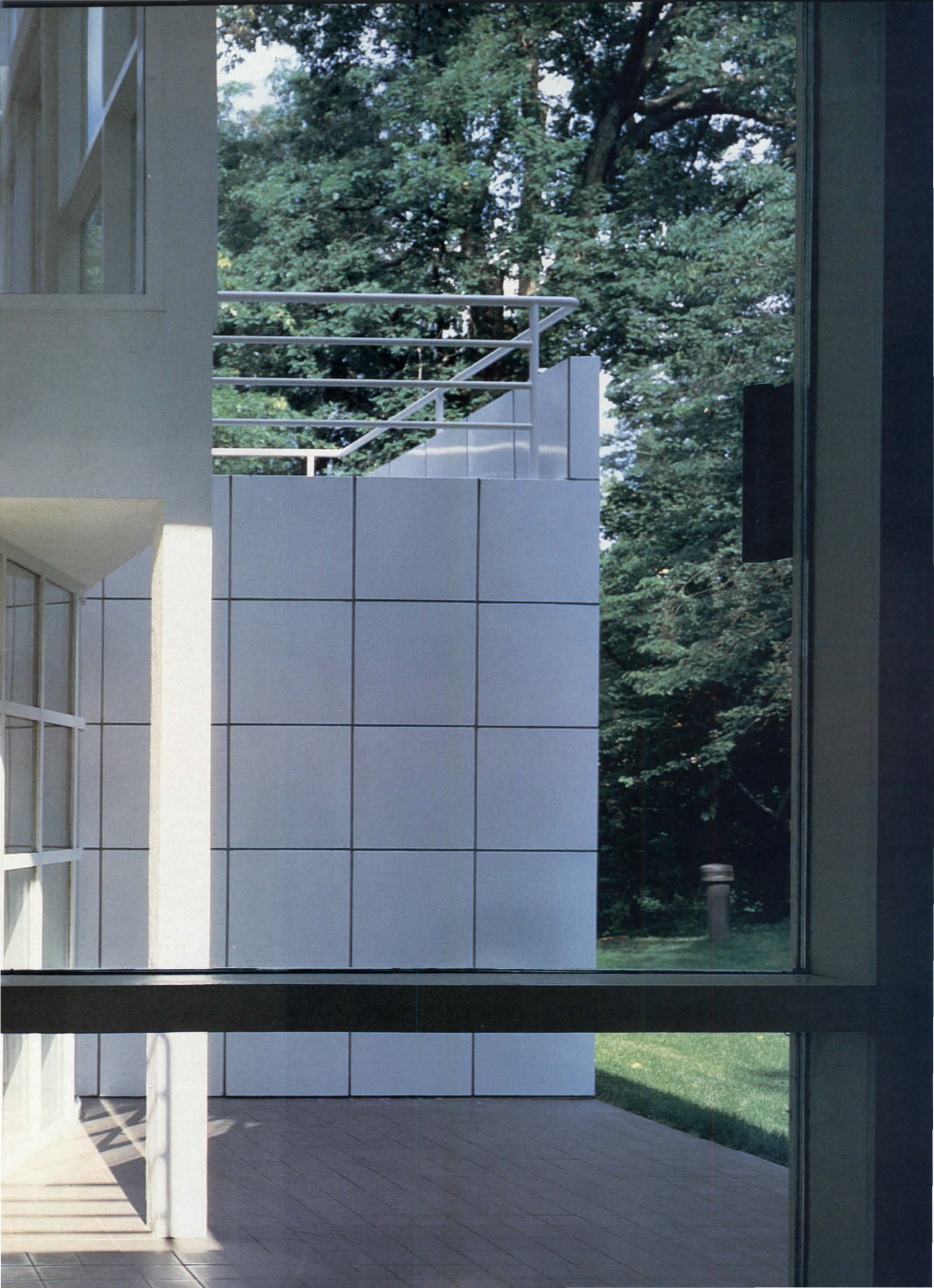


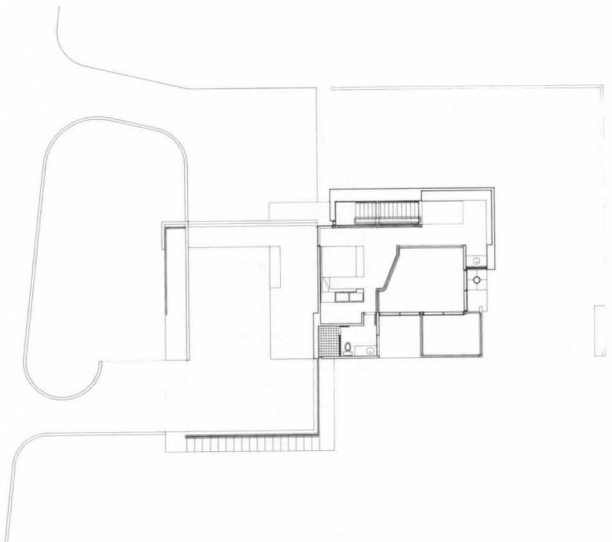
Assisting in the low profile is the siting: Meier pushed the house as far back on the sloping site as possible, which reduced the mass—i.e., the ground-floor garage is burrowed into the slope—but also broke the prevailing facade line of the neighborhood. The stucco column and beam structure traces the line where the house—had it been, say neo-Georgian—would have sat. In addition to directing visitors from a parking area in the lawn to the front door, the white frame also provides the neighbors with a ready quip for owner Giovannitti: "It looks like a gas station." Meier is good natured: "You mean they didn't say it looks like a hamburger stand?" But then why shouldn't he be? He's in good company: 44 years ago when Walter Gropius built the Frank House down the street, the neighbors didn't like it much either.



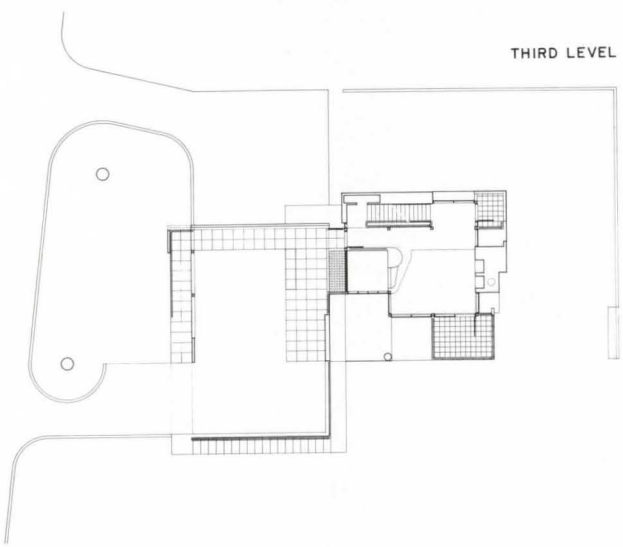




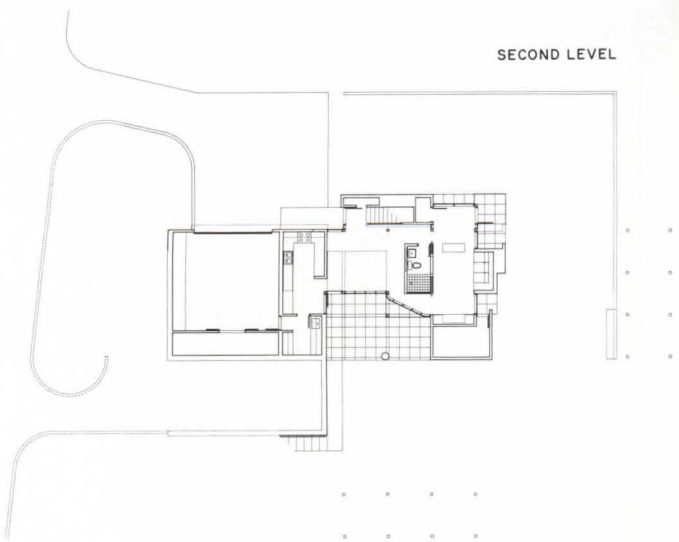




THIRD LEVEL



SECOND LEVEL



FIRST LEVEL

5

Though Meier only had 2,200 square feet to work with, he was intent that the Giovannitti Residence have a sense of "amplitude," i.e., that it should not feel like a 2,200-square-foot house. Toward that end, floor-to-ceiling interior walls are kept to a bare minimum, and double-height spaces are the rule. The first-floor dining area looks up to the second-floor entry and living area, just as the second-floor entry and living area look up to the third-floor master suite. (And vice versa.) Though the client considered the table and chairs Meier designed for Knoll, for the dining area, the price tag was "intimidating": the completely satisfactory second choice was a table and chairs respectively designed by Le Corbusier and Josef Hoffmann. In the living area, Le Corbusier appears again in classic black leather and chrome. Those concerned that the vast expanses of glass—and the absence of full-height walls—make living in the Giovannitti Residence like living in the proverbial fish bowl, should take comfort in the knowledge that motor-driven white shades can be lowered to protect occupants from the prying eyes of passers-by.

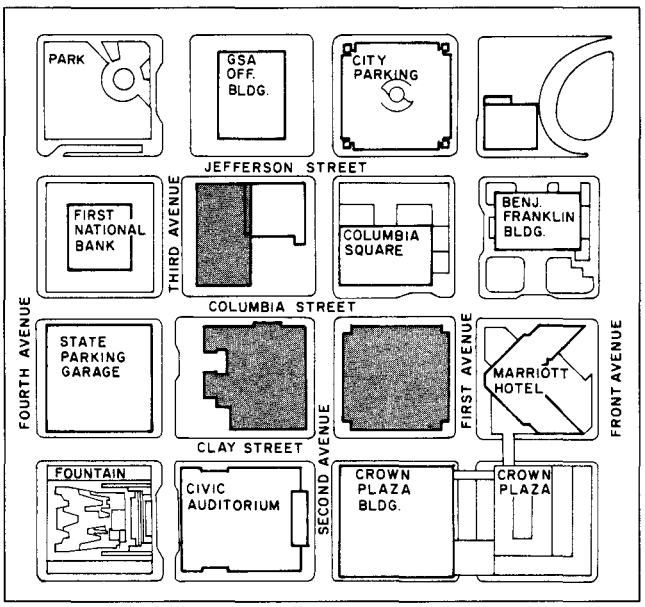
Since there are no children in the Giovannitti household, visual and acoustical privacy were of little or no planning concern. Consequently, the third-floor master suite is mezzanine-like, borrowing light, views, and a sense of expanse from the double-height living room below. The L-shaped suite includes a small book-lined study at one end, a small sleeping area, dressing room, and bathroom at the other. Though by most standards, the accommodations are spare—if not downright spartan—creature comforts are not totally denied: a television set rises from a secret compartment in the footboard of the built-in bed (photo below). The adjacent study's cabinetwork was originally slated to be lacquer, but a practical Meier and a concerned Giovannitti compromised with less costly, and less delicate, white plastic laminate. The Josef Hoffmann lamp on the Meier-designed desk is a recent addition to the architect's well-known palette of accessories. The leather-and-chrome stool, however, is a tried-and-true favorite, courtesy of, who else, Le Corbusier. Although Meier associate Michael Palladino laments that the plumber was "a fraction off" with the glistening chrome fittings in the glass block niche off the study (facing page), the architect decided not to rip it out and do it over. As Meier would say, "nothing's perfect." As the plumber and most of the rest of us would say, "Looks perfect to me."

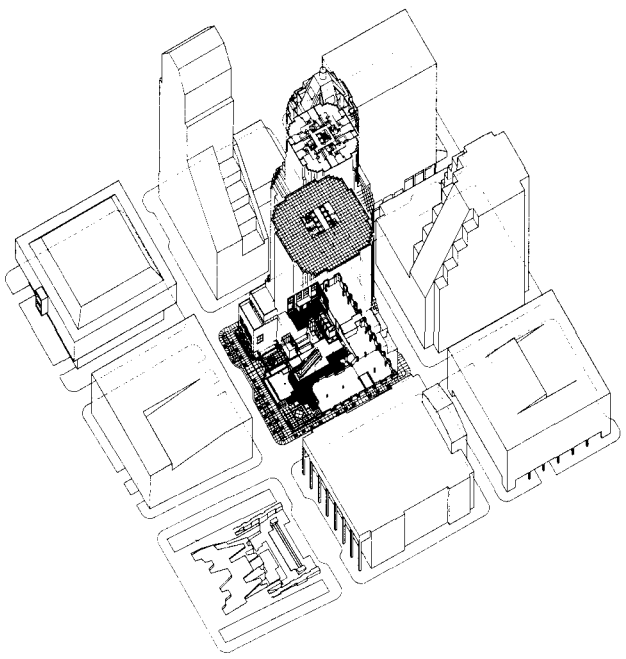
Giovannitti Residence
Pittsburgh, Pennsylvania
Owner:
Frank Giovannitti
Architects:
Richard Meier & Partners—Michael Palladino, associate-in-charge; Vincent Polsinelli, Audry Matlock, team
Engineers:
Severud, Perrone, Szegezdy, Sturm (structural)
Consultant:
Pat De Bellis (landscape)
General contractor:
Bob Hatfield

Onward and upward in Portla

KOIN Center
Portland, Oregon
Zimmer Gunsul Frasca
Partnership, Architects

The terraced massing of the hotel and office building that will eventually flank KOIN Center strengthens its visual orientation toward the existing Ira Keller Fountain (photo opposite, left foreground). The volumes of the setback tower were determined by superimposing the "footprints" of various program areas (plans overleaf). The tapered crown houses weather monitoring devices, microwave units, and other mechanical equipment. Intake for cooling towers enters through the mullioned attic windows.



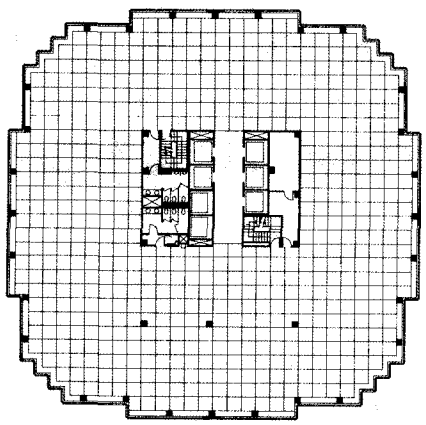


With the singular exception of Michael Graves's Public Services Building, the flat-topped high-rises of downtown Portland, Oregon, compose a far less memorable skyline than the green hills behind them. At last, however, Portland has a skyscraper worthy of the name—KOIN Center, a lofty ziggurat with a pointed crown designed by the Zimmer Gunsul Frasca Partnership. The 30-story tower recalls the kind of tall building that adorned American cities before the modernist box began to block the view. There is an ironic overtone to KOIN Center's echo of Jazz Age spires, since Zimmer Gunsul Frasca are also the architects of some of Portland's more conspicuous postwar boxes. Happily, though, the new tower's evocative silhouette does not betoken yet another of the stylistic *volte faces* that have become commonplace in current architecture. Like ZGF's recently completed Justice Center two blocks away (RECORD, June 1984), the new tower exemplifies the considered interpretation of historical sources—in this case both classical and Art Deco—to enrich the texture of present-day life. From its limestone base and marble lobbies to its painted metal summit, the multifaceted brick-clad structure reflects the internal requirements of an up-to-date mixed-use program and glorifies the external contingencies of a thriving modern city.

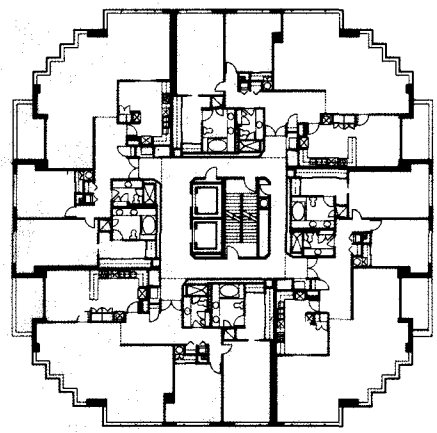
Developed by Olympia & York in joint venture with KOIN-TV and its parent company, Lee Enterprises, the $37-million KOIN Center occupies the southwest corner of Fountain Plaza, a two-and-one-half-block L-shaped complex that also includes a yet-to-be-constructed 285-room hotel and a 15-story office building (to the north and east of the tower, respectively; see site plan and axonometric). The project began less ambitiously, five years ago, as a public offering for only one and one half blocks, issued by the Portland Development Commission. Next door to the Civic Auditorium and cater-corner from the Ira Keller Fountain, designed by Lawrence Halprin, this parcel of land represented a critical juncture in the city's long-range planning—a linchpin joining the dense central business district and government sector to the north with less clearly focused commercial and entertainment zones to the east, south, and west. The PDC also hoped that increased amenities, in addition to already convenient access to parks, public transit, and an emerging performing arts center, would make this area an attractive location for downtown housing.

Olympia & York adroitly outstripped six competing developers by negotiating the annexation of an adjacent block (east of Second Avenue), then occupied by KOIN-TV's low-rise headquarters. Besides inducing KOIN to cancel an anticipated move to the suburbs, in exchange for a prominent location as tenant in the new complex, this timely real-estate assemblage permitted the architects to coordinate off-street loading, underground parking, and below-grade pedestrian connections for all three buildings.

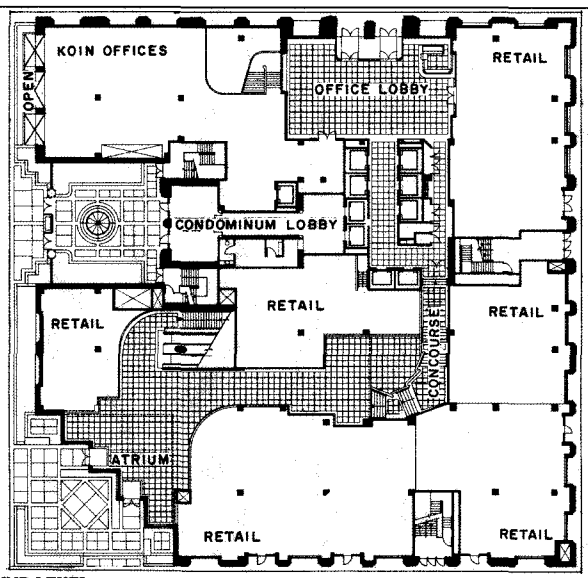
The massing of Zimmer Gunsul Frasca's tower resolves stipulated floor-area ratios and building-height regulations with the stratification of program areas (plans overleaf): television operations, retail, and entertainment facilities are inside the base; offices and 44 condominiums are in different layers of the shaft; and broadcasting and microwave reception equipment are housed with other mechanical apparatus in the crown. The setbacks that demarcate these sectors, and maximize their exposure to light, views, and outdoor terraces, also tie the tower visually to the stepped cascade of the Keller Fountain. A corner retail atrium oriented toward the water garden further integrates it into a network of busy pedestrian pathways. Separate portals and lobbies distinguish the different character of office and residential entrances (details pages 140-141), and satisfy their particular demands for security and prestige. There is no need for the developers to fabricate a marketable "image" for KOIN Center, since the building is an instant landmark. Wisely, like the occupants of great prewar skyscrapers, KOIN-TV uses its tower's silhouette as an unmistakable logo. Next, perhaps, they can book King Kong for a visit. *D. B.*



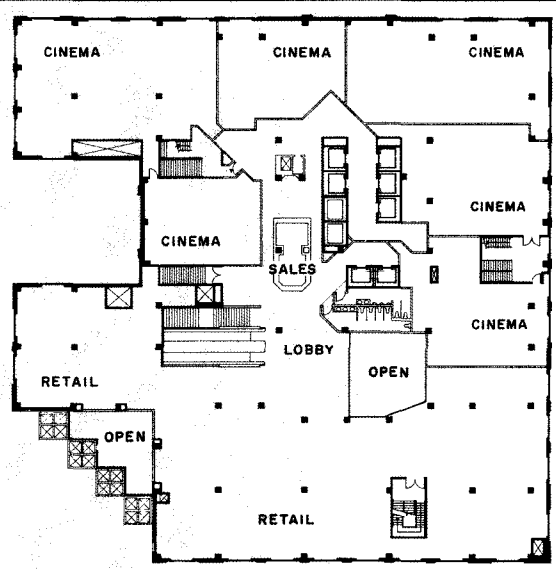
TYPICAL OFFICE FLOOR



TYPICAL CONDOMINIUM FLOOR



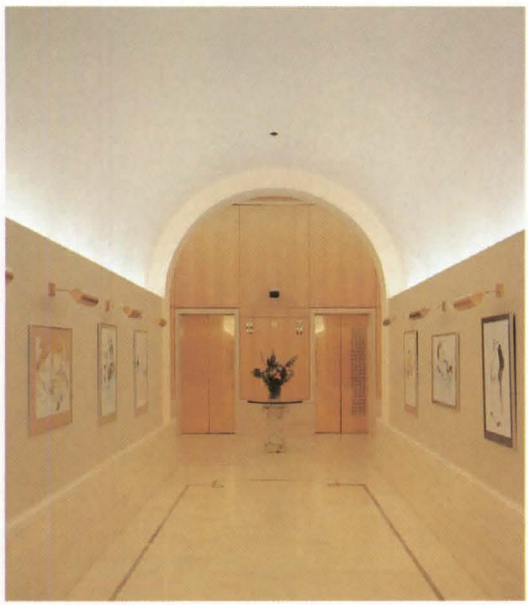
GROUND LEVEL

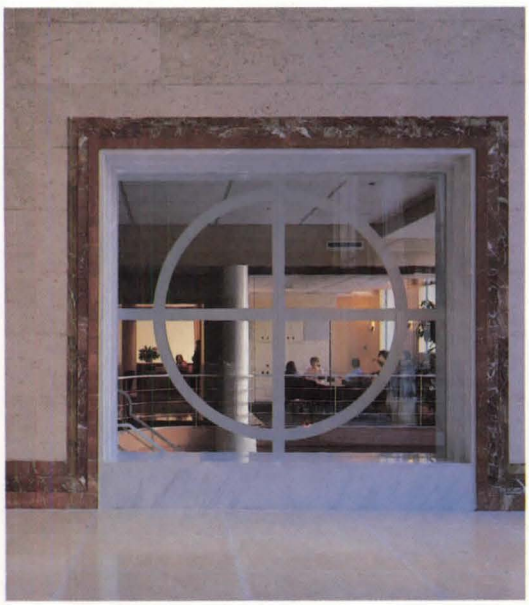


SECOND LEVEL

Not shown in the plans is an underground loading area that serves all three buildings in Fountain Plaza. The centerpiece of this extensive utility zone is a 55-foot-diameter truck turntable, to which delivery vehicles descend via 60-foot-long elevators. Elsewhere in the basement layout, there is room for a 655-car garage. Because many of KOIN-TV's technical operations require artificial light and heavy acoustic insulation, broadcasting studios were built below grade, with only a single tier of executive offices at street level. The remainder of the ground floor and the story above comprise an intricately dovetailed network of through-block circulation, commercial lobbies, shops, cafés, restaurants, and movie theaters, as well as the private entry to luxury condominium residences on floors 19-29. From a distance, the 435-foot-high tower appears to be a symmetrical composition, but viewed close-up, KOIN Center presents a varied sequence of facades. Different patterns of fenestration, portal schemes, and limestone and granite trim denote the individual character of each entry and the neighboring streets. (Portlanders have commented on the similarity of the tower base—in its proportions, materials, and stripped

classical detail—to wings of their city's art museum designed in 1932-8 by Pietro Belluschi. ZGF design principal Robert Frasca welcomes the comparison.) The recessed courtyard of the west facade on Third Avenue (upper left, lower right), set back behind gateposts and an iron grille, befits the reserved dignity of the condominium entrance (detail overleaf). In contrast, the projecting glazed atrium at the southwest corner (upper right) suits the extroverted retail gallery within—and reiterates the form of the masonry fountain diagonally across the street. Mediating between these extremes of privacy and public invitation is the office portal (lower left), facing Columbia Street. On all sides, KOIN Center satisfies city guidelines prescribing windows and other features of visual interest at pedestrian height. Although the podium of the tower preserves the urban street front in every direction, Zimmer Gunsul Frasca has left an extra margin along Third Avenue (bottom right) to allow a broad vista between the Ira Keller Fountain and the park blocks to the north. At street level, where it can be appreciated by passers-by, reinforced brick cladding is subtly enriched with a third-point bond.





An interior window, etched with an emblem resembling a television test signal, permits a glimpse of KOIN's headquarters (upper right, lower left) from the marble-lined general office lobby. Behind the window, an open stairway connects reception and executive areas on the main floor with a staff lounge below—symbolically affirming cooperation between the "front office" upstairs and the extensive complex of technical departments downstairs (lower right). More intimate in scale, the barrel-vaulted condominium lobby (upper left) exudes an air of exclusivity, especially when seen beyond the Third Avenue palings and an imposing gateway inscribed with the Fountain Plaza monogram (opposite). Water coursing over an illuminated polygonal skylight creates a shimmering beacon at the heart of the forecourt.

KOIN Center
Portland, Oregon
Owner:
A joint venture of KOIN-TV and parent company, Lee Enterprises, Inc., and Olympia & York Properties (Oregon), Inc.
Architects:
Zimmer Gunsul Frasca Partnership—Robert J. Frasca, design principal; Larry Bruton, Greg Baldwin, Ev Ruffcorn, Wally Roeder, Stewart Straus, Bill Hutchinson, Kelly Davis, Vern Almon, John Harrison, project team; Brooks Gunsul, partner-in-charge
Engineers:
kpff consulting engineers, Adjeleian & Associates (structural); Peterson Associated Engineers, Goodkey Weedmark & Associates (mechanical/electrical); Keith Jenkins & Associates (vertical transportation); Valcoustics Canada Ltd. (acoustical)
General contractor:
Donald M. Drake Company

A positive presence

Tallahassee City Hall
Tallahassee, Florida
Heery & Heery, Architects &
Engineers, Inc.

Timothy Hursley© the Arkansas Office photos

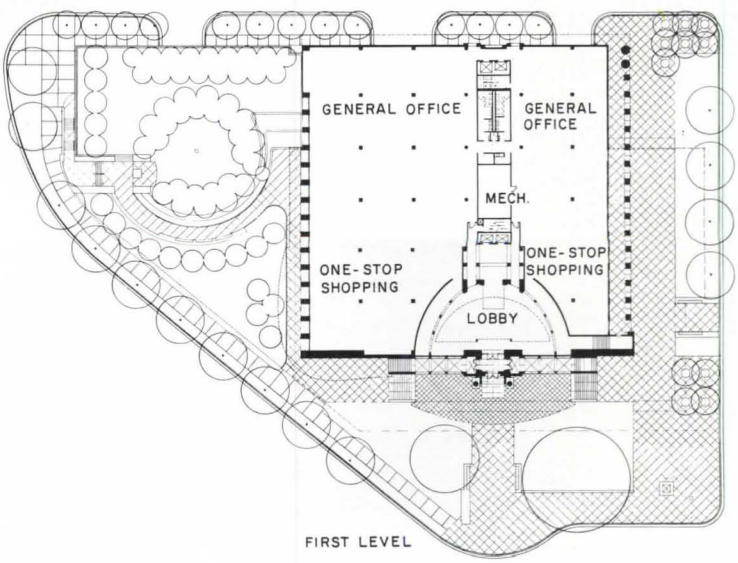
As a pivotal point between vastly different scales, styles and architectural contexts in downtown Tallahassee, the design of its new City Hall creates an appropriately strong and highly sympathetic identity for the city government. The site links the small-scale, colorfully eclectic business district with the brightly white-painted buildings of the massive Florida State Capitol complex—and is on axis with an "historic" white stone County Courthouse.

The compact and cohesive business district is predominately a low-rise, vintage mix of red brick and painted wood buildings, replete with patterned galleries, covered sidewalks and mullioned windows—an almost prototypical Southern town. Conversely, the adjoining State complex is loosely sprawled amidst parking lots and parks dotted with live oaks and palmettos. The buildings are mostly big, stolidly four-square, and range from Edward Durell Stone's assertive late-1950s high-rise to the recent, serenely colonnaded District Court of Appeals by William Morgan (RECORD, January 1983).

To keep from being "lost in the shuffle" of this business and tripartite government mélange, the architects have created a building that is forcefully individual, yet makes significant gestures and "allusions" to all its neighbors: relating to the business district are the warm brick facades, the low profile, definite windows, colonnades, covered walks, and a quietly urbanistic facade facing the downtown area. Its positive, sculptural mass, somewhat classic and monumental entrance, and a garden overlooked by a ceremonial balcony help it merge into the context of the Capitol plaza.

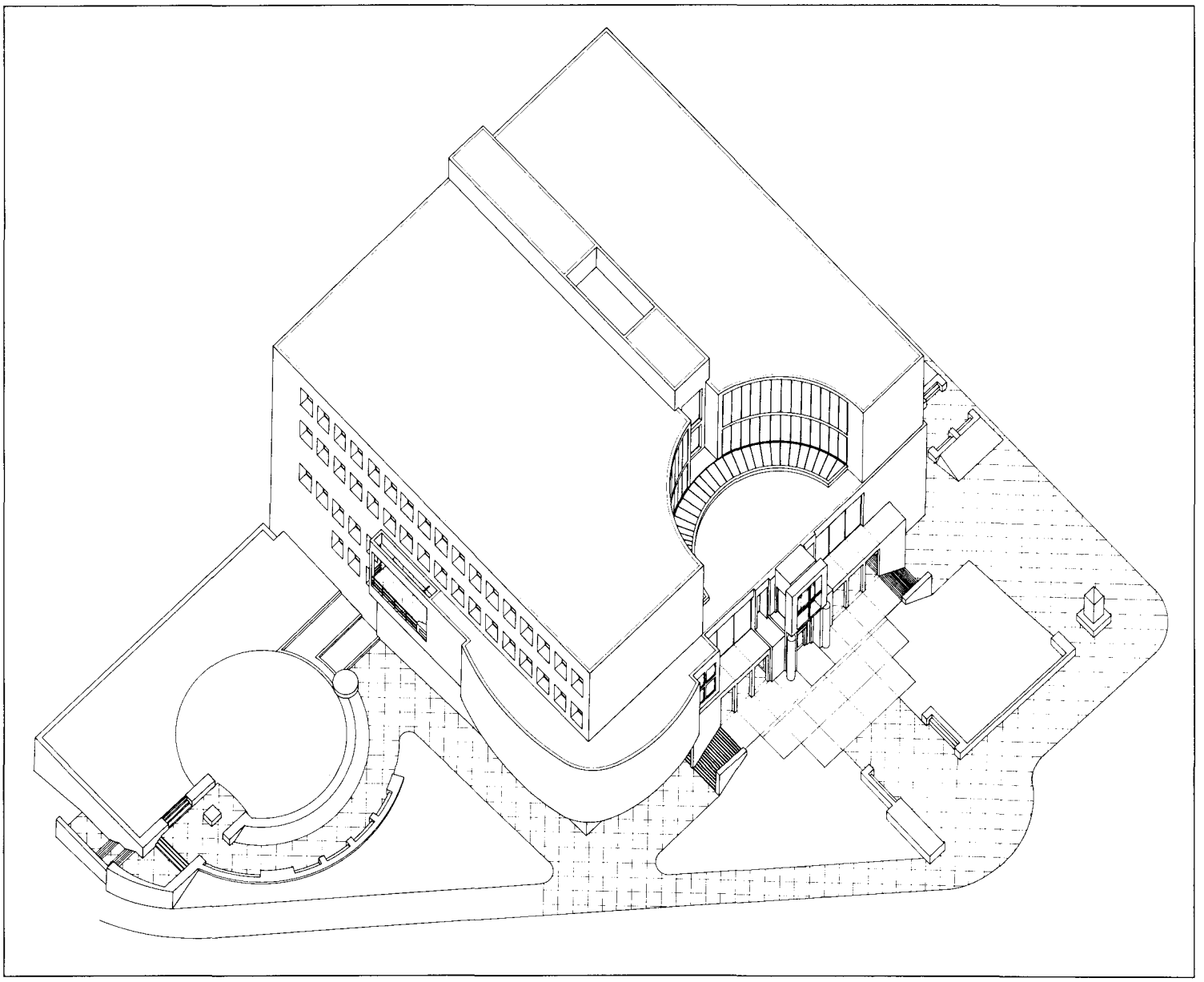
To gain maximum flexibility, the City Hall is a loftlike, steel-frame structure, with steel deck and concrete floors, and a slightly off-center utility spine. Exterior walls are insulated metal stud and brick veneer. Its four floors (133,000 square feet) house facilities for all city government officials and commissions—with room for growth. To cope with inevitable, ongoing changes in space requirements, the open-plan floors are partitioned with standard half and full height movable units. A grand, apse-like, two-story lobby has a "one-stop shopping center" for basic public services counters on its lower level, and a ceremonial stair leading to the City Council chamber and lounges. Total cost was about $9 million.

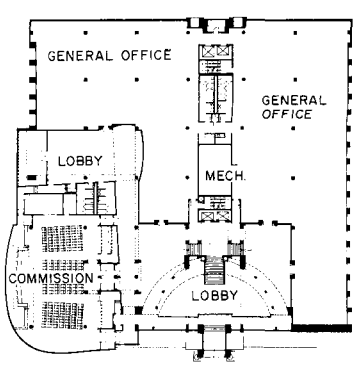
At, reportedly, less than a one per cent increase in the original cost estimate, energy usage was cut to 35,138 Btu per square foot per year, compared to the average 65,000 Btu used by similar buildings in the area—achieved by extra insulation, reduced and double glazing, HID lighting, and unitized hvac systems, with a solar hot water system.
Herbert L. Smith, Jr.



FIRST LEVEL

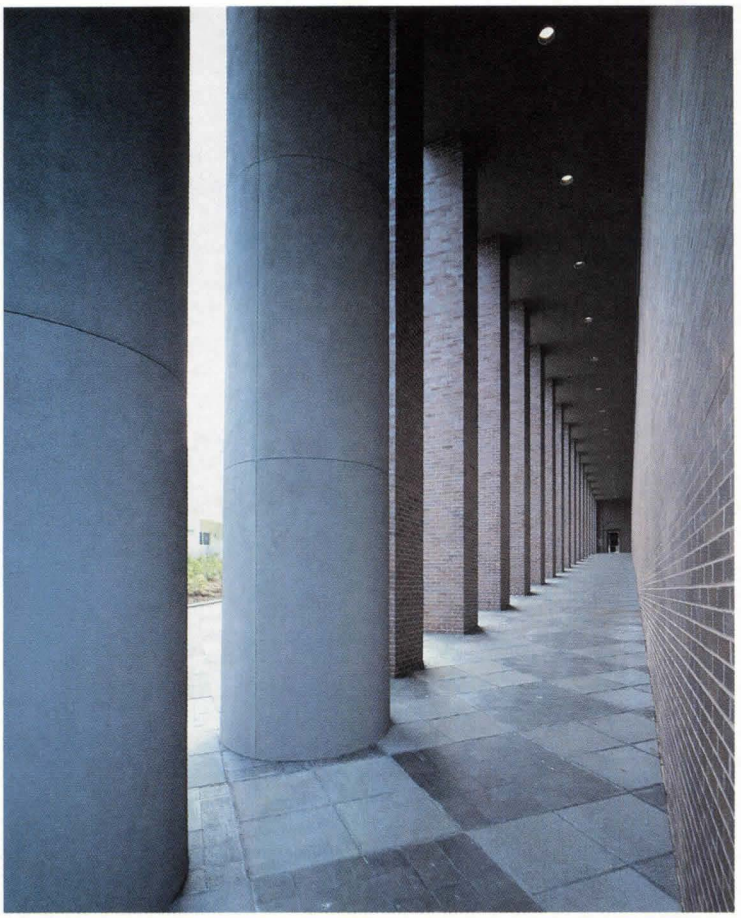
The Tallahassee City Hall continues the park setting of the State Capitol complex (photo top left) and serves as a strong transition between the small scale of the business district and the massive capitol (photo bottom left). The main civic interior spaces are clearly defined on the exterior by darker brick and swelling shapes. Equally positive is the postmodern front entrance.





SECOND LEVEL


CITY HALL



Promenades, plazas and colonnades surround the Tallahassee City Hall—and even extend into the interiors. Unlike some current buildings with postmodern "allusions" (perhaps the 1930s "old south"?), the materials are solid and rich: facing of two tones of brick; exterior paving of brick and precast concrete squares; the front door of polished bronze flanked by marble pilasters; columns of granite.

The main lobby is a spacious, brightly skylighted room, surrounded on the lower level by curving, shoji-like frosted glass walls with counter windows for "one-stop shopping" to obtain licenses, make payments and the like. From the polished terrazzo main level, a ceremonial stair of terrazzo, perforated metal and bronze railings leads to the City Council Chamber and its surrounding galleries and lounge areas.

Tallahassee City Hall
Tallahassee, Florida
Architects and engineers:
Heery & Heery, Architects & Engineers, Inc.—Vic Bowman, project director; Mack Scogin, project designer; George Taft, project architect; Merrill Elam, Chuck Clark, Barbara Crum, Roy Fragiamore, Wylie Gaston, Gordon Smith, Bob Watson, project design staff
Consultants:
Post, Buckley, Schuh & Jernigan (landscape); Heery Interiors, Inc. (interiors); Heery Energy Consultants, Inc. (energy planning); Heery Program Management, Inc. (costs, scheduling)
General contractor:
The Allen M. Campbell Company


FLORIDA

"Play it again, SOM"

All buildings eventually lose their owners to time. The 1980s are when many buildings of the 1950s will start to wear, and the original owners will seek to expand elsewhere. Our ability to preserve these buildings will depend upon the strength of the ideas supporting them and the ability of each design to continue serving our needs. The goal is not to try to freeze time but to evolve the buildings as the culture evolves.

A look into the immediate past reveals grand visions for technology, geometry, and detailing. As we look into the future, there is a new vision, something that John Naisbitt in his best-selling book Megatrends *identifies as "high tech/high touch." As he states it, "We must learn to balance the material wonders of technology with the spiritual demands of human nature." The more technical the society becomes, the more important the subjective decisions about buildings become. High technology allows us to quickly accomplish the black-and-white world of possibility and enter the colorful world of visions, just beyond the logic of our minds and our machines.*

For twenty years the fifty-two-story Union Carbide Building stood as the tallest pinstriped suit overlooking the canyon of pinstriped-suited buildings that is Park Avenue, New York City (see RECORD, November 1960). It is the neighborhood where the Seagram Building, Lever House, and the Pan Am Building all compete for a piece of the sky and the skyline. One and one half million square feet of vinyl luminous ceiling illuminated the offices, spilled into the street below, and lit up the skyline; it was a benevolent building in the 1960s but an extravagance in the 1970s. When the time came to expand, Union Carbide took the train beneath its feet (Grand Central Station is next door), left town, and went to work in the Connecticut countryside (see RECORD, October 1983).

Manufacturer's Hanover Corporation bought the building to house the 3,000 employees of its world headquarters. The investment alone yielded a handsome profit for the bank. After remodeling was complete, the bank was occupying $250-per-square-foot space for which it had paid about $125 per square foot. The bank chose the original architects of the building, Skidmore, Owings & Merrill, to evaluate the options for renovation; Gordon Bunshaft, the original chief designer, had retired but many other members of his original design team were available. Davis Allen, who designed the furniture for the first client, was to design the furniture for the second. Syska & Hennessy again served as the mechanical engineers with the same principal, Arnold Windman, in charge. The structural engineers, Weiskopf &Pickworth, were also the same and once again Anthony F. Nassetta served as the partner-in-charge.

We might suspect that in such renovations the large corporate client's computer simply hooks up by modem to the large corporate architect's computer and everybody has a cigar until the solution appears; this is true high tech. What actually happened was that people met with people for 36 months; this is true high touch.

The job for the architect grew, organically, with the conversations. What started out as a basic renovation analysis resulted in a redesign of most of the major spaces in the building. As Union Carbide moved out, Manufacturer's Hanover moved in, many times in an unpredictable sequence but with no more than six floors disrupted at a time.

Certain modifications had to be made to the building regardless of who would be the occupant. The code changes in the last 20 years in New York City implied two new elevators for barrier-free use, a new sprinkler system, and no more vinyl ceiling. The electrified cellular floor was packed with cables from the changes in Union Carbide's communications and power over the years. Each cell had to be gutted to make room for fresh needs. On floors with particularly large computer demands, power cable space had to be increased.

Certain aspects of the original building could be left undisturbed. Stainless steel is manufactured by Union Carbide and the stainless steel curtain-wall that originally served as a showcase was still in excellent condition and still exceedingly handsome. The clear glass represented an opportunity to provide daylighting deep into the building to help reduce the electric lighting bills.

The only change in exterior appearance of the building to reflect the new owners took place in the plaza and lobby level. The pink terrazzo plaza was replaced by 50,000 square feet of Canadian black granite, with a row of mini-geysers splashing on the side. The proximity of Union Carbide to Grand Central Station (with two layers of track beneath the building) eliminated the possibility of basement elevator equipment and produced a mezzanine boarding level for the elevators. Escalators brought passengers from the ground floor. While Union Carbide used the mezzanine for exhibitions, MHT chose to eliminate 3,000 square feet of the mezzanine to provide a lobby with a 42-foot-high entry space. Substantial redistribution of structural support took place to permit bracing of the tall columns originally braced by the mezzanine floor. Additional framing was also added to accommodate the loss in wind shear resistance provided by the mezzanine. The result was literally a facelift for the building at the street level, especially at night, when the flashy new red sheathing radiates to passers-by.

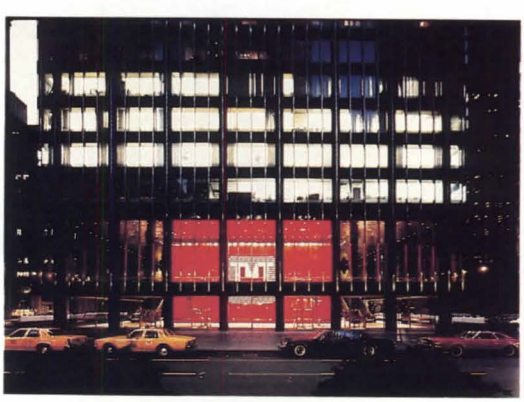
The first real question mark of the project was the typical office space. The SOM design for the typical Union Carbide floor was a highly sophisticated system that integrated the ceiling, wall panels, lighting, and air supply and return. It was a customized design that was expensive to produce and so integrated that scrapping it would mean starting again. One clear advantage of the original system was the obvious speed with which a revamped version could be put into service. Each phase of the building redesign was on a very tight schedule—there were only 18 months to design and complete the customer contact floors.

The major obstacles between the past and the present were twofold. The new owners wanted an open office plan, not closed cubicles as with Union Carbide. Second, the energy costs for running the building were unacceptable.

The original design included a luminous ceiling. The vinyl ceiling panels served also as light diffusers for the luminaires. The grid which held the ceiling in place had been ingeniously designed with a slotted system that would allow both wall panel connection and air supply and return to take place. The wall panel system was detailed to allow frequent relocations and provide a variety of ceiling heights. The desks and office furniture were custom designed to match the wall panels and ceiling system. The prime decision was how to reduce the electrical consumption in the ceiling—where consumption was four watts per square foot. The architects chose to lower the existing partitions' heights by cutting down and recapping them, allowing daylight to seep over and around the panels. The ceiling power system could be saved by running the ballasts for the lamps at half power and increasing the efficiency of the diffuser panel. Task lighting was virtually eliminated while the illumination from the ceiling was less than two watts per square foot. The ceiling remained luminous with sprinkler heads added. A variable air volume system replaced dual ducts. A new problem was created by reducing the height of the partitions—the new path the sound could travel in the open office. For this purpose, an acrylic waffle design for the ceiling diffuser panel was introduced. The new configuration permitted the acrylic to be very thin and lightweight in order to diffuse the reflecting sound.

Such highly customized solutions typical in the original environment proved to be something of a problem for the new owner. Five hundred thousand square feet of customer contact area was to be designed to the quality level and rigor of Union Carbide, but with the added

The original plaza level and lobby for Union Carbide (top two photos) are contrasted with the renovated Manufacturer's Hanover Trust design and plaza fountains (bottom photos). Skidmore, Owings & Merrill design principal Raul de Armas explains: "In 1960, it was an element of pride to provide great quantities of light in a lobby; in the 1970s it became a sin."



Photos courtesy of Skidmore, Owings & Merrill

imagery appropriate to a bank—which means, of course, woodwork. Even a bank has trouble finding veneers at a reasonable price, so the designers chose "reconstructed wood"—created by processing very common South American woods to produce uncommon veneers. The trees are veneered and the thin sheets are pressed into contoured molds between layers of resin. The mold configurations and irregularities create a whole variety of grain patterns when the new laminates are veneered a second time. The appearance can be that of highly exotic burls and identical matchbooked panels. Base metal becomes gold. Discovering this solution to the woodwork made possible extensive paneling in customer contact areas.

Once it was determined that the existing ceiling grid and panel technology could be used, the task remained to find out just what interior spaces the bank wanted and how to accommodate that need with the revitalized systems. One historic transformation which has occurred since the original design, of course, is the introduction of the desktop computer. Huge banks of files in the old office space had been replaced by wafer-thin storage disks. This means a difference in the tools at the hands-on level and a different role for the storage of information. There was no question about the arrival of high technology.

But the major challenge for the architect was to discover the difference in image between office space for a bank and that for a research-oriented industrial giant. Clearly the sharp, clean intersection of planes that passed for universal office space in the 1960s was not appropriate to the full range of spatial needs that an international bank has. These needs spanned from the most mundane space for a copying machine, to computer rooms, to general open office for the bank's internal affairs, to customer contact at the metropolitan, national, and international levels. As the stakes got higher, the space got more and more personal; the special needs spanned from high tech to high touch.

The architect chose to maintain the original interior system throughout the building and to produce a much greater range of space types than originally intended. Also at stake for SOM was the breaking of the formal mold in which their reputation had for so many years been cast. The bank, after all, wanted a "traditional feeling" in the executive offices. And we are talking museum-quality antique furniture!

The result was therefore a marked contrast to the original building. Open offices replaced the cubicles. Daylight filtered into the spaces and the footcandle power went down. The architect proved that he could play the old music with a new beat. Then he opened up the keyboard and played a whole range of spaces with precision, a confidence of detail, a quality of material, and an attention to proportion.

The spaces within the building vary from the impersonal to the highly personal, from the space with art on the wall to the space where the room itself is the art. There is a citylike variety from the public to the private space. The bank literally transforms its "briefcase" space step by step into "wallet" space. Of particular contrast is the space used by the bank to receive money and the space they use to invest it. To receive money, the bank provides flowers, wood panels, and overstuffed chairs (high touch). To invest their money, the computer screens flash numbers with the excitement of a moving marquee on Times Square (high tech).

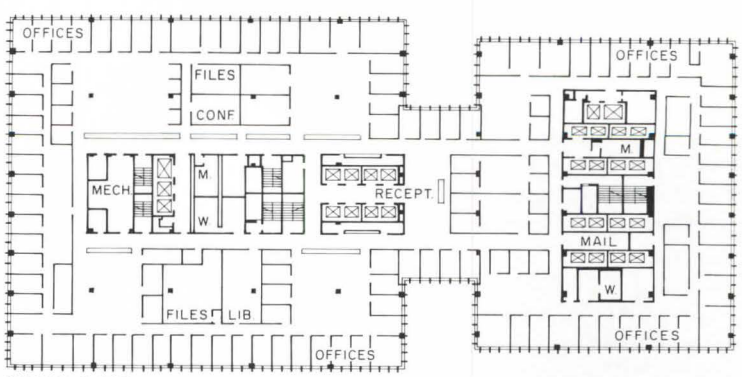
The task of redesigning a building 20 years later is one of very high risk. When Union Carbide was designed, the building was compared favorably with the designs of Mies van der Rohe and Eero Saarinen. Such company can be intimidating. To use the redesign to create a bold new expression is a tribute not only to the designers' courage, but to how well they listened to the old masters.

Richard Rush

Enclosed cubicles were replaced with low, open partitions

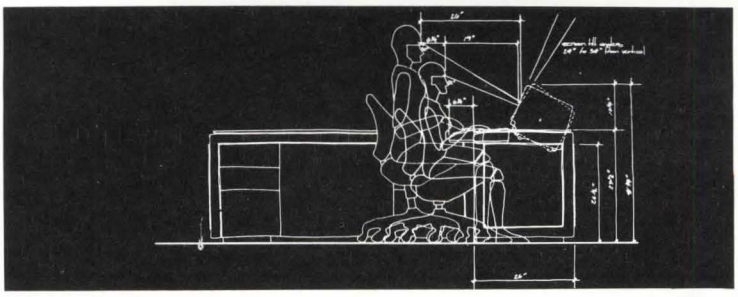
A typical floor plan from the Union Carbide building is compared with a typical floor of the Manufacturer's Hanover Trust below and right. At bottom on this page, the floor plan is a ring of cubicles. At bottom opposite is the more typical open office of today.

Just two decades ago, the storage of information meant the accumulation of vast quantities of paper in file drawers. Union Carbide employees used the spaces shown at the right to retrieve information. In the office space, grid lines dominated the interior vistas. The highest rigor took place in the ceiling where the translucent vinyl panels formed the ideal plane to which the plan could respond. The cubicles formed as work space produced long corridors of crisply defined perspective spaces. The furniture was raised above the floor plane to allow the floor its own planar expression. The contrast between the Union Carbide space and the new quarters for Manufacturer's Hanover Trust are clearly stated by SOM's Raul de Armas: "Twenty years ago there was a sense of being right, that we knew all the answers. In fact there were many unopened doors but that is the way offices were done, period. I think today that we are both more flexible and less dogmatic at the same time. We are seeking the opportunities and the forces that come from individual needs to produce something nice. And yet the discipline of the old designs, the continuous care with the wall or even with the air supply, was exactly what we are about today. We don't always think about it, but we build it that way."

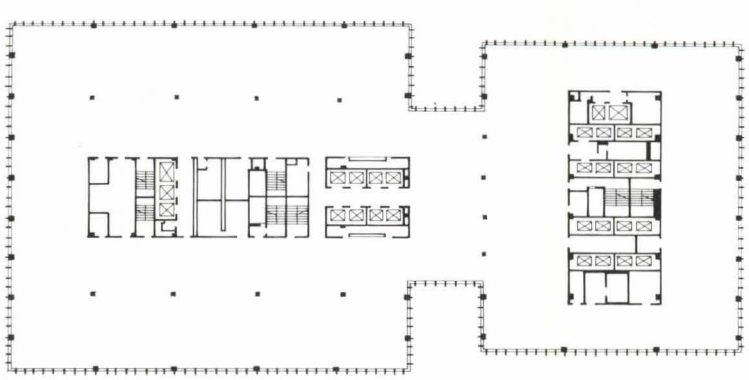


TYPICAL FLOOR

Part of the MHT design was the creation of a new furniture sysiem to replace the style of the 1960s. Today's designs must consider the comfort and needs of the desk computer operator. Chairs adjust to best accommodate each operator.



The computer room shown at left is the investment area of Manufacturer's Hanover Trust. The typical office floor (center left) vividly displays the more open flavor of the new design, which allows daylight to flow around and over partitions to reduce the artificial lighting demand. The rigor of the Union Carbide design was the basis for the new design. Architect de Armas clearly admires the old in creating the new. "This building was a model for typical redesign and it was also unique. It is such a Rolls Royce, such a product of the technology of the time, that it made our job easier. The tower, for example, had 40-ft free spans with a ceiling that uses a 5-ft grid to which one can attach partitions at any given point. The flexibility of the building allowed us to create the different kinds of environments we had to create without any difficulty." Of course, not many 20-year-old buildings start with such a flexible system, with furniture, wall panels, ceiling, lighting, and air conditioning so highly integrated. Many of the original panels from the Union Carbide typical floor (opposite page) were cut down and reused in the renovation. The passing planes typical of the 1960 design were replaced by the composition of rectilinear solids. The addition of the computer also added the need for increased capacity in the underfloor space for power supply to run the computers. The additional problems of acoustical privacy are also apparent in the new design.

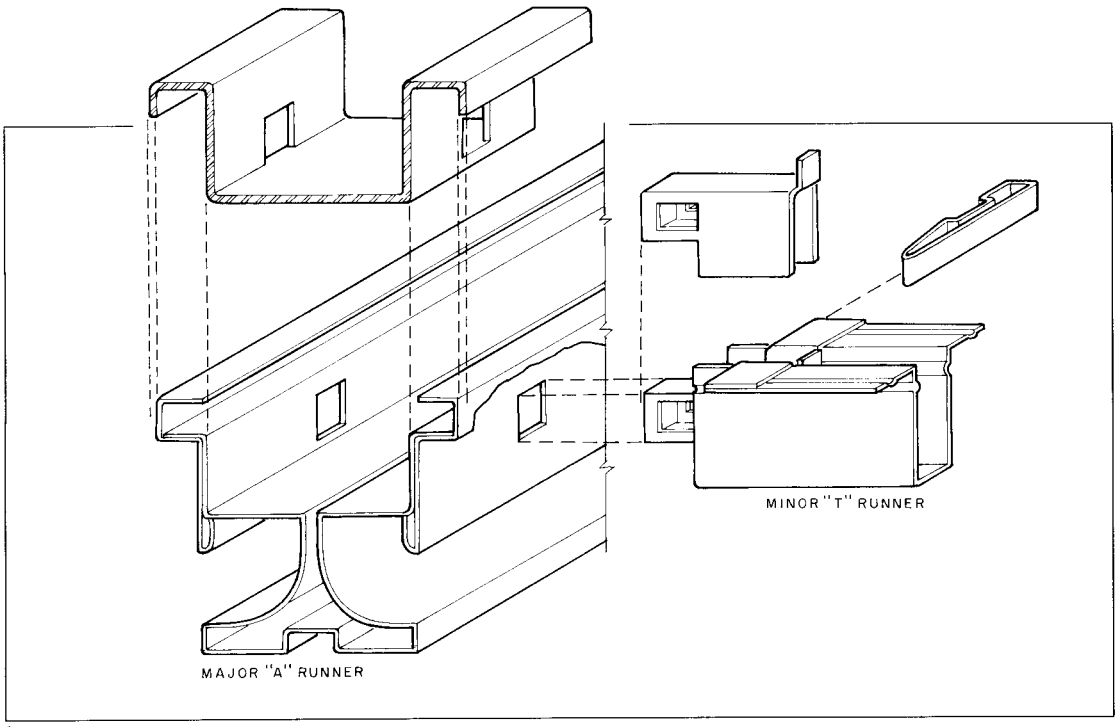


TYPICAL FLOOR

Energy *consumption* for lighting was reduced

Just before the renovation, the cost of energy demanded that the once opulent luminous ceiling of Union Carbide be only partially utilized (top). In the new MHT design (at right), transparent panels replaced many of the original opaque planes that lined the corridors. Office lighting and corridor lighting merge with the help of glass replacement panels. By running the original ballasts at half power, the same reflectors and lamps can be used in the new, more efficient ceiling. But much of the feeling of the original Union Carbide design is still present in MHT. Raul de Armas explains: "The typical floor is all transparent, the ground floor is all transparent, in the highest mode of what the 1960s offered us. I am still in awe of this kind of detail." The new luminous ceiling with its waffle grid can be compared with the original flat vinyl sheets of Union Carbide.

The SOM design for MHT includes a redesign of the Union Carbide furniture by Davis Allen, the original designer. The fine detailing of the desks (above) is extended to the wood-paneled file cabinets in the customer contact area (at right). The file cabinets are conventional metal cabinets surfaced with wood panels.



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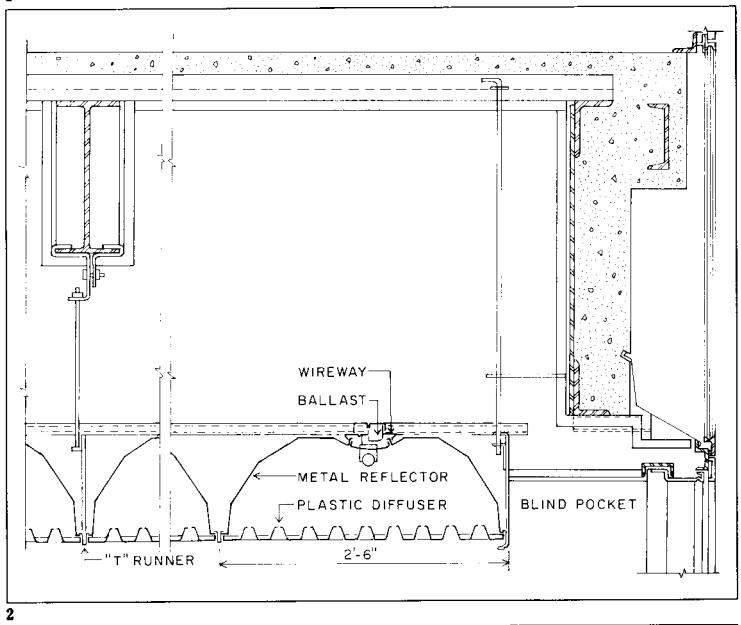

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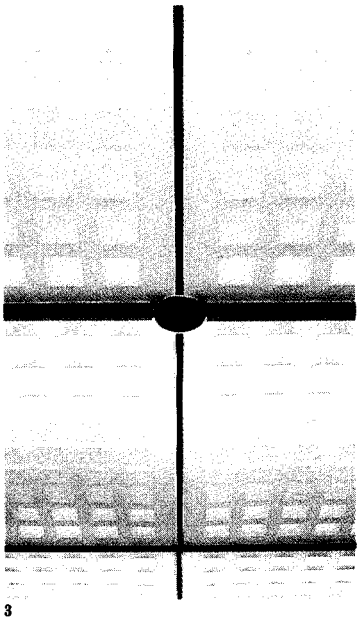

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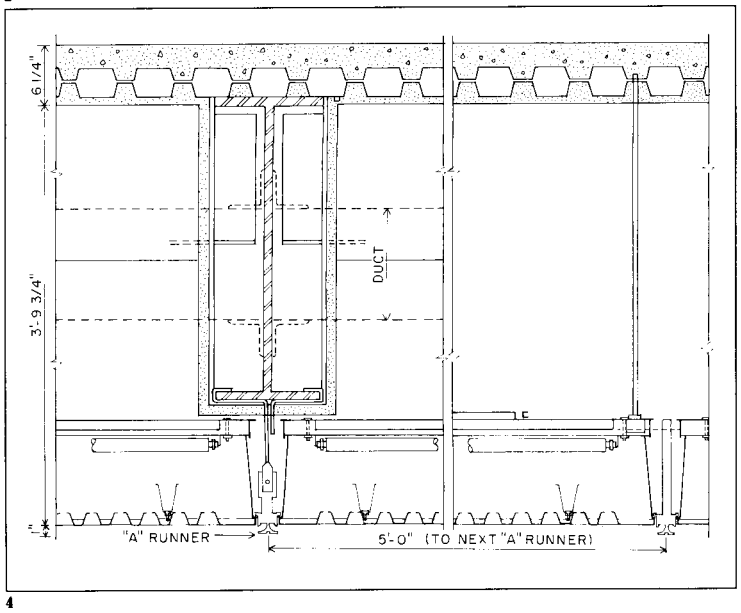


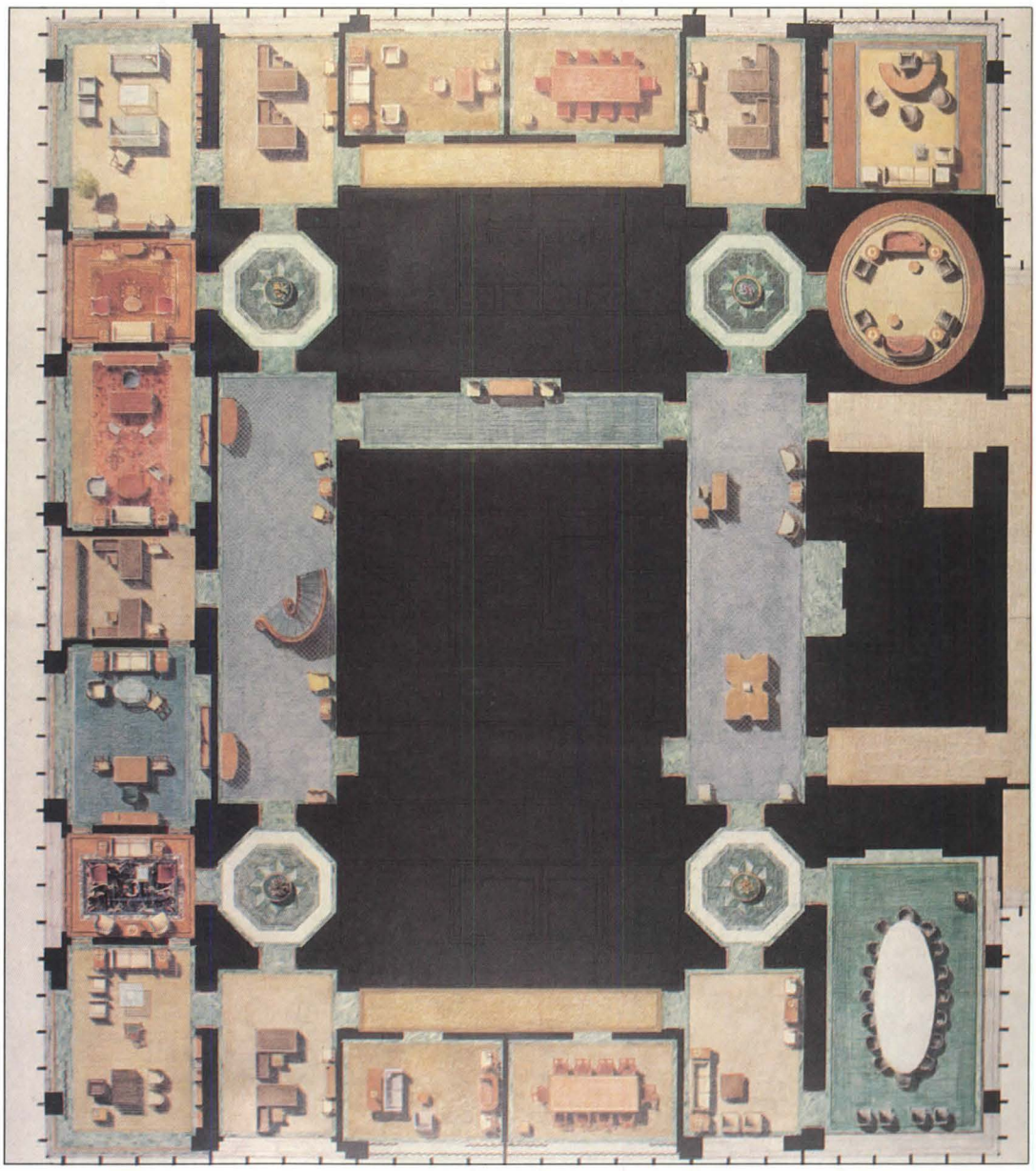
4

The original integrated system of Union Carbide was made to work anew for MHT. The problem solved is well described by de Armas: "The energy consumption level of the building was created at a time when a barrel of oil was almost as cheap as a barrel of water. The perfect working environment, regardless of what the outside was like at the time, was the key view of the 1960s. It had 100 footcandles everywhere, 72-deg air temperature, and perfect humidity no matter what time of year it was. When energy was cheap, that was how flexibility was bought. To be brought up to date, we had to alter the technology of the building. We didn't try to transform the building into another building—we tried to freshen it up where it was required. Shown at the left are: (1) The original slotted ceiling grid which allows for air supply and return while still permitting a full height panel connection to the bottom face of the grid. The new design also incorporated a sprinkler system in the grid. (2) The ballasts in the original ceiling light fixtures were altered to run at half power and reduce artificial lighting from four footcandles per square foot to less than two footcandles per square foot. (3) The waffle design in translucent acrylic replaced the original white vinyl ceiling panels now prohibited by the New York City Code. The waffle design helped to avoid an acoustical reflection that would have been undesirable in the new open office space. (4) The structure and electrified cellular floor of the Union Carbide design remained in use for MHT. The dual duct mechanical system was replaced by a variable air volume system, sprinklers were added, and the new waffle diffusers are shown.

Executive offices have been given a "traditional" atmosphere

The photo at right provides a comparison between Union Carbide's wood-paneled space and the highly individualized interiors for MHT shown on the opposite page. Austere geometric clarity has been replaced with a "sumptuous look."

The full extent of the evolution of the building systems in MHT cannot be fully appreciated until the executive floors are compared to the rest of the building. Raul de Armas explains: "As we proceed into the more 'atmospheric' spaces, they become like a building within a building, architecture inside architecture. That's not interior space planning, it's architecture. The feeling of the space had a lot to do with the client. My thinking was particularly affected because they wanted such a particular kind of interior environment. It was truly a team effort, in the sense that the client was a player, too. It wasn't us and 'them,' it was 'we.' We worked on it together." Through careful balance of detailing, it was possible to allow both modern and antique furnishings in the same spatial complex. The original design created an instrument with which to compose space. De Armas continues: "We reach more octaves with our instrument now. We have expanded; our range is different. We do have enough range today that we have become comfortable with traditional spaces." It is hard to believe that eight stories down, outside the window, is Park Avenue and not a rolling estate. One particularly useful strategy was to limit the view to the outside through the use of wood shuttered windows (bottom).



Pictured clockwise from the top left: the executive officer's suite, the octagonal rotunda in the executive suites, the spiral stair connecting two main levels of executive suites, and a conference room. Such a wide variation in styles within the same building also poses the question of the wide variation in styles within the same design firm. How does it happen that SOM can consistently create quality in design spanning different styles as well as maintaining consistency over time in the same building? De Armas gives some clue of how it occurs: "We all started here at SOM as children, so to speak. We really do see it as a family. The whole idea of the kind of discipline and how we work is set up as a team approach. That is how SOM has always worked. I feel it is a continuum. I feel that when I speak, I speak for the firm. I never just speak for myself. Therefore, I am part of something. Equally, I am who I am, partially because of the almost 20 years I have been here. That's how I do it; that's what I respect. And I believe that expanding our range in this particular area ["traditional" offices] did not break our continuum, it simply adapted it to the moment at which it was happening. Also there is a continuous rejuvenation in this place by hiring young people and by having people 'percolate' through the system; the firm goes on, the imagination goes on."

The spaces shown above are not what we expect to find hovering eight stories about Park Avenue in an office building. They can only be described as luxurious. Yet the proportions are the same as the original Union Carbide spaces. Each corner still turns on a pinpoint. Most impressive is how the new environment reaches out to include the furniture and art of another time. The space defines the art as much as the art defines the space.

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Product literature

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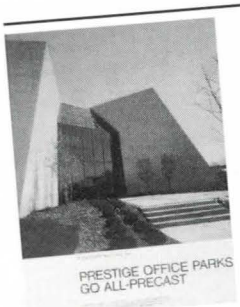

Precast concrete
An 8-page color brochure describes *Flexicore*, a precast-concrete structural system. Applications of the system, which is intended to reduce construction time, are shown. Other features of the precast method, including the alleviation of form work for structural pours, are discussed. The Flexicore Co., Inc., Dayton, Ohio.
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Plywood siding
The *Southwoods* line of pine and cypress plywood siding is featured in an 8-page fold-out color brochure. The variety of available surface finishes, sizes, edge treatments, face grades, and groove patterns of the siding is described. A siding selection chart is included in the literature. Georgia-Pacific, Atlanta.
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Site furnishings
The manufacturer's line of wood site furnishings is featured in a 16-page color catalog. Photographs and descriptions of benches—straight and circular, with or without backrests—planters, tables, and trash cans are included in the literature. Materials and finishes are listed. Sitecraft, Long Island City, N. Y.
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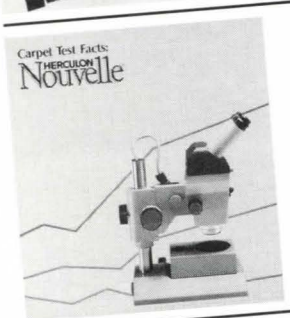

Carpet fiber
A 6-page color brochure describes the results of tests run on *Nouvelle* carpet fibers. The fiber's resistance to stains, static electricity, and abrasive wear was determined after exposure to approximately one-half-million pedestrian steps. The costs of carpets made from the fiber are discussed. Hercules, Inc., Norcross, Ga.
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Gazebos
A 4-page color brochure features the manufacturer's line of kiln-dried, Western red cedar gazebos. The assembly of the gazebos, using brass acorn nuts and washers, is described in the literature. Photos show the vaulted roofs and the cupola that can be lit by a 110v electrical system. Vixen Hill, Phoenixville, Pa.
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Solar energy systems
Components of the manufacturer's solar energy systems are featured in an 8-page catalog. Basic systems for air or water heating are described. Solar panels, air blowers, wall and ceiling grilles, and heat exchange cannisters are shown and described. Hanson Energy Products, Newcastle, Maine.
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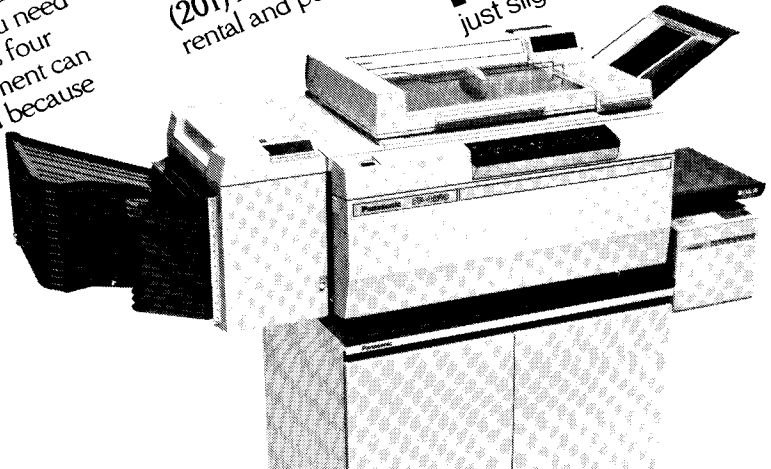

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Product literature

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Access control system
An 8-page brochure features the *MAC521* card-entry computerized access control and monitoring system. Features of the system, including password/passcard database formats, keyboard data entry, red/green access status indicators, and door unlock override command, are listed. Rusco Electronic Systems, Glendale, Calif.
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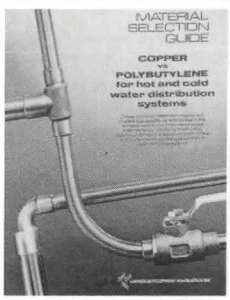

Plumbing systems
An 8-page guide compares the use of copper and polybutylene in hot and cold water distribution systems. Properties of the two materials, including strength, temperature and shock resistance, rigidity, and ductility, are reviewed. Copper Development Association, Inc., Greenwich, Conn.
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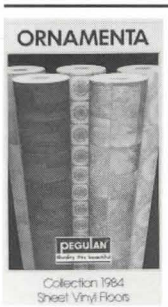

Sheet vinyl floors
The manufacturer's *Ornamenta* line of chemically embossed sheet vinyl floors is featured in a 30-page catalog. The German-made line of flooring products is shown in color photographs. Each product is accompanied by listings of dimensions and available colors. Pegulan, Div. of Azrock Industries, Inc., San Antonio, Tex.
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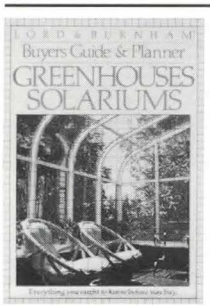

Greenhouses and solariums
A 36-page color brochure features the manufacturer's line of greenhouses and solariums. Information on the construction, thermal transmittance, air infiltration, and condensation resistance of the products is included. Lord & Burnham, Div. of Burnham Corp., Irvington, N. Y.
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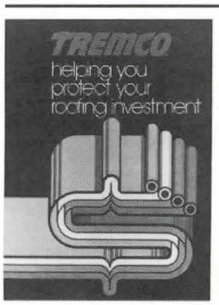

Roof maintenance
A 14-page color brochure describes the manufacturer's method of roof maintenance and features several of their products and technical services for roof repair. Aging of roofs and the *Thermocore* system for on-site roof analysis are discussed. The performance of built-up and single-ply membranes are reviewed. Tremco, Cleveland.
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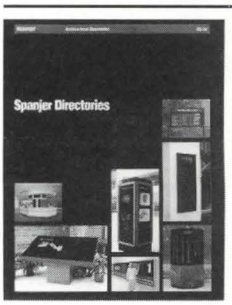

Directories
The manufacturer's line of directories is featured in an 8-page color brochure. Included in the literature are photographs and descriptions of exterior and interior directories. Standard and custom-designed models are shown. Spanjer Brothers, Inc., Chicago.
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More literature on page 163

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In recent years the growth of the curtain wall and curtain wall technology has required a specialized approach to this complicated business. Amarlite has made the commitment to serve this market. This commitment is backed by the dedication of our entire Atlanta plant facilities to curtain wall production and the formation of our new Engineered Systems Group.

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This new organization expands our capability to participate in a broader range of custom and monumental projects and adds significantly to our capability of handling design/build requirements. Single source responsibility insures the quick and accurate communication that allows us to respond to changing conditions while a project is under way.

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Each project is assigned a Manager and a support team of specialists who handle the curtain wall system from inception through installation. This project team concept delivers the professional expertise to interface with architects, contractors and other key project influences.

This is just one more example of Amarlite's commitment to serve. For more specific information on how we can handle your curtain wall project needs, contact Amarlite Architectural Products, ARCO Metals Company, P.O. Box 1719, Atlanta, Georgia 30301.

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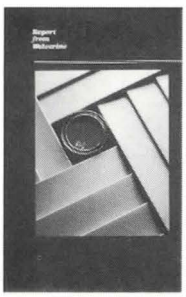
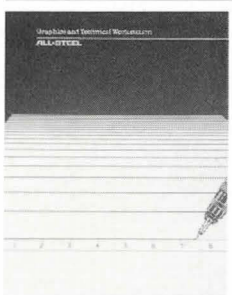
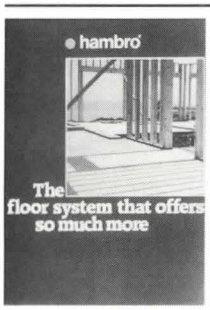


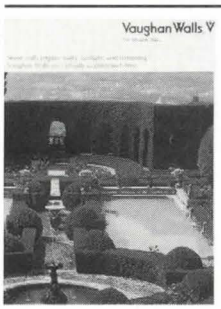
Vinyl siding
A 12-page booklet contains information on the manufacturer and on its new *Restoration Series Three* line of vinyl siding. The re-siding of old buildings, using low-gloss, smooth siding panels that are designed to look like painted wood, is discussed in the literature. Wolverine Technologies, Inc., Lincoln Park, Mich.
Circle 412 on reader service card



Graphics workstations
A 6-page color brochure features the manufacturer's new graphics and technical workstations. The literature describes the several lighting, seating, and storage options of the workstations. Photos show an adjustable drafting board that can be mounted on either a 42-in. or 48-in. panel. All-Steel Inc., Aurora, Ill.
Circle 413 on reader service card



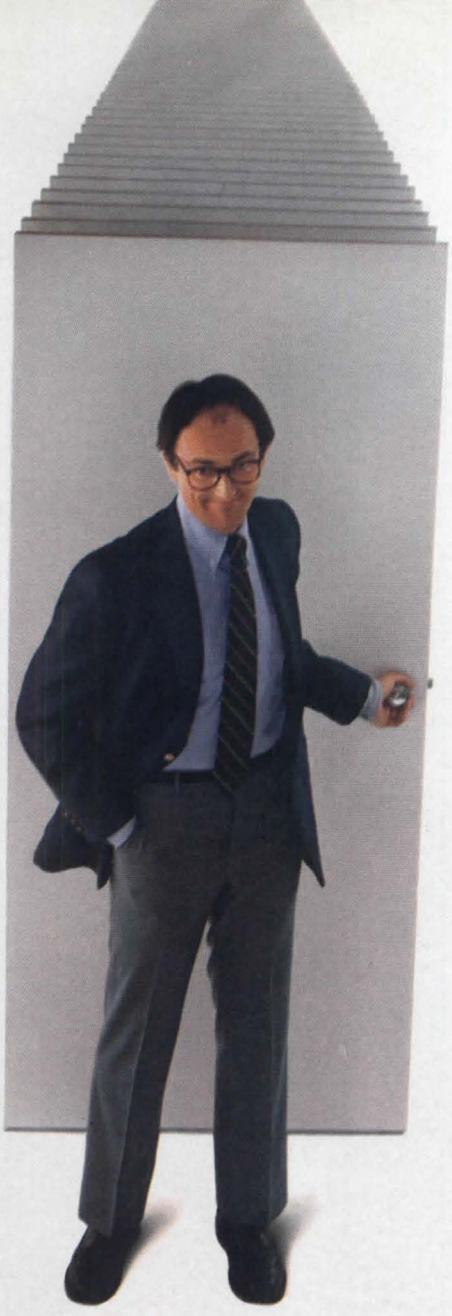
Floor system
A 4-page color brochure features a composite floor system for all-wood frame residential or multifamily construction. Photos show the construction procedures of the system, which uses steel joists and 3/8-in. or 1/2-in. sheets of plywood. The acoustical properties of the system are discussed. Canam Hambro, Needham Heights, Mass.
Circle 414 on reader service card



Movable walls
An 8-page color brochure features a system of 2 1/4-in.-thick movable walls. The installation of the system, which includes panels, frames, and vinyl base moldings, is described. Diagrams show the construction of the wall panels and how they can be attached to doors or replaced by glazed units. Vaughan Walls, Inc., Irving, Tex.
Circle 415 on reader service card

Office furniture
The *SoftOak* line of office furniture is featured in a 4-page brochure. Photographs show the components of the system, which include executive and secretarial desks, credenzas, file cabinets, and chairs. Details of the solid oak and walnut frames, with mortise and tenon joints, are shown. Magna Design Inc., Lynwood, Wash.
Circle 416 on reader service card

Structural clay blocks
A 12-page color catalog features new acoustical, seismic, and security structural tile and structural facing tile and brick. Photographs show typical installations. Information on mortar selection is included. Stark Ceramics, Inc., Canton, Ohio.
Circle 417 on reader service card
More literature on page 165



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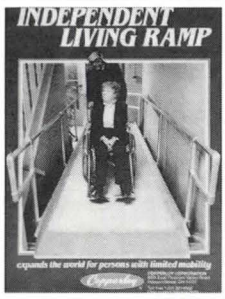
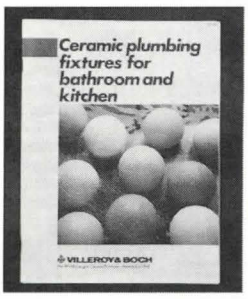
Product literature

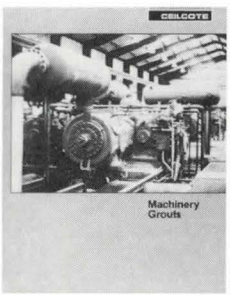
For more information, circle item numbers on Reader Service Card, pages 231-232



Ramps
The manufacturer's line of *Independent Living* aluminum ramps, designed to provide individuals using walkers and wheel chairs access to existing buildings, is featured in a 4-page color brochure. Photos of the different models showing the available finishes are included. Copperloy Corp., Independence, Ohio.
Circle 418 on reader service card

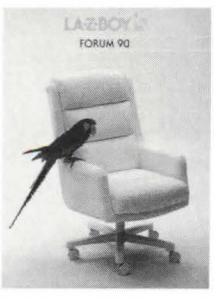


Bath and kitchen fixtures
A 24-page color catalog illustrates the manufacturer's line of bath/powder room and kitchen fixtures. Diagrams show the dimensions of each product. Illustrations are accompanied by a listing of the model's particular features and available finishes. Villeroy & Boch, Inc., Pine Brook, N. J.
Circle 419 on reader service card

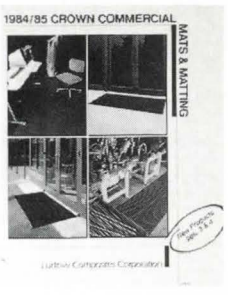


Grouting materials
A 12-page brochure reviews factors to be considered in the selection of grouting materials and methods. Three machinery grouting methods are described and illustrated. The physical properties of epoxy grouts are listed. The Ceilcote Co., Berea, Ohio.
Circle 420 on reader service card

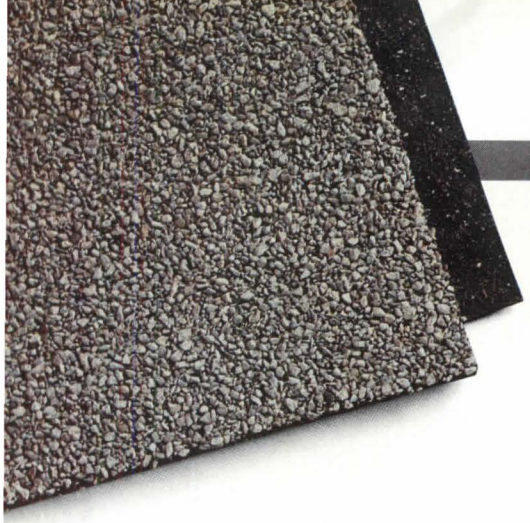
Locks
A 64-page catalog reviews the manufacturer's line of locks for residential and commercial uses, deadbolts, and locks for use by the handicapped. Each lock is shown in a color photograph. Suggested applications, dimensions, features, and finishes of the locks are listed. Schlage Lock Co., San Francisco.
Circle 421 on reader service card



Seating
The *Forum 90* series of contract office seating is featured in an 8-page color brochure. Photographs of the different models, including a low- or high-back swivel tilt chair, a secretarial chair, and a wood or an upholstered sled-base chair are included in the literature. Oak, walnut, and brass finishes are shown. La-Z-Boy, Monroe, Mich.
Circle 422 on reader service card



Floor mats and matting
A 16-page color catalog features the manufacturer's selection of floor mats and additional floor protection products. Scraper mats, non-slip mats, grass mats, and anti-static and logo/message mats are shown. A line of molded rubber products is included in the literature. Ludlow Composites Corp., Fremont, Ohio.
Circle 423 on reader service card



TAMKO Asphalt Products, Inc.
ROOFING ANALYSIS 2

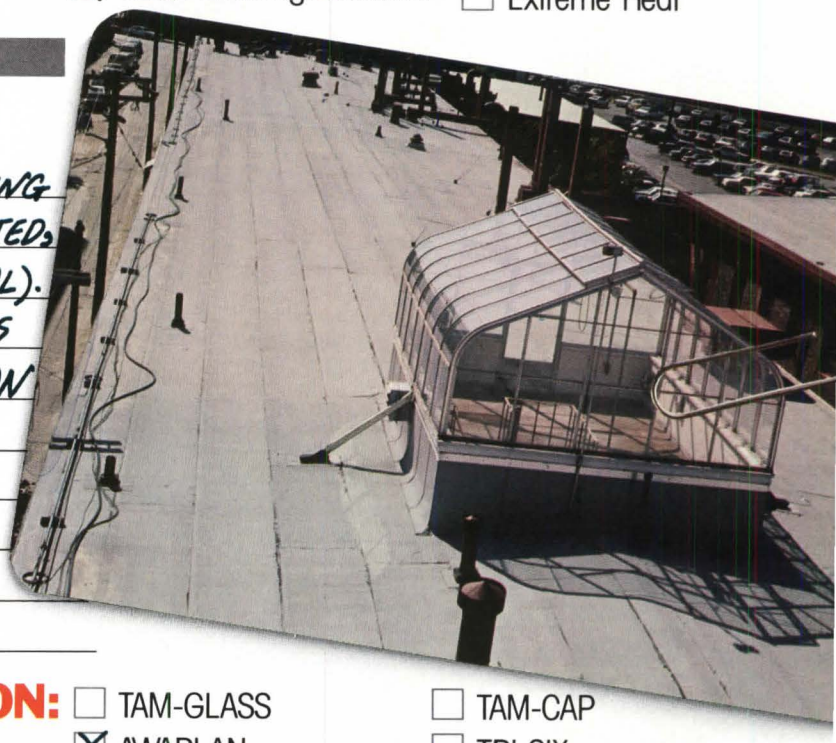
LOCATION: POLAROID CORP. - CAMBRIDGE, MASS.

PROBLEM:

- [X] Irregular Roof Structure
- [ ] Industrial Contaminants
- [X] Building Equipment Vibration
- [ ] Broad Roof Surface Temperature Profile
- [ ] Heavy U.V. Loading
- [X] Snow Loading/Removal
- [ ] New Construction
- [X] Re-Roof: Tear-Off Yes ___ No X
- [X] High Winds
- [X] Roof Traffic
- [ ] Humidity: Exterior
- [ ] Humidity: Interior
- [ ] Extreme Heat

Architect: Senior Architectural Engineer, Polaroid — Richard Massucco
Roofing Contractor: Shea Roofing Company

VISUAL:



DEC.'83

COMMENTS: RESEARCH LAB NEEDS RE-ROOFING (NON-SLIP GRANULE SURFACE REQUESTED, DUE TO ROOF TRAFFIC & SNOW REMOVAL). WOOD & BRICK STRUCTURE; REQUIRES INSTALLATION W/O TORCHES. AWAPLAN SPEC. 101 APPLIED IN HOT ASPHALT.

UPDATE: SEPT.'84 ROOF CONDITION: EXCELLENT! PROJECT A SUCCESS. POLAROID HAS SPECIFIED AWAPLAN ON OTHER BUILDINGS.

R. S.

SOLUTION:

- [ ] TAM-GLASS
- [X] AWAPLAN
- [ ] Walkways: AWAPLAN
- [X] Flashing: AWAPLAN
- [ ] VENT-PLY
- [ ] VAPOR-CHAN
- [X] GLASS-BASE
- [ ] TAM-CAP
- [ ] TRI-SIX
- [ ] No. 15 Perforated
- [ ] Organic Felt
- [ ] Type 43 Base Sheet

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1-800-641-4691 In Missouri: 417-624-6644

Circle 81 on inquiry card

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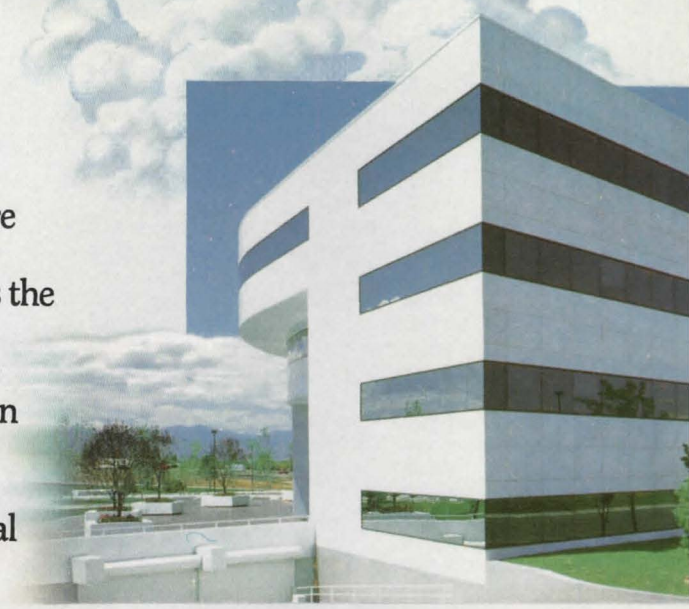
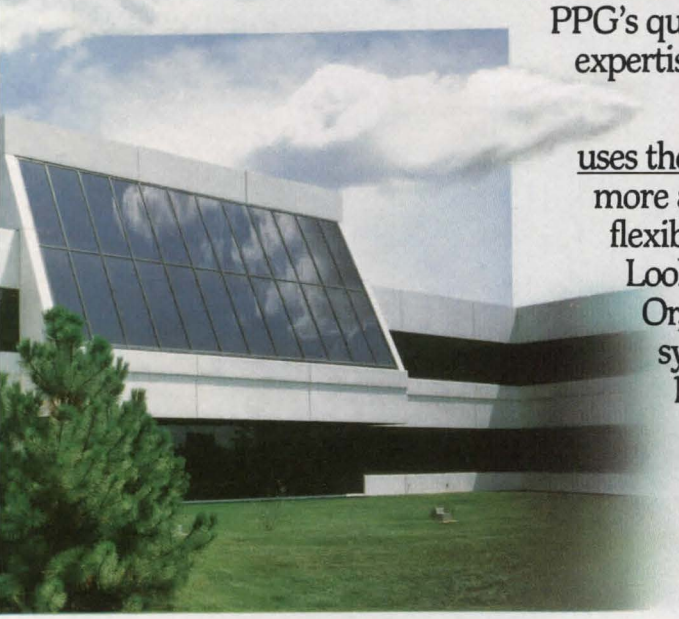
The right glazing system gives you the greatest choice. PPG offers five EFG systems: single- or double-glazed horizontal, single- or double-glazed curtainwall, and wall cladding. With flexibility like that, PPG EFG systems can meet your most demanding aesthetic and design criteria.

The right glazing system is backed by the right support. PPG has over 100 years experience in glass manufacturing; in fact, we're the largest glass manufacturer in the world. So you can expect that our testing and verification programs are extensive. And you can count on us to engineer the total EFG system: that's the complete glass and metals package from a single source. So no matter what size your building is, you can simplify planning and ordering and still receive the benefit of PPG's quality and technical expertise.





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Right to the last detail.

PPG

Circle 84 on inquiry card

New products: Designer's Saturday 1984

Designer's Saturday has, in its 17th year, also become Designer's Thursday, Friday, and Monday. This year on October 11 to 14, the 51 participating show rooms displayed their newest introductions amidst an equally impressive array of food and drink. Several of these new products are featured here and on following pages.

1. Chair: The *Göteborg, 2* armchair was designed by Swedish architect Erik Gunnar Asplund for the reception area of the Göteborg Law Courts. Asplund won the commission to extend the existing courts in a 1913 competition, yet the designs were disputed over and were not finalized until 1937. The armchair has been reintroduced and is now available with a walnut or ashwood frame. The austerity of a grand armchair, in this case, is softened by the vernacular influences—curved armrests, tapered legs, and the pitched backrest. The seat and back come in beige, red Russian, and black leather. Cassina of Italy/Atelier International, Ltd., New York City.
Circle 300 on reader service card

2. Screen system: A newly introduced screen system is intended to be a departure from conventional floor-mounted panel systems. Designed by James Hayward and Paolo Favaretto, the system features a trestle support from which the screens are suspended. Power and communication cables are packed into two separate channels in the support beam. The screens begin 12-in. below the worksurface and extend to 12-, 20-, or 28-in. above the desktop. The screens are framed in aluminum, filled with a sound-dampening material, and have grooves that allow shelves, lighting, and signage to be attached. Kinetics, Rexdale, Ontario.
Circle 301 on reader service card

3. Chair: *Toby* is a stackable armchair made of hand-crafted solid beechwood. Part of the *Classic Designs in Wood* collection of arm-, armless-, and lounge chairs and loveseats, the *Toby* measures 22 1/2-in. by 25 1/2-in. by 32-in. The chair is available with a flat black finish and lacquered oak or walnut on ash. Brayton International Collection, High Point, N. C.
Circle 302 on reader service card

4. Conference table: The new *Pascal* conference tables by French designer Pascal Morgue are composed of modular pieces. Non-locking steel connection pins join the tabletop components, which are available in several different shapes and sizes. The wood tops are finished in natural maple, medium brown or red mahogany, or dark gray maple. The legs are 5 1/2-in.-wide extruded aluminum and are painted black. Knoll International, Inc., New York City.
Circle 303 on reader service card

5. Fabric: *Andorra* is one of the first hand-woven fabrics to be introduced by the manufacturer's relatively young textile division. The deeply textured fabric is made of 100 per cent wool and is imported from Switzerland. The fabric is available in four colorways—gray/ivory is shown. Stendig International, Inc., New York City.
Circle 304 on reader service card

6. Swivel chair: The *Pegasus* was designed by Bob Becker for use as an executive or conference chair. The chair can tilt back and has a swivel base that comes in polished chrome or antique bronze. The seat and back can be covered in leather or in a selection from the manufacturer's new line of exclusive fabrics. Helikon Furniture Co., Inc., Taftville, Conn.
Circle 305 on reader service card

7. Chaise and chaise lounge: The chaise and chaise lounge designed by Ward Bennett are reminiscent of the lounge chairs once on the decks of the great ocean liners or along the beachfront of grand hotels. The curves of the chairs' arms, however, have "a precise analogue in the bridges of [those] who pioneered a new esthetic for concrete construction," claims the designer. Hand-carved from solid ash and upholstered in the manufacturer's contract textiles, the chairs combine a nostalgia for the ways of the "old days" and an interest in the methods of current technology. Brickel Associates, Inc., New York City.
Circle 306 on reader service card

8. Stools: The *Rubber* bar and counter stools are additions to the *Rubber* chair collection. Designed by Brian Kane, the stools feature a tubular steel frame and a flexible back support that is covered in rubber tubing. The formed wood seats come in maple or in a selection of colors. The bar stool has a seat height of 30-in. and a back height of 38-in., and the counter stool has a seat height of 24-in. and a back height of 32-in. Metropolitan Furniture Corp., San Francisco.
Circle 307 on reader service card
More products on page 173

1

2

3

For more information, circle item numbers on Reader Service Card, pages 231-232

4

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8

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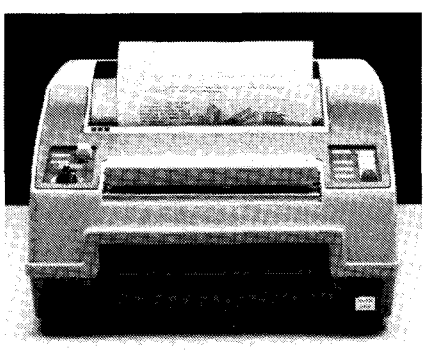

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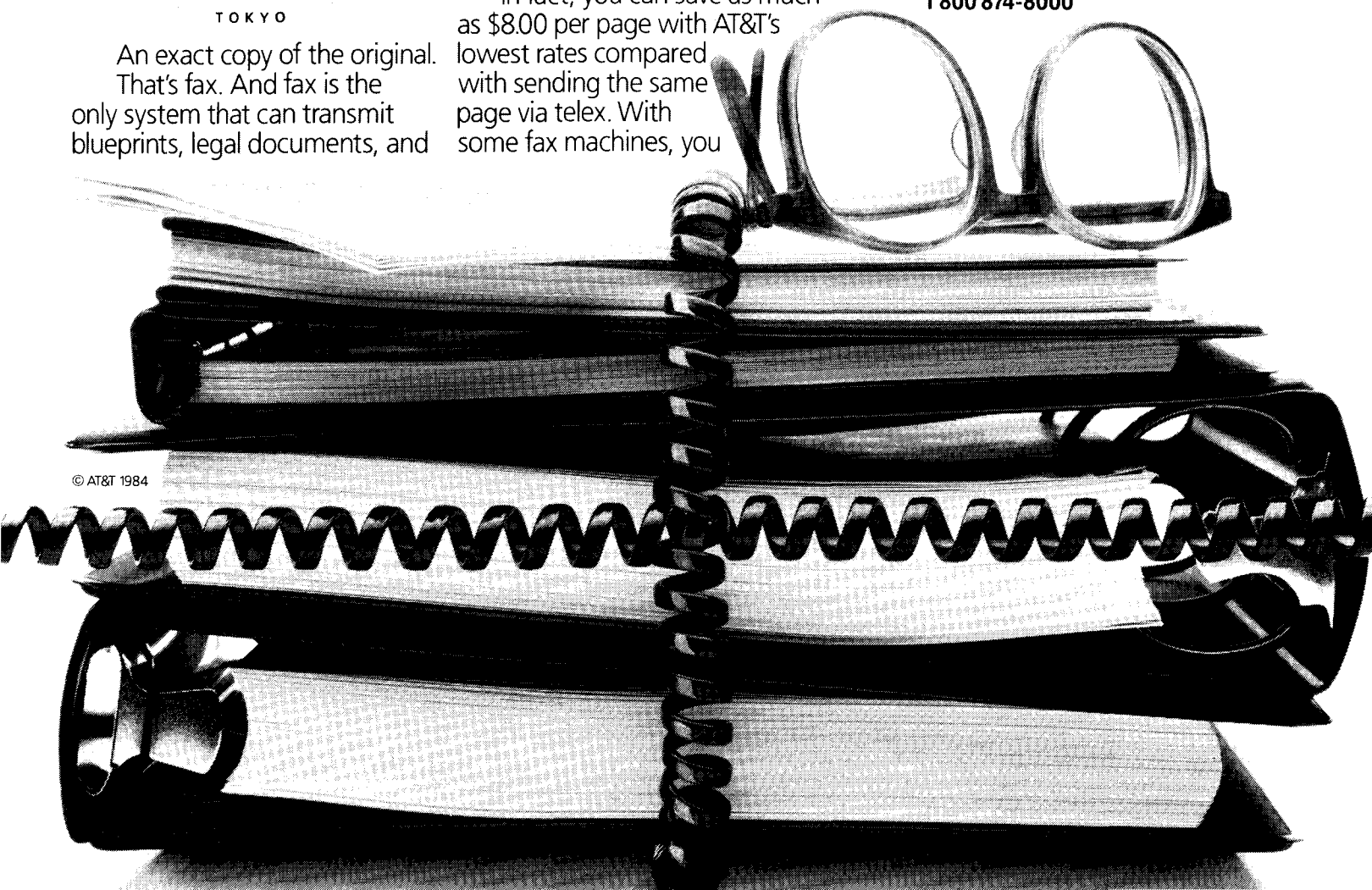
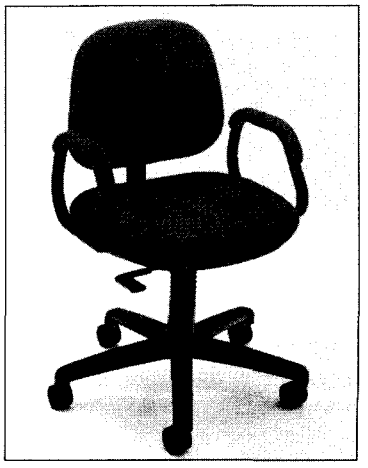


Continued from page 171

Office system
The *Ethospace* office system was designed by Bill Stumpf, in collaboration with Jack Kelley and Clino Trini Castelli. The system's structural frame has channels for electrical wiring and supports rectangular panels that can be glazed or covered in a variety of materials. Components of the system include peninsula tables with waterfall edges, trays that attach to rail tiles, light fixtures, ergonomic seating, and 38-, 54-, 70-in., and full-height walls. Herman Miller Inc., Zeeland, Mich.
Circle 308 on reader service card

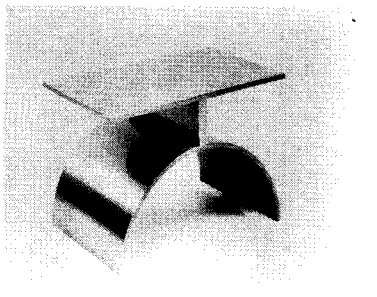
Office system
The *Pert* system of freestanding office furniture comprises file cabinets, pedestals, desks, conference tables, work tops and VDT tables with detachable keyboard arms. The components are available in light and dark oak veneers, and some pieces can be specified in laminate with oak trim. Castelli Furniture Inc., Bohemia, N. Y.
Circle 309 on reader service card



Ergonomic seating
The *L-500* line of ergonomic seating includes medium-back management chairs with and without arms, secretarial chairs, drafting chairs, and sled-base side chairs with and without arms. The back, seat, and arm-pad upholstery come in a selection of the manufacturer's fabrics. The chairs feature adjustable seat, back, and height. LBF Business Furniture, Stone Mountain, Ga.
Circle 310 on reader service card

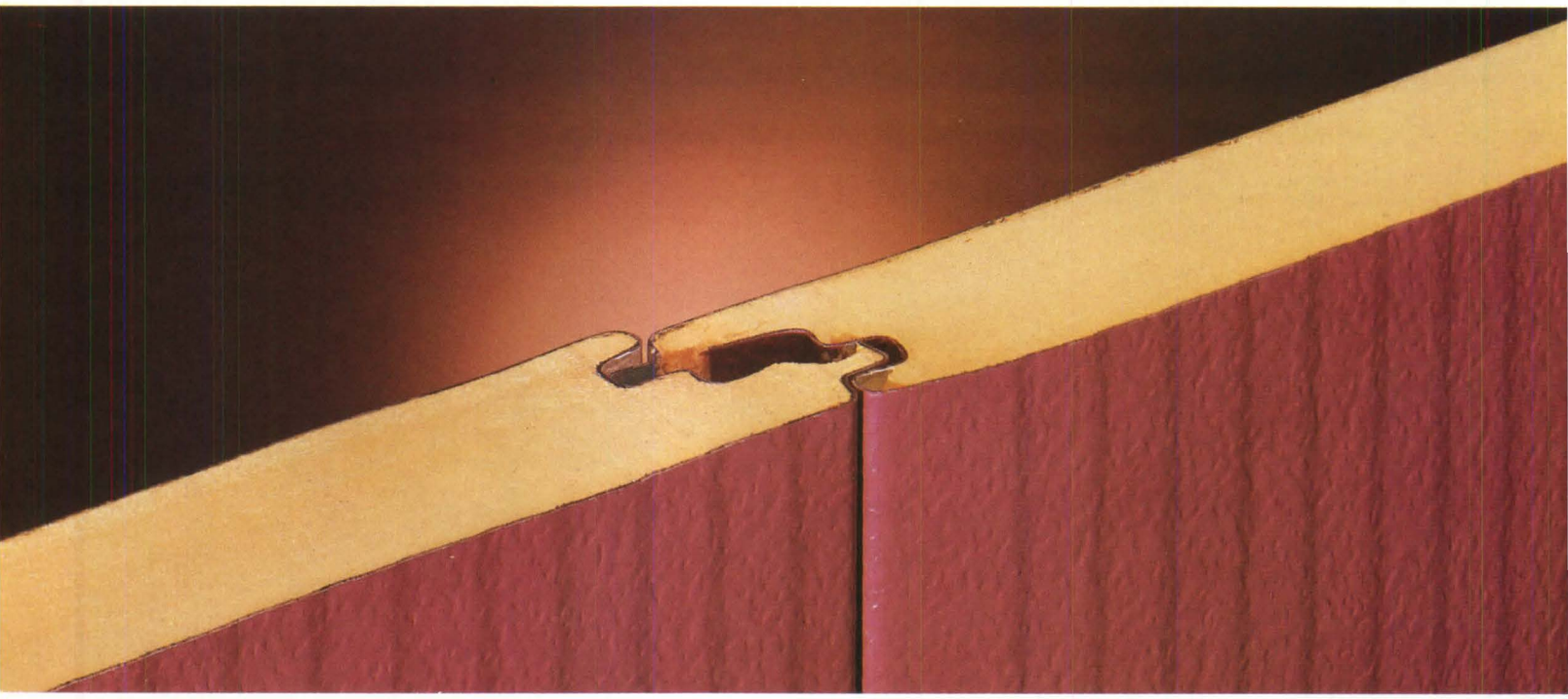
Fabric
Aubusson, part of the newly introduced *Millennium* collection, was woven in France and is intended to be reminiscent of Renaissance tapestries. The fabric is 53 per cent cotton and 47 per cent wool, is woven with five weft and two warp yarns, and is available in a width of 51 in. Jack Lenor Larsen, Inc., New York City.
Circle 311 on reader service card

Electronic furniture
Emtech electronic furniture is made up of three product categories, including adjustable work surfaces, ergonomic seating, and storage units such as cabinets and fixed or mobile pedestals. Leveling guides and wiring grommets are standard on all tables. GF Furniture Systems, Inc., Youngstown, Ohio.
Circle 312 on reader service card



End table
The *Tea* end table was designed by Stanley Jay Friedman. The table is available in polished or satin stainless steel and in a selection of high-gloss opaque colors. Dimensions are 12 in. by 22 in. by 15 in. Brueton Industries, Springfield Gardens, N. Y.
Circle 313 on reader service card
More products on page 175

New Versawall™ Panel has it all. Quality. Strength. Durability. Good looks.



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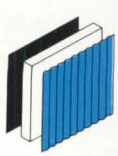
*Approximate, dependent upon individual project requirements. (Based on mid-1984 pricing index)



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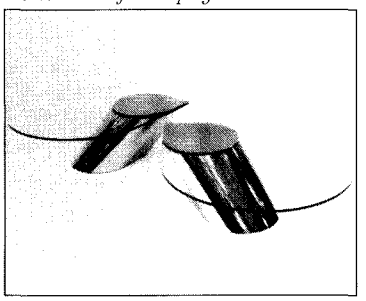
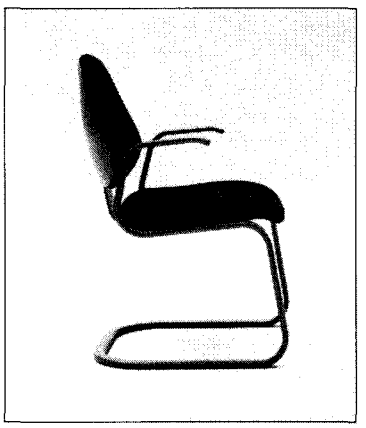
Circle 86 on inquiry card

Continued from page 173



Cocktail table
A cocktail table is the newest addition to the manufacturer's line of full-size tables. Designed by Charles Gibilterra, the teardrop-shaped table has a glass top and a polished stainless steel base. Dunbar, Berne, Ind.
Circle 314 on reader service card



Side chair
The *System 300* side chair is an addition to the manufacturer's *SystemSeating* chair series. The chair features a flexible sled-base and back. The frame is made from a 3/4-in. by 1 1/2-in. flat oval tube. The upholstered cushions have no visible seams. Haworth, Inc., Holland, Mich.
Circle 315 on reader service card

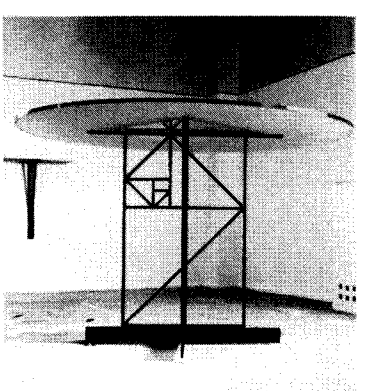


Table
The *Janus* table, designed by architect Steven Holl, has—as its name suggests—two faces. From one side, the legs of the steel base appear to be joined by an upward zigzag; from the other side, the legs define the edges of a downward spiral (shown). The 44-in. diameter top has a 16-in. square center of clear glass and a surrounding perimeter of sandblasted glass. The Pace Collection Inc., Long Island City, N. Y.
Circle 316 on reader service card
More products on page 177

Detail of Galaxy Sun Controller

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Circle 87 on inquiry card

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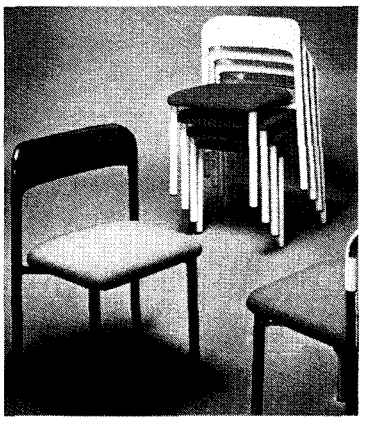
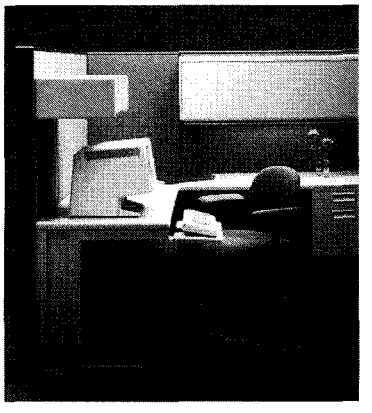
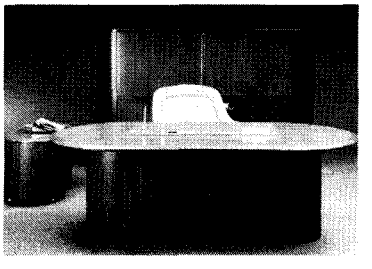


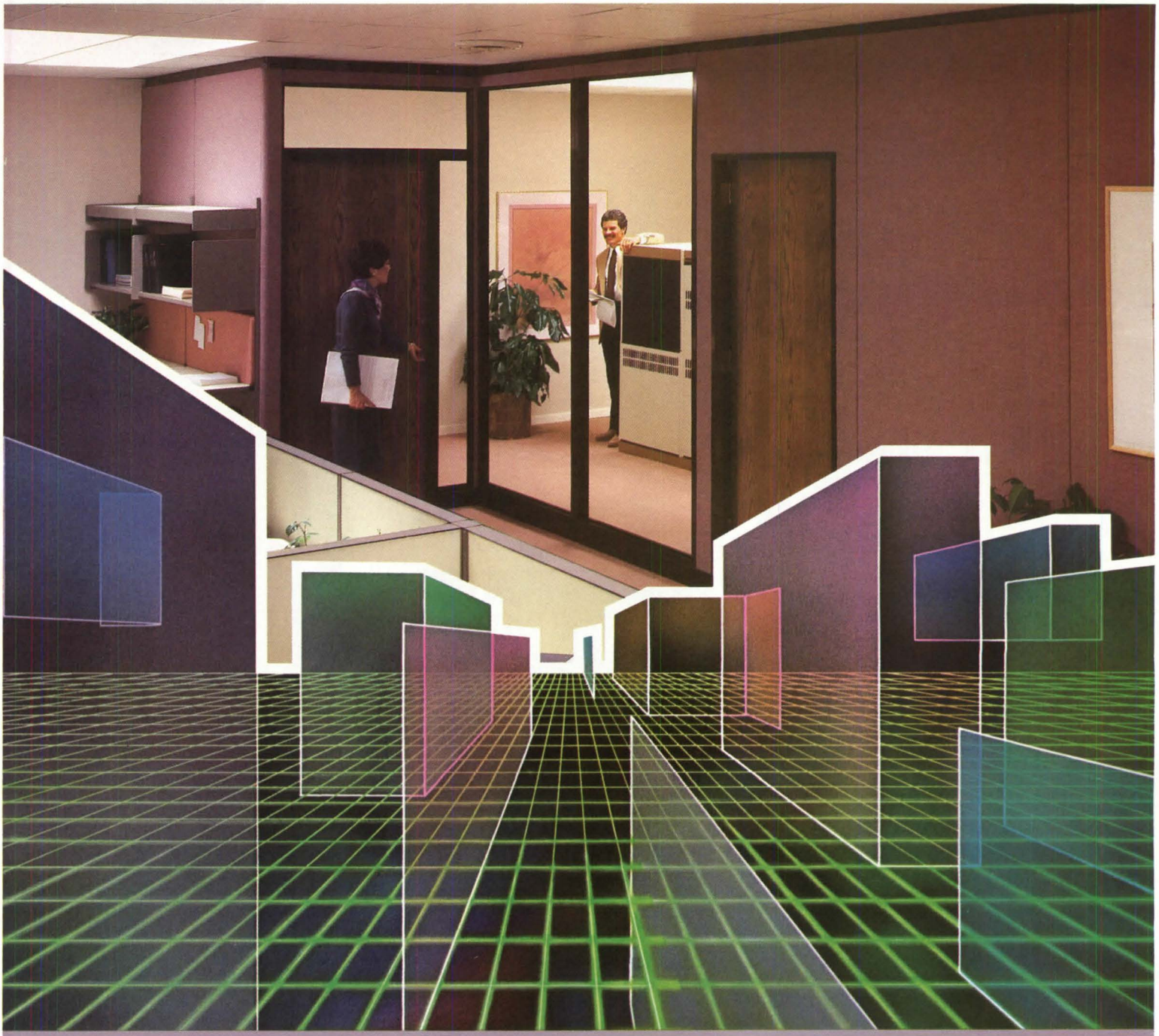
Stacking chairs
A line of stacking chairs was designed for use in seminar and conference areas or dining rooms. The chairs have a tubular steel frame, finished in white or brown epoxy or chromium-plate. The backs are injection-molded in white or brown polypropylene. The seats are covered in polyurethane foam and can be upholstered in a selection of the manufacturer's fabrics. Arconas Corp., Mississauga, Ontario.
Circle 317 on reader service card



Office system
Tempo 3 Radius is an updated open office system of modular units. The 48-in.-wide acoustical panels come in 40-, 53-, 60-, 65-, and 76-in. heights. Other components of the system include work surfaces with four-sided radius edges, binder bins, display shelves, task lights, and adjustable keyboard shelves. Shaw-Walker, New York City.
Circle 318 on reader service card



Office furniture
The *Series II* line of office furniture features executive table-desks and credenzas. The desks, high and low credenzas, and telephone consoles on casters have a "racetrack" oval shape. The high credenzas have tambour doors and can accommodate computer equipment. Cumberland Furniture Corp., New York City.
Circle 319 on reader service card
More products on page 179



There's only one floor-to-ceiling wall panel advanced enough for your open plan office.

Spacesetter™ portable panels give you flexibility and long-term cost savings comparable to your systems furniture.
We developed Spacesetter portable panels especially for open plan offices, with a combination of benefits that complement them the way no demountable or other movable wall can. Spacesetter panels give you the privacy and sound control you need without limiting the flexibility that makes the open plan so functional and cost efficient.

Spacesetter panels are designed to integrate with systems furniture for a more comfortable, efficient, attractive office—now and for years to come.

• Stability without any permanent attachments • Simple setup and reconfiguration • Raceways for easy access to power, phone and data cables • No costly damage to existing structures upon rearrangement • Investment tax credit and accelerated depreciation.

For our brochure, "The Privacy Option for open plan offices," contact Modernfold, P.O. Box 310, New Castle, Indiana 47362 or call (317) 529-1450. In Canada, write P.O. Box 399—Station E, Toronto, Ontario, M6H9Z9 or Telex: 27-2285.

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Continued from page 177

There's a lot worth saving in this country.

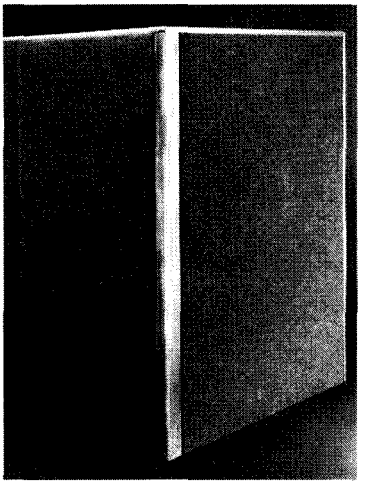
Today more Americans who value the best of yesterday are working to extend the life of a special legacy.

Saving and using old buildings, warehouses, depots, ships, urban waterfront areas, and even neighborhoods makes good sense. Preservation saves valuable energy and materials. We can also appreciate the artistry of these quality structures.

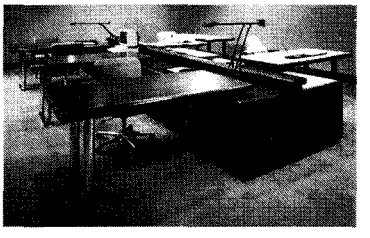
The National Trust for Historic Preservation is helping to keep our architectural heritage alive for us and for our children.

Help preserve what's worth saving in your community. Contact the National Trust, P.O. Box *2800*, Washington, D.C. 20013.

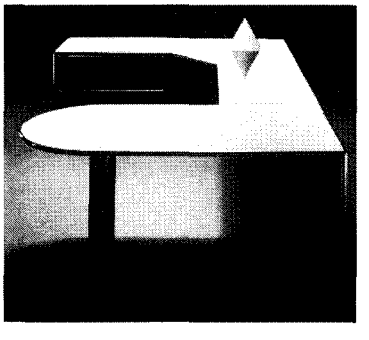
National Trust for Historic Preservation
Preservation builds the nation



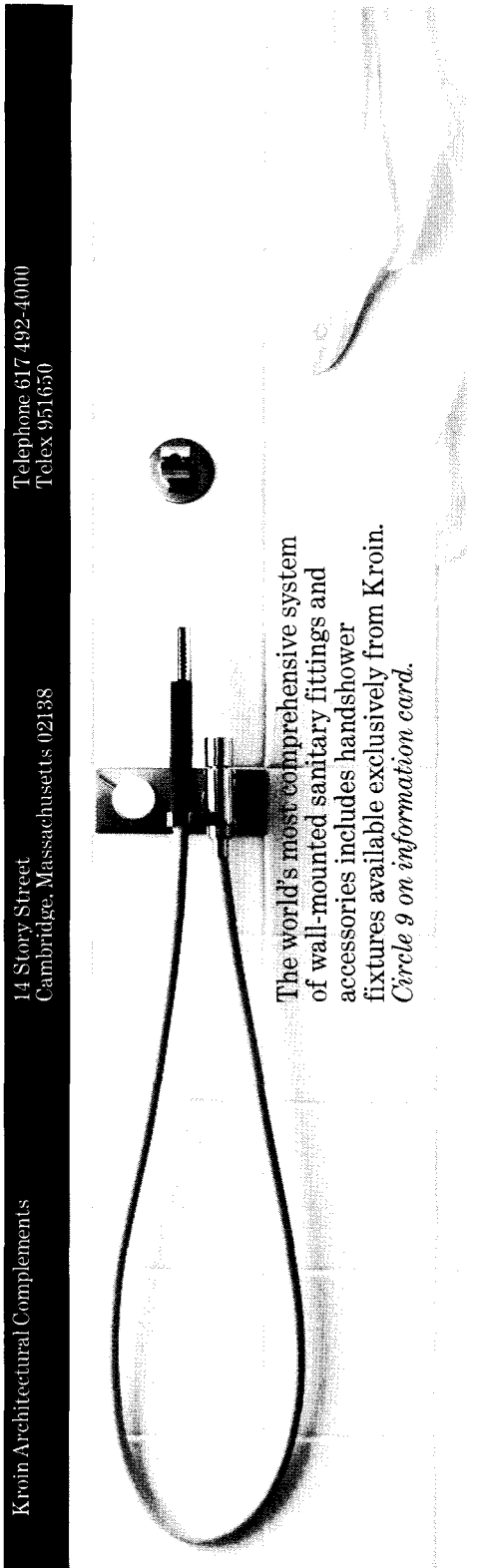
Panel
A one-piece panel has been added to the manufacturer's *System 2* line of office furniture. The acoustical panel is available with an oak or mahogany trim and can be covered in a selection of woven fabrics. Shelves and baskets can be hung on the panels. Conwed Corp., St. Paul, Minn.
Circle 320 on reader service card



Desk system
The *Powerflex* desk system consists of a metal chassis spline and a series of storage units with legal-width drawers. The desk system can be arranged in L-, T- and X-shaped configurations using radius-edged freestanding tables and adjustable work surface extensions. JG Furniture Systems, Div. of Burlington Industries, Quakertown, Pa.
Circle 321 on reader service card



Desk
The desks of the manufacturer's *TEK 3* collection of office furniture have a cylindrical base supporting a capsule-shaped work surface. The base is available in 15 colors and in bronze or chrome over stainless steel. The desk surfaces and the sides come in oak, mahogany, cherry, walnut, and ash, and in 15 color finishes. Modern Mode, Inc., Oakland, Calif.
Circle 322 on reader service card



Whoever said a swimming pool has to be rectangular? Not the designers of Boston's Marriott Long Wharf Hotel. And certainly not Overly Manufacturing which produced the pool which conforms to the ship's prow design of the structure. Thanks to the versatility of aluminum and the skill of our craftsmen, we build pools in the size and configuration of your choice, including circular therapy pools. Or truncated arrowheads. Even rectangular pools.

In Boston, swimming inside makes great sense, considering the bad winters and sweltering late summers.

Welded aluminum also made great sense since the pool is situated over guest rooms and a main floor restaurant, making leak-free performance a must. Our no-nonsense five-year warranty backs up our workmanship.

Write or phone us for a copy of our pools catalog or budget pricing for a complete system of pool, water treatment and deck equipment.

If you are heading for Boston, room reservations for the Long Wharf may be made by calling (617) 227-0800. Remember your swim suit. Even in winter.

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STANLEY'S NEW SLIDING DOOR SYSTEM CHANGES THE WAY YOU LOOK AT ENTRANCES.

Introducing Dura-Glide.™ The all-new sliding door system so advanced it sets unmatched standards for reliability and low cost of ownership.

With this state-of-the-art product introduction, Stanley combines the latest electronic technology with proven dependability to provide both owners and users with the industry's finest, most convenient sliding door package.

New design features give Dura-Glide an open and shut superiority over any other unit on the market. A Pozi-Trac™ position encoder, for example, precisely calculates door location without switches. This slashes service problems 30% to 40%.

New automatic swing door sensor, too.

With the same state-of-the-art technology, we have developed the Sentrex™ swing door sensor. Its new, infrared sensing device eliminates the need for mats and helps give the entrance a cleaner, sleeker look. This unique design is additional proof of Stanley's leadership in the door automation world.

If you're ready to step into tomorrow, get more information today. Call toll-free, 1-800-232-3663. Or write to Stanley Magic-Door,® Division of The Stanley Works, Farmington, CT 06032.

STANLEY®
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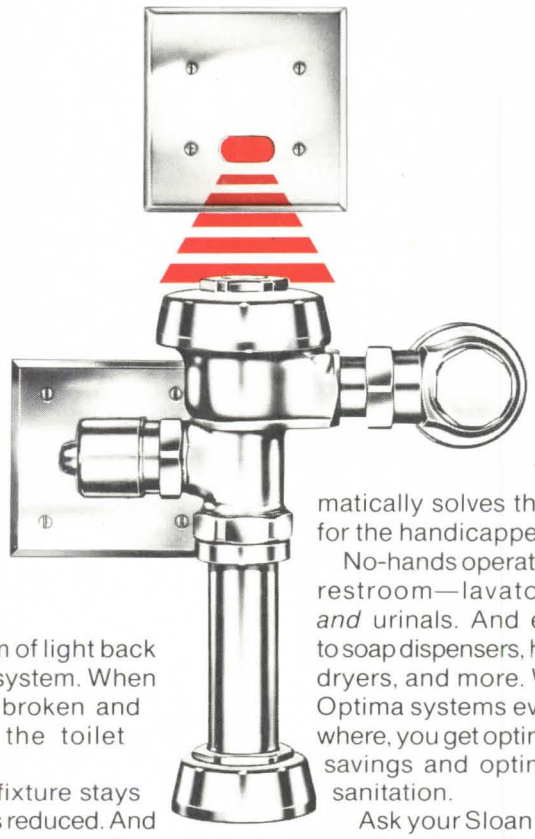
Sloan presents the no-hands toilet.



Take the operation of the toilet *out* of people's hands and it becomes a cleaner, more cost-efficient fixture.

That's the big idea from Sloan—the no-hands toilet, with no levers to flip, no buttons to push, no tank to get in the way. The Sloan Optima™ electronic sensor is in charge.

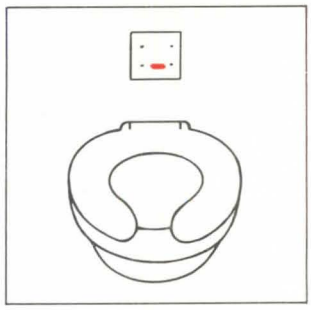
The user reflects an invisible beam of light back into the Optima sensor arming the system. When the user steps away, the beam is broken and the Sloan flushometer flushes the toilet automatically.

With no "forgotten" flushes, the fixture stays cleaner and bacterial contamination is reduced. And there's less water waste, because the system dispenses a measured amount of water only on demand.

No tank means fewer repair bills and easier cleaning. And there's no waste of costly floor space.

The no-hands toilet also automatically solves the problem of mandated access for the handicapped.

No-hands operation easily adapts to the rest of the restroom—lavatories *and* urinals. And even to soap dispensers, hand dryers, and more. With Optima systems everywhere, you get optimum savings and optimum sanitation.



Ask your Sloan representative about Optima systems today. Or write us.

SLOAN VALVE COMPANY
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