ARCHITECTURAL RECORD

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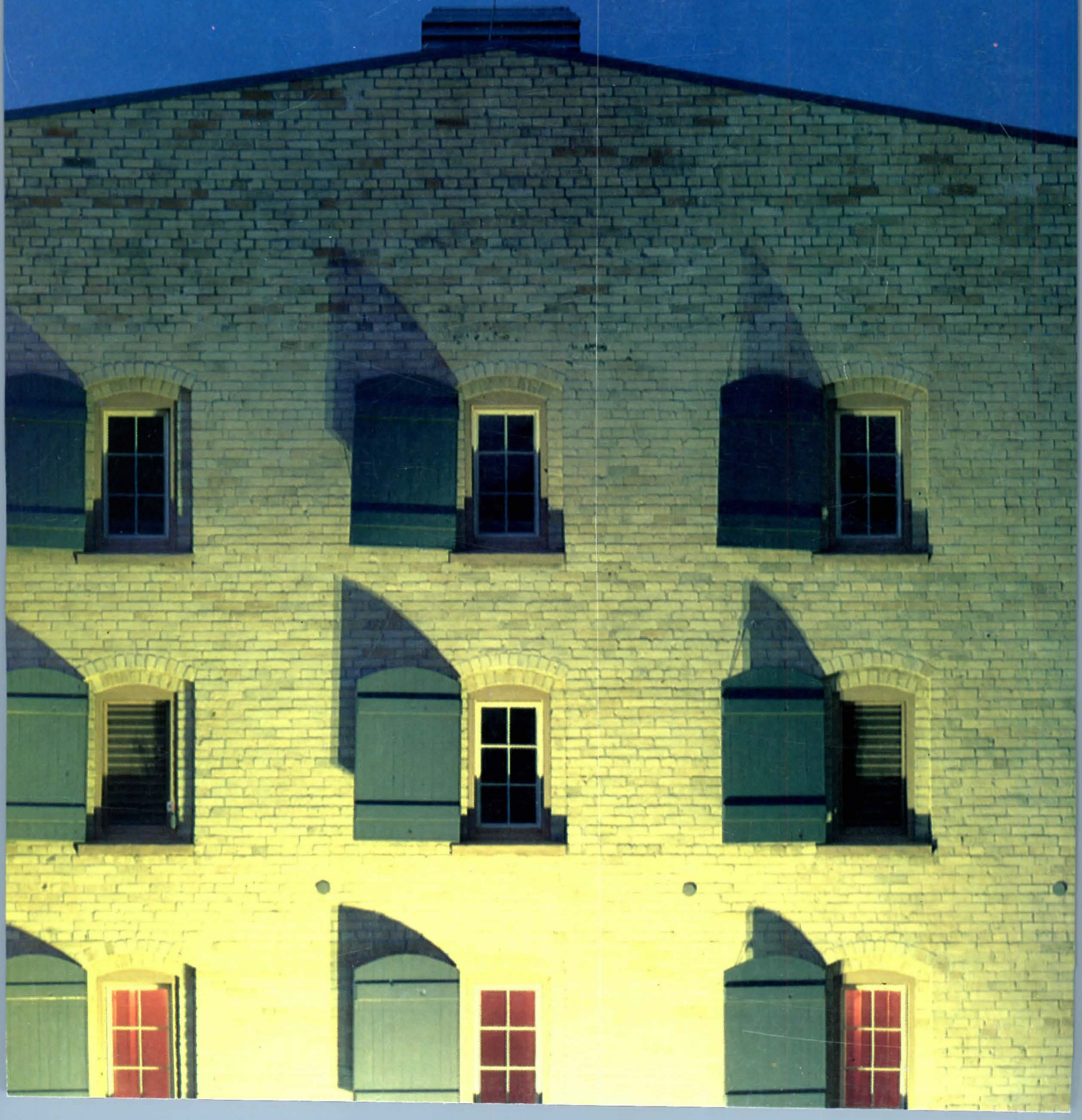
April 1985



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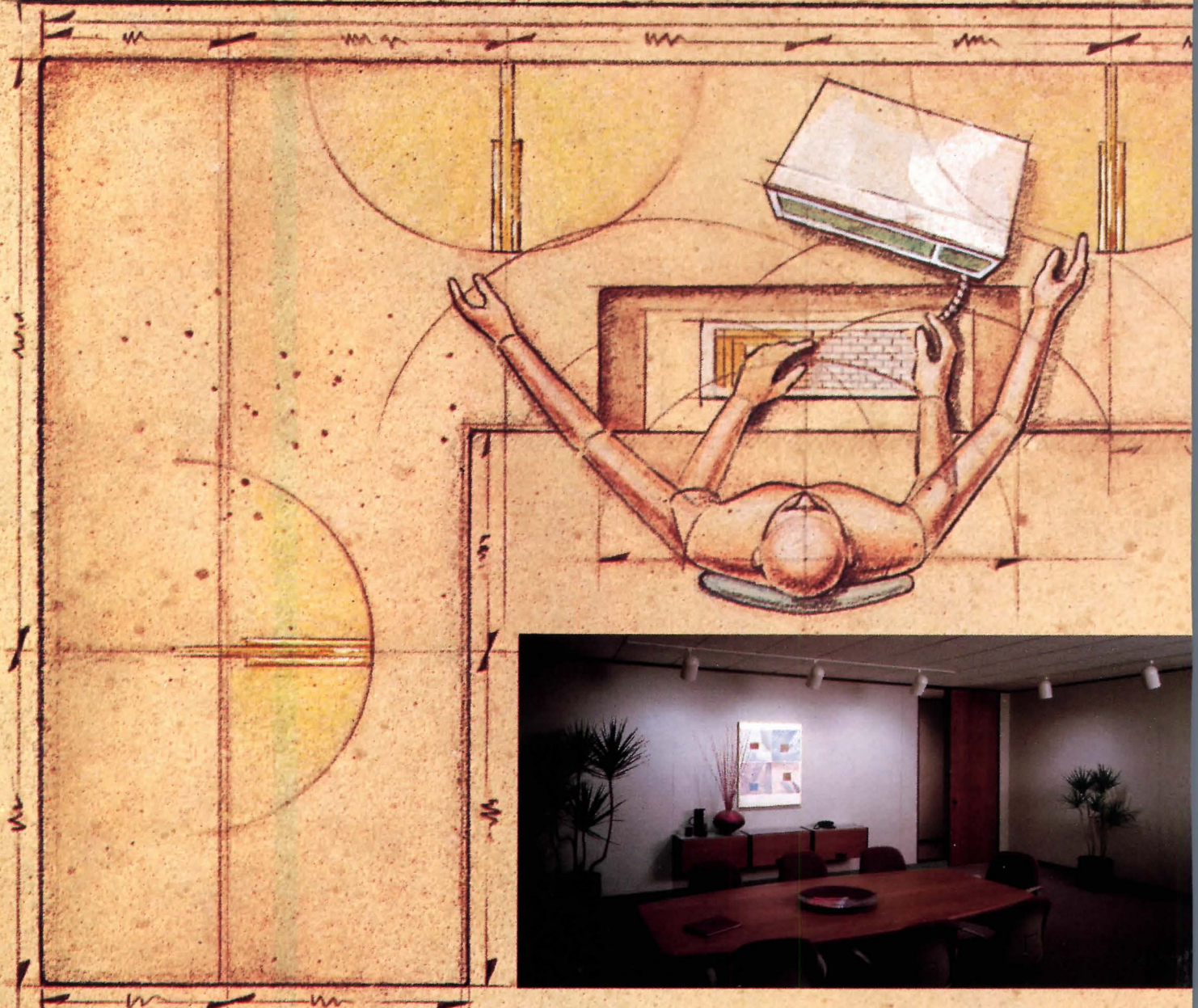

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Contents

Cover:
The Seagram Museum
Waterloo, Ontario, Canada
Barton Myers Associates, Architects
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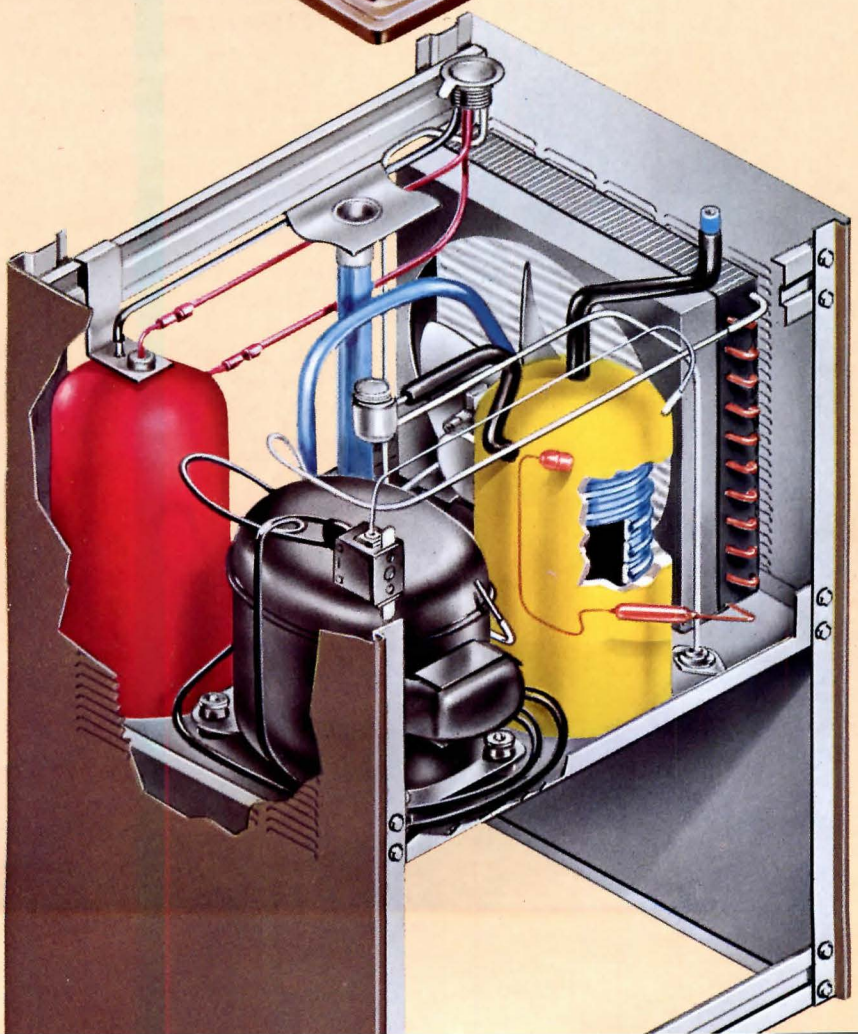

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Back in 1925 the Lamar Life Insurance Company built what could only be called, in the language of the Old South, a "splendid building."

It was the tallest in Jackson, Mississippi; designed along classic lines; and replete with a clock tower and its ever-curious gargoyles.

Times changed, and as energy costs rose, Lamar Life was faced with a challenge: to reduce energy costs by replacing the windows, yet retain the classic look of the building.

Andersen had Lamar Life covered.

And met all terms and conditions: over 650 Narroline® double-hung windows with double-pane insulating glass (standard feature of Andersen® windows and gliding patio doors).

Because of their own traditional lines, the windows don't draw attention to themselves. So the historic appearance of the Lamar building is perfectly preserved.

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Andersen double-pane insulating glass helps keep the building cool during sweltering Mississippi summers, seals the warmth in during the months when temperatures are lower.

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The Perma-Shield® Narroline windows give Lamar Life the added dividends of low maintenance, too. Outside frames are sheathed in rigid, long-life Perma-Shield® vinyl that doesn't need painting. Sash are protected with a weather-resistant polyurea exterior finish.

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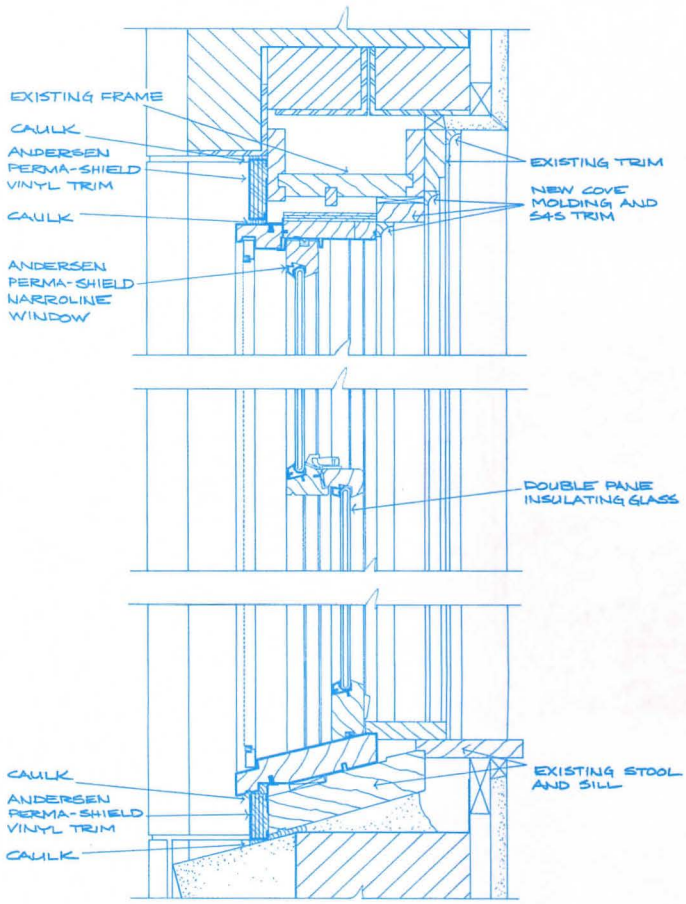

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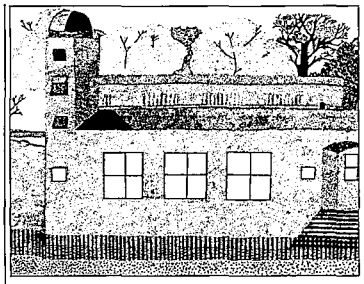
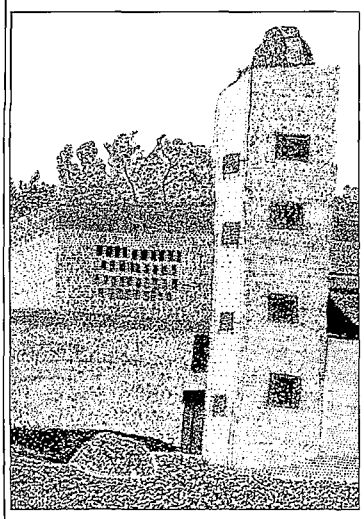
Letters





Congratulations on your Westover School cover article in RECORD's February 1985 issue [pages 124-133]. It is beautiful. We are enjoying the Gwathmey Siegel building as it enhances our daily life and work.

Enclosed are reproductions of 18- by 24-inch ink drawings done by the students when the building was under construction. The girls are in grades nine through twelve, and, as you can see, they see architecture in a charmingly different way than a camera does.

M. G. Martin
Head of Art Department
Westover School
Middlebury, Connecticut

The drawings shown here were signed by Bettie Gurnham '86 (at top) and Lynle Hawkins '87 (at bottom).—Ed.

As one who was present throughout the implementation, if not the creation, of the dream now materialized as the Monterey Bay Aquarium, I have a few comments on the article in the February 1985 ARCHITECTURAL RECORD [pages 114-123].

First, you omit from your list of conceptors the names of Chuck Barnes and Steve Webster, two marine biologists who were both present at the now legendary Margarita session where the project was conceived. Both greatly influenced project planning. Julie Packard, for some unaccountable reason, was reluctant to leave a paying job that involved diving around sewage outfalls to collect samples for marine pollution testing. She became actively involved at a somewhat later date.

Second, I don't think anybody, least of all the pragmatic David Packard, entertained serious hopes of preserving the crumbling shell of the Hovden Cannery. It was too far gone. Salvaging the warehouse, pumphouse, and boiler house required heroic reconstruction methods.

Finally, during the planning, I had severe doubts that the present unstructured circulation pattern would ever work. After several dozen visits to the MBA after the October opening, I am a believer. Given the choice of threading my way through the mazes constructed for the blockbuster Tut exhibit or browsing my way through the minimally organized warehouse of treasures called the Cairo Museum, I'll take Cairo anytime. The same principle applies to aquariums. I am now convinced that the extreme regimentation imposed in the name of efficiency by the circulation patterns of such aquariums as New England and Baltimore is unnecessary. The unorganized circulation at MBA risks chaos, but the resulting freedom is well worth the risk.

John B. Rutherford
Chairman
Rutherford & Chekene, Consulting Engineers
San Francisco

Corrections

Interesting place, Dallas; interesting architecture. It even looks good in reverse—which is the way it is shown on page 151 of the January 1985 RECORD.

Richard J. Bryant, AIA
President
Richard J. Bryant, Inc.
Irving, Texas

Credits for One Logan Square (RECORD, February 1985, pages 142-149) should have recognized all partners in One Logan Square Associates, developer of the complex, which included Urban Investment and Development Co., Philadelphia Investment Corp., and Four Seasons Hotels, Ltd.

Calendar

MBA VBPA ABP

April 9
First session of Emerging Voices 1985, addressed by architect Diane Legge Lohan, of the Chicago office of Skidmore, Owings & Merrill, and by Darcy R. Bonner and Scott D. Himmel of Chicago; at The Architectural League, 457 Madison Ave., New York City. Subsequent sessions will include Rob Wellington Quigley of San Diego and Laura Hartman and Richard Fernau of Berkeley, Calif., on April 16; Wayne Berg, William A. McDonough and J. Woodson Rainey, of New York City, on April 23; and Heather Wilson Cass and Patrick L. Pinnell, of Washington, D. C., and Lawrence W. Speck of Austin, Texas, on April 30.

April 9
Seminar on Sealants and Glazing, sponsored by the Flat Glass Marketing Association; in Boston. Program will be repeated April 11 in Atlanta, April 16 in Detroit, April 18 in Dallas, May 7 in San Francisco, and May 9 in Newport Beach, Calif. For information: FGMA, 3310 Harrison, Topeka, Kan. 66611-2279 (913/266-7013).

April 13-14
Conference, "Urban Pedestrian Systems," considering architectural social, economic, and public policy aspects of walkways, sponsored by Walker Art Center and the University of Minnesota's Humphrey Institute of Public Affairs, Center for Urban and Regional Affairs and School of Architecture; at Walker Art Center and University of Minnesota, Minneapolis. For information: Karen Statler, Walker Art Center, Vineland Place, Minneapolis, Minn. 55403 (612/375-7600).

April 16-19
Course on downtown revitalization in small communities, conducted by the National Trust for Historic Preservation's National Main Street Center; in St. Joseph, Mo. For information: National Main Street Center, National Trust for Historic Preservation, 1785 Massachusetts Ave., N. W., Washington, D. C. 20036 (202/673-4219).

April 25-27
National Contract Show, with exhibits and seminars; at the Sahara Hotel, Las Vegas. For information: Ed Postal, National Contract Show, 31921 Camina Capistrano, Suite 9-208, San Juan Capistrano, Calif. 92675 (714/240-8232).

April 28 to May 1
Design New York 1985, second annual international design market, sponsored by Resources Council, Inc.; in New York City. For information: Pauline V. Delli-Carpini, Executive Director, Resources Council, Inc., 979 Third Ave., New York, N. Y. 10022 (212/752-9040).

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On architects and homebuilders

This year, for the twelfth year in a row, the AIA Housing Committee was invited to make a presentation to the huge NAHB Convention in Houston. This is an important opportunity for the country's architects, because not too long ago the relationships between architects and homebuilders, who this year will build a little over a million single-family houses and nearly three-quarters of a million multifamily units (which is quite a body of work), were, to say the least, stand-offish. As AIA Vice President Don Hackl said: "There was a time when we seemed to be working on separate planets, which I think most of us knew deep down was not a healthy state of affairs for homebuilders, architects, *or* our clients. . . . This twelve-year birthday suggests that our relationship is on the threshold of a productive maturity."

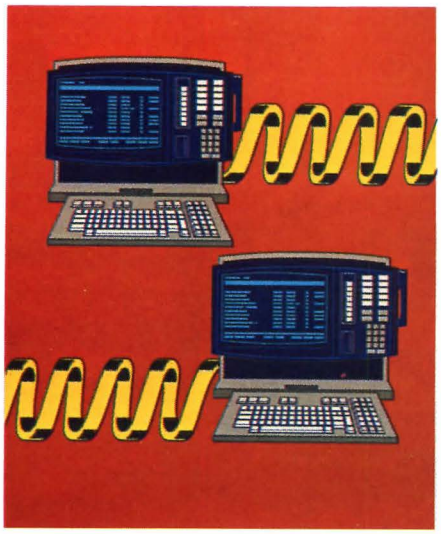
There is, of course, no way that homebuilders can be required to use the service of a good architect, and many of them never will—confident that they "know what will sell" and unwilling to spend any money to retain an architect in the hope that sound design and planning advice might not only improve the quality of the house or subdivision, but cause it to sell better. But more and more builders—on a one-by-one basis, for that is the only way it can work—are reaching out to architects for advice, counsel, design help, and maybe even a competitive advantage in the marketplace. To his homebuilder audience, Mr. Hackl wisely made it clear that in talking about "new design concepts, I'm not talking about the latest architectural fads and fashions. Good architecture is not like a hemline; this year higher, next year below the knee. Value architecture addresses such concerns as land use, the use of space in today's smaller home, privacy, energy use, affordability."

Speaking as an AIA official to the NAHB, Mr. Hackl suggested "a common agenda: a faster transfer of technical information, a continuing joint effort to develop a more uniform system of codes and reduce the risks inherent in the complex planning, zoning and review process around the country, an effort to work together more closely with those who develop manufactured housing, a joint effort to encourage the writing of tax codes in such a way that investors are encouraged to make their money available to back the construction of new housing, especially where the risks and needs are greatest—rental housing and housing for those Americans of modest means." Mr. Hackl also pointed out that "builders and architects both need to watch very carefully what is happening with the various tax reform schemes . . . and the growing Federal budget deficit. We know that the deficit needs to be brought down; otherwise interest rates are going to put both you and me out of business. That's why both the AIA and NAHB advocate a balanced Federal budget. . . . We can work together so that the inevitable cutbacks happen in an orderly way with minimum damage to our industry."

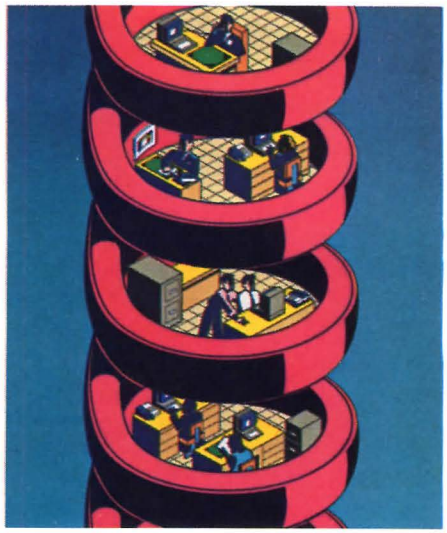
Important as that common agenda at the national level is, can we not hope that more individual homebuilders consider (or experiment, or at least talk about) the possibility that individual architects can make a contribution in terms of planning, siting, design (and especially detailing) —in short, in terms of producing a better quality house or housing unit for the prospective owner or renter? On the other side of the coin, can we not also hope that architects approached by homebuilders will respond with planning and design thinking that not only improves quality, but does not increase the builder's costs and respects the fact that the builder is the one taking the risk in a very competitive marketplace?

Better, yet, can't architects take the initiative? As I've said on this page before, if I were an architect interested in improving the quality instead of just bemoaning the quality of built-for-sale housing, I would begin by taking the best local homebuilder out to lunch. *W. W.*

Voice Management



Data Management



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The next step on infrastructure is how to pay for needed improvements

Further to Congress's attempts to grapple with the growing problems of our deteriorating highways, bridges and sewers (see RECORD December 1984, page 27), both House and Senate committees are fanning out across the nation for a series of regional hearings that, in particular, will explore the possibilities of more local contributions to financing infrastructure repair costs. The House Public Works and Transportation Committee is starting the series, which is likely to run through August.

A bipartisan curtain-raiser to the regional hearings was held in Washington in late February, the "1985 Congressional Symposium on Financing the Infrastructure." It was run jointly by committee chairman James J. Howard and William F. Clinger. Howard has placed the full prestige of his chairmanship behind the issue by sponsoring a new infrastructure bill early in the session. "This year the issue will be financing," Howard and Clinger said in their invitation to the symposium. "Who will pay the bill, and how will it be paid?"

One speaker was Joseph M. Giglio, managing partner in the public finance department of the New York investment firm of Bear, Stearns and Co. (Others: Pat Choate, co-author of the book, *America in Ruins*, and Peter M. Dawkins, senior executive vice president of Shearson Lehman/ American Express, Inc.) Giglio heads a newly established private sector advisory panel of the Senate Budget Committee that plans a parallel round of hearings—also dealing with infrastructure.

Starting in late summer and running through the fall, Giglio's group will listen to testimony in six states—Massachusetts, Florida, New Jersey, Indiana, Washington, and Texas. These six had previously contributed data on infrastructure needs to a survey organized by the Joint Economic Committee of Congress. "We hope that these states are representative of the different regions of the country," says a spokeswoman for the panel. The group consists of some 30 members, including former cabinet members, chief executives, and chairmen of major corporations. Giglio has been closely involved with the establishment of infrastructure banks in New Jersey, New York, Washington, and Connecticut, and got into the act through Senate Budget Committee chairman Pete Domenici and Bill Bradley, a committee member. "Giglio came to us with this idea," said a Senate staffer. "It seems to make quite a bit of sense."
Peter Hoffmann, World News, Washington, D. C.

Want to know which Federal agencies are giving out work?

While the most immediate interest for those seeking Federal commissions will be in upcoming contracts, as advertised in *Commerce Business Daily* or in direct invitations to bid sent to those who have placed themselves on agency bidders' lists, the Federal Procurement Data System can tell you where the work *has* been coming from and, for instance, which agency's bidder lists are good ones to qualify for.

The FPDS can also tell you who the competition is—which firms have been getting the contracts for how much and what kinds of firms (e.g. small, minority, "women owned").

The standard report is available free. To use it, you will have to cull through figures for all types of services (e.g. guard dog suppliers) and you will not get such specifics as the names of firms receiving contract awards. It is, however, adequate for an over-all picture, and the relevant information is not difficult to find.

Special reports are available for between $250 and $400, depending on the number of years to be covered and the complexities you ask for. It *will* be tailored to your specific concerns and questions.

Contact Federal Procurement Data Center, 4040 N. Fairfax Drive, Suite 900, Arlington, Virginia 22203 (703/235-1326).

Are you practicing defensive architecture?

A new pamphlet, *Practicing Defensive Architecture,* is available from the Society of American Registered Architects. It is the first of a series of three pamphlets to be issued dealing with architects' liability.

"Although this publication is not intended to constitute legal advice," says SARA president Alex Gravesen, "we believe there is great value in architects sharing the experiences of their fellows and thus learning how to avoid some of the most common pitfalls."

Other practice aid pamphlets previously published by SARA cover such topics as marketing, quality control in design and engineering, and utilizing computer technology.

The new publication can be obtained for $1.50 ($1 for SARA members) from G. Robert Johnson, 1920 Waukegan Road, Room 206, Glenview, Illinois 60025.

Design fee bidding backfires

According to a recent study by the AIA, a comparison of two states' design procurement policies reveals that Maryland, using a primary criterion of lowest fees in the selection of consultant architects and engineers, actually pays almost twice as much for design as Florida, which uses the criterion of technical competence alone (as do most of the states and, because of the Brooks Act, the Federal government) and negotiates fees after consultant selection. Maryland, it turns out, winds up paying 13 per cent of construction cost for all design-related services, while Florida pays only 6.8 per cent—this despite the fact that Florida's fees to consultants are *higher.*

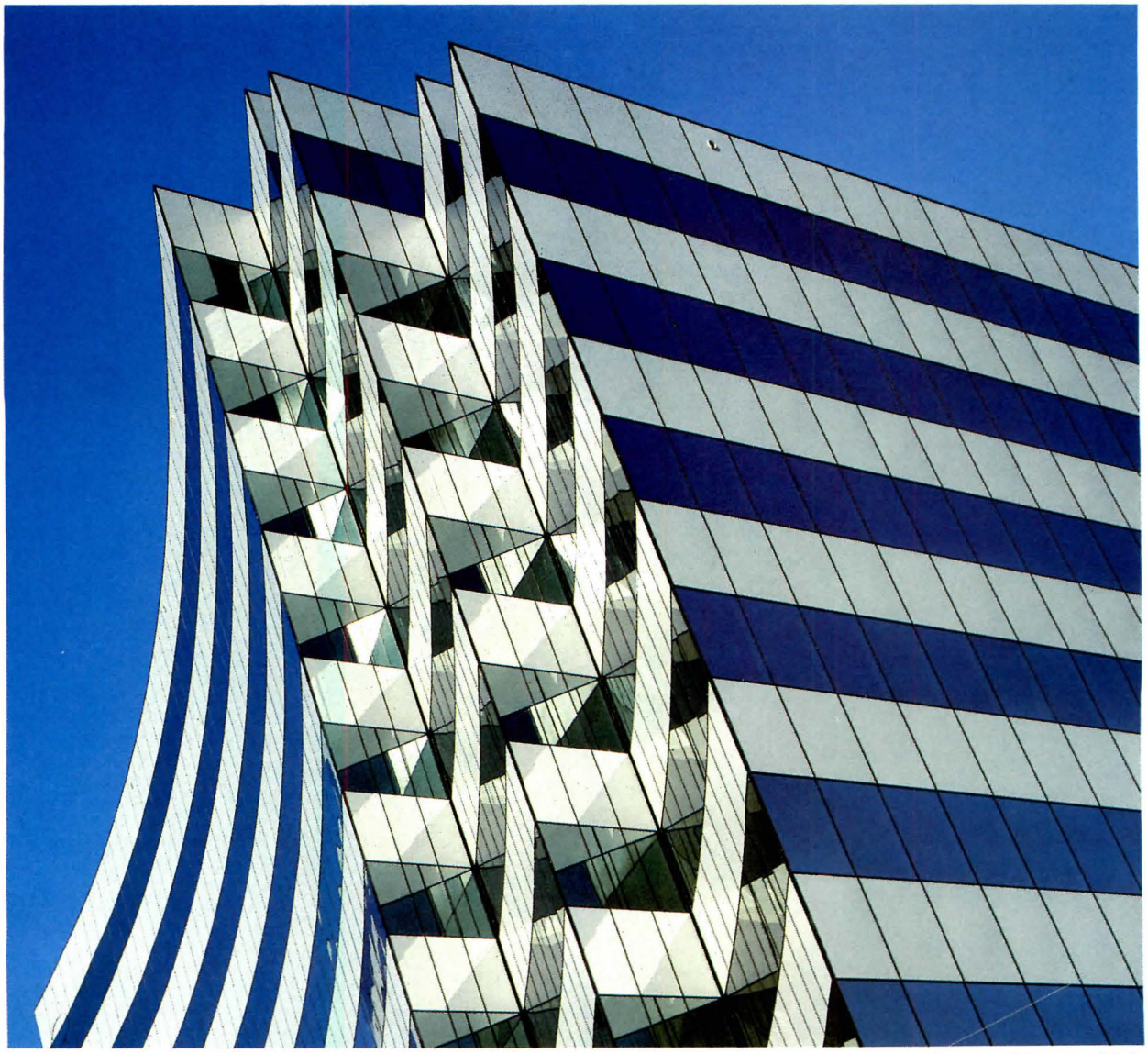
Maryland, having long claimed that its process was the most cost-effective, has, according to the AIA, let price become the dominant factor in the selection of designers. Of the 40 commissions awarded immediately prior to June 1983, 33 projects, or 83 per cent, went to firms with the lowest fee proposals.

Then, why does Maryland, with its emphasis on low fees, wind up paying more money? The answer in part, according to the study, is all the extra work that state must do to determine what its lower fees are buying. A large state staff must prepare a detailed program on which the consultants' fee proposals can be based. In turn, the many "bidding" consultants, because they are locking themselves into a dollar amount, must create detailed proposals on what they are prepared to do. Both program and proposals require extensive review.

As a result, there are hidden costs in the Maryland process not even included in the 13 per cent—the time and labor in preparing proposals on the part of all those hopeful designers before they know whether they will be seriously considered *and* the escalation in construction costs during the more lengthy process. According to the study, the extra costs to the designer are, at least in part, passed on to the private-sector clients. And the construction escalation costs, which might well be added onto the design fee to reflect the full Maryland premium, are of course paid by taxpayers.

Does the Maryland system make anyone happy? Although both governments are pleased with their architect and engineer selection procedures and the quality of the buildings that result, design professionals in Maryland are resentful of the system, reports the study. "Most architects and engineers who design state projects in Maryland dislike the system, which they feel rewards them inadequately."
Charles K. Hoyt

G L A S W E L D



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Construction economy update: The volume is reaching for its peak

By George A. Christie

The building market is doing what it usually does during the middle years of its cyclical development: It is moving over to the slow lane.

The years 1983 and 1984 saw the maximum acceleration. From almost a dead stop that lasted from 1980 to 1982 (when the value of new construction contracting failed to break out of the $150 to $160 billion range), contracting leaped 23 per cent in 1983 to $194 billion. That surge was followed by an 8 per cent gain in 1984 to $210 billion. From there the numbers will keep getting bigger for a while longer, but the gains will continue to diminish. The 1985 advance will shrink to 5 per cent as total construction contract value reaches $221 billion, and will be followed by a mere 2 per cent increase in 1986.

After adjustment for inflation, real (constant dollar) expansion of the construction cycle will be reaching its limit in 1985, and by 1986 the building market will be rounding another peak. This means that the next two years—1985 and 1986—are likely to be the best of the current crop.

Changing conditions mean you should watch single-family home and office construction

Last year opened with strong housing activity (which subsequently faded), and closed with equivalent strength in nonresidential building. The emergence of the dormant commercial and industrial building sector—a more or less normal mid-cycle event—was what kept the construction market's two-year-old expansion alive.

As 1985 opened, construction contracting continued to advance—from December's $211 billion (seasonally adjusted annual rate) to $215 billion in January. But in January it was homebuilding (and also public works construction) that moved the market ahead, while nonresidential building settled back. After last year's 24 per cent surge of commercial and industrial building, January's shift could be the signal for another change of emphasis—this time in favor of residential building.

Two market pressures—one positive and the other negative—lend support to such a reversal. On the plus side: Single-family homebuilding has yet to respond to the decline of mortgage rates that has been under way since late last summer. (January's housing gain was exclusively in multifamily units.) This potential should be coming through in 1985. The minus: Office building is highly vulnerable, and may already be on the way to an extended correction for the overbuilding that has been encouraged by accelerated depreciation. These two categories, single-family housing and offices, are the ones to watch closely in 1985.

All commercial building is reaching a premature peak, again with changing emphasis

The current cycle of commercial and industrial building is taking on a unique configuration. In contrast to the typical pattern of steady expansion over a period of three or more years, followed by sharp contraction, this cycle—which began late in 1982—appears to have topped out after only eight quarters of expansion. Its premature peak is a low one by recent standards, but should be followed by an unusually gentle decline stretching over the next several years. The reason: divergent movements in the three major components of commercial and industrial building.

For the next few years, *retail* building will be holding steady at its current 425- to 450-square-foot rate of contracting. *Office* building, which soared to 337 million square feet in the second quarter of 1984, is now edging down, and its decline will soon accelerate. *Industrial* building, temporarily stalled at just short of 150 million square feet, has the potential to climb to 200 million square feet before the next recession sets in.

Because the anticipated decline of office building will carry considerable weight in the near future, the direction of total commercial and industrial building will be generally downward through the mid-1980s, but the continued support of retail and industrial building will cushion the fall. The net result: an almost plateau-like appearance to the total commercial and industrial building market through 1987. Ultimately, as the economy slips into general recession toward the end of the decade, the cyclical decline of commercial and industrial building will degrade into a typical across-the-board retreat. For the short term, however, recession is not a serious threat. With capacity utilization at 82 per cent and unemployment at 7 per cent, the economy has plenty of room to grow, and more than enough deficit spending to keep it growing.

Contracting for retail buildings (stores and warehouses) reached a rate of 420 million square feet in 1984's second half, a level that is consistent with a volume of housing starts in the range of 1.7 million to 1.8 million units. Since 1.8 million dwelling units, as a barometer of what we can expect for retail construction, is the best expectation for the housing sector any time in the foreseeable future, it would appear that retail building has gone about as far as it is going for a while.

Because the volume of homebuilding is likely to remain close to 1.8 million units through 1985 and 1986, the demand for retail building is headed for an extended stretch of contracting at its present high level. Allowing for a short lag (which has the effect of smoothing out quarter-to-quarter variations in homebuilding as demand is subsequently transferred to retail building), contracting for stores and warehouses is estimated to hold steady in the narrow range of 420 million to 430 million square feet for the next two years.

In response to the economy's vigorous 1983-84 recovery, and encouraged by tax incentives, contracting for industrial construction surged 60 per cent between first quarter 1983 and second quarter 1984. For the rest of 1984, however, contracting for manufacturing buildings remained frozen in its tracks. The reason: The brief round of monetary restraint that was applied to check the economy's runaway expansion inevitably led to a dip in industrial production and a setback in capacity utilization.

The general economic outlook for 1985 has brightened appreciably in the past month or two, but last year's close encounter with "growth recession" is likely to eclipse the industrial building market through the first half of the year. In 1985, the completion of last year's large increase of newly started industrial construction, along with slower industrial growth and continued problems in export markets for U. S. manufacturers, will combine to hold the capacity utilization rate below 83 per cent. Under such circumstances, contracting for new plant capacity will be inhibited until some of the current surplus is absorbed. In 1985, this implies a year of only modest improvement in industrial construction, and the short-term forecast has been scaled down to 150 million square feet (up 5 per cent from 1984's 143 million). Most of this gain will be concentrated in the second half.

For the second time in the 1980s, the office building boom appears to be receding from an extraordinary peak. The first one came in the first quarter of 1981 when the rate of contracting soared to a record 355 million square feet. A year later, as the booming Southwest began to cool down, contracting for office buildings was declining sharply. But a little more than a year after that, the stimulus of greatly liberalized depreciation schedules, as discussed in *Outlook* (see RECORD, November 1984, pages 37-45), triggered a secondary building

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1985 National Estimates
Dodge Construction Potentials

First Update March 1985

		1984 Actual	1985 Forecast	Percent Change 1985/84
Nonresidential Buildings				
Floor Area (millions of square feet)	Office Buildings	317	275	− 13
	Stores & Other Commercial	477	496	+ 4
	Manufacturing Buildings	143	150	+ 5
	Total Commercial & Manufacturing	937	921	− 2
	Educational	89	95	+ 7
	Hospital & Health	71	72	+ 1
	Other Nonresidential Buildings	122	132	+ 8
	Total Institutional & Other	282	299	+ 6
	Total Nonresidential Buildings	1,219	1,220	—
Contract Value (millions of dollars)	Office Buildings	$ 22,917	$ 20,975	− 8
	Stores & Other Commercial	18,465	19,800	+ 7
	Manufacturing Buildings	7,141	7,650	+ 7
	Total Commercial & Manufacturing	$ 48,523	$ 48,425	—
	Educational	$ 7,569	$ 8,125	+ 7
	Hospital & Health	7,217	7,550	+ 5
	Other Nonresidential Buildings	9,959	10,700	+ 7
	Total Institutional & Other	$ 24,745	$ 26,375	+ 7
	Total Nonresidential Buildings	$ 73,268	$ 74,800	+ 2
Residential Buildings				
Dwelling Units* (thousands of units)	One-Family Houses	1,001	1,050	+ 5
	Multi-Family Housing	747	725	− 3
	Total Housekeeping Residential	1,748	1,775	+ 2
Floor Area (millions of square feet)	One-Family Houses	1,578	1,648	+ 4
	Multi-Family Housing	714	707	− 1
	Nonhousekeeping Residential	92	90	− 2
	Total Residential Buildings	2,384	2,445	+ 3
Contract Value (millions of dollars)	One-Family Houses	$ 66,849	$ 73,325	+10
	Multi-Family Housing	27,597	28,625	+ 4
	Nonhousekeeping Residential	6,425	6,500	+ 1
	Total Residential Buildings	$100,871	$ 108,450	+ 8
Nonbuilding Construction				
Contract Value (millions of dollars)	Highways & Bridges	$ 17,158	$ 18,025	+ 5
	Sewer & Water	8,098	8,600	+ 6
	Other Public Works	8,143	8,125	—
	Total Public Works	$ 33,399	$ 34,750	+ 4
	Utilities	$ 2,485	$ 3,000	+21
	Total Nonbuilding Construction	$ 35,884	$ 37,750	+ 5
All Construction				
Contract Value (millions of dollars)	Total Construction	$210,023	$221,000	+ 5
	Dodge Index (1977 = 100)	149	157	

*F.W. Dodge basis.

Prepared March 1985 by the Economics Department McGraw-Hill Information Systems Company, George A. Christie, vice president and chief economist

boom in major cities and their suburbs all over the nation.

Tax reform proposals that are apt to take back some of the incentive of accelerated depreciation add an extra element of mystery to the outlook, but such legislation is at least a year from becoming effective. In the meantime, the office market must be evaluated on the basis of current conditions.

By conventional standards, this market was overbuilt as long ago as 1981, and one consequence of accelerated depreciation was to raise the threshold of saturation. What was surplus by pre-ERTA standards became acceptable with liberalized depreciation. After three extra years of high-volume development, it is probably safe to say that the market is as overbuilt today—with the new depreciation schedules—as it was in 1981 under the former rules. If 1982's short-lived decline of contracting was any indication of developers' reaction to overbuilding, then a cutback of perhaps 15 per cent (to 275 million square feet) might be appropriate for 1985's nervous market. An even larger decline would seem reasonable except for the motivation to continue building in anticipation of tax reform.

Institutional building will rise but still remain below pre-1980 levels

Over the past two years, state and local governments have been learning how to get along with less financial help from Washington. The initial shock of the New Federalism, coming as it did when the economy was in deep recession, led to sharp cuts in contracting for institutional building during 1981 and 1982. Recovery, which began in 1983, has been a slow process, and the future of the institutional building market (schools, hospitals, public administration buildings, etc.) depends on the capability of state and local governments to go it alone.

Over the next several years, the most positive influence on institutional building will be the gradual strengthening of demographic support in the key educational sector. The biggest risk: the likely loss of Federal Revenue Sharing funds. However, neither of these two factors will have much bearing on 1985's outcome when the continued recovery from the 1981-82 collapse will raise contracting another 6 per cent to just under 300 million square feet—still below pre-1980 levels.

The 1985 forecast of total nonresidential building (commercial, industrial, and institutional building) has been increased slightly to 1,220 million square feet—a volume that is virtually even with 1984's final total. A different "mix" of building types in 1985 (fewer offices, more institutional buildings), along with an average increase in cost per square foot of 4 to 5 per cent, will raise nonresidential building contract value 2 per cent to $74.8 billion.

Housing also will show mixed results with an over-all increase

The closing quarters of 1984 brought the anomaly of declining mortgage rates *and* declining housing starts. Usually when one is going down, the other is going up.

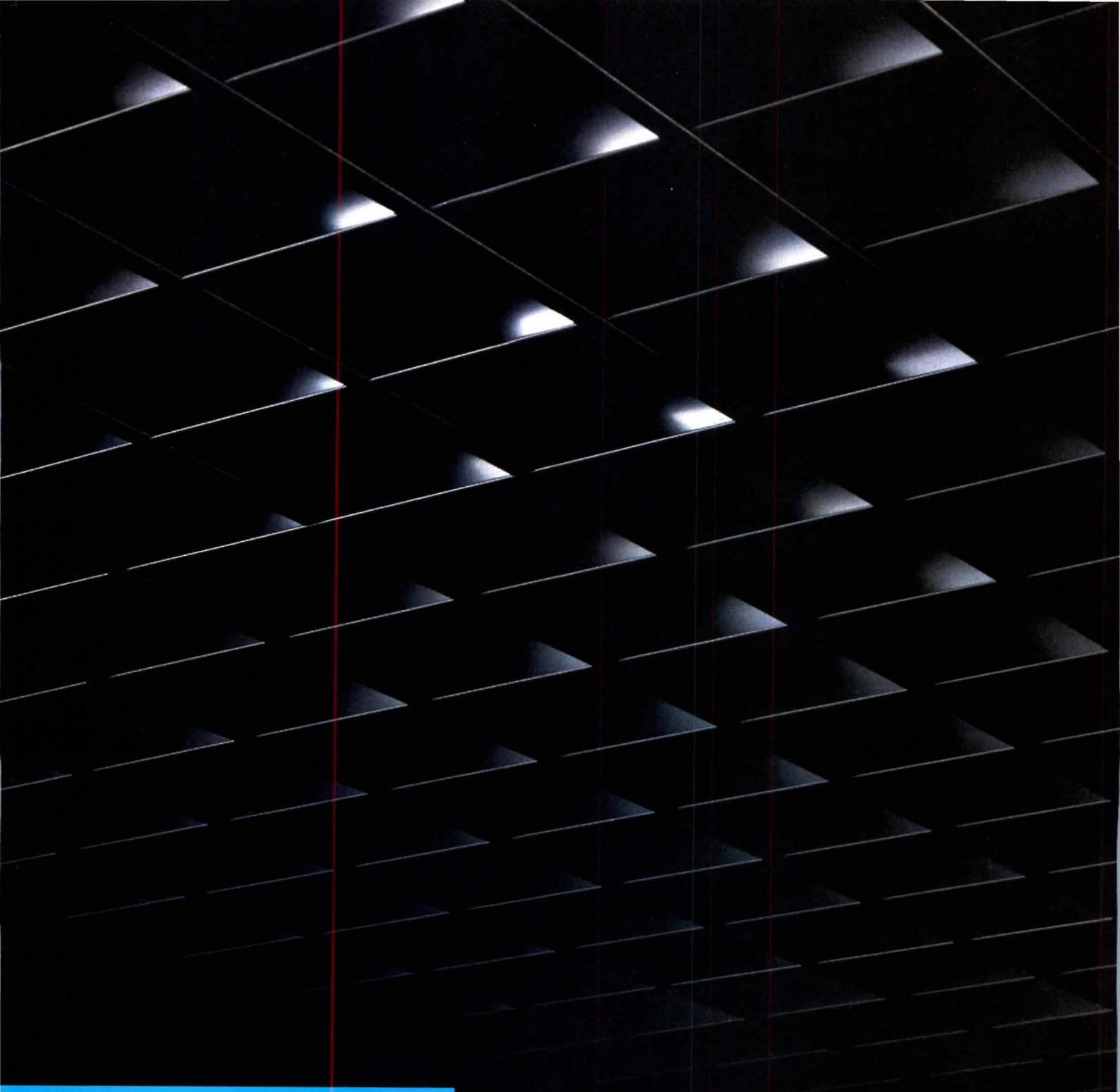
Whether the lack of homebuyer response to improving credit conditions was due to general economic uncertainty during last year's shaky second half, or the hope that still lower rates might be negotiated by holding out longer, the time to act has arrived. After its brief slowdown, the economy is back to cruising speed.

Partly for that reason, interest rates are stabilizing. With homebuyers running out of reasons not to buy, it has become fashionable to look for the turnaround of the housing market in 1985's first quarter, with continuing recovery throughout the rest of the year.

Although short-term interest rates are stabilizing, mortgage rates can still edge downward a bit more. The average mortgage commitment rate , which is currently a shade under 13 per cent (down from 14 per cent at this time last year), is expected to decline for perhaps another quarter, leveling off between 12 1/2 and 12 3/4 per cent through the second half. By 1986, mortgage rates— preceded by rising short-term rates—are likely to be climbing into the 13s again.

The experience of the first half of the 1980s, a period when mortgage rates ranged from high to very high, is the best guide to the potential of the one-family housing market when mortgage rates fluctuate between 12 and 13 per cent. Within this range, the credit-sensitive one-family building market cannot stretch much beyond 1.1 million units, and can also be squeezed below 1.0 million, where it is now.

Early in 1985, one-family housing starts will reverse their 1984 decline, edging past the one-million unit rate in the spring quarter to finish the year at 1.1 million units. For 1985 as a whole, the expected volume of 1,050,000 one-family units would be the best of the 1980s to date—slightly better than the 1.0 million volume reached in both 1983 and 1984, and well above the depressed level that prevailed during 1980, 1981, and 1982.



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1985 Regional Estimates
Dodge Construction Potentials

First Update March 1985

		1984 Actual	1985 Forecast	Percent Change 1985/84
Northeast	CT, ME, MA, NH, NJ, NY, PA, RI, VT			
Contract Value (millions of dollars)	**Nonresidential Buildings**			
	Commercial and Manufacturing	$ 8.183	$ 7.950	− 3
	Institutional and Other	4.467	4.800	+ 7
	Total	$12.650	$12.750	+ 1
	Residential Buildings			
	One-Family Houses	$ 8.665	$ 9.675	+ 12
	Multi-Family Housing	3.598	3.750	+ 4
	Nonhousekeeping Residential	880	900	+ 2
	Total	$13.143	$14.325	+ 9
	Nonbuilding Construction			
	Highways and Bridges	$ 3.246	$ 3.200	− 1
	Other Public Works	3.119	3.300	+ 6
	Utilities	314	400	+ 27
	Total	$ 6.679	$ 6.900	+ 3
	Total Construction	$32.472	$33.975	+ 5
North Central	IL, IN, IA, KS, MI, MN, MO, NE, ND, OH, SD, WI			
Contract Value (millions of dollars)	**Nonresidential Buildings**			
	Commercial and Manufacturing	$ 9.416	$ 9.475	+ 1
	Institutional and Other	5.167	5.400	+ 5
	Total	$14.583	$14.875	+ 2
	Residential Buildings			
	One-Family Houses	$10.720	$11.775	+ 10
	Multi-Family Housing	3.555	3.450	− 3
	Nonhousekeeping Residential	925	775	− 16
	Total	$15.200	$16.000	+ 5
	Nonbuilding Construction			
	Highways and Bridges	$ 4.766	$ 5.025	+ 5
	Other Public Works	3.699	3.775	+ 2
	Utilities	203	300	+ 48
	Total	$ 8.668	$ 9.100	+ 5
	Total Construction	$38.451	$39.975	+ 4
South	AL, AR, DE, DC, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV			
Contract Value (millions of dollars)	**Nonresidential Buildings**			
	Commercial and Manufacturing	$18.536	$18.800	+ 1
	Institutional and Other	9.444	9.900	+ 5
	Total	$27.980	$28.700	+ 3
	Residential Buildings			
	One-Family Houses	$30.230	$32.600	+ 8
	Multi-Family Housing	12.384	12.450	+ 1
	Nonhousekeeping Residential	2.732	2.825	+ 3
	Total	$45.346	$47.875	+ 6
	Nonbuilding Construction			
	Highways and Bridges	$ 6.128	$ 6.525	+ 6
	Other Public Works	5.833	6.000	+ 3
	Utilities	1.394	1.500	+ 8
	Total	$13.355	$14.025	+ 5
	Total Construction	$86.681	$90.600	+ 5
West	AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, WY			
Contract Value (millions of dollars)	**Nonresidential Buildings**			
	Commercial and Manufacturing	$12.388	$12.200	− 2
	Institutional and Other	5.667	6.275	+ 11
	Total	$18.055	$18.475	+ 2
	Residential Buildings			
	One-Family Houses	$17.234	$19.275	+ 12
	Multi-Family Housing	8.060	8.975	+ 11
	Nonhousekeeping Residential	1.888	2.000	+ 6
	Total	$27.182	$30.250	+ 11
	Nonbuilding Construction			
	Highways and Bridges	$ 3.018	$ 3.275	+ 9
	Other Public Works	3.590	3.650	+ 2
	Utilities	574	800	+ 39
	Total	$ 7.182	$ 7.725	+ 8
	Total Construction	$52.419	$56.450	+ 8

Multifamily building, at a very strong 700,000-plus unit volume in 1983 and 1984, is being supported by two layers of demand—one firm, but the other undependable. Condominiums, which now make up one-third of total multifamily starts (up from one-tenth only a few years ago), have found a secure niche as the 1980s alternative to the traditional "starter home." But apartment construction, having soared into the unreal world of tax shelters since 1982, is, like offices, becoming overextended.

With accelerated depreciation continuing to support apartment building for at least another year, and lower interest rates stimulating condo sales, 1985's total of multifamily building can be expected to remain within its recent high range of 700,000 to 750,000 units. January's strong rate of contracting got 1985 off to a good start.

Total housing starts in 1985, consisting of 1,050,000 one-family homes and 725,000 multifamily units, are estimated at 1,775,000—a small increase over 1984's 1,748,000 units. Including nonhousekeeping residential buildings (hotels, motels, dormitories), total residential construction contract value will increase 8 per cent in 1985, to $108.5 billion.

Public works are going ahead in the face of budgetary discipline

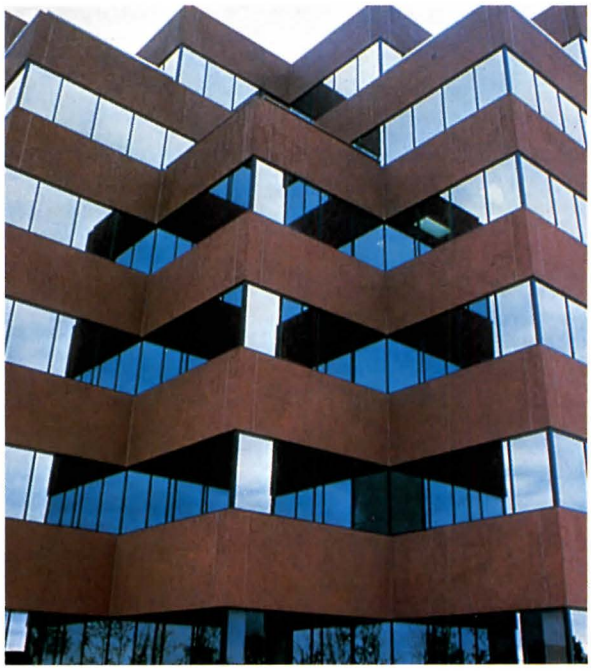
The ICE issue, which has been threatening to disrupt highway construction for the past year, finally appears to have been resolved. But this does *not* mean that highway/bridge construction is about to surge as a large block of "frozen" Federal funds is suddenly released.

It is a fact, of course, that Congress's reluctance to pass DOT's Interstate Cost Estimates (due to controversial amendments to the bill, and not because of the estimates themselves) has delayed the disbursement of several billion dollars of Federal grants for interstate highway construction. Contracting for highway construction has not been seriously interrupted, however, mainly because state governments were able to advance the funds necessary to keep most projects moving ahead. Despite all the concern, 1984 contracting for highways and bridges was *up 13 per cent* over 1983's previous record value.

The release of the blocked Federal funds in the months ahead will be of greater interest to the keepers of state and Federal government accounts than to contractors. As funds that were advanced by state highway agencies are replaced by Federal grants, 1985 contracting is to be close (or only slightly higher) than it would have been had the ICE issue never happened—a total of $18 billion for a gain of 5 per cent over 1984's contract value.

The attempt to conform with last summer's Deficit Reduction Act will keep a tight lid on Federal spending for water resources (by the Corps of Engineers and the Bureau of Reclamation) and for waste water treatment plants (by the Environmental Protection Agency). However, construction of water supply systems, which depends more on municipal funding, is expected to rise nearly 10 per cent in 1985 in line with generally strong building activity. On balance, total public works construction will not quite keep pace with inflation in 1985, as the expected 5 per cent rise in construction cost exceeds this year's 4 per cent advance of contract value to $34.8 billion.

Total nonbuilding construction contract value (public works and utilities) will advance 5 per cent in 1985 to $37.8 billion.



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Practice:
Why are architects on the defensive?

In the second part of this coverage, speakers at the AIA's Dallas conference continue on "Power, Image and Compensation"

By Joan Capelin

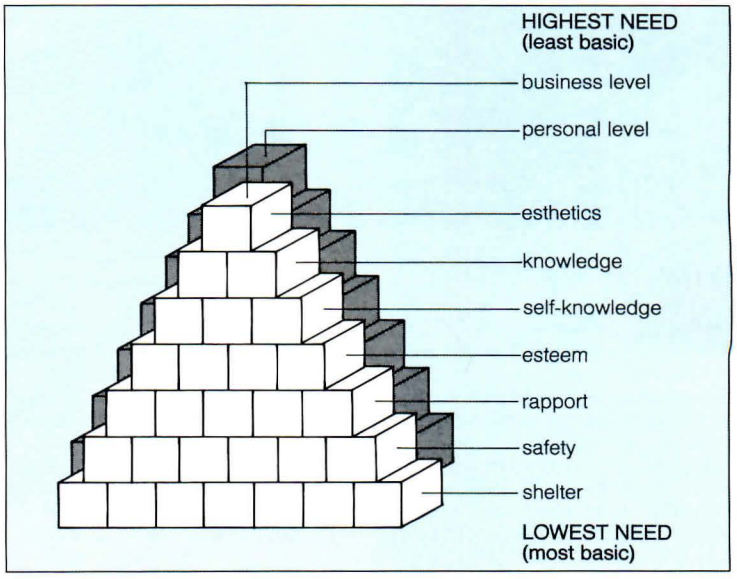
Last month (see RECORD, March, pages 39 and 41), author Joan Capelin described the opening night of the AIA Practice Committee conference, "Power, Image and Compensation." Videotaped speakers Wolf von Eckardt, William Marriott, John Vigilanti, and Paul Goldberger assailed the design profession as being less than unfailingly talented, short on financial understanding, and desiring construction-process controls it might be unable to exercise—characterizations that the conference participants themselves were slow to object to.

Eleven conference speakers attempted to address the reasons why the profession is on the defensive. Ultimately, according to Capelin, it was the self-confidence of the speakers that inspired the conference, since the answers as to how these successful practitioners had achieved success seemed to vary. John Burgee thought architects should stick to doing only the part of the construction process that they are best at, while Sarah Harkness seemed to argue for broader responsibility. Gerald Li argued for flexibility and convincing clients of the value of design, while John Portman implied convincing them of the value of more daring. Marketing consultant Martin McElroy spoke of "opportunity" as being a prerequisite to "power, image and compensation," while Ennis Parker stressed the value of communication. Chuck Thomsen spoke of "recognizing what clients want from us," which was also about communication. Herewith more observations by the speakers. Charles Hoyt

Obtaining clients was a subject that occupied speakers in a number of sessions. "Good selling," maintained David Harper in one, "is making the truth credible." His firm, Harper & Buzinec, is cited as one of America's fastest-growing. You needn't muse about whose truth he refers to. "Clients are yearning for strong leadership," he made clear.

Central to Harper's argument was the Maslow Hierarchy of Needs Pyramid, which shows that the caliber of the magnitude of one's needs is inverse to the strength of elementary desires. Just how opposite our potential clients' priorities are to what we, as professionals, may think of as important can be seen in Harper's rendition of the pyramid (see illustration shown below). "Interviews are for alignment of values," he said, and suggested that architects find the location of their clients on the pyramid before they find their own.

Harper cautioned that architects must learn as much as possible about a prospective client so that they can sell at the client's level. "If you sense that this client is interested only in a simple four walls and a roof, you don't sell 'image.' If he seems to need psychological safety, discussion about cost control will be well received."



Maslow's Hierarchy of Needs Pyramid illustrates just how differently designers and clients may look at the value of the designer's work. On the pyramid, esthetic motivation is at the opposite extreme from the reason that the client may have come to the designer in the first place—for basic shelter.

Careful, though. Clients may talk about "esthetics," but precious few care about esthetics while most architects are passionate about them. What clients probably mean when they talk about esthetics is "esteem," which is only halfway up the pyramid. A client who wants his project to win design awards is probably interested in "esteem." Even architects themselves can get hung up on this one.

Communicating exceptionally well to both prospects and clients therefore becomes a mark of excellence. Martin McElroy, speaking from years of experience in the marketing trenches, made this enthusiastically received observation: "Marketing is making the client look smart. Anyone in a service business has one product: heroes. We must figure out how to make heroes of our clients. This is the first threshold for creating professional opportunities. By marketing, we earn the latitude to apply our capacities."

Communication and how it relates to compensation became a primary conference concern

Jerry Li voiced his view that self-knowledge leads to better compensation: "Architects have failed to remedy the compensation problem because of a strange self-perception I call the 'privilege syndrome.' The very act of practicing—the simple fact that we are heirs to an art that has a tradition and history—is seen as an end in itself, a reward of its own. The privilege syndrome causes architects to undervalue their own worth. We are in this way our own worst enemy.

"Obviously we must look within to begin finding solutions to the compensation situation. Only after we adopt and communicate a more positive attitude about the services we sell will a better income be derived."

What is the role of skillful communication in improving compensation? Paul Segal is forceful on this topic: "We deserve to get paid for the value we add for a client." Segal takes no chances with "deservedness." Appropriate compensation also comes from shrewdly "negotiating an arrangement, not a fee"; setting the client straight on the interdependence of quality, time,

Continued

Ms. Capelin is president of Capelin Communications in New York City, a public relations firm that consults primarily to design professionals.

How can the owner of this building meet the code requirement for elevator lobby separation and still keep this elegant lobby elegant?

John Ascuaga's Nugget Hotel/Casino Sparks, Nevada.

and budget; working for a fixed fee for the part of the project you really control—the construction documents—and on a time basis for the design and construction phases.

How does Segal's firm convey these points, and also the value of its services to a client? The firm describes every single step in detail before the project begins, "until the client finally screams." Segal also negotiates a flip tax when the building he designs is sold and commands a better price because of its design, and he charges the client a small use tax for his building, like what a broker would receive each year of the lease. Segal's audience was understandably both enchanted and anxious about these ideas.

Before clients will be eager to pay higher fees, they must understand what architects do

John Burgee: "Most owners don't understand the complexity that the architect has to deal with and they feel that all he does is design the building. Okay, that's true; that may be the easier part, though. Getting it from the design to being built is a very complex process. There are all the thousands of tasks that have to be monitored and guided and directed; that is not really appreciated."

Jerry Li was more pointed. The reason his firm, Clark Tribble Harris & Li, takes the time to educate clients is to enhance their *understanding of* why the firm is valuable. Speaking about his firm's public relations program, Li said: "It is absolutely imperative that a promotional effort be made; it will make you more valuable at the next fee negotiation."

John Portman would broaden the target group to be educated to the public in general. He said: "I think we as architects expect too much of the public. The public's not really all that interested in us. To the broad spectrum of our population, architecture is something that's sort of mysterious out there somewhere. They see these buildings built, they're impressed by the great cathedrals, but they really don't understand what it is architects are all about. So why should you decide that you're only going to talk to the two per cent who understand you? You have an obligation and a duty to speak to all of them, because you have imposed yourself upon them. Architecture is an imposition art. If you don't understand that, you're going to try to serve only this two per cent who understand what you're doing, and, if you do, you're going to fail."

So what was learned after all the rhetoric and the (intentional?) discomfort were over?

"The man who doesn't know where he's going is very likely to wind up where he's headed," said Steve Wintner of the AIA's Practice Management Committee, paraphrasing an old Chinese proverb. His warning reflected the stream of self-examination/self-discovery that flowed just below the surface for that 24 hours in Dallas.

If everyone came with this ulterior motive, what was the Institute's agenda in sponsoring the event?

The Practice Management Committee's premise was that a conference like this could enable architects to strengthen their position as members of the building team—and be compensated accordingly. A direct corollary would be that practice and business are mutually inclusive.

The Sunday rites—the silent viewing of the unpleasantly critical videotapes, the imposed but unnecessary shifting from room to room into other silent regroupings, the unquestioned acceptance of arbitrary instructions—were intentionally irritating. "That's no way to treat an architect," snapped one participant at the end of those first three hours. Indeed, no way to treat anyone.

The committee had made its point, although I wonder if the attendees got it: Architects have for too long been told by unchallenged authorities where to go, when to speak up (or not), how to behave individually and as a profession. The committee was prepared to offer an explanation for its disturbing behavior and, finally, a refund to anyone vocal enough to protest and leave. In fact, only a handful even responded when prodded by the facilitators for comments at the end of the first session. Most participants were tired and perhaps downhearted after the hassle and the hypercritical tapes. Their behavior reflected all too well the weary, accepting profile of the profession's being "only a necessary evil," as Vigilanti had described it.

The videotapes used in the conference—the critics and clients segment and the interviews with Portman, Burgee, and Pelli—were uncommonly professional. Their content, arresting and provocative. Similarly, the entire next day—the interview of Thompson, Harkness, and Li by Bob Edwards of National Public Radio and the five breakout sessions—was also taped. If new ground was in fact broken, the moment was chronicled. If there is enough interest, the funds will be found to edit all the footage, to provide much-needed refinement to the program sequencing, and to package the conference for AIA components to use. While Bill Hooper no longer serves at the AIA as committee liaison, it will take

someone with his tenacity and vision to make it happen—and it should.

The Institute possibly also got the message that the image of the architect as unbusinesslike is a significant problem to address, as much within the profession as without.

Part of the message seemed to lie in where the appropriate line was between business and art

Chuck Thompsen got around to the profession/business issue in his session on "Services": "In thinking about these trends, I've looked for some primary engine of change. What seems evident is this: the tweedy, gentlemanly practice of architecture will no longer serve the large, complex needs of our world. Marketing, price competition, corporate structures, specialization, management, joint ventures, and so on add up to the reality that the *profession* of architecture is also the *business* of architecture. Not one or the other, though; it's a mistake if we leave our professional dignity behind us."

John Portman had to become a developer in order to be able to succeed as he defines it: "Getting into the development side enabled me to deal with the whole building process; enabled me to defend myself, and to counteract those forces that were trying to make me walk away disheartened and compromised. Going into the development field was only a method to allow me, the architect, to do what I felt was in the best interests of society, as I see it—all the people—and to create an environment that people really enjoy."

Cesar Pelli was quite clear about the source of his popularity: "I don't feel that because I design beautiful buildings, this gives me a right to be sloppy, or slow, or inefficient. On the contrary, I believe that *because* I design beautiful buildings, I have to be, also, among the best in terms of doing buildings that are efficient, within the time, and within the monies that are available."

Sarah Harkness, whose career has been conspicuously uninspired by a profit motive, has reached her own conclusions about practice. At one point she commented: "It's very sad that our designers get more and more into management, into promotion, all of the financial areas. If designers have to go that way, they lose what they have to offer." Later, though, she asked: "Are architecture and management exclusive? They are, so far as time goes, but not so far as consideration. The architect is not this one person who knows everything."

One thing was evident: Taken together, the architectural speakers definitely conveyed that quality and profit—like architecture and business—go hand in glove.

It would be exciting to think that this one small conference in Dallas would be the turn in the tide that would wash the perverse, pervasive image of the unbusinesslike, unreliable, uninformed, remote, and arrogant architect out to sea. Dream on.

So saying, who *is* the "New Professional"? A maverick or a new breed? The hype is appealing. "You may find," ventured the conference announcement in boldface, "that the 'New Professional' is you."

Well, renewed professional may be a better description. Funny how restorative it can be to get back to basics. Steve Wintner asked: "Do we know what we want? Do we know how to get it?" The choice of being an artist or a businessman, a small office or a three-letter giant, seemed ultimately less important than checking out the options, *making* the decision, liking it, communicating it.

McElroy, again: "Endless transformations are the nature of our existence, fraught with irony and contradiction. It is for us the hard business to see them through. And so we shall, out of love for this profession, its work, and its meaning. We shall, because nothing will impede our desire and our duty to create and bring others toward excellence. Then Power, Image and Compensation will take care of themselves."

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Management: "Being there." Practice longevity takes planning and prophecy

This year, architects, engineers, and planners Haines Lundberg Waehler have been in existence, under one name or another, for 100 years. How?

How does the management of a firm guide it intact for a hundred years through the treacherous shoals of world-wide economic calamities and whirlwind changes of taste, social structure, and technical needs? If you answered "very carefully," you have half the gist, if little of the substance.

Haines Lundberg Waehler began in 1885 under the name of Cyrus L. W. Eidlitz. It was a time of low technological priorities, low-rise structures, and high-revival styles. The AIA and architects' professional status were still young, the AIA having been recently formed by, among others, Leopold Eidlitz, Cyrus's father. While the younger Eidlitz was to design buildings with élan in then routine Romanesque, Gothic, or classic garb, his first commission, the Metropolitan Telephone Building in New York, was prophetic of one of the more businesslike ways the firm would have such a long-lasting career—the adaptation to quick change, in this case, the technological revolution. It was to be the first in a long line of instances of "being there"—in the right place, at the right time, in the right direction (see the next page for a brief rundown of the firm's most important commissions).

While this would seem to point to a firm's being on the cutting edge of what's being built, and where, as the primary longevity factor, according to partner Martin Raab. . .

There are four longevity factors—and being on the cutting edge is only one of them

Or, as he terms it, having "market responsiveness." The others are organized ownership transfer; a recognized high level of performance and consequent client satisfaction (he calls this "service quality"), and "people," by which he means getting, and hopefully keeping, the right ones.

Partner Michael Maas is most emphatic about the importance of a smooth ownership transition, which he terms the single most important factor in the firm's longevity. "Our firm has an unusual history in that it has always planned for succession by a process we call 'passing the baton,' " Maas explains. "From the beginning, each generation of managing partners has chosen its own successors from within the firm." Adds partner Robert Djerejian: "The partners have always had a mentoring relationship with the firm's next generation to make the transition less onerous. Our legacy as mentors is the process we have always gone through; it is something that we have to transfer."

How does an up-and-coming partner gain ownership? According to Maas, the future partner is given adequate compensation each year to allow him to buy his share, so that—at the end of a set period—the partner is fully vested.

"There's always been a 10-year period of changeover," Djerejian explains, "a five-year phase-in and five-year phase-out, so it's roughly 10 years before you have a total change in leadership."

To some, the idea of the firm's name *not* reflecting the current ownership may seem the ultimate in self-sacrificing leadership. "We stopped changing the name in 1976, when our team came into place," says Maas. "We felt 11 name changes in nearly 100 years were enough!" Presumably, the value of an established name in reassuring prospective clients outweighs the ego gratification of seeing one's name on the door.

"A firm doesn't survive for 100 years unless what it's doing sells"

This pragmatic comment by HLW staffer Jane Cohn is reflected in the fact that longevity also extends to the firm's clients; in fact, it still has its first client, the New York Telephone Company. Martin Raab attributes this to "a constantly growing roster of disciplines" that has created a balance in the services the firm can provide. "I believe this has said to clients that all disciplines are important to us, that we focus on the way a building functions over the long term, on clients' real needs," says Raab, adding: "When an architect sees himself solely as a designer, the supporting members of the 'orchestra' can be seen to lack a 'conductor.' There is a well-rehearsed orchestra here with an experienced conductor, and, as a result, we still have our first client. We've been providing New York Telephone with such varied services as architectural design, structural, mechanical and electrical engineering, interior space planning and design, codes review, and short- and long-term feasibility studies for 100 years."

"And too," adds Djerejian, "being architects and engineers at the time that buildings became more complex said, in simplest terms, that we were ready to undertake the work. We added all those new services to address new market opportunities in high-technology projects."

Maas notes that the firm chose 100 Years of Design and Technology as its centennial theme because that balance was so important to it.

"The extent to which the quality of our performance accounts for our survival," Djerejian adds, "does go back to our ability to deliver a total system. That allowed us not only to compete favorably here, but to have an exportable commodity—the transfer of high-technology design to the international market. Our predecessors knew that the practice of architecture is a balanced three-legged stool: design, technology, and business. We've always tried to take this 'total' approach."

HLW's experience shows. . .

New markets evolve from a design firm's basic strengths

As an example, Djerejian points out that their emphasis on technology led to the design of Bell Labs in 1942, which in turn led to specialization in all sorts of laboratory design for the past 50 years.

"Another example," adds Raab, "is our historic work for financial institutions which has equipped us to deal with other service industries."

"Our marketing success," says Maas, "has had a lot to do with researching economic and business trends and seeing their implications regarding new building types. We then assess which up-and-coming types apply to our past experience. That's what puts us in the right place at the right time."

Of course, dealing in specialized areas produces leads in itself. "All of our telecommunications and lab design," continues Maas, "has kept us alert to new industries that are undertaking research and development. And we've added services to meet their specific needs. For example, in 1981, we established our technical regulatory services division to help industrial clients meet all those new regulatory requirements."

You can have the right timing, clients and product, but longevity also means having the right people

"The process begins with recruitment," says Djerejian. "Our summer internship program provides both the managers and young architects with an opportunity to see if the fit will be right."

"For some people we are too big, too business-oriented, but there are an awful lot of other people who are attracted by that," adds Maas. "Many employees see a large firm as giving them the opportunity to do substantial work. There are many career paths that don't necessarily lead to the top but that lead to recognition and career satisfaction. Since the range of our projects is considerable, it offers varied experience."

Says Raab: "The things that

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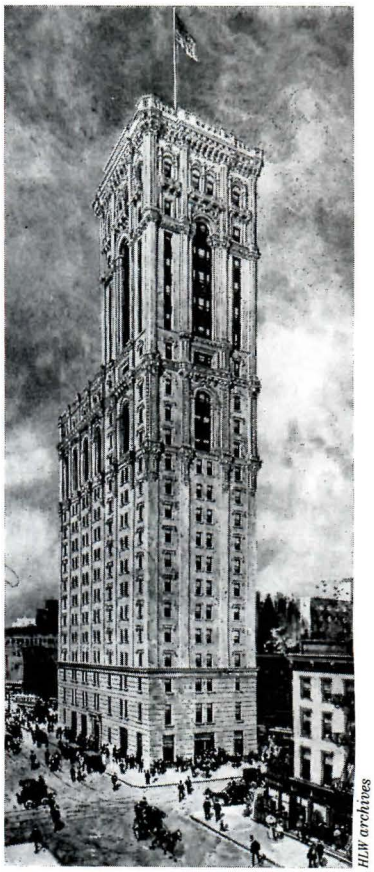

HLW archives

Sigurd Fisher

The firm, then 20 years old and known as Eidlitz & McKenzie, produces The New York Times Tower (top), the world's tallest building, with the deepest foundation, heaviest steel, tallest elevators, etc. McKenzie Voorhees & Gmelin produce the world's largest telephone facility in 1926, The Barclay-Vesey Building, using early setback massing.

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make people stay are simple: the type and quality of the work, their interest and involvement in it, their pay, and a sense of potential future reward." Perhaps surprisingly, Raab ranks professional satisfaction as being most important.

"We offer a four-day work week, competitive salaries and benefits, growth opportunities, a scholarship program and a lunch-time professional development program conducted in-house," adds Maas. "These are things that make a person stay here, in addition to the pride in doing good work."

And HLW also offers career and financial opportunities for all professional staff members to become associates, senior associates, or lower capital partners—if not managing partners. Those on the staff who are not design professionals can aspire to become senior specialists. All who reach this level participate in profit sharing.

"In recent times," continues Raab, "we've used a structure that forces ownership and management not to distance themselves from direct project and client responsibilities. We are not involved only in finance or marketing. We are also involved in projects and therefore we still—to a greater or lesser degree—have close contact with the people who are coming along working their way up. We keep on dual tracks—we still maintain direct architectural involvement even as we assume managerial roles."

Still, he emphasizes that the firm transition question is the most critical: "Most firms fail because of partners' greed, for power or to get out every last cent. Then, the best people leave because they can't afford to buy the old partners out.

"The key element is giving up power when it's at its peak. When the partners are at the height of their intellectual and physical power is when they're least likely to think about these issues, but that is exactly the time, in their late 40s and early 50s, that our partners have always started to pass the baton. This way the older generation can still oversee mistakes. You have to allow that to occur with your supervision, not *after you* are gone.

"Firms that don't survive are those that become the private preserve of a partnership group or fail to recognize the fragile nature of business continuity in professional service. Either they don't deal with—or deal with too late—their letting go of the reins to the next generation. The new partners must be put in place in time to acquire the personal and business skills to carry on."

And so, HLW's partners have just announced the appointment of two successors, Theodore Hammer and Leevi Kiil, who both come from specialized areas of the practice: corporate, and research and development projects respectively. *Charles K. Hoyt*

Some firsts—and some quick shifts of direction—mark HLW's first century

HLW partners like to quote Ralph Walker, a prominent partner in the early years, on the firm's philosophy: "It has been the outspoken purpose of the partners, past and present, not to develop stereotypes, not to confound soundness with conservatism, never to confuse progress with mere fashion; but to undertake each major problem in as fresh a manner as possible." How that philosophy has guided the firm can be seen in a brief rundown of its history.

In 1900 when Eidlitz took a partner, engineer Andrew Campbell McKenzie, the firm at once became a multidiscipline organization and produced the world's then tallest building, The New York Times Tower. (As a very different sign of its ability to adapt to the times: the firm reclad this "Italian Gothic" spire in "modern" garb at mid-century.)

In 1916, McKenzie added a new discipline—planning. An early advocate of urban order, he served on New York's planning committee at the time the nation's first zoning regulations were drafted, and helped set the stage for the stepped massings that would characterize skyscrapers for the next decades.

It was as Voorhees Gmelin & Walker that the firm would produce one of the first major designs to employ setbacks, The Barclay-Vesey Building, for New York Telephone, in 1926. The building was also notable for another innovation that would quickly catch on—a relative void of ornament and historic references, using instead the new massing itself for visual interest in a manner described as "German expressionist."

During this period the firm launched further into modern technology with the design of laboratories. (These would number over 500 by the firm's centennial, including a national research lab for the Atomic Energy Commission.) And it also began a long association with banking clients, an association that would match the cyclical swings of construction in that industry.

Surviving the Depression with a greatly reduced staff of 30 people working on renovations and residences, Voorhees Walker Foley & Smith was on an early road to recovery with ten 1939 World's Fair commissions. In 1941, the firm was co-designer of the first high-rise urban-renewal housing for the New York City Housing Authority. Among wartime efforts was the design of packaging for heavy military equipment transport.

During the early 1950s, the firm designed and managed the nation's largest construction project, a 350-square-mile plant for the Atomic Energy Commission in Aiken, S. C. About the same time, it produced one of the first major suburban corporate headquarters for General Foods, in White Plains, N. Y. It also moved into the design of health-care facilities. By now, the firm numbered over 1,000 employees.

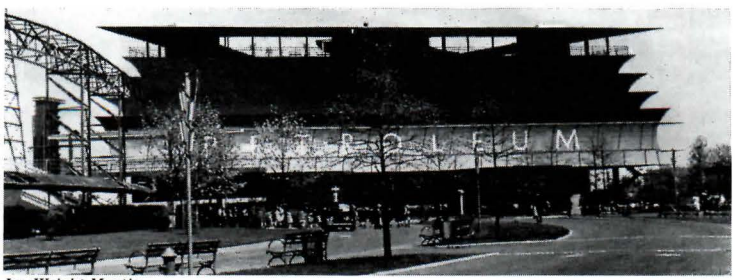
In 1958, when it became Voorhees Walker Smith Smith & Haines, it was completing long-term work for the Ford Motor Company: massive research and engineering facilities for the one product of technology that would most change our landscape, lifestyles, and spending patterns—the car. It moved into educational facilities that would serve the "baby boom"—and into the international market.

As Smith Smith Haines Lundberg Waehler in 1964, the firm completed the Maryland space flight center, where early work was done that would one day put a man on the moon and that today serves as the control center for unmanned satellites.

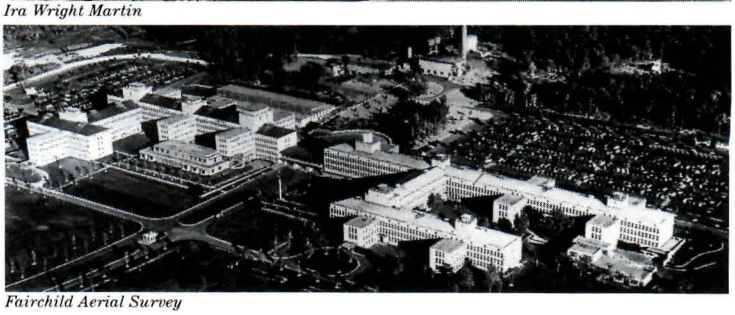
With the flowering of mammoth government agencies, the firm completed the first all-new home for one in 1969—the National Bureau of Standards housed in 2.5 million square feet in 22 buildings.

In the early 1970s, the firm assumed its current name and moved into Third World countries, in this case Nigeria, with completion of the International Institute of Tropical Agriculture for the Ford and Rockefeller foundations. A branch office was opened in Beirut in 1975 and, with the change in political climate the next year, switched to Athens. It handled work for the American University, Aramco, and the Kingdom of Saudi Arabia. The value of design and construction-management projects in Saudi Arabia alone reached $950 million in 1975 and, by the end of the decade, HLW was to have not one but two offices in that country.

In recent times, HLW has achieved a roster of services that includes some 43 "disciplines," ranging from hydrologic engineering to technical regulatory planning to land development and feasibility studies. The growing importance of renewing existing facilities has resulted in its strengthening two disciplines in particular—building restoration and renovation and interior design, the latter ranking among the largest of such services in the country. The firm sees opportunities in facilities for new types of research, such as microprocessor development—and in that latest in high-tech installations, our offices. As well as designing spaces in which to use computers, it is using computers to produce the designs. And it is expanding facilities management services. *C. K. H.*



Ira Wright Martin



Fairchild Aerial Survey

One of ten commissions by Voorhees Walker Foley & Smith for the 1939 World's Fair, "The World of the Future," the top photo shows the exhibit hall for that up-and-coming product, petroleum. Gigantic research-and-development projects have been among the firm's mainstays. This one, for Bell Telephone (bottom), was only a first phase in 1942.

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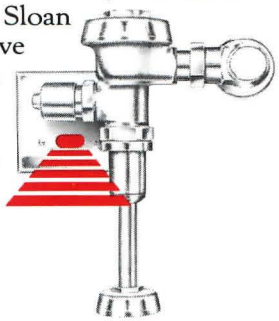

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Architectural education: Temples, and other religious themes—a design studio case study

That theory, philosophy and symbolism can be evocatively melded into studio teaching is effectively shown in the portions of eight student projects from Professor Hallet's course illustrated on the following pages

By Stanley Ira Hallet

Several years ago I introduced the "temples quarter," an alternate design studio exploring religious themes, to graduate students of architecture at the University of Utah in Salt Lake City. A form of reverse proselytization, the temples quarter asked students to reach back into the histories and legends of unfamiliar religious groups and present their findings to their fellow students. Once they had gained some understanding of the theological/cultural context of their religious "client," they were required to determine the next design step appropriate to today.

A recent studio consisted of fifteen students well versed in the skills and polemics of basic architectural building and relatively accomplished in the disciplines of programming, structures, and building technologies. The temples studio contrarily emphasizes the more poetic, philosophical, and even cultural aspects of a design problem. While studios of this nature can be dangerous in overdose, the concentrated exercise of ten weeks obliged students to explore a world of esthetics totally unfamiliar to them.

Early days

On the first day of studio, students presented their choice of religious topic or theme, often too ambitious. The need to draw limits was obvious. Only by narrowing down the religious topics could the student grasp essential issues within the limited time available. For example, Judaism was considered too broad a topic, whereas Hasidic Jewry was better focused.

Although well-known religious movements were the most popular, some students were drawn to more esoteric practices. Interspersed between Hindu, Judaic, and Christian projects were the ancient kiva rites of the Anasazi Indian groups of Western America, the elaborate sweat houses of Arctic Eskimo tribes, and the peyote gathering ceremonies of the Huichol Indians of Mexico. In fact, topic proposals kept challenging and stretching the limitations set for the class.

The alternative possibility of religious issues or themes offered additional dimensions to the studio: the questions of death, cremation, and burial were necrophilically popular; centers for meditation or study combined religious practices common to diverse groups.

Looking back, those first meetings foreshadowed the many hours of discovery, heated debate, and studio discussion that followed.

History and artifacts

Once a topic was chosen, the students were soon immersed in the complex relationships that exist between a culture, its traditions and myths, and the historic building forms needed to express them. The common structures of vault, dome, or cube of space take on metaphysical, even cosmological meanings. The sun, the primordial source of energy, now plays mythological roles that affect the organizations of space and buildings. Relationships between earth, building, and sky respond to deeply rooted cultural biases. The Zoroastrians' fire temples lift their columns of air, fire, earth, and wind to the sky, while the Eskimos burrow their hot and dark sweat houses deep into Mother Earth, choosing to return to the womb rather than to climb to the sky. As each student explored his choice, the results proved inescapable. The forms of man's religious architecture tell many stories and remain vast libraries to man's architectural heritage.

The need to communicate these historic facts and architectural expressions associated with the religious served two purposes. First, it provided the critic and students a foundation for future criticism and evaluation. Constructive dialog was only possible if all the participants had been exposed to the essential issues embodied in each project. Once the references were made clear, all parties could question the rigor of the research, the strength of the analysis, and the conclusions drawn. Second, the process of exploration, analysis, and subsequent editing of the historic materials into a coherent presentation forced the student to begin the design process. Thus, immersed in a world of fast esthetics, the first design acts were initiated from drafting boards overflowing with books, drawings, and photos. The library, light table and photocopier were never in such strong demand.

The gate or way

Unfortunately, studios that start with "book work" often suffer from "library block," or an inability to jump from index cards to yellow fodder. While the graphic communication of historic materials flexed certain design muscles, the ultimate need to commit to a specific design approach left many a student anxious and finally stymied. To respond, the students were given twenty-four hours to develop a conceptual gate or doorway to their vaguely defined projects. While these first design proposals were often superficial, the naive front doors provided plenty of opportunity for discussion and laughter, and most importantly, the design debate had begun.

What was borrowed from the past and why? What were the appropriate architectural connections between past and future? Is this "gate" the "right" next step? Discussions were heated as everyone quickly became an expert. And some proposed gates did suggest strong ideas.

Conceptual thoughts and models

After passing through many doorways, students chose a site, defined an appropriate program, and designed a conceptual model to communicate issues thought most important. The three-dimensional models required describing architectural form and place. In many cases the conceptual models became the embodiment of future design studies. While some students attacked the model materials with gusto, others were overwhelmed by their earlier historic studies and unhappy with their first thoughts. One such student studying Hindu temples was totally blocked. Unable to build upon the strengths of past works, he became incapable of interpreting future design steps. However, the methods he had chosen to express fundamentally historic Hindu issues already held clues to a strong design approach. Once the elaborate system of Hindu temple planning principles was pointed out, an outburst of design studies followed. The student's conceptual model grew longer and longer until a procession of geometrical forms multiplied into a mile-long spine of parks and temples. The strong garden and sanctuary plan cut across a jungle landscape.

Beyond the concept—areas of interest

Instead of devoting long hours to flow diagramming and redrawing of elaborate plans, the earlier conceptual ideas provided direct ordering principles well suited to architectural planning. Tedious plan manipulations never occurred. Instead, the students were asked to explore one key area of their project, such as a prayer room, a cell for study, a pool.

Final projects

With only three weeks to complete the project, the final presentations contained all the earlier graphic and model studies. Although the customary rush to the finish could not be avoided, the reuse of earlier materials gave the students confidence. New models and drawings became more ambitious. The need to communicate strong ideas pushed students to their limits. The final projects were not disappointing. Their strong, perhaps personal interpretations of cultures past, and their unrelenting commitment to expressing the ideas and aspirations they found, led to statements of unbiased enthusiasm and challenging esthetics.

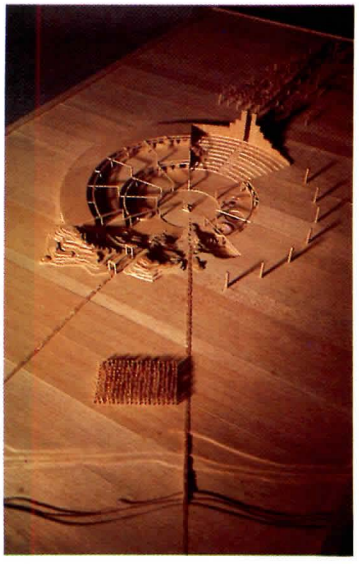
Reflections

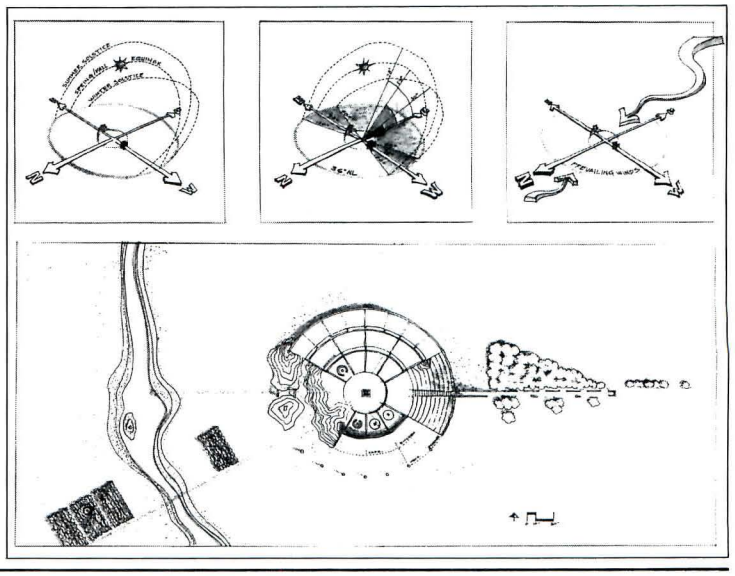
The excitement felt in the studio was due, in part, to many diverse esthetic approaches being explored in one classroom. The common theme of religious works only allowed the designers to leap from Unitarian meeting houses to underground Alaskan sweat houses. The free forms of the monastic Jewish retreat were only better appreciated when followed by the paradisiacal geometries of the Mogul gardens. The cosmological village plans of the Anaszi became more distinct when contrasted to the meditative courts for a center of early Jewish, Christian and Islamic studies.

The resulting diversity assured no class solution: each student was secure in listening, borrowing, and designing within his own religious context. One overriding goal was shared, a respect for the past works of a culture and a reaching forward in time to design new works. The problem of context was not limited to filling in an empty lot along a street of Queen Anne rowhouses with another Queen Anne variant, nor reflecting the building to the left and the building to the right on one's own facade. Rather, the questions of context became the answer to the question: what should follow? The very concept of following implied continuity. While still expressing the "collective being" or "memory" of his religious client, the designer still appeared free to use his own talents. The community "crit-ins" popular during the seventies was insufficient. Instead the temples studio was an attempt to look back to a jury of ancestors and forward to a jury of grandchildren.

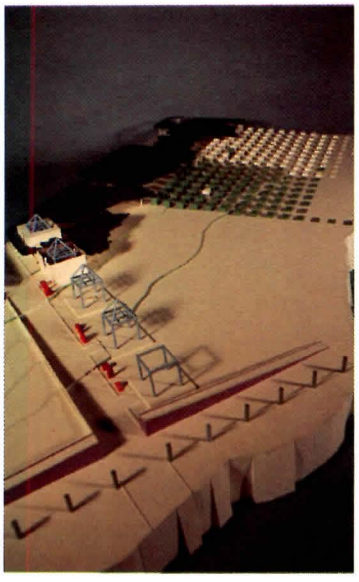
Stanley Ira Hallet is a professor of architectural design at the Graduate School of Architecture, University of Utah. Architect, author and filmmaker, his Peace Corps experience in Tunisia and a Hays-Fulbright Lectureship in Afghanistan led to many films and articles, and a book entitled The Traditional Architecture of Afghanistan. *He is a partner of Hallet Hermanson and Associates, architects.*

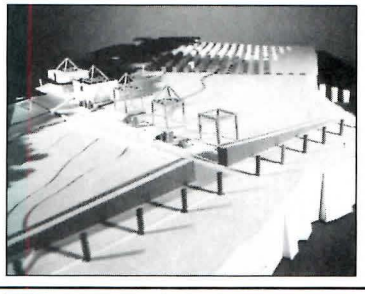
Retreat and Anasazi Study Center, Bart Mills, designer
In the Four Corners area of Utah, Colorado, Arizona, and New Mexico, a retreat center for the study of Anasazi Culture was proposed. Earlier historic studies emphasized how they built their fortress-like villages into cliffs or on desert plateaus, often in the form of well-defined semicircles open to the sun. Kiva rituals evoked the earthly origins of the people and their gods. While the proposed project is earth-sheltered, its walls radiate out into the landscape following the solstice lines. During the fall and spring equinox, the sun slices through the stepped and curved entrance gate, a reminder of the Anasazi's celebration of the sun as it rises each day to share its energy.

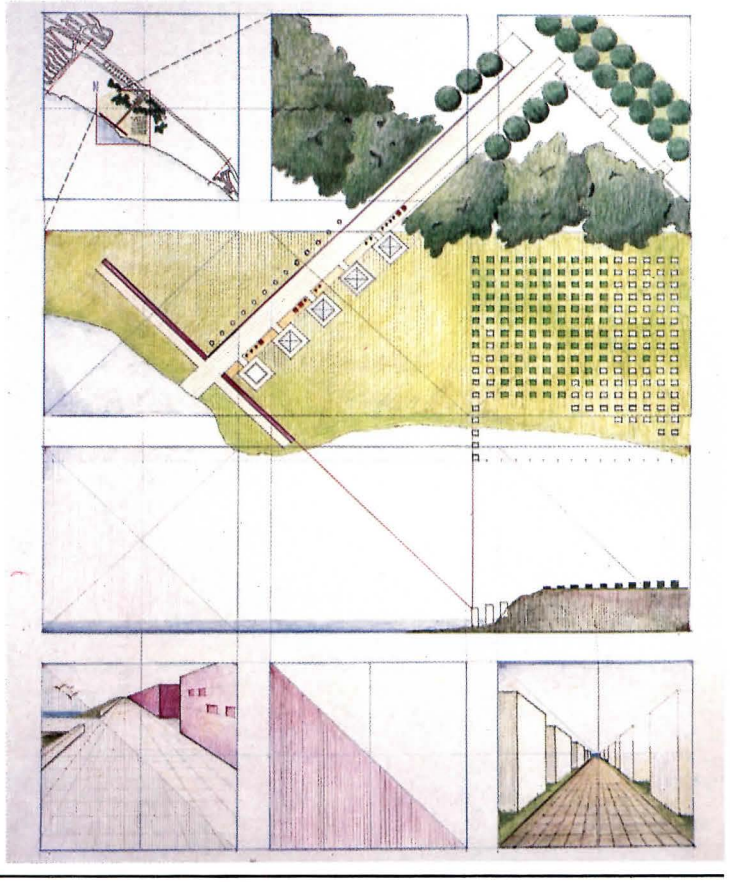




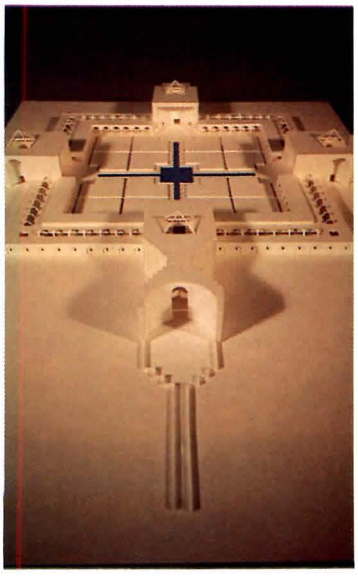
Garden Necropolis, Richard Loosle, designer
A garden necropolis is perched on cliffs overlooking the California coast and contrasts a collection of experiences. Arrival, procession, prayer and burial are at times formal—one sequence often clashing with another—or informal, even bordering on the organic. White crypts are covered with living vines as individual caskets are interred in the crisp, monolithic blocks. As the cemetery receives the dead and the green plants envelope the burial tombs, the field of burial architecture changes in color and texture. A series of chapels built to different stages of enclosure suggest the seasons of the year, as well as those of life. At the end of a path, thick burial walls contain ashen remains. The question of death, and the reminder and celebration of life, are both reinforced for the visitor as nature intertwines with man's exact works and all is seen in the never-ending paradox of growth and change within the greater context of eternal stillness.

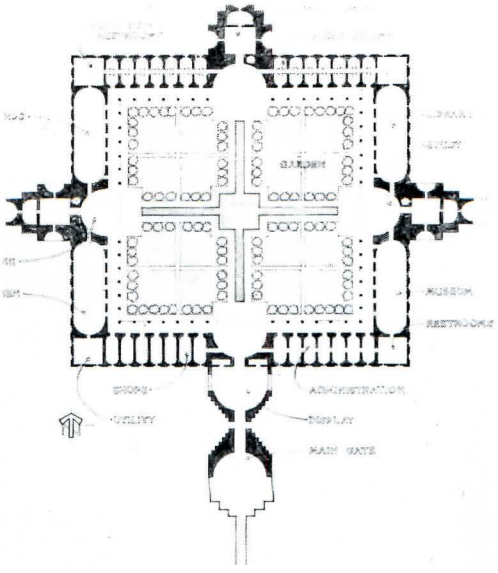




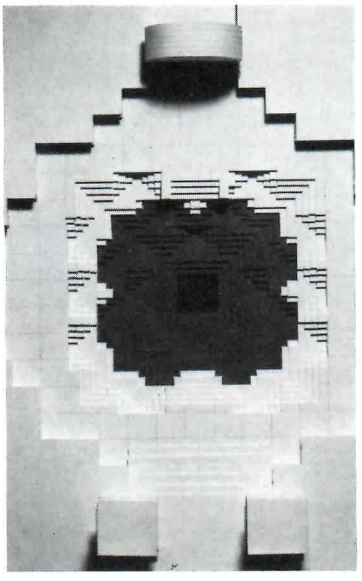


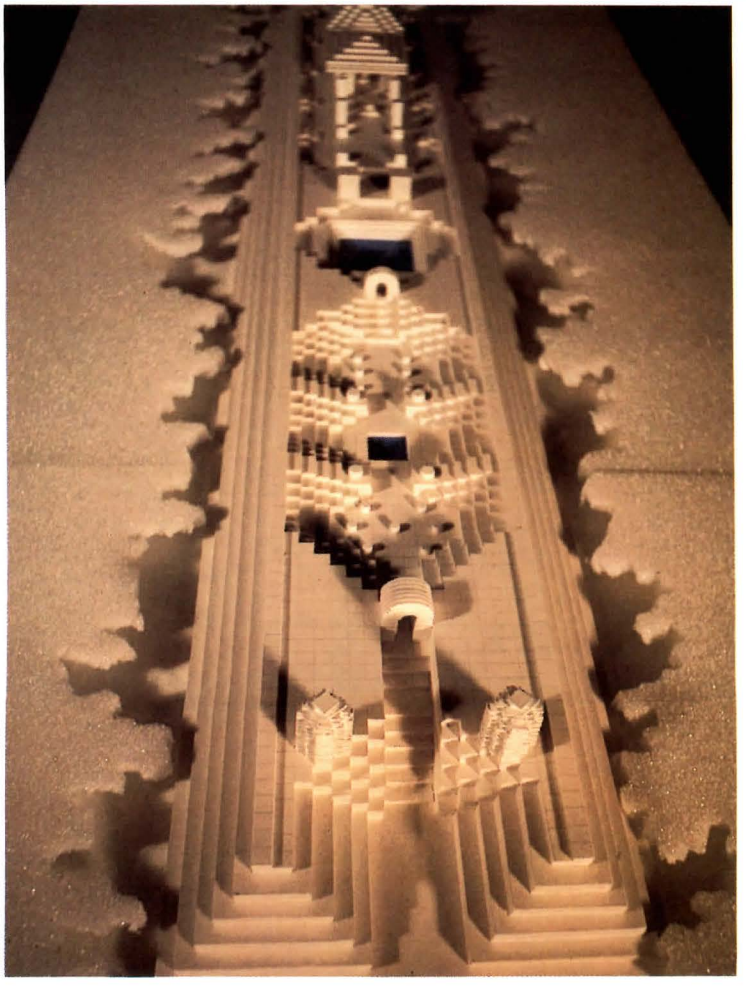
Mogul Study Center, Mark Nielson, designer
In a center for Islamic studies in India, the rich pattern language of Islam lays the geometrical framework for a garden paradise for student and visitor within massive court-defining walls. The interest areas to be explored are sculpted out, following complex geometries associated with buildings, gardens and decorative organizational principles. The resulting honeycomb of cellules holds a variety of living and working spaces required by the retreat center.



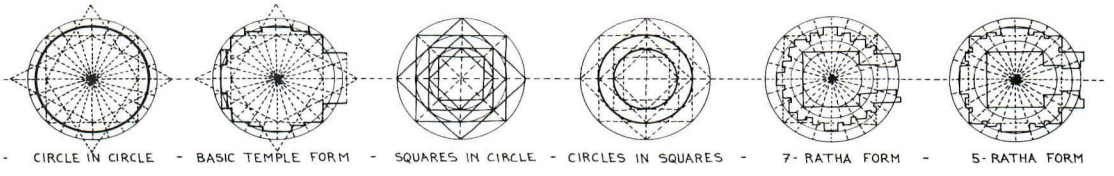


Hasidic Synagogue,
David Herbert, designer
For a proposed Hasidic synagogue in Poland that held a few remaining Jews to pray under a new "enlightened" religious policy, a key area for study was a small prayer or study room. Overflowing with books, this simple space embodied the most fundamental rule of Hasidism, i.e., study. The prayer rooms were piled one on top of the other, finally culminating in the central synagogue space where the Hasidim line the balconies in prayer, chanting and debating Talmudic law.





Hindu Temple Complex,
Henry Schlichter, designer
In this study, as a major focus, a single square of water is manipulated and crenulated to form a water pool of great complexity and geometry. A reinterpretation of Hindu temple geometry, the shimmering pool becomes an ever-changing punctuation point along a series of garden parks and temples that eventually form a 20th century Hindu complex—a mile-long spine of geometrical forms cutting across a jungle landscape.



Project: Private Residence, Rancho La Costa, Calif. Architect: John Mosele, AIA, San Diego, Calif.

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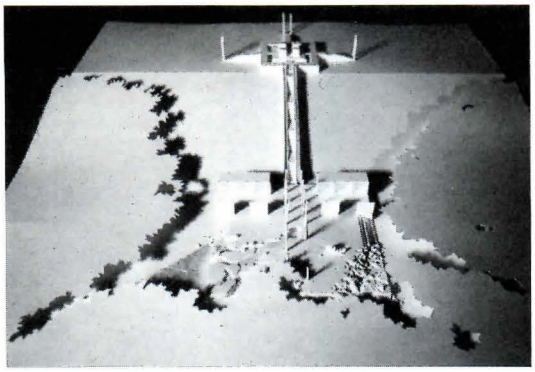
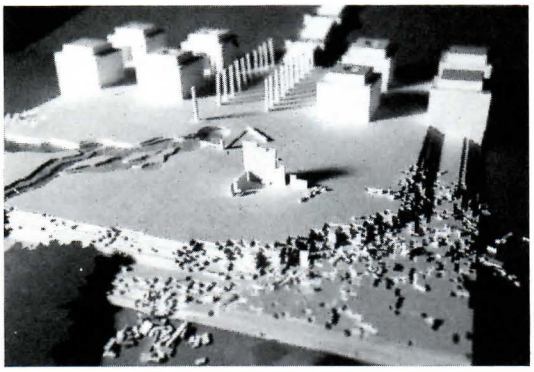
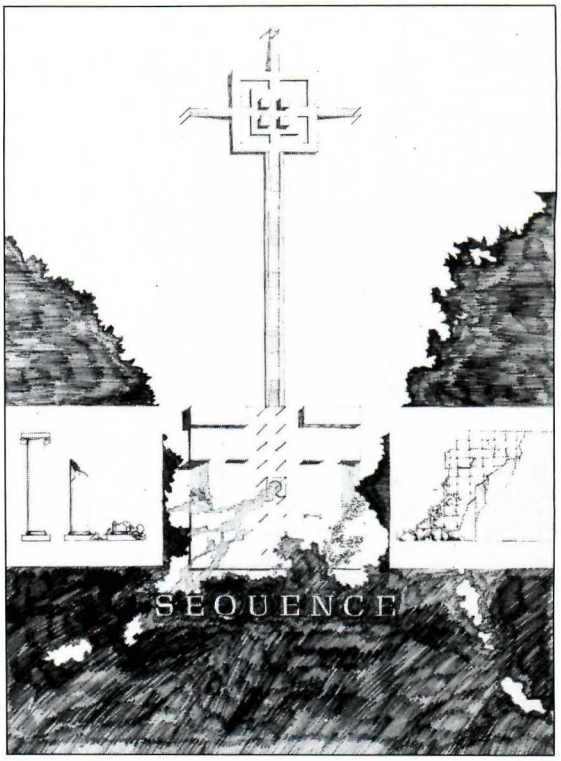
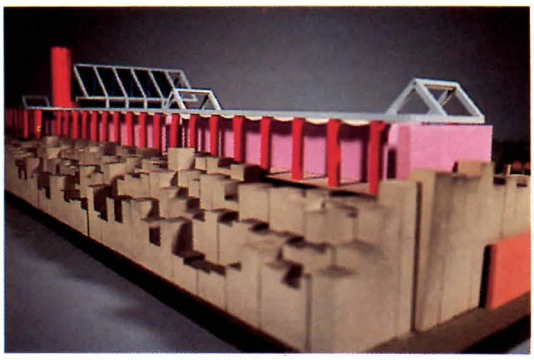
A Zoroastrian Fire Temple,
Sarah Woodhead, designer
Located high in the Indian mountains, a Zoroastrian fire temple forms the final altar to a pilgrimage site. At the base of the final climb, a square platform welcomes visitors to a small monastery and study center. This pristine, Euclidian platform erodes into the mountain landscape, contradicting the precise geometry of the perfectly composed fire temple above. Fire, wind, water, and earth, the absolute elements of the ancient fire temple erected above, now eat away at man's precious work until it dissolves into the surrounding forests.

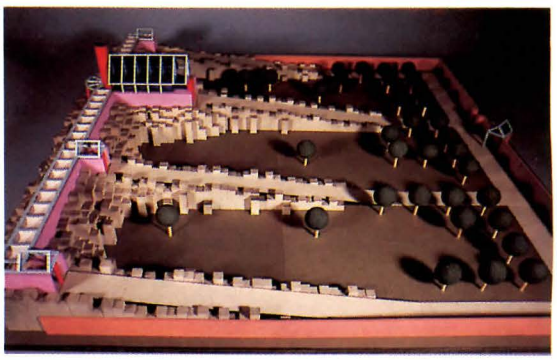




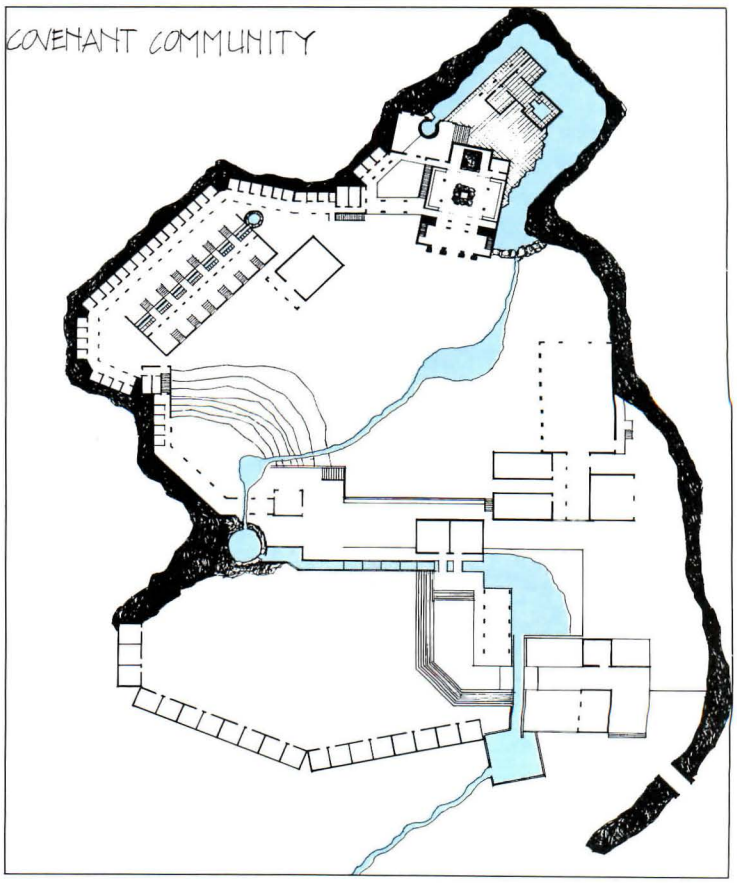


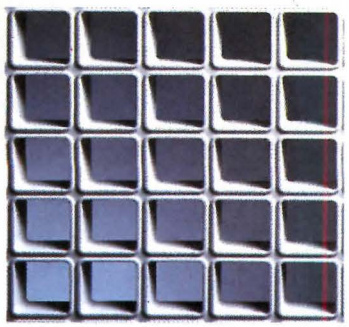
Crematorium,
Mark Molen, designer
Here, a processional walk passes through a grove representing the garden of life. Several paths climb steps to gates, one holding a chapel and crematorium. A long wall shelters the ashes of the dead. The severe walls of the complex define a garden of plants, forest, and building. The eye moves forever upward, following the path from birth through life, to death and beyond.





Jewish Monastic Center,
David Perkes, designer
This project explored the story of the Essenes, an ancient Jewish group dedicated to the study of the Torah and ritual ablution. Separating from the ordinary practices of Judaism of their time, they built a community at Qumran for communal study and religious practice. The proposed study center is a 20th century retreat devoted to practice and meditation. Waterways remember the ancient rites and tie a series of traditional building types into a small communal village. Although the structures appear to rise from the arid landscape, the presence of man's work is felt through new manipulations of wall, detail, and color. Inside, rusticated stone slabs of table and podium are contrasted to the surrounding chiseled architectural walls and wood shading screens. Water pumped from deep wells runs down gentle slopes, collecting into pools for ablution and meditation, finally irrigating communal gardens sited below the village. Earth, water, garden, building and community thus become one historic sense of place.





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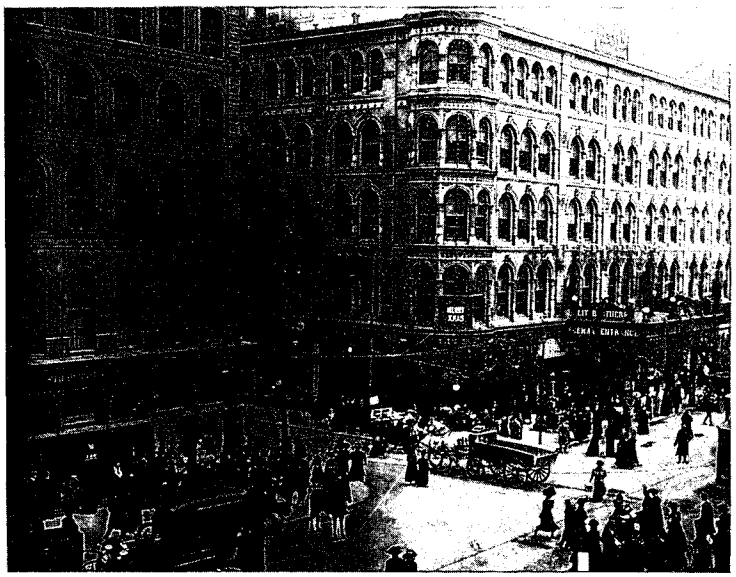
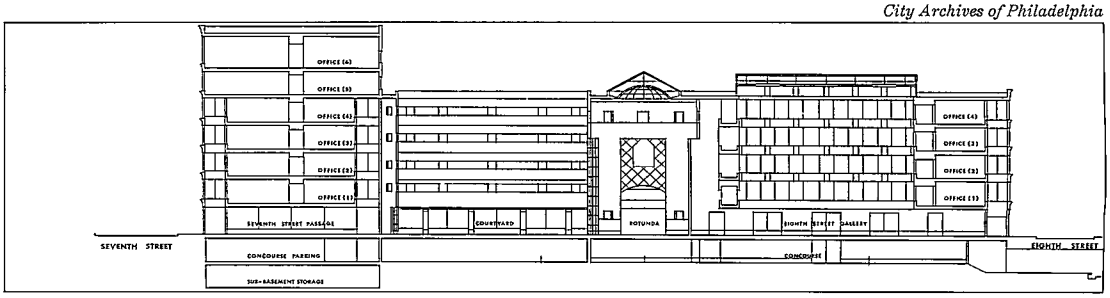
A benign urban renewal project in The City of Brotherly Love

Although the rejuvenation of Philadelphia's Market Street East corridor has mainly involved the infusion of new buildings into the urban fabric of Center City, recent public outcry has saved what may be the finest block of Italianate commercial facades in the city from the wrecker's ball. The old Lit Brothers department store complex, a group of 14 iron-and-masonry structures erected between 1859 and 1918, is being renovated into a mixed-use facility called Independence Center. Comprising 900,000 square feet of offices and shops, the project will feature five-story-high pedestrian galleries leading from Market and Eighth streets into an outdoor courtyard and domed rotunda in the center of the block (section below). Joint architects are Kieran, Timberlake & Harris; Sheward-Henderson; and John Milner Associates.

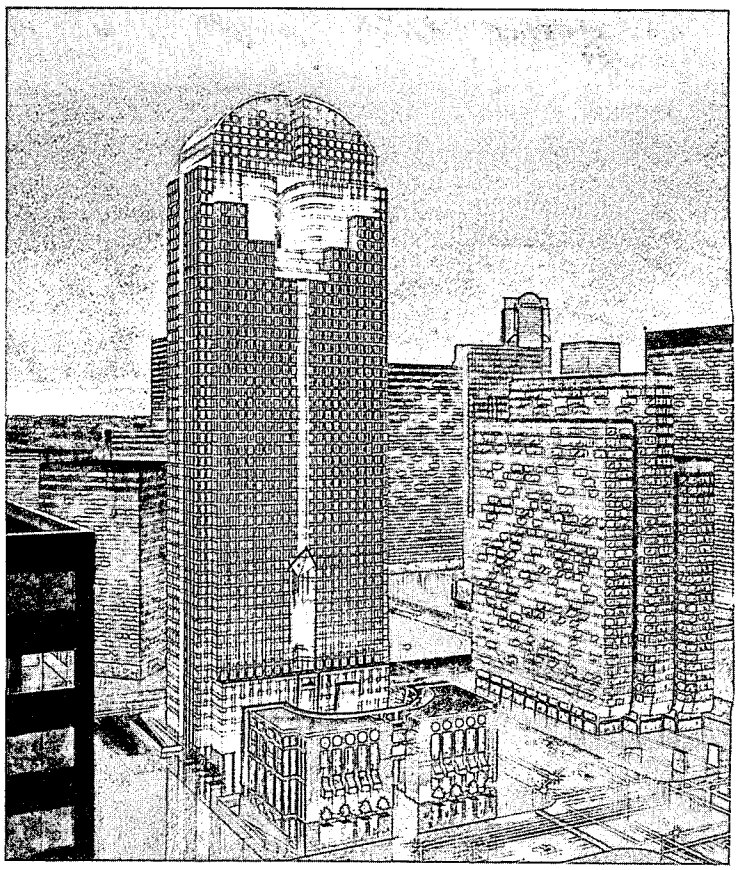


City Archives of Philadelphia



New window on the Southwestern sky

If the negative impact of commercial overdevelopment is currently being felt in Houston, nobody has told builders in rival Dallas, where office construction is continuing at a dizzying pace. Witness plans for 2200 Ross Avenue, a 53-story tower that will add 1.3 million square feet of office space to Texas's second city. Sheathed in granite, the structure will feature an illuminated arched top and a curving, six-story-high "sky window" that will light an upper-level lobby. Back on the ground, the tower will be connected to a separate, five-story retail base through a huge piazza whose elaborately programmed fountain and landscaped trellis wall have been dubbed, with typical Texas immodesty, "The Hanging Gardens of Dallas." Architects for the development are Skidmore, Owings & Merrill (Houston office).



Drabert: The Chair Grand Prix

"The one who sits too much and in the wrong way has to do a lot of jogging."

– Dr. Hans Schoberth

Ergonomics is to chair design what aerodynamics is to auto design: easier to imagine mom without pop, pepper without salt, or sea without sand than chair design these days that is not based on advanced human factors research.

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Similar problems confront chair-designers and car-designers when it comes to seating: proper support, long runs, shoulder and back fatigue, reaching, staying alert for long periods of time.

So just as Porsche might say of Audi, SunarHauserman says of Drabert chairs: the human factor details are impeccable. All are engineered for both heady responsiveness and the grueling test of endurance runs. The chairs' suspensions are fine enough for the quick, reflex corrections that office conditions of all kin make necessary.

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Source material: California architects find inspiration at Monterey conference

Although East Coast skeptics may argue to the contrary, the light really *is* different in California. And so, it seems, are the state's architects. Participants at the sixth Monterey Design Conference, sponsored by the California Council/AIA and organized this year around the theme "Sources: The Origins of Inspiration," were able to experience that difference first-hand when conference chair Doug Austin introduced Paul Rudolph as a speaker. The image of the two architects converging at the podium was unforgettable: Austin, a San Diegan decked out in jogging shorts, tee shirt, baseball cap, and camp-style whistle, and the crewcut Rudolph, a conservative New Yorker in black suit, white shirt, and dark tie. Kipling's words about east is east and west is west never rang so true.

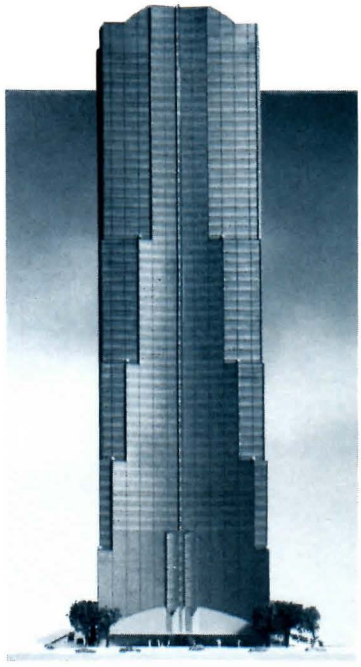
Distinctions between the nation's two coasts aside, it was the special quality of California's natural and man-made environments that preoccupied attendees at the rustic Asilomar Conference Center in Pacific Grove for three sun-dappled February days. By forsaking the usual bland meeting site in downtown Monterey, organizers created a conference—and an atmosphere—that was essentially fail-proof: if the predictable glow of slides projected by some 25 conference speakers only intermittently illuminated what inspires architects to do what they do, the ethereal light filtering through tall pines at the seaside retreat could not fail to ignite a spark of creativity among the 600 architects in attendance.

What were some of the sources of inspiration that emerged from the various presentations? Not surprisingly, there was a mixed bag of specific influences—historical allusions, contexts, and references—along with less easily definable experiences emanating from each architect's own personal background. In the former category, Mitchell Green of Kaplan/McLaughlin/Diaz explained how he is trying "to stem the Yuppie tide" of homogenized architecture by utilizing regional features (bow fronts in Boston, loggias in Marin County) in some of his firm's current hospital projects. Dyed-in-the-wool modernist Peter Blake offered a rare look at some of his architecture, which he claimed was influenced by the work of a variety of early- and mid-20th-century artists. Images of Le Corbusier's Villa Savoye and Wright's Falling Water showed up on several other architects' screens as well. Some historical/contemporary matches were intriguing, if not always convincing: although Anthony Lumsden's juxtaposition of the CBS Building with the Parthenon aptly revealed how the concept of rhythmic solids and voids has remained a consistent architectural theme over the centuries, Christopher Carr's comparison of the same ancient Greek landmark with his rectilinear interiors for a national chain of soft-sided luggage shops was, at the very least, tenuous.

Allan Temko, architecture critic for *The San Francisco Chronicle* and self-styled "aging *enfant terrible*," stirred things up during the CC/AIA Honor Award festivities when he characterized architecture as "a moribund profession" and all architects over 50 as "scoundrels." He lambasted post-Modernism as "self-indulgent and semi-literate," adding that "if you think it looks good now, wait until the stucco starts peeling from the wood frame." Catching the AIA powers-that-be somewhat off guard, the irreverent Temko was a striking contrast to the ensuing Hollywood-style awards ceremony, which had canned platitudes by presentors and Oscar-like acceptance speeches by the winning firms.

If there were any real "hits" at the conference, they might have been one idiosyncratic architect from San Diego, one contemporary work of architecture, and one professor of engineering. The architect was Ted Smith, whose inexpensive "loft residences," equipped with only basic amenities, seem inspired by the realities of high-priced California real estate and by Smith's "listening to what others want" in their architecture. The building was the Esherick, Homsey, Dodge & Davis's new Monterey Bay Aquarium, whose strong industrial imagery, technical wizardry, and superbly designed exhibitions impressed visiting conferees. The professor was James Adams of Stanford, whose opening and closing remarks underscored how innate inhibitions, societal pressure for conformity, and the similarity of most architects' backgrounds conspire to inhibit creativity. How, then, does one increase creativity? While Adams had no instant remedies—he called it "a long-term reallocation of time and resources"—he noted that the financial reward system used by some corporations can help encourage new ideas. Adams also listed some conflicts raised at the conference—namely, the issue of style versus "truth" in architecture, whether architects will retain their idealism now that business is better, and a perceived current lack of experimentation—but he added that such tensions are good for the field. In spite of everything, he concluded, "It's a terrific time to be an architect." *P. M. S.*

Manhattan moves downtown



Until recently no visitor to New York would have dreamed of staying downtown, mainly because hotel construction south of 14th Street effectively ceased over a century ago as the city's entertainment and retail districts moved northward. Downtown Manhattan remains a viable mecca for finance and government, however, and as the monumental Battery Park City complex nears completion, developers have begun to reexamine the area as a market for new luxury hotels. The largest one to date—and second tallest hotel structure in the city after the Waldorf-Astoria—is a 60-story, 608-foot-tall hostelry proposed for a site opposite the World Trade Center. Designed by Eli Attia Architects, the 700-room structure will feature a concave reflective glass wall set into a facade of varying shades of gray and blue glass.

Competition calendar

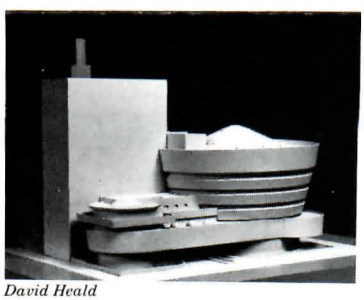
• *Sunset Magazine* and the AIA are seeking entries to the biennial Western Home Awards Program, open to architects registered in 13 Western states. Residential projects completed since January 1, 1981 are eligible. Winning entries will be published in *Sunset*'s October issue. Application deadline is May 2. For entry brochure write AIA-*Sunset Magazine*, Box 2345, Menlo Park, Calif. 94025.

• The Red Cedar Shingle & Handsplit Shake Bureau has issued a call for entries to its 1985 Architectural Awards Program. Open to architects and designers, the program will honor completed buildings in the categories of residential/single-family, residential/multifamily, vacation houses, commercial/institutional, remodeling/restoration, and interiors. Application deadline is June 7. For information contact the Bureau at 515 116th Ave. N. E., Suite 275, Bellevue, Wash. 98004 (206/453-1323).

• The Landmarks Preservation Council of Illinois and the Historic American Buildings Survey are sponsoring a competition for the best set of measured drawings of any previously unrecorded historic building or site in Illinois. Cash prizes totaling $1,300 will be awarded to the four top entries. Deadline for entry is August 31. For information contact Therese Kelley, Landmarks Preservation Council of Illinois, 407 S. Dearborn St., Chicago, Ill. 60605 (312/922-1742).

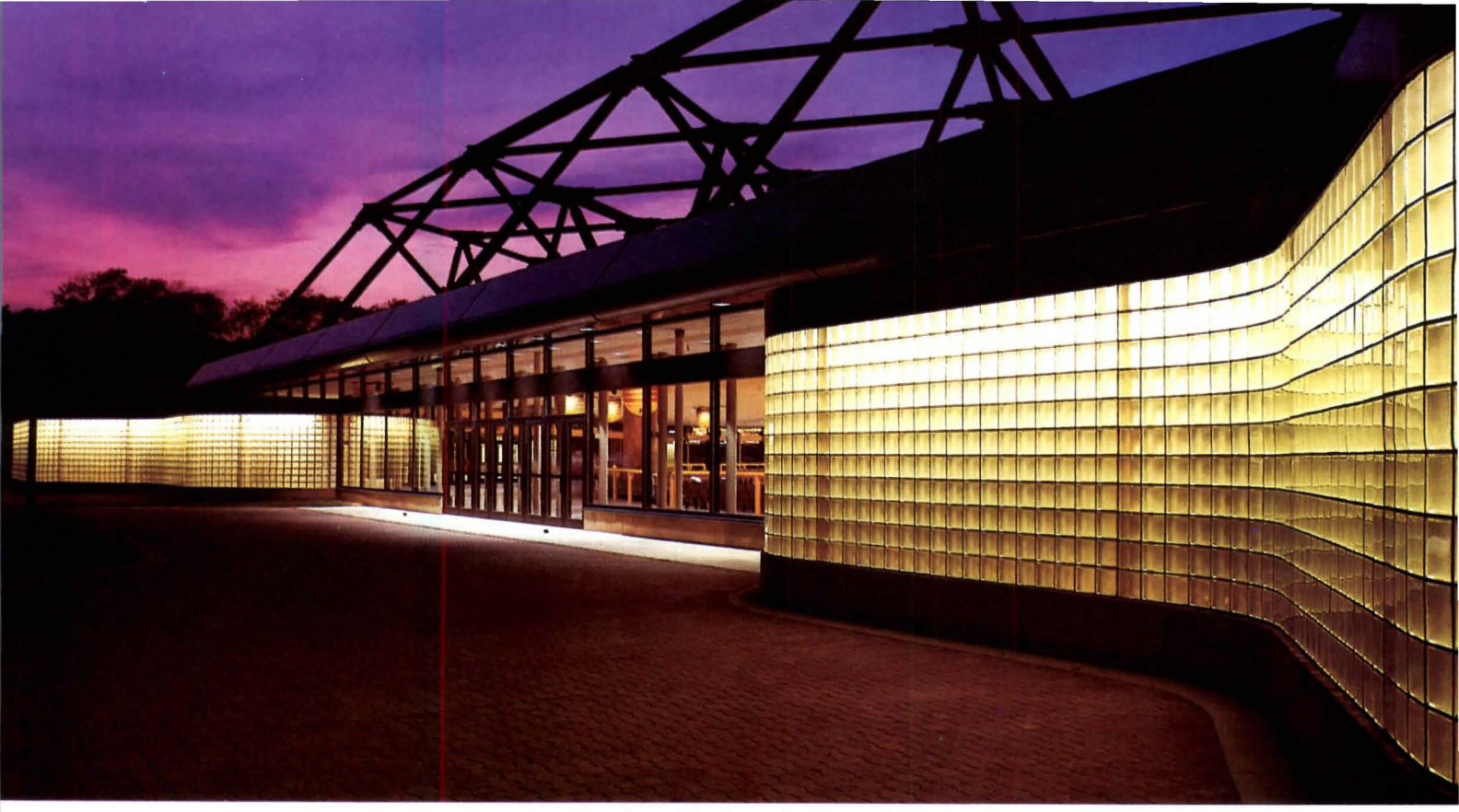
• Classical America seeks entries to a student competition that calls for the design of a classically inspired small public library. Cash prizes totaling $5,000 will be awarded. Entry deadline is September 1. For information contact Classical America, Box 821, Times Square Station, New York, N.Y. 10108.

Guggenheim Museum announces expansion plan



David Heald

How do you design an addition to a 20th-century architectural icon? That is the question facing Gwathmey Siegel & Associates as the New York firm embarks on a most challenging task—an 11-story expansion of Frank Lloyd Wright's Guggenheim Museum that will house new galleries, offices, conservation and storage facilities, a library, and a restaurant. Gwathmey Siegel's initial concept, shown in the adjoining photo, calls for an 80-foot-wide, 135-foot-high slab that echos the basic form of an early addition Wright himself proposed for the museum. Although details have yet to be worked out, the architects are investigating such materials as concrete, stucco, and tile, and they anticipate "a neutral facade" that might lead to a more harmonious relationship between the Guggenheim and its residential context.



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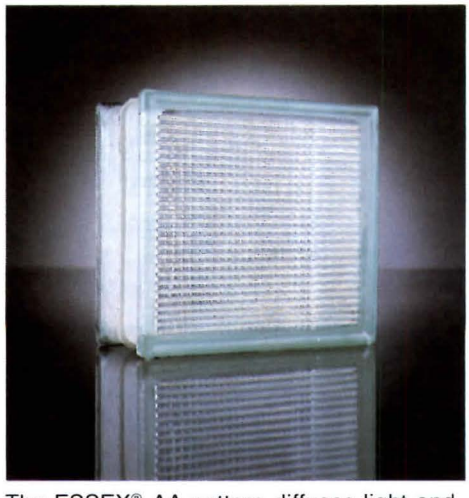

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A classical quotation

The decidedly flat-topped skyline of Atlanta is about to get its first historicist skyscraper—a 25-story office tower on the corner of Peachtree Street and Ponce de Leon Avenue. Designed by Chapman Coyle Chapman & Associates, the 400-foot-high structure is intended to harmonize with the Georgian Terrace Hotel and the Ponce de Leon Apartments, two early-20th-century buildings located across the street. Toward that end the architects have specified such "contextual" features as a limestone base, a shaft of brown/gray precast concrete and reflective glass, and a tile-clad crown consisting of peak-roofed gables. By amazing coincidence, round arches and stone gargoyles on the new building recall details found on the former Inman House (above), a Romanesque Revival mansion that occupied the site until 1947.

Yale, Harvard name architecture heads

Thomas Beeby, partner in the Chicago firm of Hammond, Beeby and Babka, has been appointed Dean of the Yale School of Architecture, effective December 20, 1985. Currently the director of the School of Architecture at the Chicago campus of the University of Illinois, Beeby succeeds Cesar Pelli, who will remain at Yale as professor of architecture. Beeby received his architectural education at Cornell and Yale and was associate professor in the Department of Architecture at the Illinois Institute of Technology from 1973 to 1980. His firm has received a National AIA Honor Award and eight citations from the Chicago Chapter/AIA.

Meanwhile up in Cambridge, Spanish architect José Rafael Moneo has been named Chairman of the Department of Architecture at the Harvard Graduate School of Design, effective in July. Moneo succeeds Henry N. Cobb, who will maintain his teaching role as adjunct professor. Known in Spain as both an architect and an educator, Moneo has held full professorships at the Barcelona and Madrid schools of architecture. He co-founded the Spanish journal *Arquitecturas Bis*, and he has served as visiting professor and studio critic at Princeton and Cooper Union.

Rave reviews for Indianapolis theater restoration

Although the reuse of vacant downtown movie houses as performing arts centers is nothing new, few of these renovations have been carried off with the finesse of the recent conversion of the Circle Theater into the new home for the Indianapolis Symphony Orchestra. Designed in 1916 by Rubush & Hunter, the 1,847-seat theater is an exceptionally refined example of the Adamesque style. While adaptation for live performances required a host of interior modifications, including the widening of the proscenium arch and the addition of an acoustical orchestra shell, architects Dalton, van Dijk, Johnson & Partners have skillfully integrated the new architectural elements into the theater's restored interiors—a jewel box of rose, ivory, and gold-leafed plaster ornament. The results of their efforts, shown here, speak for themselves.

Darryl Jones photos

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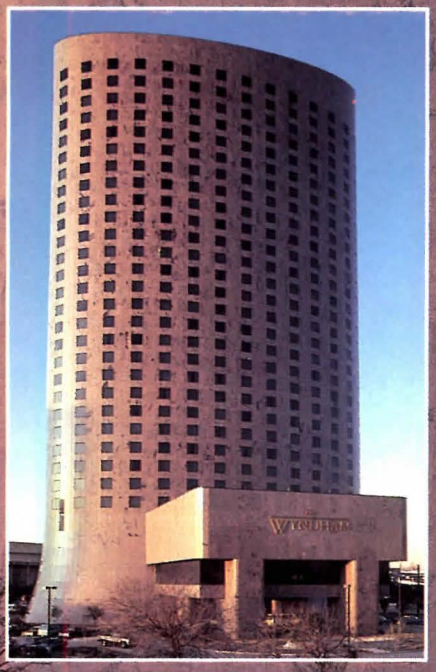

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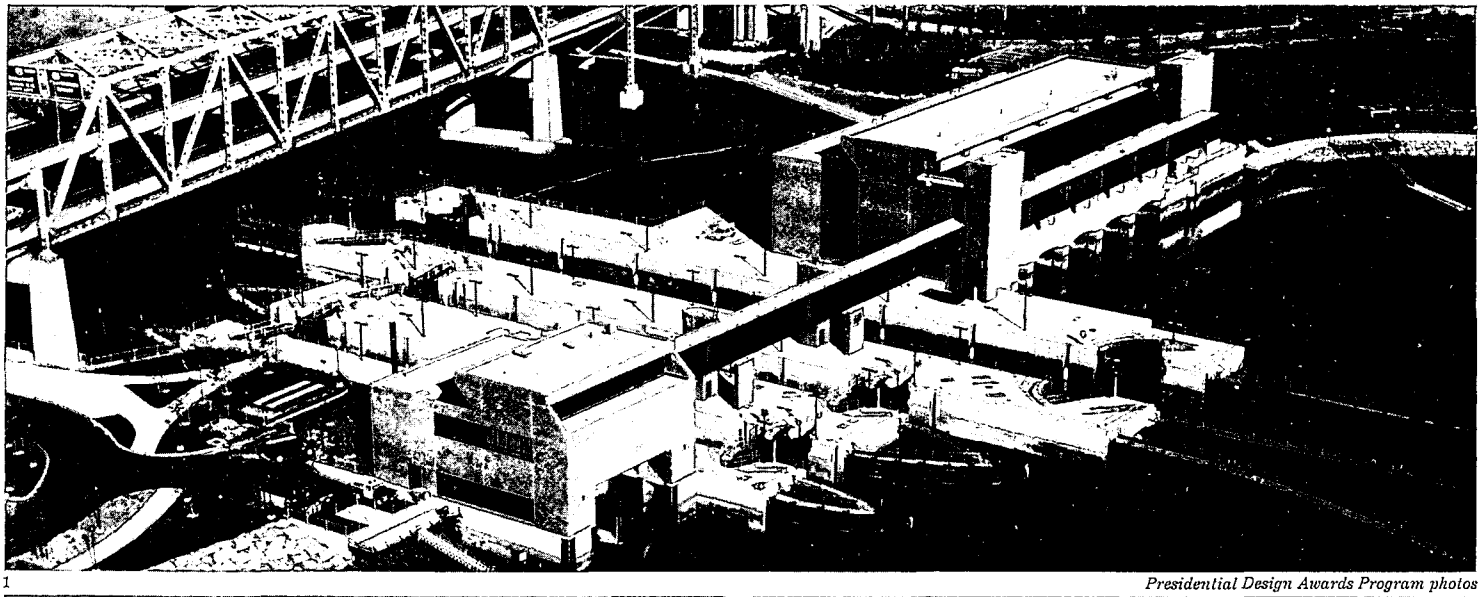
Design awards/competitions: 1984 Presidential Awards for Design Excellence

In ceremonies held recently at The White House, President Reagan presented the first 13 Presidential Awards for Design Excellence. Initiated by the President in December 1983 and administered by the National Endowment for the Arts, the quadrennial program recognizes outstanding Federal design in the fields of architecture, engineering, graphic design, interior design, landscape architecture, product/industrial design, and urban design and planning. Projects completed or implemented between 1974 and 1984 were eligible for the 1984 program. Current and former



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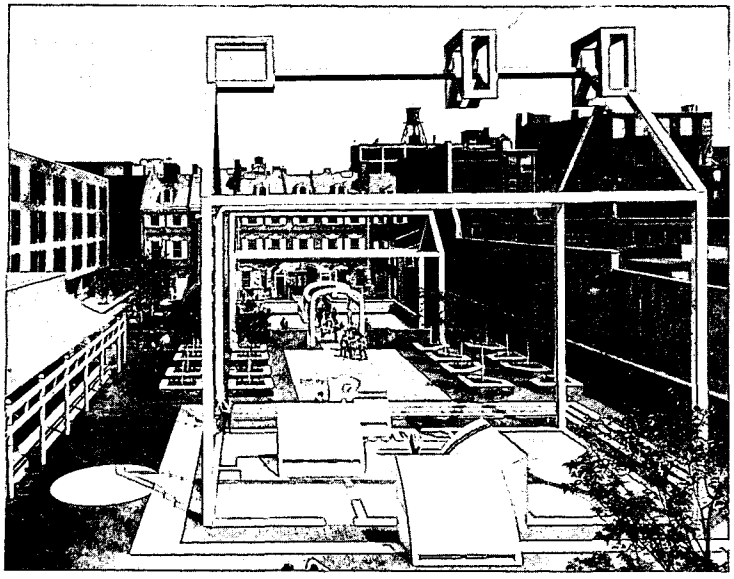
Presidential Design Awards Program photos



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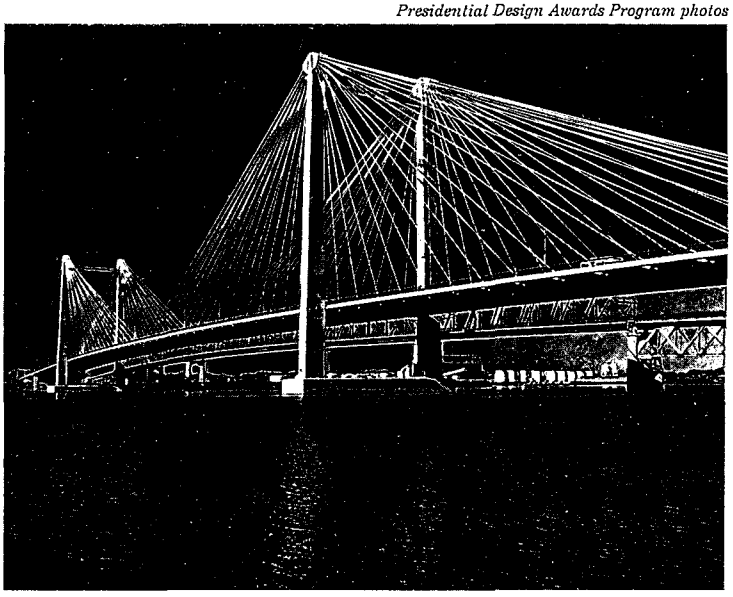

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1. Charles River Project, Boston, Massachusetts; CE Maguire, Inc., Engineers. The centerpiece of a flood- and pollution-control project is an earth-fill dam and pumping station situated on the Charles River between Boston's North End and Charlestown. Six massive pumps push flood waters back upstream for release into natural storage areas that also serve as wildlife refuges. The dam separates the salt water of Boston Harbor and the fresh water of the river, and thus protects marine life in both bodies of water. Three locks serve commercial and recreational boaters, and a fish ladder has resulted in the return of such species as shad. The top of the dam forms an extension of Boston's *Freedom Trail that carries hikers* back and forth between two historic neighborhoods. The jury called the project "a major public works program of the highest order [that] moves beyond a narrow technical mandate to complement the larger social, physical, and visual qualities of its city."

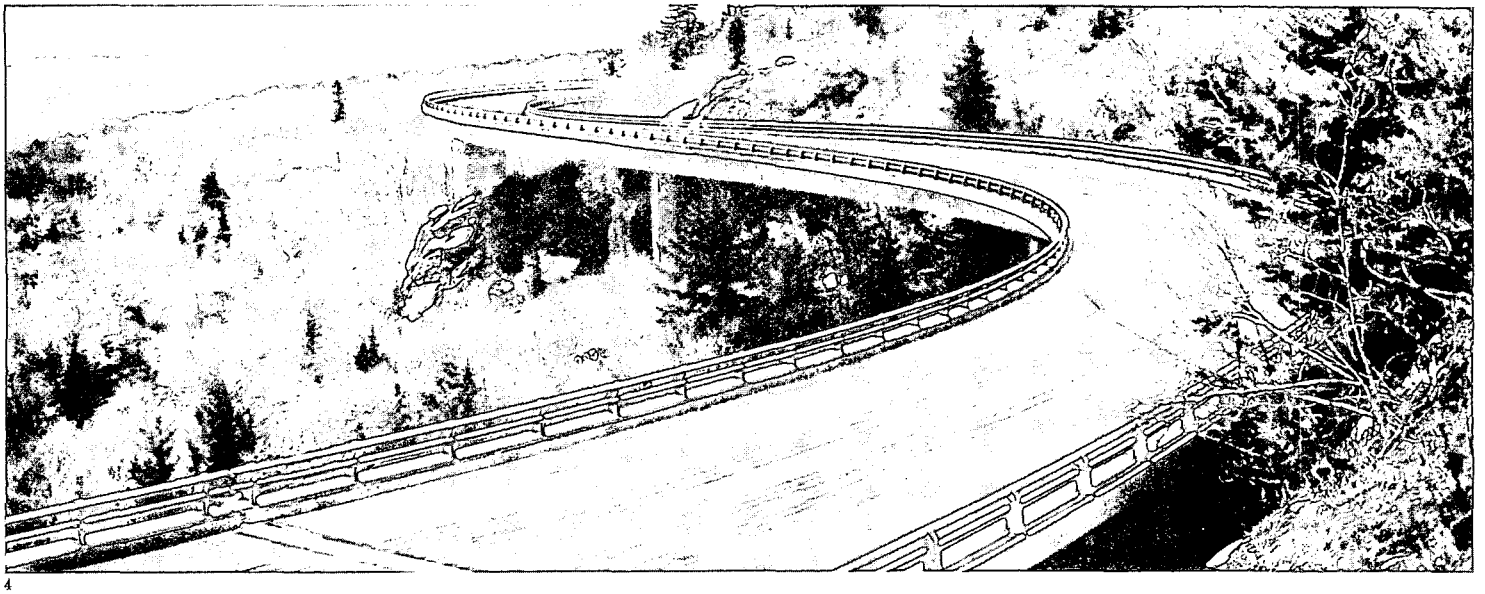
2. Franklin Court, Philadelphia, Pennsylvania; Venturi, Rauch and Scott Brown, Architects. Responding to a bicentennial call by Congress for a monument to Benjamin Franklin in Philadelphia, the architects designed an underground exhibition center on the downtown site where Franklin's house once stood and restored five adjoining Federal houses. Rather than attempt to replicate the Franklin dwelling, the architects chose to create a steel-framed outline of the residence and place it in a landscaped courtyard. Plans of the original house are set into white marble slabs, and openings in the black slate floor allow visitors to view the *in situ* remains of the lost dwelling's foundations. The jurors called Franklin Court "an inventive sculptural statement that evokes an historic setting." The project, they added, "achieves a blend of restoration, imaginative recreation, and contemporary design while honoring the requirements of each."

3. The Intercity Bridge, Pasco/Kennewick, Washington; Arvid Grant and Associates, Consulting Engineers. Built of 300-ton blocks of locally produced precast concrete, this segmentally assembled cable-stayed bridge across the Columbia River is the first of its kind in the United States. The four-lane, 2,503-foot-long span has three segments of 407, 981, and 407 feet forming a continuous seven-foot-deep girder. The jury observed that "the Intercity Bridge is not just a great technical achievement; it is a work of art. The use of steel and prestressed concrete in striking white color, the simplicity of the connections to its components, the elegance of the bridge lines, and the clarity of its structural behavior enhance the beauty of this utilitarian structure in ways that can be perceived by both experts and laymen."

4. Linn Cove Viaduct, Blue Ridge Parkway, North Carolina; Figg & Muller, Engineers. The challenge for the engineers was to complete the final link in the 469-mile Blue Ridge Parkway, part of the National Park System, by spanning a rocky, 1,243-foot-long hollow on the side of Grandfather Mountain—all without disturbing the existing terrain. The construction system utilized is relatively new: the concrete superstructure was cast in 153 pieces at a nearby plant, trucked to the site, and then lowered into place by a crane that

Federal employees with professional responsibility for design work were allowed to compete for the awards, as were Federal contractors, state and local governments, and not-for-profit organizations that had completed design works for the Federal government. By the July 1984 competition deadline, a total of 630 entries representing over 50 Federal agencies had been submitted to the program. The 13 final winners were selected from among 91 recipients of the first-stage Federal Design Achievement Awards, which were granted by three specialized juries in October.

We illustrate six Presidential Award winners in the architecture and engineering categories, chosen by jurors I. M. Pei (chairman), Stephen Carr, Colin Forbes, Maria Giesey, Richard Haag, Marvin Mass, Henry Millon, George Nelson, Mario Salvadori, Adele Santos, Frank Stanton, Donald Stull, William Turnbull, Jr., and Lella Vignelli.



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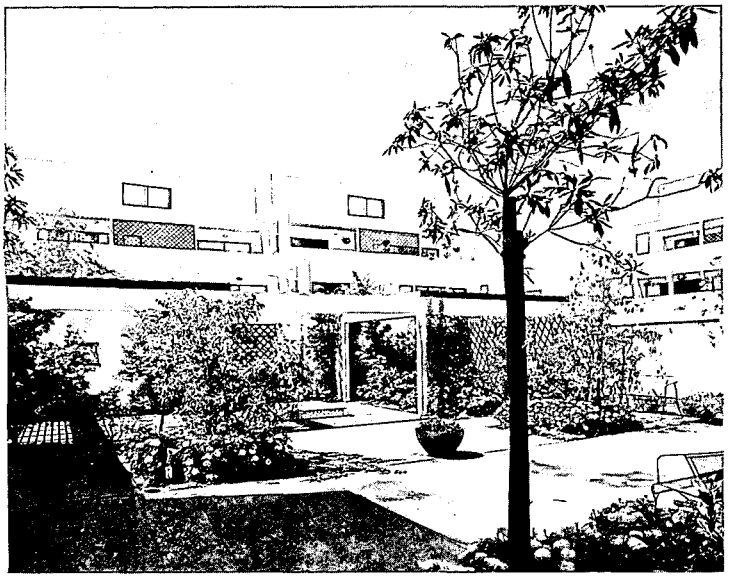

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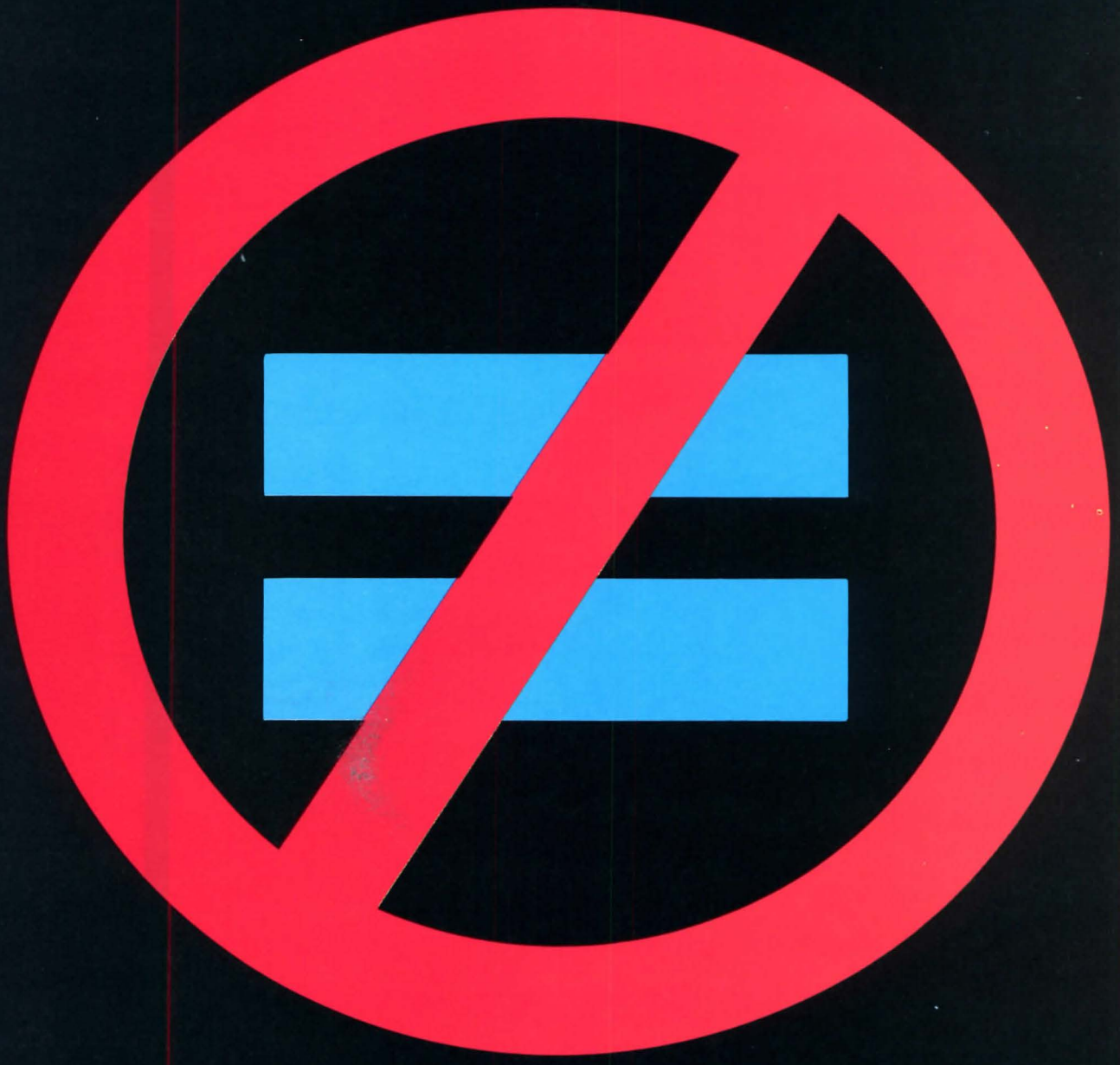
was anchored near the edge of the advancing viaduct. Foundation holes were also drilled from above and precast post-tensioned piers then lowered into place. The jury praised the solution as "technically innovative and respectful of the environmental situation. The roadway [is] an elegant curving ribbon that caresses the terrain without using it as a support. It gives the motorist the sensation of driving tantalizingly on air while the earth goes by."

5. The Gardens, San Mateo, California; Backen Arrigoni & Ross, Architects. The challenge was to design a 186-unit apartment complex for young professionals on an awkward seven-acre hillside site dotted by mature eucalyptus and oak trees. The architects' solution was an apartment village arranged around a pattern of pedestrian walks, courtyards, and private gardens and bounded by a wall for security. Individual units are no higher than two stories and are constructed of wood frame with stucco exteriors to harmonize with existing single-family houses in the area. Cars are sequestered along the edge of the site and partially hidden a half-story below grade. The jury called the project "a refreshing solution to a difficult site problem. The gardens themselves are important because they give people opportunities to create their own personal statements, their own special places."

6. Scattered Infill Public Housing, Charleston, South Carolina; Bradfield Associates, Architects; Middleton, McMillan, Associated Architects. After a city-wide study in 1978 pinpointed vacant lots as a prime source of trouble in residential areas, the city of Charleston constructed 113 housing units on 14 sites in five diverse neighborhoods. Cost and energy considerations led the architects to revive a vernacular building type—the Charleston side-house—whose simple clapboard exterior and narrow configuration proved appropriate both contextually and climatically. In addition to creating much-needed new housing, the infill program has stimulated private reinvestment in the affected neighborhoods. "The infill approach to public housing is clearly a time-consuming process requiring the utmost commitment from a housing authority," noted the jury. "In Charleston attractive livable environments have been created within stringent budgetary and time constraints. These [dwellings] are exemplary in their social, architectural, and urbanistic goals and set an important precedent for future public housing projects."

Other recipients of the Presidential Award include the graphics and visual communication system developed for the National Aeronautics and Space Administration; the Unigrid system of graphics created for all publications of the National Park Service; the Historic Preservation Tax Incentives Program of the Department of the Interior; *The Seattle Foot,* a prosthetic device developed for the Veterans Administration; the Art-in-Architecture Program of the General Services Administration, the system of signs and symbols developed by the Department of Transportation; and the urban renewal program of the Lowertown Redevelopment Corporation in St. Paul, Minnesota.



There is no equal.

The Law Courts: The Architecture of George Edmund Street, by David B. Brownlee. Cambridge, Mass.: The Architectural History Foundation with The MIT Press, 1984, $45.

Reviewed by Barry Bergdoll

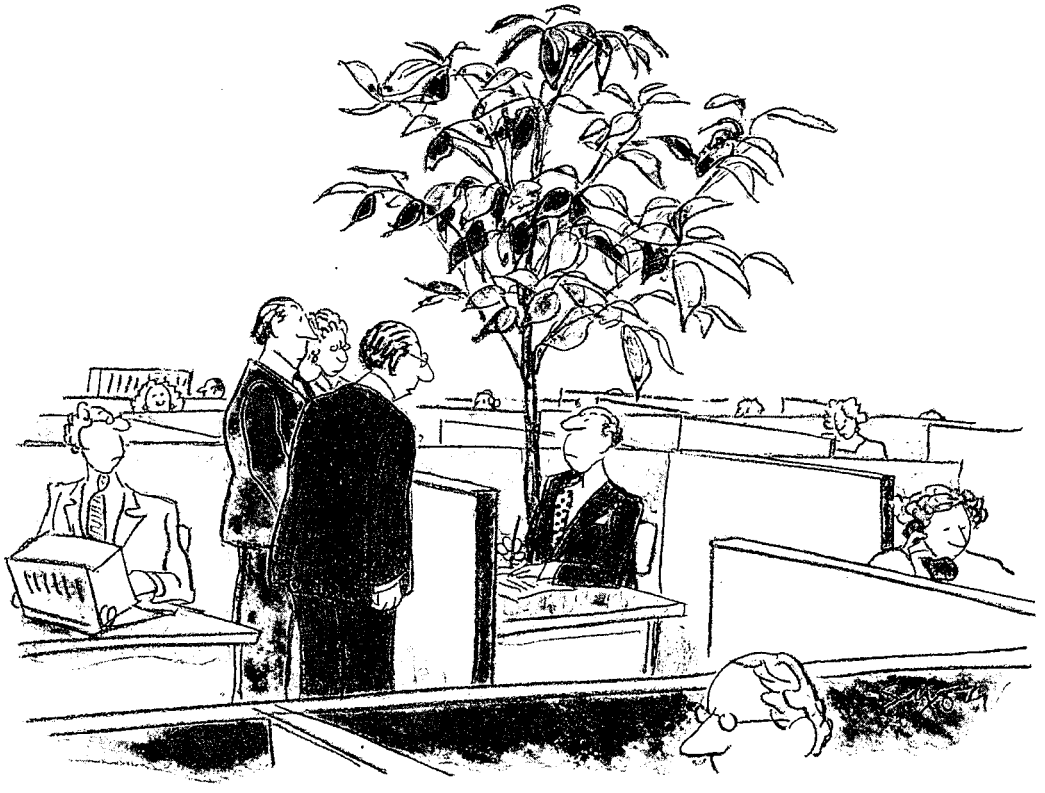
George Edmund Street's London Law Courts, the vast Gothic Revival cityscape that erupts as the Strand winds its way from Westminster to the City, have never been overly admired. Goodhart-Rendel captured the essence of the problem in his rubric "Gothic Swan Song." That great monument's vigorous and earnest medievalism was already out of fashion in the 1870s as it rose in a London increasingly seduced by the more lighthearted Queen Anne charms of Street's pupil Richard Norman Shaw. Street considered the Law Courts his great opportunity to substantiate what he and his fellow goths had long maintained: namely, that the language of High Victorian Gothic could become a universal one, as appropriate and flexible in defining a monumental secular style as it was in coloring the explosion of church-building at mid-century. But the self-assured monument that culminated Street's prolific career as master of the High Victorian Gothic has always seemed to mark the end, rather than the beginning, of an epoch. Street himself died just months before the Courts' public opening, exhausted after 15 years of unrelenting controversy, compromise, and scandal that surrounded every aspect of the building, from the choice of the first design to its final critical reception.

In setting out to write the biography of the Law Courts, David Brownlee has painstakingly untangled that long succession of disputes, skillfully sifting through voluminous archives and old newspapers to resurrect the cast of characters, the issues involved, and their implications. Like so many great Victorian public buildings, the Law Courts were from the first a barometer of rising and falling political careers. Brownlee charts the history of the commission against the constantly shifting political background, with its almost dizzying alternation of Tory and Liberal administrations. Gladstone, Trevelyan and the Dickensian Acton Ayrton are as much the protagonists as the architect. Indeed, current-day practitioners will learn with amusement, or perhaps sympathetic relief, that the government's indecision and fundamental distrust of architects made the building's history into one of endless confrontation and conflict. Nothing from the choice of the site and plan to Street's salary, the working conditions of the masons, or even the responsibility for the furnishings was decided outside a politically charged realm. Brownlee gracefully juggles the intersecting forces of the legal reform movement, political ambitions, a changing building economy, the emergence of trade unionism, and the rise of the dispute over the architect's professional status—all of which shaped the design and construction.

Brownlee's book also sheds light on the rather complex nature of architectural competitions in 19th-century England. Although competitions were widely used to select designs for Victorian public buildings, they were an ever greater display of confusion and indecision. The high point had been reached over the design of the new Government Offices in 1856. Although G. G. Scott won this so-called "Battle of the Styles," his Gothic design was not retained, and he was requested either to redesign in compromise classic or to resign. The Law Courts competition of 1866-67, if it was a triumph for the Gothic point of view (Burges, Scott, Waterhouse, Street, Dean & Woodward, Seddon, and E. M. Barry all entered), exposed the lack of consensus over monumental architecture and the duties of a public architect in a country that knew neither an academic tradition nor an official architectural bureaucracy such as determined major commissions on the continent. The jurors unashamedly chose E. M. Barry's plan and Street's elevations, appointing these architects from two differing camps (Barry was disposed toward classical, though he had conceded to Gladstone's well-known Gothic preferences in his design) to resolve the contradictions. Although Street was finally named sole architect, he was to redesign the project several times—and even for a different site—before ground was broken five years later. The pamphlet war with Barry cast a pall over his triumph and inaugurated the disputes and controversies that plagued him for the rest of his career.

The detailed history of construction that makes up the final third of the book would perhaps seem the least promising aspect of this comprehensive monograph; it is here, however, that Brownlee's story is most stimulating. The review of Street's career that opens the book and the detailed analysis of the competition are familiar enough from other sources. Although Brownlee fills out the story with tireless care, his conclusions merely corroborate our view of Street's effort to realize that "central building of the world" which was the object of so many 19th-century architectural reveries. But when the building comes to dominate the account, Brownlee at once focuses on a detailed description of the site and opens up his text to a panoramic consideration of late-Victorian building and architectural practice. The descriptions of the controversies over heating or electrical lighting, for instance, are far from tedious. They not only reveal much about neglected aspects of late-19th-century design and the technical advances that were made even in historicist guise, but also illuminate a world in which everything was in mutation, from the building's infrastructure to the definition of workmen and the architectural profession. It is on this uncharted terrain—the actual building site—that the story is at its liveliest. Here, Street's great "Swan Song" becomes momentarily the central building of the late-Victorian architectural world.

Barry Bergdoll teaches art history at Columbia University.



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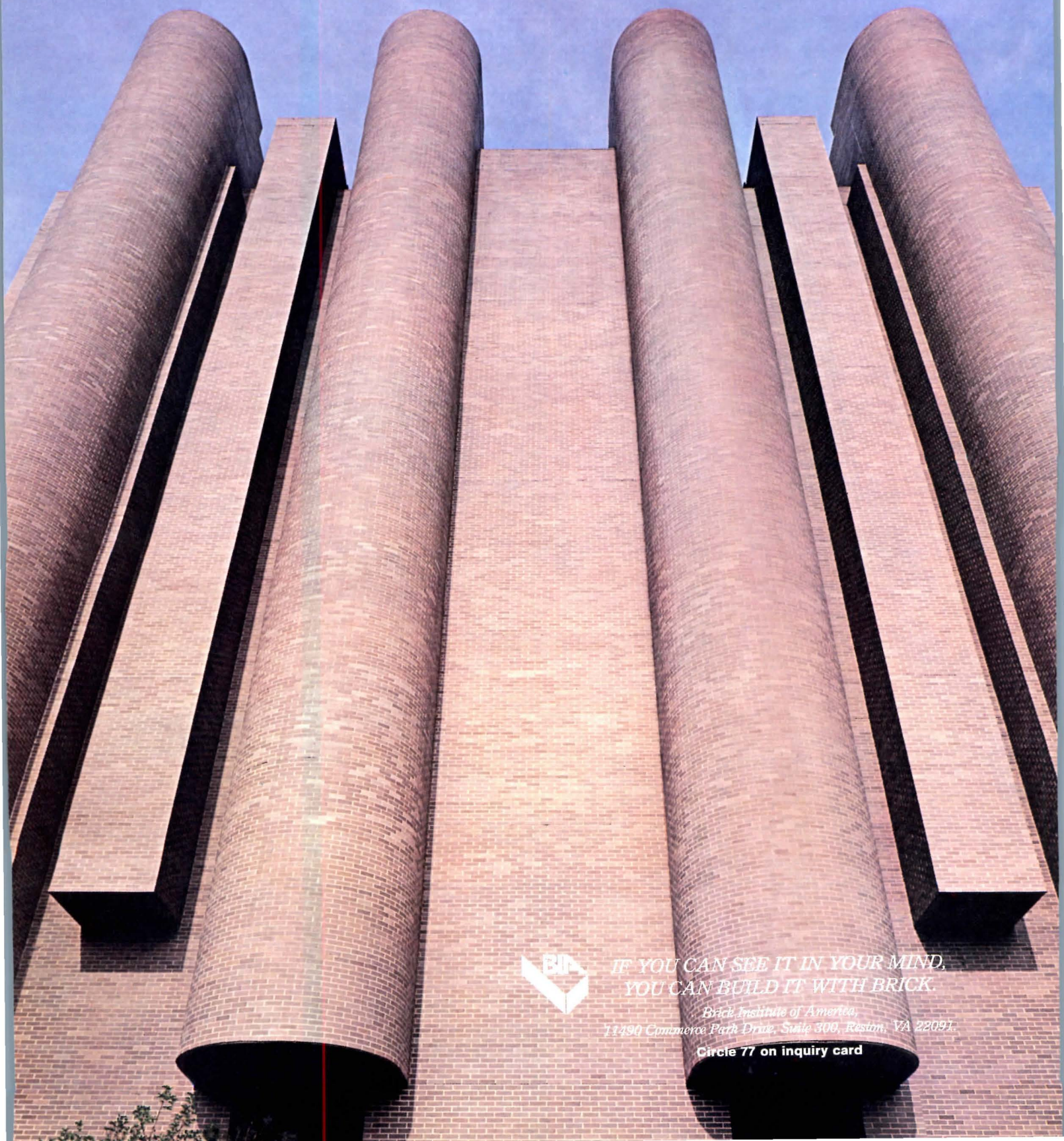

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Toward a return of the public place: an American survey

The Pavilion, Washington, D. C., by Benjamin Thompson & Associates and Arthur Cotton Moore/Associates.

By James Sanders

"The open piazza is seldom appropriate for an American city today . . . . The piazza, in fact, is 'un-American.' Americans feel uncomfortable sitting in a square: they should be working at the office or home with the family looking at television, or perhaps at the bowling alley." Robert Venturi wrote these words in 1965 to explain why his firm didn't adopt an open plaza approach for their competition entry to Boston's Copley Square. The problem of most American cities, he said, was not that they lacked sufficient open space, but that they had *too much*.

It was heresy, pure and simple. At least for architects. To suggest that they might be engaged in a flurry of building plazas for an American public that neither wanted nor needed them was to challenge a cherished axiom of modern architecture and planning. But if provocative to architects, it was to most other social observers simply the common wisdom of the times: America was becoming a private affair, a society, in John Kenneth Galbraith's words, of "private affluence and public squalor." As critics noted about the time Pennsylvania Station's Doric columns came crashing down, our public vision was becoming fairly impoverished. The emerging American was packed into automobiles and suburban homes, entertained by television and indoor activities from nightclubs to bowling. America seemed to be evolving into the first society in history to jettison the need for an architecture of public space.

It was only the architects themselves who, fresh from their trips to Italy, kept proposing those endless piazzas, replete with cafés, fountains and flowers—a fantasy of a communal social life where Americans would casually interact and gather in broad public spaces. In practice, the results kept emerging as cheerless, windswept expanses of concrete and scraggly trees. And Venturi was right: however popular piazza-life was in Italy, France, or the rest of the world, Americans seemed to have no problem avoiding these forlorn places. Perhaps sitting in a square *was* simply "un-American."

Could we ever really have thought that way, even momentarily? It was only two decades ago, yet it now seems like a bygone vision of America. Today, the nation bulges with dozens, even hundreds, of new public gathering places. In city after city, the same scene is repeated:

©Harlan Hambright

The fountains gush. The crowds throng. The elegant umbrella tables and chairs scrape against the brick-paved floor. Jugglers and mimes woo the crowd away from a brass trio's Bach. Here a woman is dazzled by chrysanthemums; there two old friends have just run into each other; at the next table, a love affair may be starting. Paris? Milan? No, a "place" in Santa Monica. A "galleria" in midtown Manhattan. An "atrium" in Troy, New York. A "market" in Baltimore. A "park" in Georgetown. Above the din of the crowds may be open sky or glass skylights, escalators or the cornice of an historic market building, tiers of shops or corporate offices.

These innumerable new spaces are changing America. They have already changed the traditional perception of Americans as unwilling to demand or support an urbane lifestyle of café-sitting and *il dolce far niente*. And they are in the process of redefining once-firm categories of social life and architecture. The lines between what is urban and what is suburban, the distinction between what is public space and what is private, have begun to blur. But so pervasive are these new projects, and so ingrained have they become in American life, that it seems necessary to re-evaluate our traditional concepts in their light.

If we have not yet done so, it is in part because this explosion of new spaces has come so quickly, and in part because it was so unexpected. Remember when the Ford Foundation's headquarters opened in New York just 18 years ago? Its high, glazed atrium was treated at the time as an extraordinary anomaly, a striking anachronism that, indeed, only an institution as wealthy as the Ford Foundation might underwrite. We were told to look long and hard at that 12-story interior space, for in our time we might never see its like again.

Or recall when in 1972, Peter Blake, writing in *Architectural Forum*, felt the need to adopt his most characteristic naughty-boy irony in praising the just-completed Walt Disney World as "perhaps the most interesting new town in America." He truly felt there was much for architects to learn from its builders' skill in creating popular, charming, lively, pedestrian-oriented environments, but it seemed essential to plant tongue firmly in cheek. After all, what value would a serious modern architect see in its 19th-century-inspired, historically referential streetfronts, festooned with such "period" details as ornate, re-cast lampposts? Other than the cartoon wizard, who would ever build in such a manner?

In a few short years, a remarkable convergence of new retailing formulas, the loosening grip of modernism, and an increasingly sophisticated urbanism (itself being patiently re-learned after the sweeping reductionism of the modern movement) has created new building types—and new social phenomena—to be found in almost every city in the nation.

Public versus private spaces

The issues these spaces raise are complex. To some observers, many of the new downtown malls, markets, and atria represent the suburbanization of the city, the importation of a successful commercial formula to an urban setting. The word "suburban" here takes a dark undertone: artificial, homogenous. Others counter by pointing to the grand 19th-century tradition of glazed commercial spaces in cities, precedent that rests firmly in the pantheon of urbanism.

An even more profound question lies in these places' ambiguous status as "public" space. These are not the traditional open piazzas and town squares, built and kept up by the state, open to all, held in the public trust, and devoid of commercial activity. But they are, in practice, serving as "public" spaces for the large numbers of people who eagerly flock to them as meeting spots, locations in which to "see and be seen," and, particularly among young people, as common ground for passing time with one's peers. Meanwhile, the municipal and state governments to which Americans historically have turned in this century for the provision of parks, squares, and plazas find themselves hunkering down for a long period of fiscal austerity, the difficulties ahead seen largely in maintaining existing facilities, much less in building ambitious new ones.

So the society has turned to the private sector for the creation of these new "public" spaces, to the retailers, developers, and corporations who, for their own economic return, are creating them in record numbers, often as the centerpieces for larger office, shopping, or housing efforts. To some, this represents an irreconcilable contradiction: spaces cannot be "public" if they are privately sponsored and controlled. To others, there is a lesson in their success: well-maintained, attractive, and secure, they offer the basic attractions provided in the past by parks and squares. Efforts to restore traditional public spaces might learn from elements of these new, privately sponsored projects.

And is it necessarily the sponsorship of a place that determines whether or not it is perceived as "public"? Over the last half-century, we have taken for granted that government will provide plazas and squares for the public. It was not always so: in the 19th century, when government took a smaller role in society, many "public" places, from beach resorts to gallerias to pleasure gardens, were in fact built by private entrepreneurs and businessmen. But they *looked* public. They *felt* public. Their private sponsorship did not prevent them from becoming focal points for their cities, widely popular and civic-spirited. Can we rediscover the attributes of their design and use that made them perceived that way, so that their special character, their "public-ness," re-emerge in today's efforts?

James Sanders practices environmental design and development in New York City. With Sanders, Strickland Associates he designed public amenities for Bryant and Union parks in Manhattan. His work as a critic and writer includes articles and a major exhibition on subsidized housing entitled "At Home in the City."

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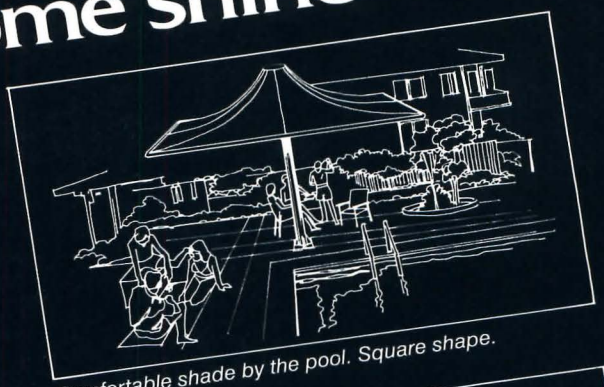
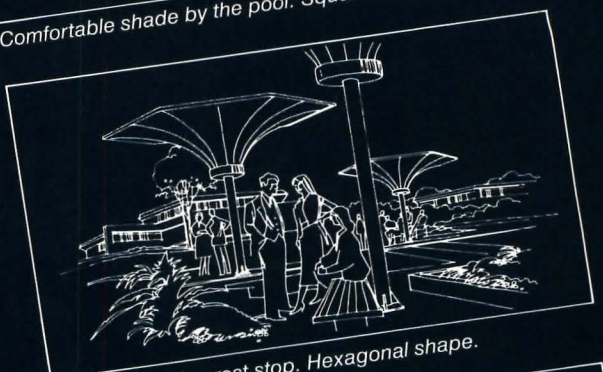
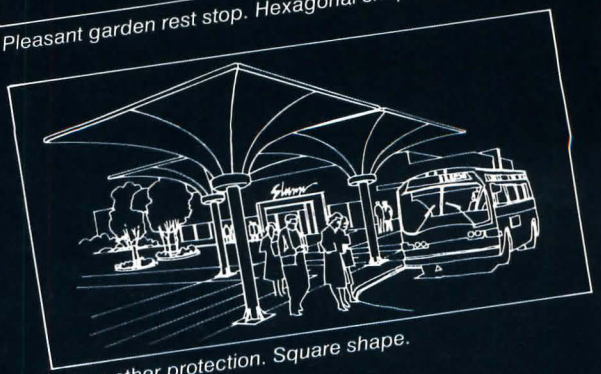


Comfortable shade by the pool. Square shape.



Pleasant garden rest stop. Hexagonal shape.



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Galleria Vittorio Emanuele, Milan, by Giuseppe Mengoni, 1865-75.

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Malls and arcades: An historical overview

Looking back on our own recent history, one can see that an early blurring of the lines between city and suburb, public and private, occurred around 1956. In that year, the opening of Victor Gruen's Southdale Center in suburban Minneapolis created a new phenomenon. Gruen placed a partially glazed roof over the common space of a shopping center and filled the now-climate-controlled area with a café, sculpture, murals, fountains, exhibitions, and seating. "Two-level Southdale is more like downtown than downtown itself," headlined *Architectural Forum*'s review, immediately asserting the ambiguity Southdale and its countless imitators would sustain.

Here were some of the most precious elements of urbanism—worthy of an Italian town itself—brought to the middle of a highway suburb. In 1956, Southdale probably exceeded the urban amenity available in many American cities, few of which at that time could boast plazas with open-air cafés and exhibitions. Here, under glass, was a new "street" and "plaza" life. As Southdale's progeny began to multiply, the amenities blossomed ambitiously; by the late 1960s, the "malls" (as they were now called) encompassed performance areas, spectacular floral displays, exotic trees, and fountains of a complexity not seen since Piranesi's day. And they could be found everywhere.

For the developer, whatever sense of "urbanity" these spaces may have had was secondary. In enclosing the space of a shopping center, he had created an all-weather facility where consumers, indifferent to climate or season, would be encouraged to linger—and shop. The fountains, cafés, and the rest became merely the tools by which patrons would be encouraged first to come, then to spend the day. But for the teenagers or young mothers who now built their social life around the mall, it could be seen as serving much of the communal function offered by the traditional town square or European piazza.

The emerging ambiguity between city and suburb posed by the malls was sharply heightened by the next step: the importation of the mall concept, by now a proven retail success, into the downtowns of older cities, usually by redevelopment agencies eager to see center cities revived by any means possible. Such early downtown malls as Water Tower Place in Chicago bore a striking resemblance to some of the better-class suburban antecedents: they were glossy affairs in polished metals and stone that in deference to the price of land in central cities took on a more vertical cast. The multi-acre parking lot became the multi-story parking garage, the atria became higher and narrower, and the amenities now extravagantly encompassed vertical circulation, with exposed-cab, glitter-lit elevators gliding down into gurgling pools of water.

Here the irony built upon itself: a compressed microcosm of "urbanity," sitting in the middle of an urban center, yet somehow not an urban phenomenon at all. Although *in* the city, it did not seem to be *of* it. Only grudging connection, if any, was generally provided to the traditional, sometimes aging downtown streets of department stores and small shops; instead, these downtown malls turned themselves inward, their shopfronts facing the courts, all the fun tucked inside. To the old, real city, they reverted to their suburban roots and presented mostly blank walls, four and five stories high, punctuated only by the oversized signs of the major department stores within.

It seemed obvious to many that it was simply the inward focus and homogenous commercialism of these malls that denied them any chance of a true urbanity. But the reality was more complex. Almost a century ago, in the late 19th century, an urban form much like the downtown mall flourished in European and American cities. Like the mall, it was inwardly focused. Like the mall, it was built around shopping. Like the mall, it was generally developed all at once, not incrementally and "naturally." It was the arcade. Today, we remember it as one of the glories of the industrial city, and a singularly urbane phenomenon.

From its beginnings in Paris in the 1810s to its triumphant crest in Milan, Berlin, Naples, and Cleveland in the 1870s, the arcade formula remained remarkably constant: a linear, multi-story, glazed-roof space that connected existing streets and that was lined with shops and offices. Accessible to adjacent thoroughfares through high, open archways, the arcades pulled street life into their passages and provided a rain-protected, ornately decorated, and naturally lit shopping environment. Generally built by private entrepreneurs (sometimes with condemnation assistance from municipal governments), they contained a wide variety of shops and cafés, and often became their cities' beloved social centers. One American visitor, Mark Twain, was fond of Milan's great Galleria Vittorio Emanuele and wrote of it as "roofed over with glass at a great height, the pavements all of smooth and variegated marble, arranged in tasteful patterns—little tables all over these marble streets, people sitting at them, eating, drinking, or smoking—crowds of other people strolling by—such is the Arcade. I should like to live in it all my life."

Other people strolling by. Twain, at once, touched the heart of the matter, why the Milan Galleria is essentially an urban place, and Water Tower Place, despite its North Michigan Avenue address, essentially a suburban one. At its root, the essence of a suburban place (no matter what its location or how many cafés it boasts) is that it is conceptually a point in space, discontinuous from all else. People drive to it, park, use it, get back in their cars, and drive away. Those using the mall make a deliberate decision to do so; no one is "just passing through" to get somewhere else. The malls remain detached from all else around them. Their use, in a word, is conscious.

A street, by contrast and almost by definition, is a place to come to and use consciously, but is also a connector between two or more other places. Some people may have made a special trip to use the street's facilities, but others are just passing through to get somewhere else. It is the combination of conscious and casual use of the street that makes for its complex web of interactions and possibilities. With no casual use, is it any wonder that a mall, despite its fountains, trees, and cafés, might somehow feel "artificial"?

The men who built the arcades knew they would not succeed as cul-de-sacs. They had to serve as connectors, as short-cuts, and the arcades always linked two or more already busy streets—or, as in Milan, two important city resources (the Cathedral and La Scala). It was simply good retail sense, and it made the arcades function, as Twain noted, just like streets.

The arcade updated

But the arcades were more than just connectors. Through their architecture they spoke to the general public as places that were welcoming and civic, and as such they still have several critical lessons to teach us.

In New York during the 1970s, city planners turned to the old arcades as a prototype for new "covered pedestrian spaces" that would largely supersede the often underused open-air plazas the city had been encouraging since the early 1960s. Like those earlier plazas, new covered spaces would be brought about by a provision of the zoning resolution that allowed developers who constructed these spaces in their buildings to exceed the standard height and bulk

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Left: The Cleveland Arcade, 1888-90, by John M. Eisenmann and George H. Smith. Right: Entrance to Park Avenue Plaza, New York City, by Skidmore, Owings & Merrill.

limitations for their zoning district. In some cases, as much as 20 per cent more floor space might be added—a gold mine of additional income for the developer given the high cost of Manhattan land. The inevitable loss of sunlight, the extra shadows, and the increase in density and congestion created by these much taller buildings would be offset, it was felt, by the amenity gained through the private construction of the new spaces.

From the outset, and to their credit, the planners recognized that a key component of these spaces' success was their function as connectors, and they mandated at least two entrances on different streets. After early disappointments, the concept finally achieved success with Citicorp Center's atrium (Hugh Stubbins & Associates), which opened in 1978. Although its pedestrian pathways were convoluted, its numerous entrances to surrounding streets (and a link to a subway station) encouraged cross-circulation. Its retailing concept addressed its urban location by stressing food outlets over durable goods shops (the reverse of the suburban mall's mix) and provided it with a sturdy and even complex pattern of use. New York, claimed supporters of Citicorp, now had a new "indoor town square" at no (direct) cost to the city. And it was seen as the harbinger of many more such spaces which, as the city's office market brightened, were suddenly on the drawing boards.

But a glance at the sleek, cool, corporate tiers of stainless steel that defined the architectural character of Citicorp's atrium could quickly lead an observer to wonder just how truly "public" the place was. And the same question arose even more strongly with two other galleria spaces in office towers in midtown Manhattan—Olympic Tower and Park Avenue Plaza—designed by Skidmore, Owings & Merrill. Both of these gallerias, like Citicorp, were fully enclosed, and both served as their buildings' lobbies as well as bonusable "covered pedestrian spaces." The street entrances of both spaces consisted of revolving doors set into the tinted glass curtain walls employed in the towers above. Unlike the City's regulation for "through-block arcades," which were required to be open to the air at either end (in the manner of the European arcades), these "covered pedestrian spaces" could be climate-controlled. And after technical problems emerged in the earliest ones (cold winter air, it was said, was being tunneled into the buildings' interiors and up their elevator shafts, wreaking havoc with the heating systems), the

James Sanders

mandated size of the entrances was allowed to shrink and take the form of revolving doors. In allowing these spaces to be enclosed, the City was immediately and profoundly altering their nature. Conceived as "super-streets," these spaces were becoming "super-lobbies."

But enclosure was only part of the problem. The Department of City Planning learned, after suffering the first few barren examples, that it was necessary to fill these places with amenities and was soon strictly supervising the number and location of tables, chairs, trees, and other public attractions. It also regulated the minimum height and breadth of the spaces and even the "transparency" of the street walls. But it chose to exercise no direct control over architectural style.

So SOM was free to employ its standard vocabulary of glass curtain walls and revolving doors for the entrances to these covered pedestrian spaces. In doing so, the architects, whether intentionally or not, were sending out a clear message to the general public. Buildings have meaning. To most people, glass-and-steel curtain walls and revolving doors at the base of a building mean "corporate office building," not "public place." The office building does not necessarily seem welcoming to everyone; even those for whom it is welcoming tend to use it differently than they would a public space. To some, the message of these building entrances (even if unwitting) was "do not come in unless you have business here." Many people didn't even realize these places were open to the public. Yet all citizens were carrying the burden of lost light and increased congestion caused by the zoning bonus arrangement.

The semiology of public spaces: the message of architecture

That objects, like buildings, can send out "messages," especially ones not intended by the designers, is an idea much explored by semiologists. Although semiology's proponents (mostly French philosophers and critics) are notorious for their dense and intimidating prose, their basic concept is quite simple: that objects or texts can be understood as signs and sign-systems. It is an approach with wide application in architecture—especially public architecture—where the great diversity of users includes many with no special interest in the history or theory of architecture. The 19th-century arcades, we now know, exhibited through their architecture an effective and widely understood *language* of gestures that gave them an unambiguously public character. Their public language transcended the fact of their private sponsorship and retail orientation.

Today, as we embark on a new era in which communal gathering spaces will be not solely, or even mostly, built by the government, it seems incumbent upon us to learn that language or "code-system," and how to adapt it to our social needs and technological resources. Without that knowledge, we will be forced to resort to measures like those now mandated by the New York City Planning Department to ensure public use: prominent signs and graphic symbols indicating that the atria and gallerias are open to the public. The English language must be used because the architectural language has failed. The entrance to Milan's Galleria, it should be noted, needs no sign proclaiming "Open to the Public from 7 a. m. to 10 p. m."

How did the 19th-century arcades achieve their unambiguously civic character, their "public-ness?" Their first step was in being climatically continuous with the outside world, with clear, multi-story openings; the transition from street to arcade became gradual, the dividing line between inside and outside indistinct. For their interiors, the arcades often simply borrowed the pre-existing and well-understood language of classicism, which had over the centuries come to be associated with governmental, or at least institutional, structures. The triumphal arch that forms the entrance to Milan's Galleria carried a clear message of welcoming passage for large groups of people. The elaborately detailed interior walls, comprising classical arches, pilasters, columns, and ornament, carried the character of the exterior facades of important buildings, making the linear space between them, by obvious extension, feel like an important street. Together, the effect of the inviting entrances and the "outdoor" architecture of the interior walls made the arcades seem like broad thoroughfares—marble-paved, vehicle-free, and filled with cafés and trees.

Many of the arcades, though, did not use classical stonework. Toward the end of the 19th century, the arcades turned increasingly to the cast-iron structural systems pioneered by Joseph Paxton in his 1851 Crystal Palace outside London. These iron gallerias (Cleveland's spectacular Arcade is the best American example) could not be said to have an interior "facade" at all. Instead, an openwork of cast-iron balconies, galleries, and columns culminated in the soaring iron arches and trusses vaulting the main passage and supporting the glass roof that kept rain out and let daylight in. While classically influenced in some of their small details, these inventive interiors cannot be said to have borrowed from a pre-existing language of public buildings, as did the stone facades of Milan, Berlin, and elsewhere. These cast-iron interiors boasted, in fact, a new architectural language, yet they, too, carried an unambiguously "civic" character. What was their secret?

The answer may be found in their great, arching, glassy roofs, whose daring engineering was put to work in vaulting the tops of nearly all the arcades, including those otherwise built of stone. The trusses and skylights had an unmistakable grandeur. They were sweeping, generous gestures. By their very nature and purpose, they required a broad scale that encompassed figuratively as well as literally the entire pedestrian realm. Their simple forms, elegantly

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Office complex, New York City, NY. Designer: Soo Kim Associates, New York City, NY.

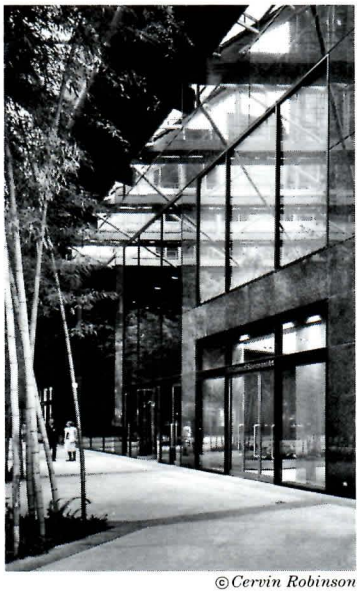
Left: The IBM Garden Plaza, New York City, by Edward Larrabee Barnes Associates.
Right: Trump Tower Atrium, New York City, by Swanke Hayden Connell Architects.

embellished, spoke of a sensibility larger than that of the domestic house or individual shop. So strong was the sense of civic celebration and public character provided by the great roofs and their supporting iron and stone galleries that the arcades could transcend the near-chaos of signage and merchandise that (particularly in Paris) rapidly engulfed the lower floors. Ironically, present-day signage and displays are generally far more strictly regulated, but the over-all effect still seems *less* public than the old arcades, where signage, in whatever quantity, was held in place and balanced by a strong civic framework of architecture and vaulting that was as non-commercial as a cathedral's.

Public spaces in New York: IBM and Trump Tower as case studies

Today, as both the new glazed atria and open-air projects multiply, the elements of a new public language are beginning to emerge. Spaces are being routinely outfitted with the essential amenities—seating, planting, fountains, food service—that allow them to serve as gathering places. In some cases, ingenious technical solutions are being found for long-standing climatic, maintenance, and mechanical problems. But the architecture of these places still generally fails to recognize the importance of a building's "language" in sending out the right messages—those that would make them be perceived as public and would let them fulfill their potential as society's focal points, not just retail facilities or corporate symbols. One must recognize the distinct possibility that for some of these new spaces, not being viewed as public may be desirable, but for others, especially those built in return for zoning bonuses or with public aid, there is a responsibility to feel welcoming and civic. City planners should go beyond such issues as the number of trees and chairs and explore how architecture can serve as a "sign" as clearly as—and considerably more effectively than—a printed notice.

The new IBM Garden Plaza in midtown Manhattan, situated at the base of that corporation's new 43-story office tower, was developed as part of a zoning bonus arrangement and offers the state-of-the-art in the provision of activities and balance of uses—achieved through its ample number of entrances and the genuinely enthusiastic offering of such amenities as plenty of free public seating, a café, performances, landscaping, a museum, even a computer-driven cultural information center.



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But the architectural language of the place—Edward Larrabee Barnes's slick, late modernism, expressed in a white-pipe space-frame and the tower's gray-green bands of glass and polished granite—speaks a code-system of corporate elegance, not civic celebration. The entrances are particularly ironic: Barnes's firm has found a superb technical solution to the recurrent problem with the climate of the Northeast, where cold winters and hot, humid summers have seemed to mandate that atria be sealed and heated or air-conditioned. IBM's Garden Plaza, climatically cushioned by receiving a portion of the tower's filtered air on its out-cycle, can be extensively opened to the outside on most days by huge, 33-foot-high glass doors which slide to one side, creating a clear, open passage that blends inside and outside almost imperceptibly.

But the technical finesse of these entrances is undercut by the architecture. Recessed from the street and given the same glass-and-steel expression as the rest of the atrium, the entrances are difficult to find and convey little more excitement or grandeur of passage than a set of revolving doors would. So understated are they that in one view, a closed-circuit security camera takes on the prominence of an ornamental bracket, the only interruption in the building's smooth skin.

Sixty-eight feet up, the atrium's huge trusses create impressive clear spans, but there is no sense of grandeur in their design either, no sweeping, generous gesture that might create a sense of uplift and underscore the excitement of this great communal space in the heart of the city. If possible, the regular, sawtooth trusses seem almost prosaic, to be appreciated more by engineers than the general public. The problem is not that the Garden Plaza isn't handsome, which it is, but that its architecture, called upon to speak eloquently to the public, is almost mute.

At the nearby Trump Tower Atrium by Swanke Hayden Connell, also created as a trade-off for a zoning bonus, a different code-system emerges—here not that of the corporate office building, but that of the modern retail outlet, the stylish boutique, or fashionable department store. Interestingly, like most of the code-systems of modern buildings, Trump's language emerges not out of what was traditionally considered "style" (details, proportion, systems of ornament), but from certain combinations of materials and surfaces. The "modern-retail" code-system, now to be found from Rodeo Drive to the Via Veneto, is achieved with quality sheet metals (such as bronze) brought to a high polish, extensive areas of float glass, veneers of expensive stone (such as veined Italian marble), and backlit metal and acrylic signage, all served up under arrays of brillant track-lights and PAR lamps. At the Trump atrium this combination is stretched across the interior of a tall space which, despite its provision of required public amenities, still feels like something of a private preserve for prosperous customers.

Unlike IBM, the Trump Tower atrium, an entirely indoor space, promotes no indistinction between inside and outside. Its entrance along Fifth Avenue is prominently marked and suggestive, at least in scale, of a large space within. (Also unlike IBM, one should note, Trump's design discourages non-specific use by the general public. There is no place to sit down, except in restaurants, and the only real activity within the atrium is high-priced shopping.) Trump Tower's atrium, a pink marble cocoon, has a protected, insulated quality that is a desirable feature for its managers and tenants. As in so many of these new spaces, it is precisely the ability to offer a level of security and control far in excess of that found on a street or in a public park that underlines its popularity with a middle-class public, eager to use the city but only if assured of comfort and safety. It is no coincidence that the popularity of these spaces has risen in direct correlation to the decline in the use of public parks and squares, which are perceived by many as suffering a range of social ills, from crime to illegitimate use (drug-selling, con games) to being a dumping ground for indigents.

Some national examples

As a primarily retail-oriented space, Trump Tower is more typical of the majority of new atria around the country than IBM's Garden Plaza, which serves as a vessel of corporate prestige. What both evidence (Trump Tower more than IBM) is the failure to transcend through their architecture what might be considered their "ulterior motives" (cash sales, business good will, and extra revenue from additional upper floors) and become, as the old arcades often did, true centers of civic life. It is a lack they share with many atria and malls in other cities, where the issue of "public-ness" remains unresolved, even as qualities of civic grandeur are being approached from a variety of directions.

In Georgetown, a three-level mall dubbed Georgetown Park reverts to a 19th-century historicism, resulting in a delightful and charming space that nonetheless seems somehow privatized, its robust original architectural sources losing their sense of civic grandeur in the process of being brought up to date. Also in Washington, a three-story market called The Pavilion (Arthur Cotton Moore/Associates and Benjamin Thompson & Associates) sits at the base of a magnificent 19th-century post-office atrium and finds a borrowed grandeur in the vast volume of the old space, its Romanesque Revival tiers, and its giant trusses. Recalling images of bustling medieval villages huddling at the foot of ruined Roman aqueducts, it disturbingly hints that true civic grandeur may belong to another culture, one that we, like the medievals contemplating the Roman arches, only partially understand, even as we take advantage of it. And in Philadelphia, a new series of galleries (Bower Lewis Thrower/

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Top: South Street Seaport, New York City, by Benjamin Thompson & Associates; Beyer Blinder Belle; and Jan Hird Pokorny. Bottom: Harborplace, Baltimore, by Benjamin Thompson & Associates.

Architects) stretches four blocks and encompasses three department stores. The development rests atop a vast new transit complex of subways and suburban trains, taking its cue from the spirit of the transportation facilities below: clean, handsome, and efficient. Although it cannot be said to have yet achieved a truly civic grandeur, its lively, pleasantly plaza-like spaces *do* feel public, even if more like a train station than a park.

Notwithstanding their lack of civic grandeur, these new spaces are solving many of the stubborn, pragmatic problems of security, climate control, and maintenance that have previously driven a wedge between economic and real-estate practicality and urban graciousness. This crop of spaces may be on the edge of a new generation that will effectively employ architecture to reinforce the strides made in turning our conception of public space inside-out: creating civic places at the *inside* of buildings.

Open-air public spaces

Clearly, it has been those new spaces under glass roofs—the atria and the gallerias—that have been the most singular addition to the nation's inventory of public spaces. But equally significant changes have been occurring in the open air. Our conception of outdoor public space is being transformed by developments emerging under a variety of sponsorships and for a variety of purposes. Distinct responses to distinct conditions are creating, ironically, what is more or less a single new direction for American open space.

From civic groups and local development corporations have come a new approach to dealing with traditional open spaces, such as parks and plazas, which have slipped into decay and disuse by a public intimidated by illegitimate activities such as drug-selling. These spaces are being reclaimed through the introduction of coordinated new amenities, many of them "commercial" vending stalls and concessions designed to draw in a pedestrian population and stabilize the use of a place. Elsewhere, the opposite is happening: open space is being carefully injected into retail offerings. The market projects of The Rouse Corporation, for example, have transfigured the retail world through their placement in historic city centers and by the introduction of large open spaces as integral elements of their plans. These open spaces have, in fact, become attractions in themselves, filled with shops, performance areas, and other amenities that offer the promise of a continuous civic festival.

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So from at least two distinct sources has come a convergence. American open spaces are becoming more complex in the range of activities they encourage, and the traditionally sharp distinctions between retail use and non-commercial park activities are blurring. It has become accepted that a public open space can have, and may need to have, both in order to remain safe, well-maintained, and welcoming. What has become critical is the search for a balance between the two realms, public and commercial, to ensure the public realm from dominance by the commercial. At Rouse's South Street Seaport, it is not clear that this goal has been achieved.

A glance at the pedestrianized Fulton Street, the main open space of South Street Seaport, shows the strides made by Benjamin Thompson & Associates, Beyer Blinder Belle, and Jan Hird Pokorny in the artful filling of space with activities and amenities, and in the enrichment of that space with design elements ranging in scale from the largest gestures to (and this is the unusual part) the smallest signage, displays, and furniture. They have restored to the design of open space the quality of decision-making at a range of scales that was almost completely lost in the modernist era, when open spaces, even if striking in their large moves, were in their details uninspired at best, brutal at worst.

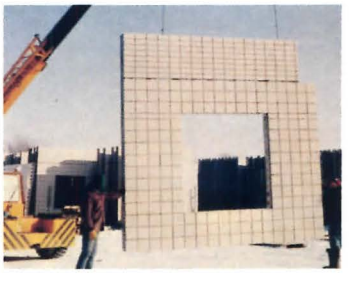
If Fulton Street nonetheless fails to feel fully public, the fault may be not with the architecture so much as the crush of commercial activity brought on by the very density of retail use. All other activities, from the performances to simply sitting and resting, seemed subsumed under the crush of people buying or about to buy. It may in fact be Fulton Street's traditional two-sided shopping (the element of the project which to many observers seems to lock it most comfortably into the city's matrix) that creates its frenetic atmosphere. With traffic banned, vending pulled into the street's center, and its cul-de-sac location at the water's edge, the eye cannot avoid retail activity. Shopping is everywhere. Despite the mimes, banners and benches, the balance seems missing.

As the Seaport expands onto its pier pavilion and the crowds on Fulton Street are given a destination, the balance may re-establish itself. And if the Rouse project in Baltimore, called Harborplace, is any indication, new public space around the Seaport's pier pavilion may be far more successful. For it is at Harborplace that the balance between retail activity and passive recreation seems to have been achieved gracefully and almost effortlessly. Designed by Benjamin Thompson & Associates, the project comprises a series of broad esplanades located along the water's edge and fronted by two new market pavilions. Along the promenades one is afforded the best of both worlds. To one side a glittering array of restaurants, cafés and shops spills down to the walks in a series of terraces and balconies. They focus outward, to the other realm: the Harbor, with its historic ships, aquarium, and ever-changing reflections. A variety of pleasures is provided for: sitting on a promenade watching the slow arcs of a gull through the rigging of a sailing ship, or turning to the daytime bustle—or evening glow—of a set of elegant shops and restaurants, and feeling that one is in the center of things.

The broad promenades are unquestionably a significant addition to the public spaces of the city. A woman reads, her back against a bollard; a couple dangles its feet over the side and speaks quietly; the captain and first mate of a pleasure boat review charts. No purchases are required; everyone is welcome. From the upper decks looking down they may seem a study in solitude, but from the promenade level, looking back at the pavilions, one is aware that they, too, have been drawn here in some indefinable way by the liveliness of the market.

Here is retail space, then, activating public space as only it can do: drawing people, energizing and enlivening the area, making the space in front of it seem comfortable and well-maintained, offering the jostle of humanity that answers a deep need for communality. And here is the public realm, giving relief and a sense of expansiveness to the retail parts of the project, providing, as only it can, a brief respite from the pressure of urban life. The balance between commerce and recreation, between public and private, is truly achieved, and both profit from the mixing.

At open-air markets and reclaimed urban parks, at retail malls and corporate atria, an American public is demonstrating its pleasure in communal gathering places that mix what have been heretofore disparate pursuits. They can sit at tableside, enjoying drinks, and watch the passing parade, or, in turn, be one of those strolling past the cafés, passing through on their way elsewhere. The nation is moving toward new and complex conceptions of public space and public life. Soon, we may no longer have to travel to Milan to find places where we, too, may join with Twain in saying, "I should like to live there all my life."



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Corporate culture

By Deborah K. Dietsch

Only yesterday, designing an office meant partitioning off the window walls for executives and setting up a few, flexible panels in the center of the floor for the rest of the staff. But these days, increasing numbers of white-collar professionals and corporations are demanding interiors that impart a sense of permanence and distinctive character to counterbalance rapid turnover in management, employees, and computerized technologies. As architect Diana Agrest points out, "Everybody wants an identifiable place to work where they feel comfortable, not an amorphous, no-man's land."

As a result, employers who used to spend just two per cent of their budgets on equipping their employees, are beginning to invest more corporate dollars on office furnishings and interiors. In the process, they are discovering that "Design matters profoundly . . . affecting the quality of work life of individuals and organizations," as Michael Brill, president of the Buffalo Organization for Social and Technological Innovation, asserted at RECORD's last Interiors Round Table (mid-September 1984, pages 33-47). For the architect, the elevated role of office design means that it can no longer begin with mere physical planning. It first requires an understanding of corporate culture: the idiosyncratic way in which an organization operates and views its own work. According to Laurence Booth, design partner of Booth/Hansen & Associates: "Office interiors have to become much more site-specific. You have to view the corporate client in precise terms and then determine how to convey a unique image of that client."

The projects illustrated in this Building Types Study attempt to do just that, whether through classical allusion, as in the Helene Curtis Industries headquarters by Booth/Hansen & Associates, or through the reuse of history, as in the restoration of the Reliance Standard Life Insurance Company building by John Milner Associates/David Beck Architects, or through typological transformation, as in the Gramercy office condominiums by Agrest and Gandelsonas.

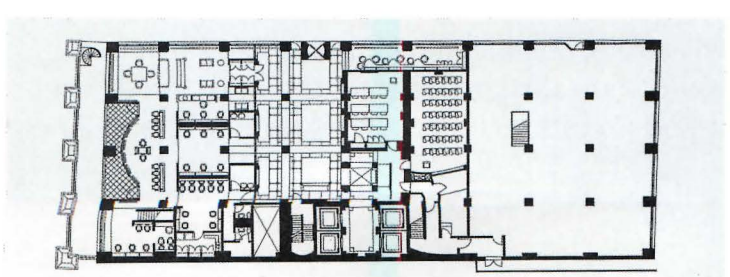
Common to all is a belief that designing for corporate culture is like creating a small town. It calls for a strongly defined structure of private and public spaces, connecting pathways, and commonly shared amenities to encourage a sense of worker community and control over the environment—thus to attain the much-touted managerial credo of higher productivity and job satisfaction. Although in the projects shown this goal is achieved through different esthetic sensibilities, in utilizing urban metaphors to make their point, their designs rely on the most coveted of all office commodities: light and an interesting view of both inside and out.

Deborah K. Dietsch is a freelance writer based in New York City.

Helene Curtis Industries Corporate Headquarters
Chicago, Illinois
Booth/Hansen & Associates, Architects

Beast into beauty

Hedrich-Blessing/Nick Merrick photos



Once upon a time, there was a beauty—Helene Curtis Industries—who was confronted by a beast of a building in need of a corporate facelift, located on the north bank of the Chicago River. Enter architects Booth/Hansen & Associates to save the beauty and carve the beast into a multifarious entity with a soft, classical profile. This new image for the publicly owned company, which has moved into marketing upscale beauty products, has been attained through a pattern of work spaces that shuns the anonymity of the open office "landscape" in favor of an interior "cityscape."

The architects approached the remodeling of the 1914 brick warehouse by addressing their corporate clients as an urban culture and treating the setting as a microcosm of Chicago. Taking advantage of the existing, tight (18-by-20-foot) column spacing, the typical office floor plan (see following pages) was laid out as a city grid. Private offices at the north and south perimeters, flanked by secretarial stations, define the edges of the "downtown." Manager workstations occupy the "Loop," grouped around columns that act as both "street lamps" and "utility poles" in providing light and power. And conference rooms positioned at the center of each floor serve as public "plazas."

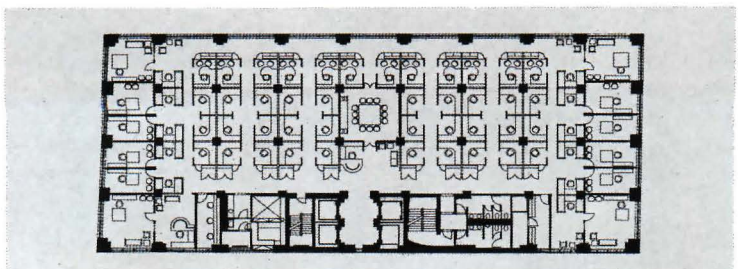
Along the "side streets" and "boulevards" of the office corridors, a "skyline" is created in section and elevation that capitalizes on allusions to the White City. Custom-designed workstation panels are constructed as building facades with material, color, and profile variations in base, shaft, and cornice (photos following pages). The potential monotony of a continuous ceiling "sky" is avoided by dividing acoustical tiles into separate paneled "cloud" formations. They provide visual relief with access to overhead cabling in the exposed, blackened plenum. Everywhere, columns are crowned by oversized capitals that double as reflectors for custom-designed sconce uplighting and as receptacles for "wire management" (photo facing page).

For the executive offices and board room, Booth/Hansen created a separate penthouse (photo top left). Instead of forcing a complicated and visually competitive statement onto the top of the warehouse facade, the plane of the triple-glazed, tinted windows was extended into a green curtain-walled structure. "We took the glass box and accommodated it for human beings," explains design partner Larry Booth. Inside the box, a decidedly un-Modern, symmetrical plan is organized around the pomp and circumstance of the elliptical board room. The interior of the board room underscores this Beaux-Arts plan, elaborating the pale, classically inspired vocabulary of the offices below without resorting to heavy-handed historicism. Outside the board room in the surrounding corridors, a row of streamlined columns circumscribes its elliptical form and bridges the Modernist idiom of the penthouse exterior.

At the base of the building, further allusions to classical grandeur are announced by the entrance lobby's marble-encrusted benches and diamond-patterned floor (photo facing page). In a room overlooking the river to the side of the lobby (plan bottom left), public introductions to the company's new image are made in a beauty salon devoted to demonstrations of product potential.

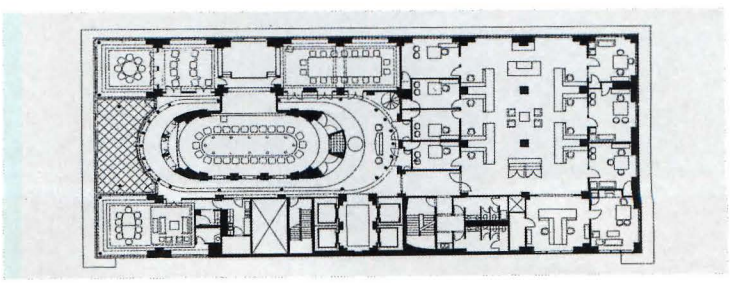
To coax corporate potential into profits, Booth/Hansen boosted worker morale with amenities such as a riverfront terrace for the employee cafeteria and an entire window wall of daylight for the workstations on every office floor. In deference to the managerial mantra of "bottom line," the architects installed an energy-saving mechanical system that utilizes river water to cool condensers and make ice for thermal storage.

"Nothing in this corporate headquarters is designed as a tour de force," claims Booth, adding: "We aimed for constant variety within the constraints of working comfort." For the people who inhabit these interiors from 9 to 5, this attitude promises the outcome of working happily ever after.



Architects Booth/Hansen & Associates solved the problem of outfitting the Helene Curtis corporate offices by custom-designing furniture that is tailored to their client's needs. The system of *paneled workstations "puts a nice material where it's needed," including bleached oak moldings and caps and practical, washable vinyl bases. Panel heights vary according to function to promote a sense of "that's my office" individuality (photo left and facing page). Each workstation is configured according to task: "talking" models feature curved table tops for conferences (photo top left); "working" models feature L-shaped surfaces for intensive tasks. Overhead, visual variety is further encouraged by "clouds" of acoustical tiles that break up the ceiling plane. Exposed plenum and slab are camouflaged as black background. Office illumination is restricted to daylight, desk lamps, and HID uplighting from column-mounted sconces, which is reflected by flared capitals. The latter device is used throughout the corporate headquarters. The powder-puff color palette of each floor—pink, light green, and baby blue—subtly shifts tone with changes in daylight over the workday. Custom-designed black lacquered tables in the perimeter offices and leather club chairs in the waiting areas (photo bottom left) are injected as dark-edged counterpoints to this sweetness and light, an idea purportedly inspired by Edouard Manet's paintings. According to Booth: "I didn't want the paleness to become saccharine."*

The Modernist curtain wall exterior of the penthouse belies a symmetrical, Beaux-Arts plan (bottom right) with board room at its center, executive offices and meeting rooms in the "glass box" wings. A row of unadorned columns circumscribes the board room's elliptical volume in the reception area and corridors, engaging the curved window wall on the front elevation of the warehouse (photo top right). The interior of the double-height board room evokes a quiet, "pre-Modern" classicism, complemented by Saarinen furnishings in the CEO's office and executive meeting rooms. Indirect lighting from clerestory windows and ceiling cove suffuses pale paint colors and moldings. Pairs of doors around the board room swing open for more daylight and views toward the Loop (photos bottom right and facing page). Exaggerated pilaster capitals recall columns on floors below. Audio-visual presentations are made in an ancillary space to the side of the ellipse (plan below), without interfering with the room's monumental proportions. Custom-designed, black lacquered table (photo facing page) is dismantled in sections, allowing the room to be used for other functions.



Helene Curtis Industries, Inc.
Corporate Headquarters
Chicago, Illinois

Owner:
Helene Curtis Industries, Inc.

Architects:
Booth/Hansen & Associates—Laurence Booth, design partner; Paul Hansen, managing partner; William Ketcham, project architect; John Shuttleworth, Eric Chatlain, project team

Engineers:
H. S. Nachman and Associates (mechanical)

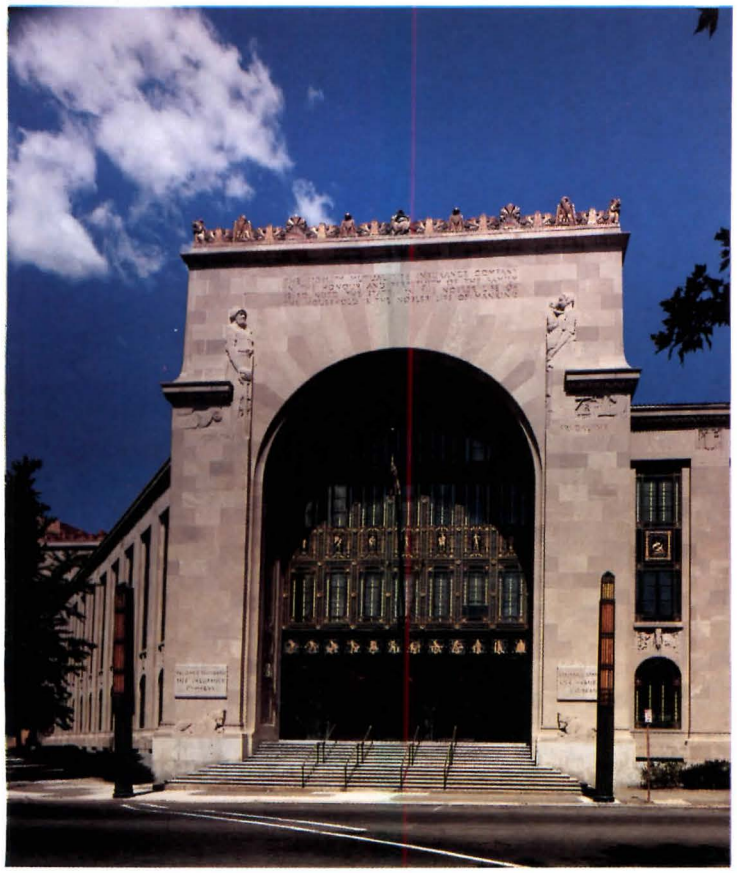
Consultants:
Gage Babcock (security); William Sako and Associates (audio-visual/TV); Hanscomb and Associates (construction manager)

Contractors:
W. E. O'Neil Construction Co. (building); C. A. S. Office Interiors (interiors); Westinghouse (elevators); Ancha Electronics (audio-visual/TV); Forrest Security (security)

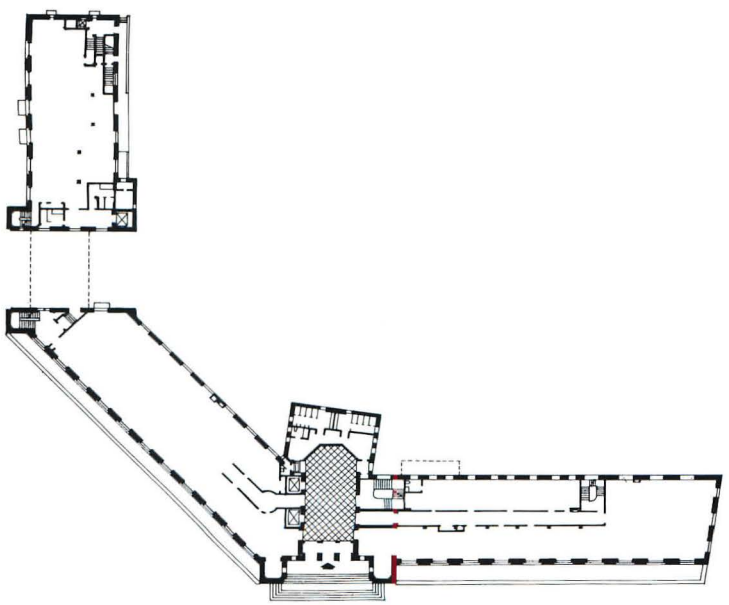
Reliance Standard Life Insurance Company
Philadelphia, Pennsylvania
John Milner Associates/David Beck Architects

Insured against loss

©*Fred Forbes photos*



Limestone exterior with bronze-and-marble entrance arch is protected by a facade easement donated to the Philadelphia Historic Preservation Corporation by Reliance Standard Life. Interiors, including lobby (photo facing page), were restored to meet standards for tax investment credits.



Preservation has become big business. Wielding tools such as facade easements and tax investment credits, developers have been able to rescue increasing numbers of endangered landmarks, but in the process, have recycled many beyond recognition. So-called "adaptive reuse" has led to abuse of history and the loss of architectural integrity.

Although its restoration has been facilitated by these preservation business tactics, the Fidelity Mutual Life Insurance building in Philadelphia has been spared any architectural malpractice. The team of John Milner Associates and David Beck Architects has sensibly returned the limestone-and-brick behemoth to its original purpose. Constructed between 1926 and 1928 according to the designs of Zantzinger, Borie & Medary (architects of the Philadelphia Art Museum located across the Benjamin Franklin Parkway), the block-long structure stylistically reflects the transition from early 20th-century historicism to the geometric Art Deco forms of the late 1920s and '30s. Both its exterior and interior boast an eclectic assortment of surface ornamentation (conceived by sculptor Lee Lawrie), depicting a stylized iconography of Egyptian-inspired flora and fauna symbolizing the attributes of the insurance business (dog of fidelity, owl of wisdom, opossum of protection, beehive of industriousness, squirrel of thrift).

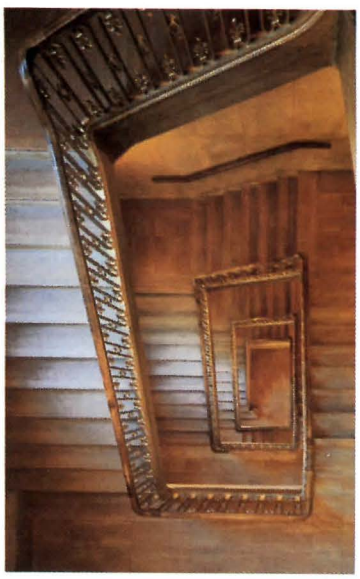
Over the past six years, however, these ornately embellished surfaces had stood deteriorating, since the building had been vacated and subsequently used as a warehouse by various local institutions. Recognizing the under-utilized potential of the massive structure, the city of Philadelphia held a competition for its redevelopment four years ago. Most of the resulting submissions advocated its reuse as high-priced condominiums to fit in with the surrounding residential neighborhood. Fortunately, the city recognized the merits of a proposal from The Binswanger Company, Fidelity's subsequent owner/developer, to maintain the structure's commercial character by renovating it into a speculative office building. Happily, its major tenant has turned out to be another insurance company—Reliance Standard Life—a firm that now occupies two-thirds of the office space and for which the building has been re-named.

This compatible use relieved the architects of making any major changes to the existing, linear plan (left), demanding only the upgrade of mechanical systems, elevators, and stairs to meet local building codes. Milner Associates then set about cleaning and repairing the exterior, including its iron spandrels, terra cotta copings, and bronze entranceway. Inside, second floor ceremonial rooms, public lobbies, corridors, and grand staircase were meticulously restored, utilizing existing evidence and historical photo documentation (including a 1928 article published in RECORD). "Our philosophy was to maintain as much of the original, historic features of the building as possible," notes John Milner.

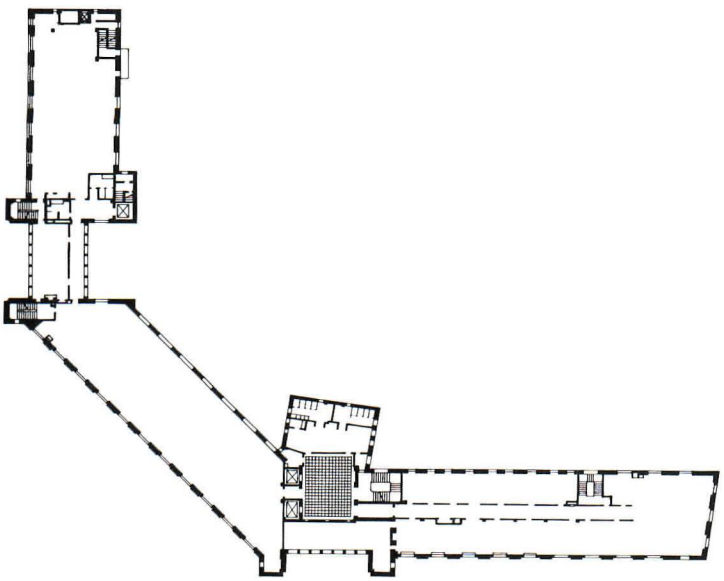
In the entrance vestibule and lobby, bronze grillework, door surrounds, and elevators were stripped and treated with tinted lacquers, oil, or bronze flake paint, depending on the severity of deterioration. The bold, antique verde and Tennessee marble floor pattern, echoed in the dark green and ivory panels of the plaster ceiling above (photo facing page) was selectively repaired and infilled. Similarly, the plaster ceilings and wood paneling of the second floor executive suite, board room (photos following pages) and officers' dining room were cleaned and replaced with new materials to duplicate the old, as necessary. Throughout, light fixtures of the period were replicated from original shop drawings found in the basement.

As the prime beneficiary of these sumptuous spaces, Reliance has not only gained an historic setting, but has inherited a corporate tradition in perfect sync with its day-to-day operations. Its new headquarters proves that truly "sympathetic" reuse is not only possible, but profitable, and that skilled craftsmanship (for a price) is very much alive and well.

Milner Associates restored the second floor executive suite and board room without changing their original character. Both executive suite (photo facing page) and board room (photo near left) are paneled in striped mahogany (called "cocoa wood" during the 1920s) and the anteroom in rosewood with matching furniture (photos far left, top and bottom). The Art Deco plaster ceiling of the executive suite was painstakingly restored and the pendant light fixture replicated from original shop drawings. Rather than replace existing metal sash windows with double-glazed, anodized aluminum units (a typical "adaptive re-use" solution), the architects specified interior storm windows for insulation. Wooden Venetian blinds were fabricated from original models. The grand staircase was glass-enclosed to double as fire stair (photo below).

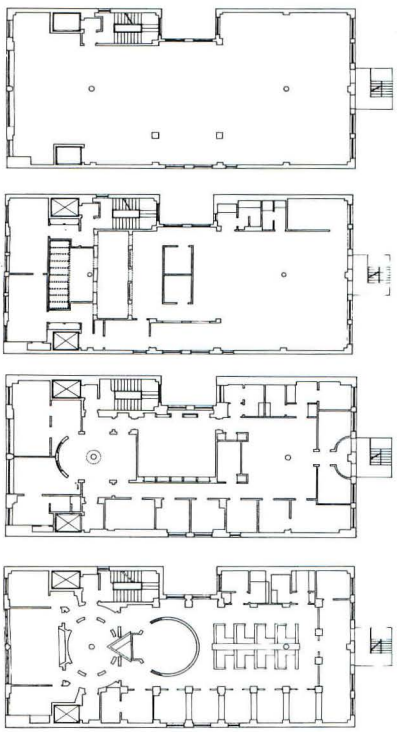


Reliance Standard Life Insurance Company
Philadelphia, Pennsylvania
Owner:
2501 Associates
Developer:
The Binswanger Company
Restoration architects:
John Milner Associates—John Milner, Mary Werner DeNadai, Dale Frens, project team
Coordinating architects:
David Beck Architects—David N. Beck, Edward J. Sarnacki, Judy Hendrixson, project team
Engineers:
Bernard Schwartz and Associates (structural); Bennett Levin & Associates (mechanical/electrical)
Design consultants:
Environmental Design Corporation (Reliance Standard Life office interiors)
General contractor:
L. F. Driscoll



The Gramercy Condominium
New York City
Agrest and Gandelsonas, Architects

Theme and variation



In addition to renovating three floors and entrance lobby (plans above) of the Lower Manhattan loft building, Agrest and Gandelsonas modified its exterior (photo above) at street level with a gridded window screen centered on a single column. In the lobby, the intersection of a gridded plane of slate tiles and wall of honed granite is symbolically marked by a vertical strip of light (photo facing page).

The reputations of architects Diana Agrest and Mario Gandelsonas are based more on theory than on building. Yet their writings and architecture mutually support the idea that design is a critical act, involving a conscious choice of architectural language. Such a choice of language imparts a specific ideology. Criticism in the design process is used to analyze the relationship between architectural elements (its "semantics") in order to transform accepted traditions into a new language with new meanings.

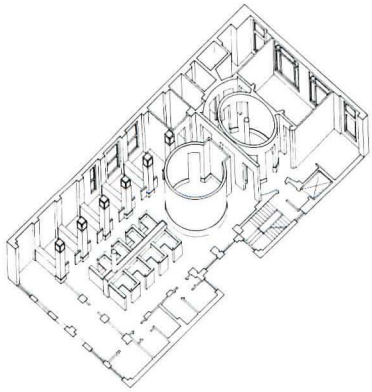
In the design of three floors of a building located off Broadway in Lower Manhattan, the architects assess the theme of loft-office through the variation of spatial sequences and their manipulation by light. Each theme is composed around the existing confines of the raw loft space (typical floor plan top left): an asymmetrical grouping of elevator, stair and light well, symmetrical south (front) and north (back) elevations and two sets of columns. Within this framework, a progression of private and public spaces is organized from front to back: private offices overlooking the street, reception lobby off the elevator, a freestanding public room in the middle and an open work area at the back. Agrest and Gandelsonas varied this theme by exploring the formal tensions between opposing conditions of symmetry/asymmetry and rooms/open plan, "a conflict that generates a certain energy," they explain. Each floor is treated as a separate composition in which these conditions are criticized and re-investigated in a series of related spatial permutations.

In their own offices (second plan from top), a layered sequence of walls and volumes establishes symmetry in the front, reinforced by a series of arcades, that dissolves into asymmetry within the back drafting studio as a result of the extension of the services along the east wall. On the seventh floor offices of a food service corporation (plan bottom left), the potential discontinuity between front symmetry/back asymmetry is absorbed in the elliptical reception arcade, treated as both room and circulation space. At the back, office alcoves serve as functional *poché* to define a symmetrically enclosed office "courtyard" for a fixed row of workstations. At one end of this "courtyard," a cylindrical conference room doubles as a convex boundary to the back office area and as a self-contained figure within the floor plan. This figural/non-figural variation becomes more dissonant within the fourth-floor offices of another tenant (third plan from top). Symmetrical front reception and back office are both divided and connected by a library. Part room, part hallway, these interiors reflect the architects' concern "to use every movement space as a positive element rather than as leftover space."

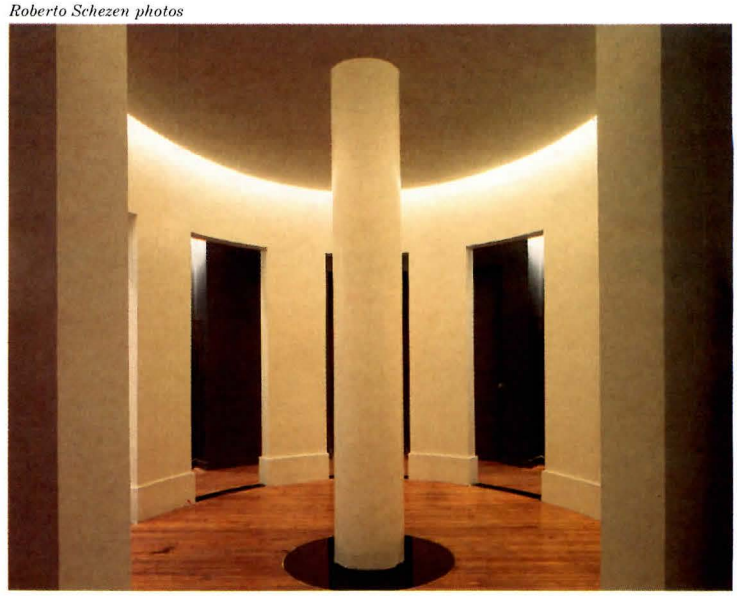
The ambiguity between flowing and enclosed interiors is reinforced by a minimalist vocabulary that alludes to both Modern openness and Classical rooms, "a language that has been called 'Classic-Bauhaus'," notes Agrest. This language is punctuated by light, used to directly pinpoint freestanding rooms or furnishings, or to indirectly dissolve walls and edges. On the seventh floor, for example, the figural quality of the row of workstations is emphasized by a horizontal spine of light down its center as well as by the pattern of ceiling fluorescents that mirror its shape (see photos following pages).

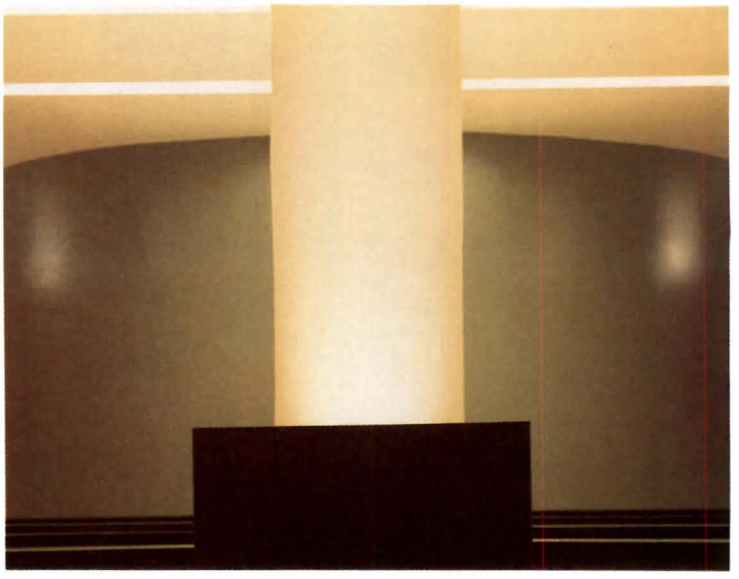
Many of the dialectical devices used by Agrest and Gandelsonas derive from their self-confessed obsession with the city: "Our projects are heavily influenced by urban imagery and by the notion of a sequence of movement." Urban monumentality is suggested by the juxtaposition of materials and scale (nine-foot doors with oversized frames, for example). Nowhere is this more apparent than in the ground-floor entrance lobby (photo facing page). While symbolizing the architects' fascination with the conflict between the Modern (the lobby's sliding plane of slate tiles) and the Classical (honed granite gate and walls), the actuality of this space supersedes historical disjunction. It achieves an architecture of dramatic simplicity, grandeur and surrealist language.

For Agrest and Gandelsonas, architecture is seen as fragments that are cinematographically "read" and "edited" as separate units or parts of a whole. On each floor of the Gramercy office condominium, variations in spatial sequences are "read" as a series of double entendres between symmetry/asymmetry, enclosure/open space, public/private domains. The seventh floor reception lobby, for example, assumes the appearance of a clearly defined room. Its elliptical shape is inscribed on the floor in a line of black marble, and its non-axial nature is emphasized by a center column (top photo near right). At the same time, its arcaded poché *remains empty, acting as a transition point between front and back offices (bottom photo near right). In the back office, a "spine" of workstations is defined as an object within a symmetrical "courtyard" by an asymmetrical correspondence to a "wall" of "street lamps" (bottom and top photos middle right). Asserts Gandelsonas: "There is a figural quality to this space that contrasts with the abstractness of the so-called 'office landscape'." The conference room assumes a double role of wall (top photo far right) to enclose the back office and freestanding cylinder (bottom photo far right), a positive spatial counterpart to the arcaded reception lobby ellipse (axonometric). To further stress the tension between these spatial relationships, light is used in a Baroque manner to bathe edges and spotlight centers. The workstation "spine," for example, is focused on a horizontal shaft of light and overhead fluorescents that mimic its shape (top photo middle right). Around the workstations, column "street lamps" diffuse ambient light.*



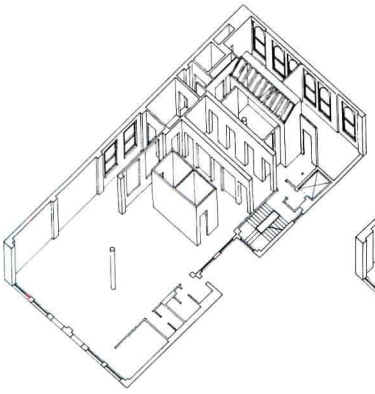
Roberto Schezen photos

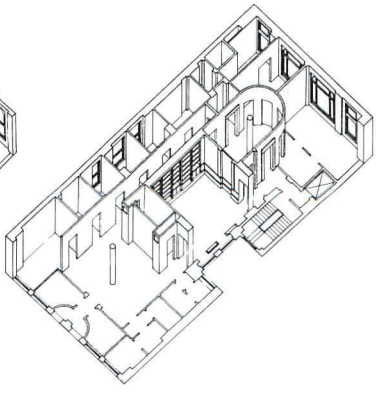


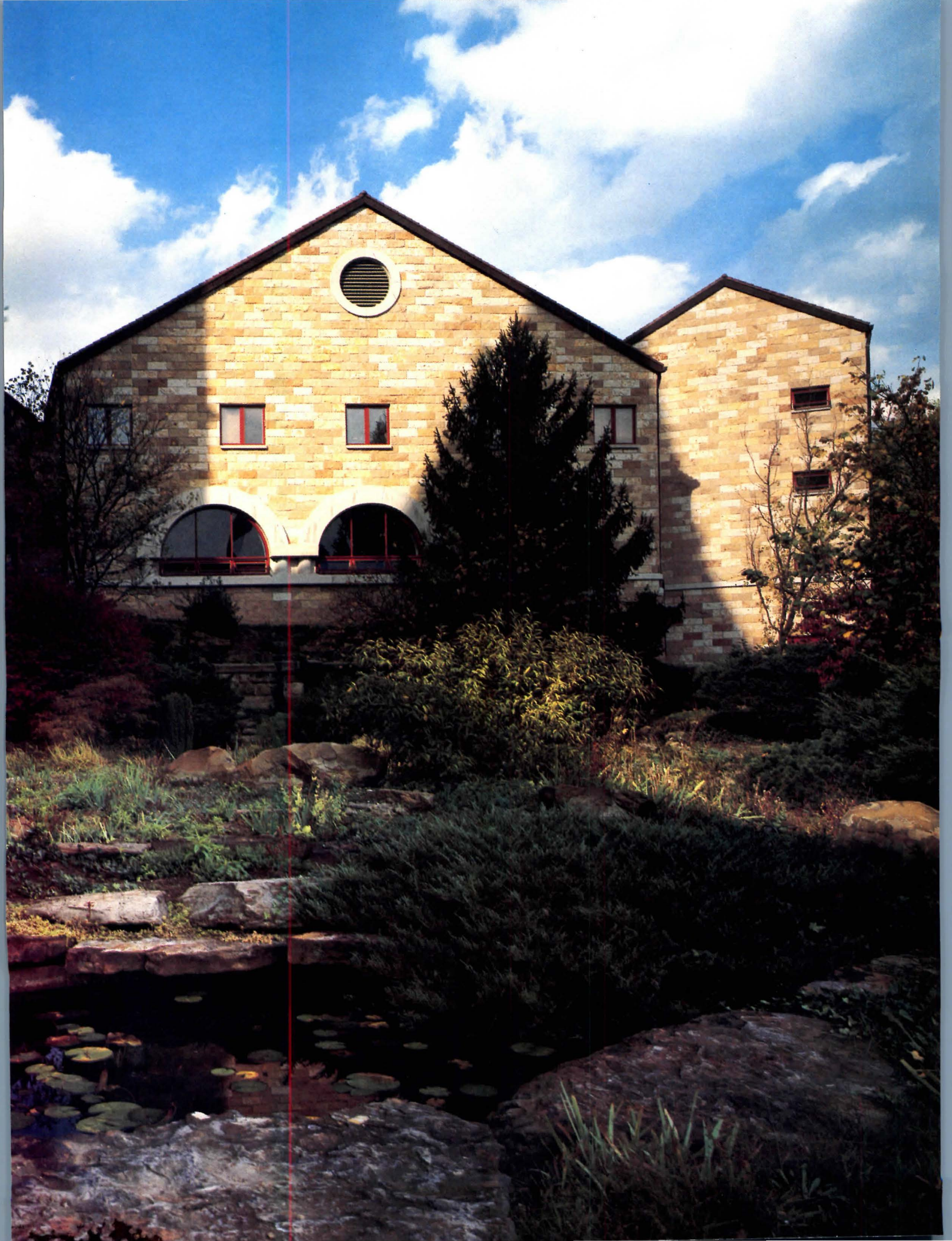


The minimalist style of the Gramercy office condominium is articulated by an architectural language representative of both Modernism and a bare-bones Classicism. "We tried to 'de-stylize' the spaces, but of course, you can't get away from style altogether," remarks Agrest. Light is used to modulate spatial depth, underscoring the sequence of separate, layered interiors in the architects' own offices (left axonometric). Illumination from the skylight in the conference room colors white walls with a bluish tone (photo bottom left), while reception area arcades are washed in yellow light from overhead incandescents (photo top). The entrance to fourth-floor offices (right axonometric) takes on a monumental, classical air, dramatized by a central column. The column's functional role as a support element is contradicted by the circle of light that surrounds and dematerializes its capital (photo bottom right). The seventh-floor workroom assumes a more abstract character through a graphic composition, accented by glowing light columns and a fluorescent ceiling pattern that reflects the floor plan (photo facing page). The cylindrical conference room repeats black trim of workstations.

The Gramercy Condominium
New York City
Owner:
Project 21 Realty Corporation
Architects:
Agrest and Gandelsonas—Diana Agrest and Mario Gandelsonas, design partners; Leonardo Zylberberg, associate
Engineer:
Marvin Goldsmith
General contractor:
Yglesias General Contracting Corporation







Continuity amid change

Saint Meinrad Archabbey Monastery and Library
Saint Meinrad, Indiana
Woollen, Molzan and Partners, Architects

For an architect who, like Evans Woollen, sees architecture as "the poetic union of change and continuity," few commissions could be more fitting—or more daunting—than to fashion, in the 20th century, a monastery, with its plangent whispers of a still-unfolding history founded on an enduring tradition.

On the foreshortened time scale of this country, the archabbey of Saint Meinrad is a venerable one, dating to the 1850s when a mission from the home abbey in Einsiedln, Switzerland, followed a wave of Swiss and Bavarian immigrants to emerging settlements in the southwestern corner of Indiana, bringing with them stonecutters and other skilled artisans—as well as a rooted vision of monastic architecture. The arriving monks established a monastery and seminary on a lofty rise commanding a broad valley, and by the turn of the century, after a ten-year building effort still legendary in the town, had crowned their hilltop as well with an imposing Neo-Gothic church whose twin spires now as then announce the archabbey from afar.

A century and a quarter later, however, the discommodities of the aging abbey—not least its too close proximity to the seminary, which by then had become home to some 350 undergraduate and theology students—tested even monkish tolerance, and the order was pressed to that most solemn of undertakings for such an institution: replacing its monastery while adding a much-needed academic library.

Woollen pursued the charge by familiarizing himself with the order's daily routines and rituals through a two-week stay within the community before probing its past on a two-month pilgrimage to the medieval mother abbey in Einsiedln and earlier Benedictine monasteries in Italy. The images and insights gleaned from this immersion in monastic life and architecture are revealed at Saint Meinrad's in a composition that, though glove-tailored to the archabbey's people and place, is so rich in overtones as to seem timeless—a natural outgrowth of what came before.

Even in siting and massing, the new buildings have resonance: the monastery an assemblage of mythic forms poised on a hilltop adjoining the abbey church; the library a clean-lined "non-building" angled into a hollow at the foot of the hill below the main entry to the college, a remove that speaks of a polarity more than physical. In the same way, although the triangular parti of the monastery was first suggested by the contours of the sharply defined plateau it rests on, it came to seem, says Woollen, "the only natural, unforced answer" not only to the topography of the site but to the spoken and unspoken demands of program as well. By concentrating the monastery's private places on the brink of the plateau, the plan opened them to the best views, reserving the flat land for the cloister. It also left unobstructed the north facade of the abbey church, of which the monks are especially fond. And, not altogether fortuitously, the triad evokes the Trinity—a symbolism the order was quick to grasp.

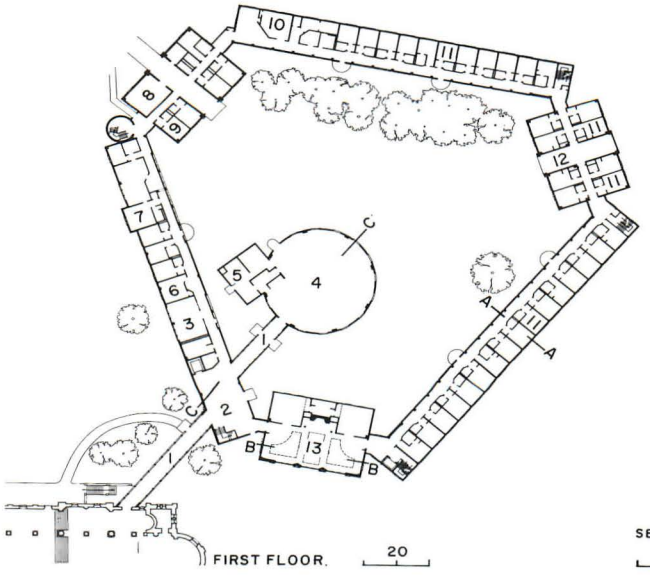
The echoes sound most strongly, though, in the monastery's almost androgynous interplay of contrasting forms and materials. Woollen felt that the archabbey should be perceived from without as a "passive fortress" against the world of affairs, but that within its walls the mask of toughness should drop to reveal a gentler, more accommodating inner world. Thus the rugged sandstone of the exterior yields to a cloister walled in creamy plaster, while the strong geometry of the building forms is gentled by the curves of arches and circles. At another level, the stone reprises the original Neo-Gothic buildings and by extension the home abbey, and the plaster recalls the stucco of Italian Romanesque—a style long associated with the Benedictine movement. Within the cloister, these almost subliminally felt contradictions set up a tension that approaches movement, the apparent scale and distance of the monastery's volumes and voids shifting, like the views, with the observer. But the tension is counterbalanced by the stabilizing chords of layered associations and meanings. The sum, as befits a monastery, is unity. It is also poetry. *Margaret Gaskie*

Wilbur Montgomery

Jay Mather

The site chosen for the new monastery was slightly to the north of the abbey church on a high plateau defined by two steep inclines, one of them echoed on the plateau by a row of sturdy trees planted in line with its slope. Similarly projected, the line of the opposite slope would meet the first at a 60-degree angle, and architect Woollen was quick to see the advantages of enclosing the implied equilateral triangle with the monastery to form a cloister on the flat of the plateau. The symbolism of the triad apart, the scheme allowed monks' cells to be placed along single-loaded corridors on its perimeter, giving each an outside view and lessening distractions from passers-by. The corridor itself could then become a quiet daylit place for contemplation, particularly on the ground floor where wide arched windows recall the outdoor arcades

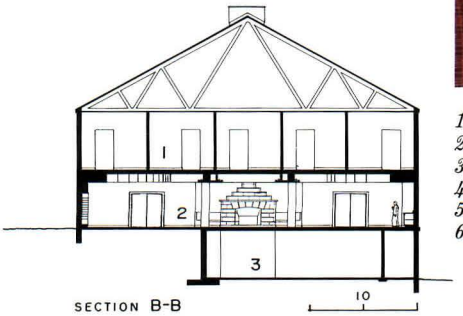
of the traditional cloister. (In another symbolic touch, novices are housed at the level below the cloister.) The smooth planes of the cloister walls are broken only by variations in the fenestration, but the triangle as a whole is focused on the circular refectory and punctuated by inward-turning peak-roofed elements at the angles: a barrel-vaulted belvedere which Woollen refers to as a "window on the world" (photo below); the calefactory, or abbey "parlor" (see rear facade at left on preceding pages); and the entry to the monastery (photo bottom left), which bridges open and cloistered areas. The entry also gives the first intimation of the cloister via a stuccoed cylindrical stair tower played against the rough sandstone, and a beckoning arch over a broad—but barred—double oak door with a "real" door cut through it.



1. *Slipe*
2. *Cloak/vesting*
3. *Reading*
4. *Refectory*
5. *Kitchen*
6. *Prior*
7. *Abbott*
8. *Conference*
9. *Guest rooms*
10. *Chapel*
11. *Monk cells*
12. *Belvedere*
13. *Calefactory*

Although the archabbey of Saint Meinrad, with a population of about 170 residents and nonresidents, is relatively large, its cloister, Woollen says, "stretches tradition to the limit" both in size and shape. Usually, cloisters are not only much smaller than this one-acre close but have been added to over a long period, resulting in a series of intimate courtyards. Here, Woollen felt it would not be honest or appropriate to simulate such growth with an instant version of its result, and so chose the "natural" solution sketched by the triangular building plan. Nonetheless the court is far from graceless. The row of trees that helped prompt its form now furnishes it, even in the absence of landscaping, while the warm creamy cloister walls, set off by red window trim and red tile roofs, provide a sedate but vibrant frame. Most important, the space is both dominated and visually diminished by the circular refectory, which seems to "reach" from its eccentric position in the triangle toward the center. Unlike the other buildings, the refectory is capped by a conical terne roof that when weathered will echo the verdigris of the church spires. Used for meetings as well as meals, the refectory is the heart of the community and, fittingly, its link with the church, connected to it by a "slipe," or passageway where the monks assemble before filing into the sanctuary for services. In finish, the building typifies the approach followed throughout: simple, sturdy materials finely detailed and crafted to achieve an elegant austerity.

Wilbur Montgomery

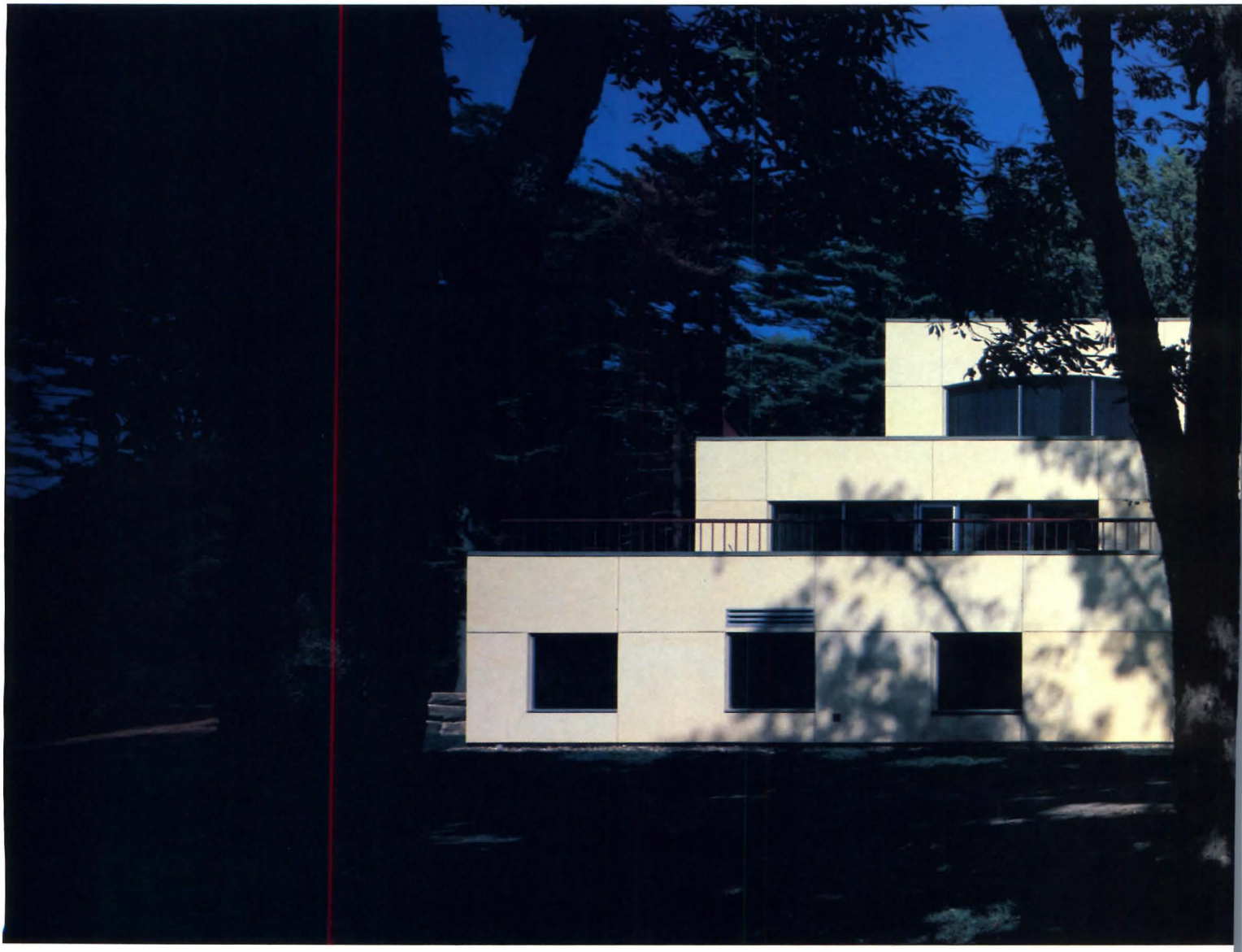


SECTION B-B

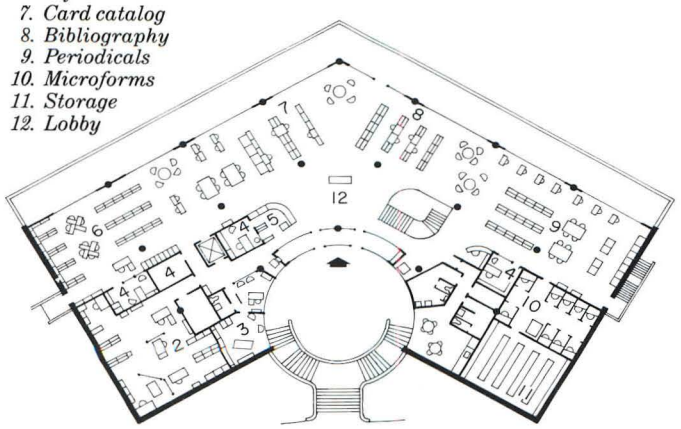
1. *Monk cells*
2. *Calefactory*
3. *Storage*
4. *Refectory*
5. *Slipe*
6. *Cloak/vesting*

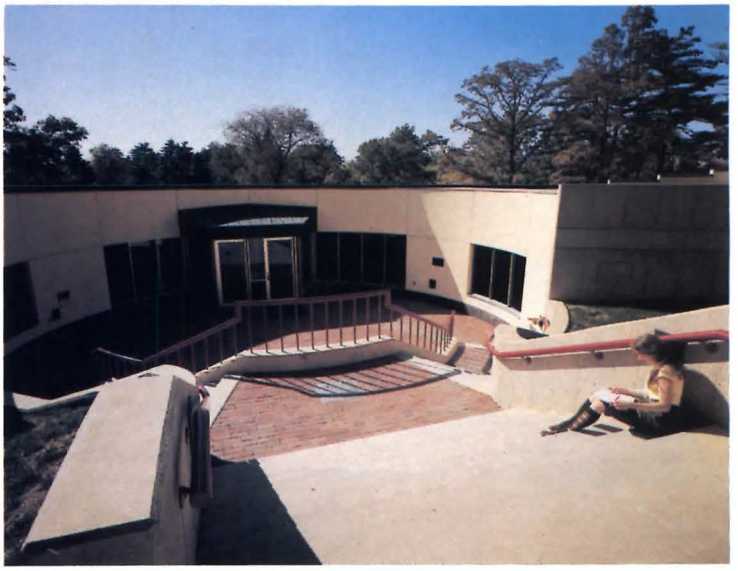
SECTION C-C

If the library lacks the poetry of the monastery, it is no less eloquent of purpose: to house the college's library of 150,000 volumes, many of which had been "shelved" in boxes. Mindful of the image of the archabbey ensemble from the approaches and the views from its prominence, architect Woollen conceived the library as a retiring "non-building" of terraces stepping down a steep slope from an entrance court (bottom photo) directly opposite the main college entry. The terrace theme is carried forward by a rooftop "lawn" (aerial photo on opening page) and garden beds alternating with tile-paved sitting places on the decks below: When the planting matures, the building will be draped in ivy. Though modified and simplified, the library refers back to the form and materials of the monastery through its angular mass pierced by a circular entry court and its use of concrete panels, cast with a warm aggregate to match the sandstone elsewhere, combined with stucco toned down from the buttery cream of the cloister to ivory. The fenestration also is similar, though arches are flattened, and strip and punched windows enlarged. (The portholes look out from small study areas.) In plan the library is organized with circulation functions



1. *Secretary*
2. *Processing*
3. *Librarian*
4. *Office*
5. *Circulation desk*
6. *Reference/reserve*
7. *Card catalog*
8. *Bibliography*
9. *Periodicals*
10. *Microforms*
11. *Storage*
12. *Lobby*

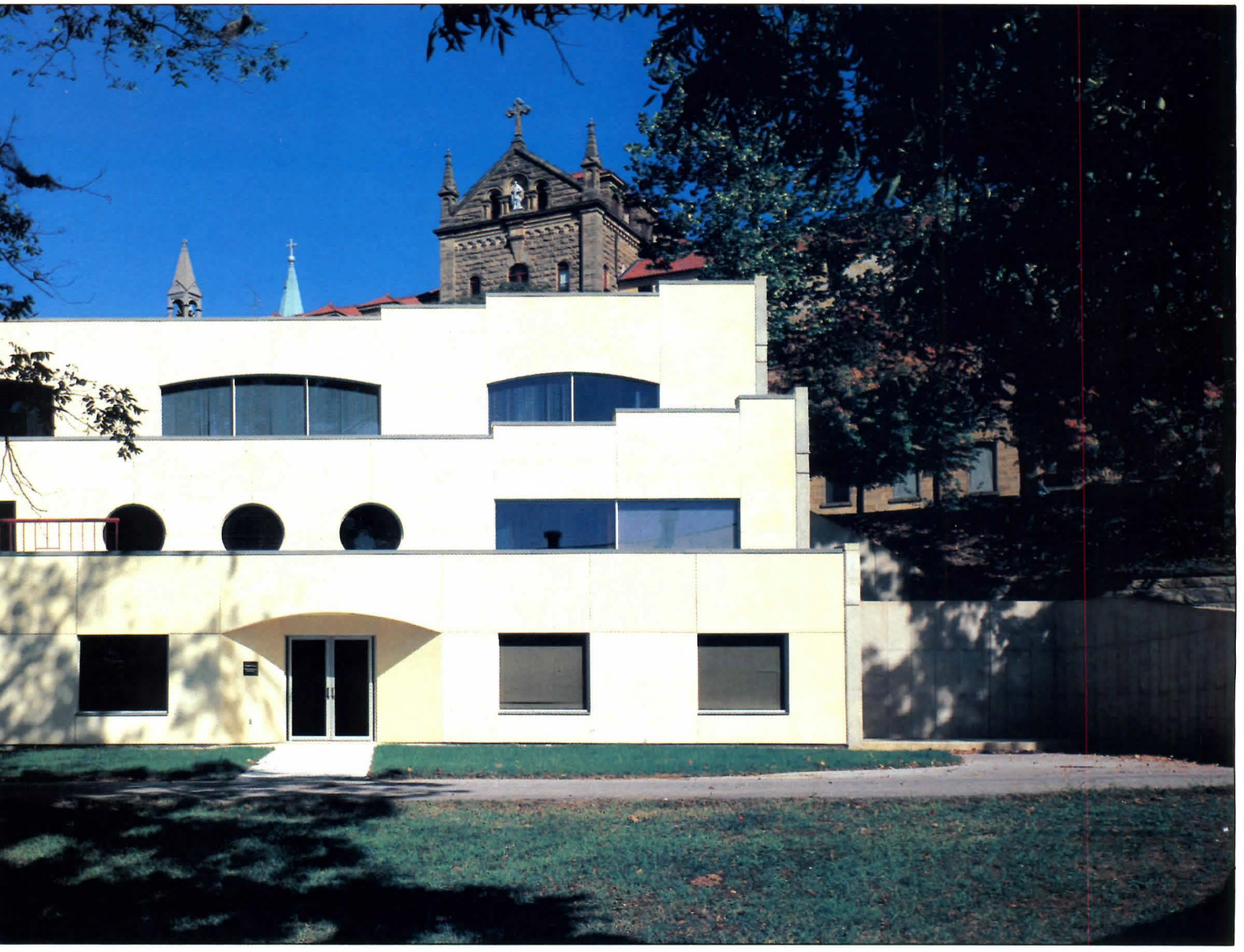


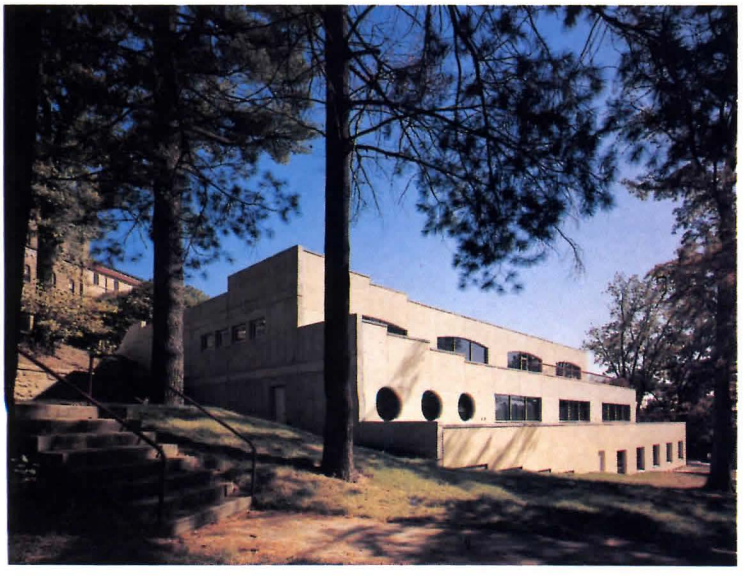


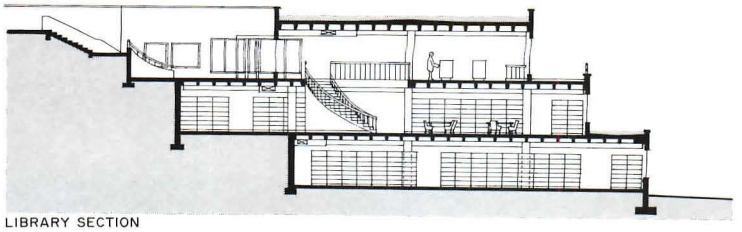
and open study areas on the upper level, connected by a curving staircase to more concentrated collections and private and small group study spaces on the floor below. Stacks and administrative and technical service areas are on the lowest level. Through painstaking detailing that turned to advantage its low-tech, bare-bones construction, the library was built at a cost of only $57 per square foot.

Saint Meinrad Archabbey Monastery and Library
Saint Meinrad, Indiana
Owner:
Saint Meinrad Archabbey
Architects:
Woollen, Molzan and Partners—Evans Woollen, design; Lynn Molzan and Laurence O'Connor, project architects

Engineers:
THP Limited (structural); Biagi & Sons (mechanical/electrical)
Consultants:
Kirkegaard and Associates (acoustical); James Nukolls (lighting); David Kaser (library programming); Sherman Robinson (food service)
Construction manager:
Geupel DeMars







LIBRARY SECTION

The Seagram Museum
Waterloo, Ontario, Canada
Barton Myers Associates, Architects

Design distilled

The word "distillation" can mean the abstract or essence of something. The two towers (top photo) are intended to be just that. One old, one new, they signify the nature of the Joseph E. Seagram plant, the active distillery in which the new Seagram Museum is located. The museum's brick-and-steel tower is neither belfry nor belvedere. Punctuating the entrance court, it contains a dormant column still, a 35-foot-high beauty in brass and copper. The new still tower is on axis with a still tower projecting from the mansard roof of a Victorian production building (site plan opposite and right in the top photo). The museum complex includes a renovated 1857 warehouse (left in the top photo and cover) and, in the foreground, a Christo-like stack of barrels. The hvac towers (photo above) look like overscaled chimneys.

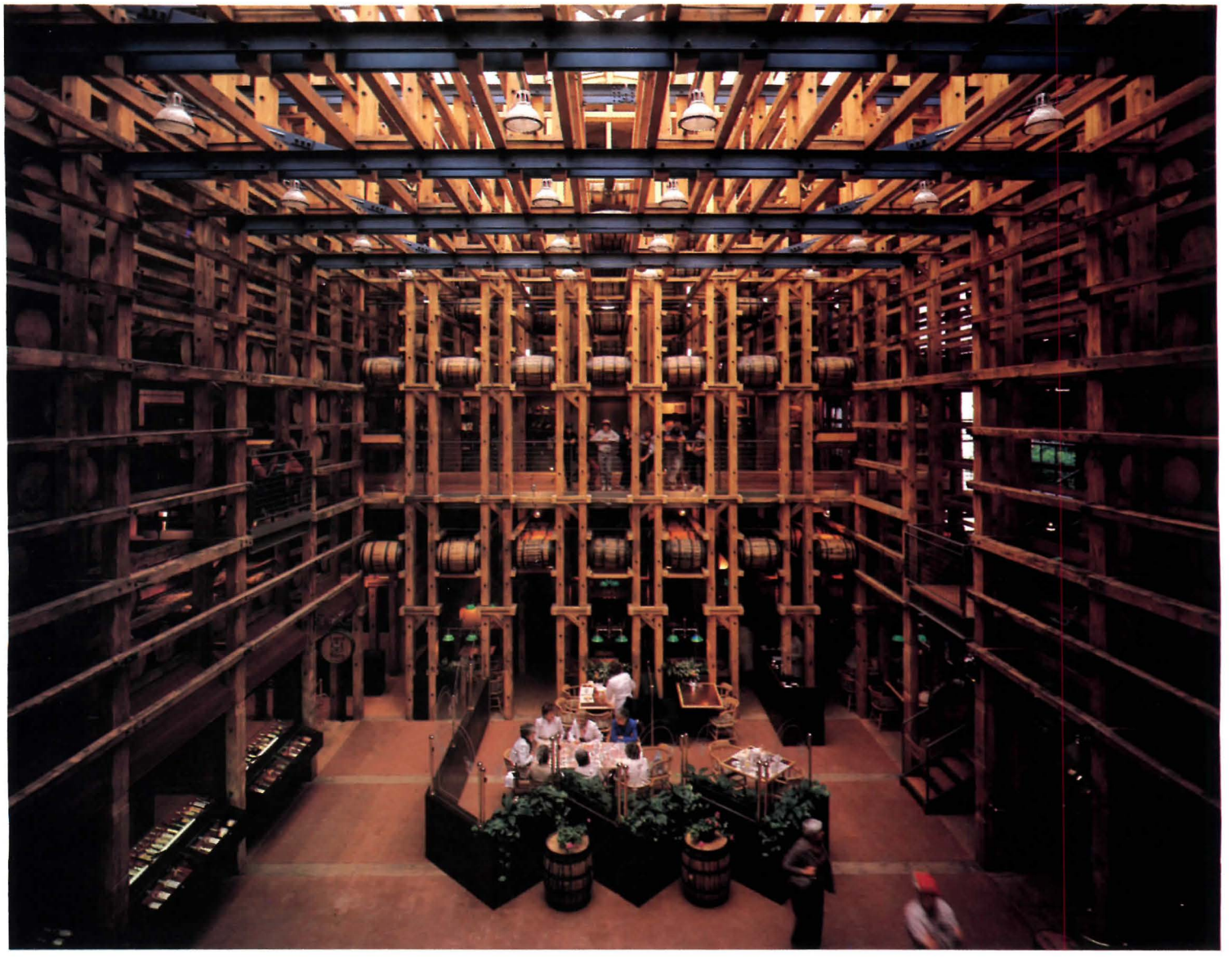
The 19th-century Joseph E. Seagram distillery in Waterloo, Ontario, Canada, founded in 1857, is the original Seagram plant and still a key component of the Seagram production empire. The company's international holdings include wineries in California, France, and Spain and the great distilleries, Chivas Regal and Glenlivet, in Scotland. It seemed to Charles Bronfman, chairman of the board, and to his sister, architect and philanthropist Phyllis Lambert, that the time had come to build a museum to celebrate the ancient arts of distilling and fermenting spirits. To this end the Bronfmans enlisted the aid of Dr. Peter Swann, a scholar in the field of Asian art, who then was working as the administrator of their trusts, and is now the museum director. Because the Waterloo plant was already an architectural museum of splendid 19th-century industrial buildings still being used for their original purpose, the Bronfmans and Swann decided to locate the proposed museum within its grounds. Wisely, they chose as their architects a firm whose head, Barton Myers, considers such buildings to be interesting, important, and historically significant.

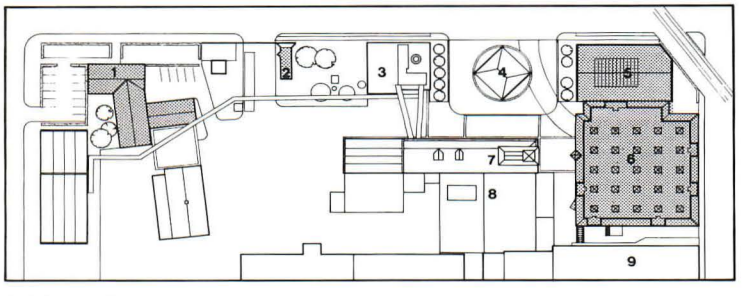
Myers saw the chance, in his words,"to create a convincing combination of old and new in a positive manner, in the spirit of the excellent additions and alterations done by Carlo Scarpa and Ernesto Rogers in Italy during the 1960s, expanding and renovating old museums or recycling historic buildings into exhibition space. It was an opportunity to demonstrate our interest in consolidation, the use of constraints as a design generator, and creating old and new linkages with the architecture of Waterloo and its region." And linkages with the historic Seagram plant itself. The mass of the new building modulates between two early structures and much larger and later plant buildings to the rear of the site. Three distinctive architectural ideas form the basis of Myers's final scheme: First, the 19th-century exhibition hall, exemplified by the large shed exhibition buildings of Chicago (1893), Philadelphia (1876), and London (1851); second, his own desire to create buildings within buildings; third, Constantinos Doxiadis's concept of organizing such buildings obliquely, as described in his book *Architectural Space in Ancient Greece.* He was also influenced by Gunnar Birkerts's Glass Museum in Corning, New York.

According to Myers: "Gunnar had a very interesting idea that there should be a short-circuit tour for the person who can spend only twenty minutes with a collection. He made it like the Stations of the Cross, each station being an exhibit of some of the best pieces of the collection, historically organized. If you have an hour, you can engage yourself a little more. If you have a lot of time and want to specialize, you may go into any one of the overwhelming collections. This is better than dragging yourself through gallery after gallery to find the things you want to see." Myers used this concept at Seagram, but gave it more explicit architectural expression. "My idea for the main exhibition building was to come into a court, actually a sanctuary, a Greek space and see a collection of temples, then choose which one to enter. Or go first to the audio-visual temple and then flow into products, distillation, and grapes."

The building shell and the little temples within it have been executed with great craftsmanship and pride, reflecting the traditions of the distillation and fermentation industry itself. On the interior, all the steel is expressed in the high-tech manner, but it is high-tech with a difference. "Steel," says Myers, "is wonderful only when it is contrasted with mass. The Victorians knew this. They played the power of masonry walls against the gorgeous porosity of the steel. The budget didn't allow me to make the interior skin of brick instead of drywall, but these surfaces are 45 feet high and appear solid. Also, the two little buildings I inserted are partially enclosed by uninterrupted planes, which helps. Furthermore, I used Victorian colors which makes it look even more like a 19th-century building. If I had painted the whole thing white, it would look minimalist high-tech. Now some people think it's post-Modern. It's been fun." *Mildred F. Schmertz*

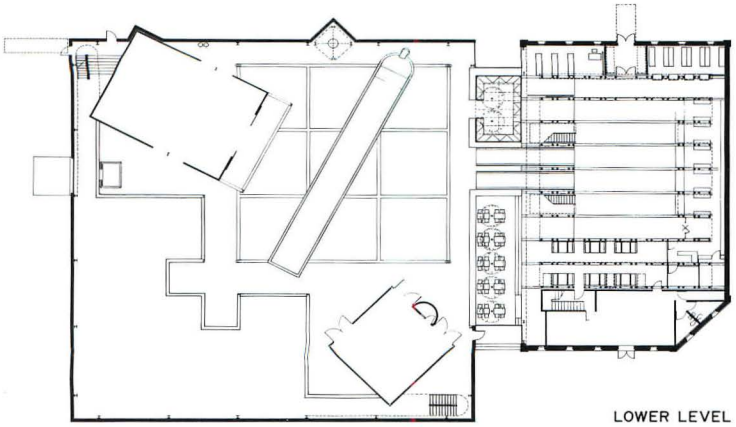
The area of the Seagram plant site forming the new museum's immediate context is shown in the partial plan (below). Buildings that once occupied the museum location (6) were reconstructed elsewhere on the property. The former warehouse (5) once had about 5,000 barrels stacked on pine racks. (Barton Myers declared this splendid construction to be "the world's largest Sol LeWitt.") Now it has lost its central bays (photo below), removed to form an atrium occupied by a restaurant as well as other spaces, including the entrance lobby, shops, and washrooms. Vestigial casks, alas empty, still deck the racks. A new skylight greatly cheers things up, however, by drawing forth a beauty in the great pine frame that was never visible in the old warehouse days.



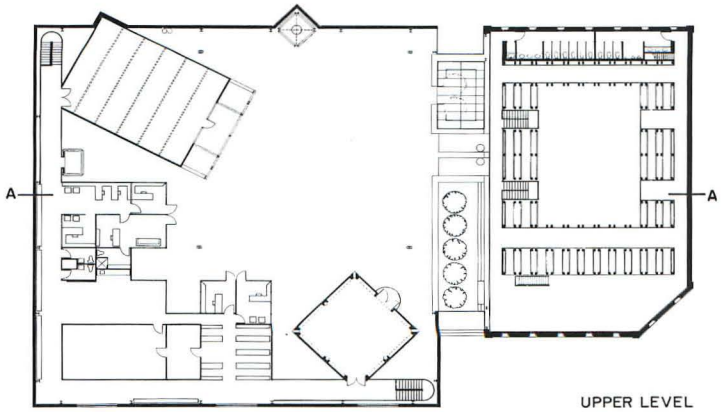


1. *Plant offices (renovated building)*
2. *New gate house*
3. *Boiler plant*
4. *Museum arrival courtyard*
5. *Renovated warehouse*
6. *Museum (new construction)*
7. *Production building*
8. *Fermenting building*
9. *Bottling building*

As the plans and section indicate, the visitor first enters the recycled warehouse, moving from its lobby through the barrel-rack-lined atrium. Here he may choose to mount stairs leading to exhibits on the rack platforms or to pass directly into the museum proper across a glass arcade containing a restaurant and a small greenhouse. Once inside the museum's principal exhibit hall (120 feet square and 50 feet high), he is confronted by two little buildings within the building. On the upper level is a continuous private mezzanine in which offices, library, and work spaces are enclosed in glass greenhouse-type structures. The smaller of the two inner buildings has an audio-visual room on the lower level, the larger an exhibit area. Exhibits continue below the mezzanine, but are not contained within building facades, although it had been Myers's original intention to have two more little buildings within the building. The floor pattern, in two tones of brick, echoes the module of the ceiling trusses. The diagonal bisecting this floor pattern marks the location of a former canal, now channeled underground. The new museum is a large simple building shell, with a relatively flat, unarticulated exterior skin. Of simple warehouse construction, it is

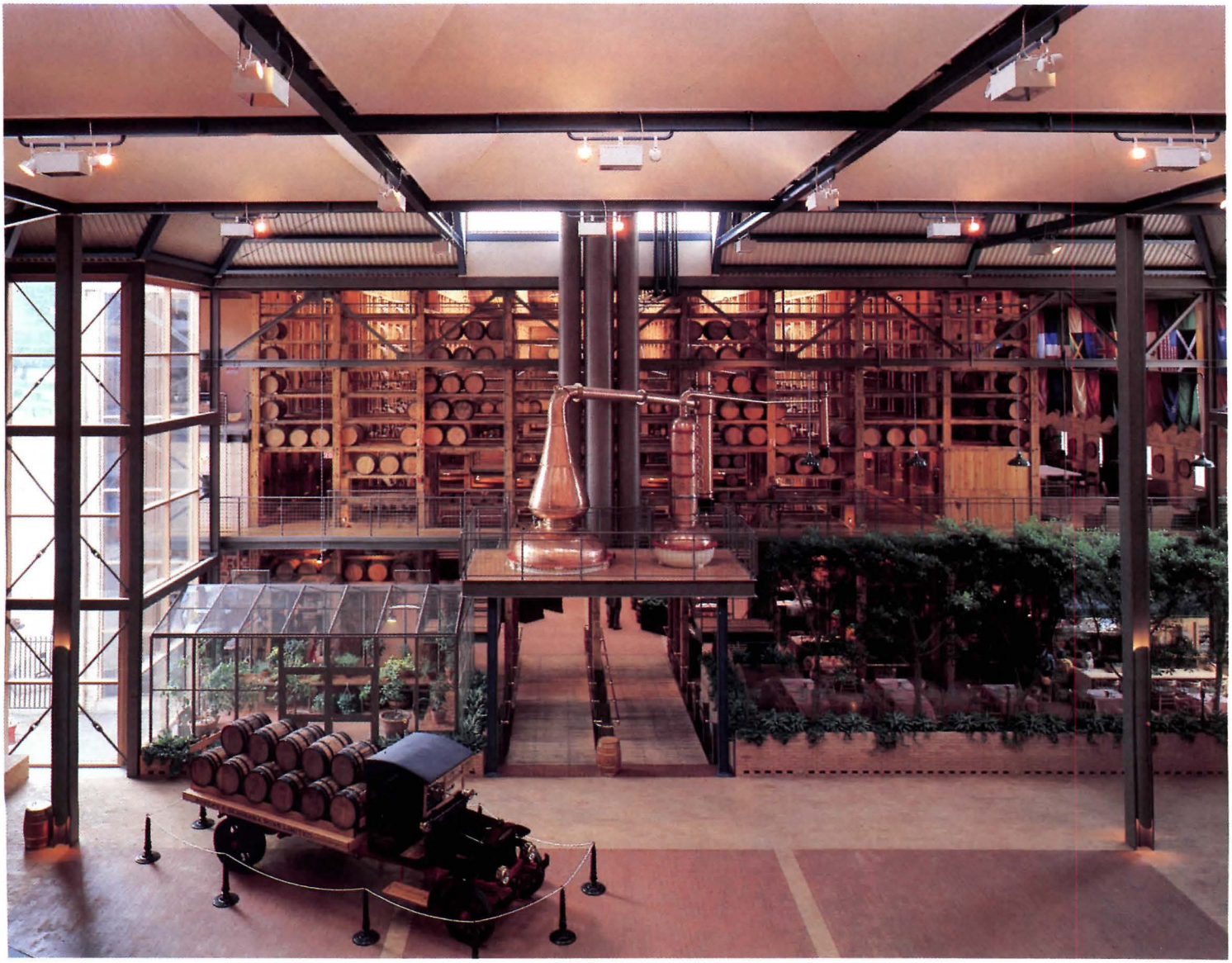


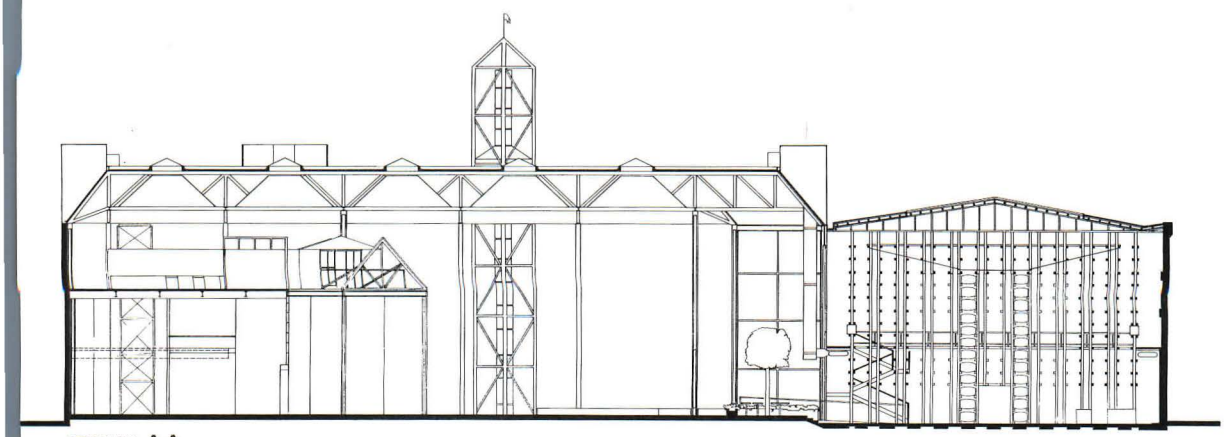
LOWER LEVEL



UPPER LEVEL

steel-frame, cross-braced where necessary, and sheathed with drywall, insulation, moisture barrier, exterior brick veneer, and metal roofing. Because of the sturdy nature of the artifacts exhibited, it was not considered necessary to build the walls to a standard of temperature and humidity control required for a museum of fine arts, for example, or a library. Should the museum decide to put some fragile objects on permanent display, protective environments would be devised. Each pavilion has the potential for its own temperature and humidity control supplied by a zoned, modular, roof-mounted hvac package unit. There are six such zones. A standard industrial skylight is located in each roof bay. In every bay, within the depth of the steel roof trusses, four triangulated panels of fabric extend from the base of the skylight to the bottom chord of each truss. These giant lamp shades reflect, soften, and diffuse daylight (photo below) or incandescent night lighting (photo opposite). Three windows on the mezzanine light staff work spaces.





SECTION A-A

All the mezzanine work spaces (photo below) except those that require acoustic privacy, overlook the exhibit area, bringing the staff into direct contact with the daily life of the museum. The interior is framed by carefully proportioned structural steel in three scales—hefty, medium, and delicate—for the basic structural system, the buildings within the building, and the mezzanine offices, respectively.

Pine wood cut from the heavy timber taken from the former warehouse was used as paneling for the 20-foot-high rolling doors that close off the larger of the two buildings within the building. "The museum can close the doors, drop a screen, and show movies," says Myers, "or the doors can be a theater backdrop with the two columns and gable outlined in steel framing the stage."

The Seagram Museum
Waterloo, Ontario, Canada
Owner:
Joseph E. Seagram and Sons, Ltd.
Architects:
Barton Myers Associates—Barton Myers, Donald Clinton, associate-in-charge; Shirley Blumberg, Ruth Cawker, Brian Hunt, Gerry Lang, Marianne McKenna, Thomas Payne, project team
Engineers:
Read Jones Christoffersen (structural); ECE Group (mechanical /electrical)
Consultants:
Joseph Cadloff (specifications); William Nassau (audio-visual); Karen Wilkin (color)
Exhibition and interior design:
Dr. Peter Swann, Susan Swann, David Nasby
Contract manager:
Grahame Vincent (Joseph E. Seagram and Sons, Ltd.)

Soft high tech

By Bradford Perkins

This review of two buildings—The Victoria General Hospital and the Discovery Parks Multi-Tenant Research Facility—designed by Russell Vandiver Architects of Vancouver, British Columbia, deals with important design issues that are being overlooked in current architectural debate. Both buildings are significant works of architectural form, but additionally they address other important design concerns. As long as leading architects and the media focus upon drawings, unbuilt or unbuildable projects, housing for the rich or the dead, or the decoration of simple boxes (no matter how tall), it is possible to ignore these issues. However, most of the design problems facing both the public and the profession raise questions that must once again be viewed as important for architects to answer, if architecture is to continue to have a truly positive impact on the built environment. My own list of important architectural issues is shaped in large part by the fact that so much of my own work has been with hospitals, laboratories, and other technically complex facilities. Thus, my list includes:

How to deinstitutionalize public buildings. While significant progress has been made toward making some public buildings—schools in particular—attractive, inviting environments, the same is not true for all types. Hospitals and other technically complex facilities have all too often been unattractive, functional buildings, which patients, staff, and visitors tolerate or ignore. In too few cases are these buildings a positive factor in the lives of their occupants and neighbors.

How to integrate a building with its site. With all the talk of contextualism, I am surprised to find so many buildings designed as objects that ignore their context. Too few buildings are shaped to fit their site, and too many ignore the opportunity to make the natural surroundings a part of the interior design. For example, one well-publicized building in a benign climate and attractive setting has small square windows that force the building's occupants to work in interior office spaces that are cut off from natural light and views. The rationalization of this fenestration was energy conservation, which could have been addressed more effectively if it had not been handcuffed by style.

How to create cost-effective flexibility. For most buildings to be successful over their normal life span, they have to be able to adapt to growth and change. Moreover, the need for change in most buildings is accelerating—nowhere more so than in technology-intensive facilities such as hospitals and laboratories. There have been a variety of gimmicks promoted for such buildings, but most are expensive hardware solutions (such as full interstitial space) rather than a real response to the demands of programmatic growth and change.

And, of particular importance, how to achieve architectural excellence—in traditional formal and spatial terms—in programmatically and technologically complex buildings. A friend of mine once hypothesized that most hospitals were so unattractive because once their architects had organized up to several thousand spaces—each with its own difficult program, technical, and code requirements—into a functionally correct plan, they no longer had the time, energy, or freedom to deal with major esthetic issues. Some architects surmount these constraints, of course, proving that design excellence can be a central project goal even for labs and hospitals.

What Russell Vandiver and his colleagues have done in their office's first two buildings is to explore the formal possibilities of a softened high-tech esthetic while still addressing the issues listed above. Both buildings use a similar kit of parts. Due to their programs, clients, and other differences, however, the results are two distinctly different structures. As the firm's second building, the Discovery Parks project (opposite page) is the more assured, mature work.

As a first project, the Victoria General Hospital (below and following pages) was a major challenge for a new practice. Its program called for a new 500-bed, full-service, community hospital to replace an obsolete older structure. The new building was to be sited on a 35-acre open field with only limited building area due to underground marine clay deposits and restrictive utility easements. One strategic hospital planning decision is central to the building's parti. Hospitals are, by their nature, bulky, clumsy forms. The typical floor size and limited building height presents an inherent form and proportion that is neither vertical nor horizontal. Vandiver's decision to separate the bed towers from the diagnostic and treatment (d & t) area greatly improved the massing of his building. Many hospitals are designed with the bed towers on top of a diagnostic and treatment podium or integrated into a single structure. While there are always functional arguments for doing so, this scheme inevitably leads to compromises. Most hospitals are, in reality, several different building types: laboratory, office, warehouse, hotel, etc. Trying to integrate them into a single structure can be done, but it provides still another set of complications that must be accommodated in the design solution.

By putting the patient floors in two separate structures, Vandiver, in addition to breaking down the building's large programmatic mass into less imposing elements, made it possible to create an enclosure around one of the design's most successful features—the carefully preserved oak trees and rock outcropping in the central courtyard. The central courtyard provides an attractive backdrop for the long glass-enclosed

Victoria General Hospital

mall that acts as the building's central circulation spine. Bright primary-colored ducts serving the diagnostic and treatment building line the inside edge of this mall. The only disappointment in the mall was a client decision not to permit it to be a higher greenhouse-like space similar to the one used later at Discovery Parks.

The expressive location of the primary ducts on the building exterior is part of a major functional as well as esthetic concept at VGH. Vandiver also pulled out the stair towers, which are designed to pick up shear loads in compliance with the local earthquake code. Thus the d & t wing became a loft building with flexible space uninterrupted by major vertical elements. Before the building was completed, the hospital decided to redesign the entire radiology suite to accommodate state-of-the-art digital equipment. The d & t building, with its uninterrupted floors and generous mechanical space in the ceiling, made this change easy to plan and implement.

The building's high-tech expression is softened considerably by informal, natural landscaping, carefully designed not to look designed. Moreover, wherever possible, the interior spaces—client rooms, cafeteria, mall—are brought into direct contact with this outdoor setting. The landscaping also reduces the impact of the other client-initiated compromise—the substitution of poured-in-place concrete for Vandiver's proposal for an aluminum skin. Poured-in-place concrete in a cool, damp climate has neither the machinelike slickness appropriate to this design vocabulary nor a color and texture that softens and humanizes the building mass.

In spite of the compromises in the skin and the mall, the building is a powerful high-tech form that provides a highly functional, attractive setting for an essential social service. Many of us who work on such buildings have had to question whether the high-tech vocabulary is an appropriate way to deinstitutionalize this type of facility. The design reality, however, is that these buildings are large, complex machines, and no amount of skin-deep cosmetics will disguise this fact. Therefore, in selecting a design vocabulary it is, in my opinion, valid to ride the horse in the direction it is going and to express the machine aspect of the building.

In his second building, Vandiver reused many of the same concepts but this time avoided the few compromises which keep VGH from being a completely successful form. This second building, the Multi-Tenant Research Facility (MTF) for the first Discovery Park, has a very different program from the hospital.

The Discovery Parks are four government-sponsored industrial parks next to four of the Vancouver region's universities. The MTF was conceived as playing three roles: as the flagship building for these parks, as an "incubator" building for start-up high-technology companies, and as the central amenity building for the first park.

The program's two major elements—the rental lab area and the central amenities (a club, meeting rooms, and dining facilities) are separated by a skylit mall. The lab area is again treated as highly serviced loft space with no internal obstructions other than six columns. Again the vertical mechanical distribution and the stairwell/shear wall towers are brought to the perimeter.

Within the mall, the mechanical concept, which was only partially realized at Victoria General Hospital, is developed to its full potential. The bright primary-colored ducts have been called "entrail" architecture, but they form a playful and sculptural centerpiece to this dramatic space. They are efficient as well. All air is filtered, heated, or cooled and supplied to the concourse. Air from the concourse is then drawn in through louvers at the edge of the mall into the ceiling above the tenant space. This simple flow combined with heat recovery, passive solar, and automatic controls makes this a very energy-efficient system.

As with the hospital, the exterior esthetic is softened high tech. Aluminum panels with a thermoplastic core are used to clad a form that is carefully set in another natural landscape. Cornelia Hahn Oberlander, landscape architect for both projects, describes the Discovery Parks complex as "pavilions in a parklike setting and in a landscape designed and researched to be ecologically balanced." The resulting juxtaposition of a very slick esthetic in a carefully shaped natural setting was exactly what the client was seeking. As Harley Kelsey, a vice president of Discovery Parks, stated: "Good design is the basis for innovation, and the building itself sets that precedent. The architect understood the high-tech atmosphere we were trying to interweave with the human requirements."

For me, the elegance of Vandiver's solutions for both buildings can be found in the ways that he has made two complex problems appear simple. In both buildings, he has fulfilled the essential criteria for technologically intricate and sophisticated structures by making them human, attractive, flexible environments that are well-integrated with their sites. Most important, they are well-organized as form and space. In sum, they are works of architecture.

Bradford Perkins is the founding partner of Bradford Perkins and Associates in New York City. His practice includes health-care facilities, office buildings, and housing. Mr. Perkins is a frequent contributor to ARCHITECTURAL RECORD.

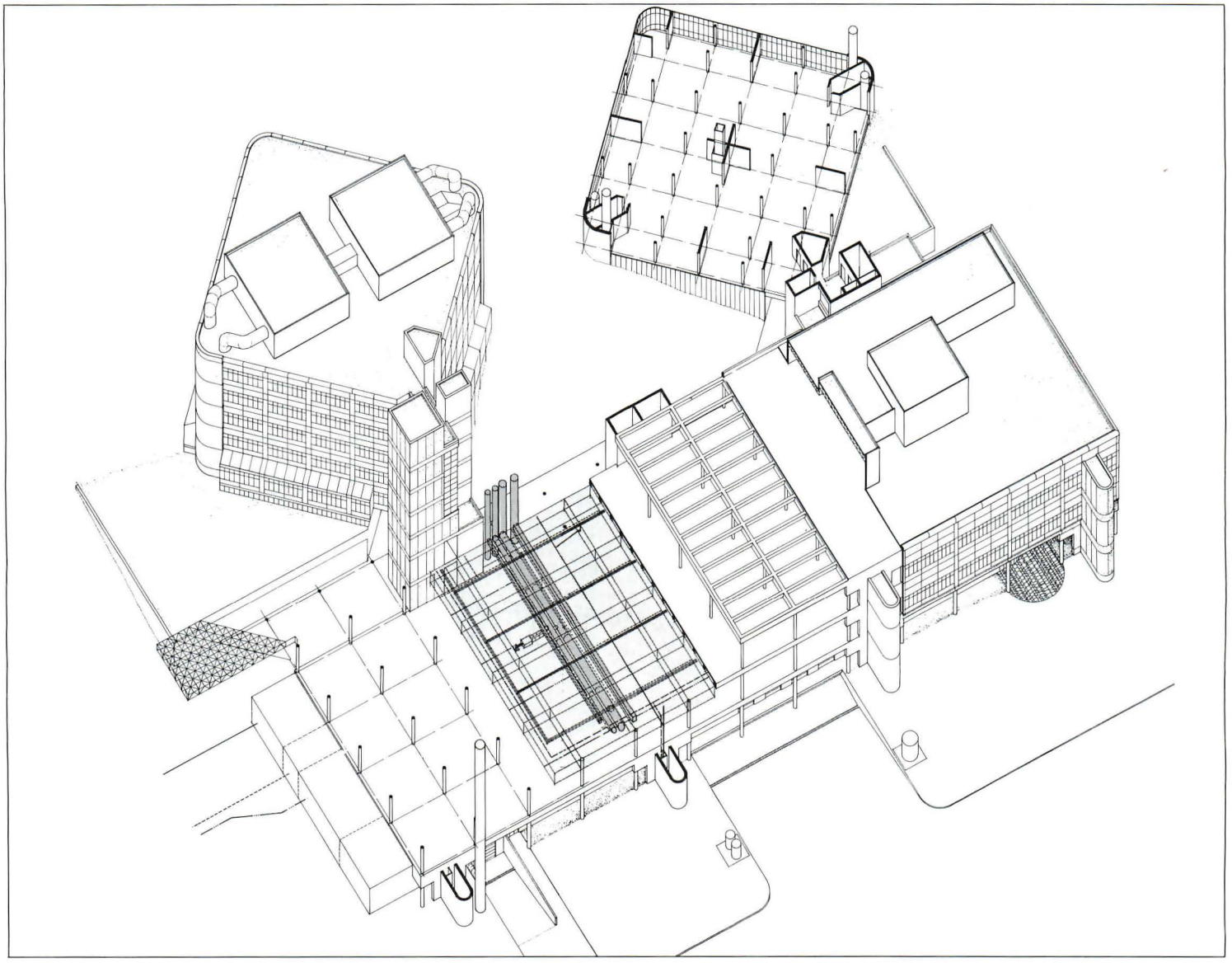
Simon Scott photos

Multi-Tenant Research Facility

Victoria General Hospital
Victoria, B. C., Canada
Beinhaker Irwin/Russell Vandiver Architects

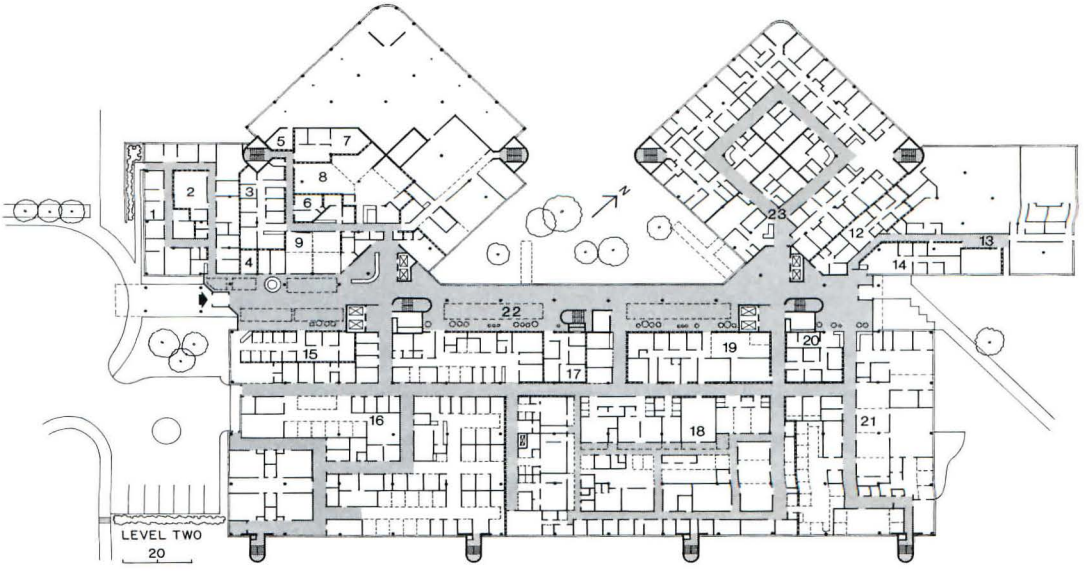
The building is approached and entered on the two narrow ends at the second level. The combination of the use of the narrow, more-articulated ends and the stepping of the building into the site significantly reduces its apparent mass. The two entrances open into a skylit mall that serves as the central public circulation space of the facility. On one side of this central circulation spine is the diagnostic and treatment building which houses the hospital's more technologically complex facilities—labs, operating rooms, radiology, mechanical space, etc.—as well as the warehouse and other support areas (axonometric opposite). The stairs and mechanical services are pulled outside this building so that it becomes a large flexible loft structure. The bed towers were rotated 45 degrees from the

diagnostic and treatment wing's grid to simplify the important circulation link between the bed tower and diagnostic and treatment areas. At the same time this orientation made possible a close proximity between elements without shutting off natural light to any part of the complex.



Running down into this central circulation mall are the major ducts of the hvac systems, which have been color coded with a number of bright primary and secondary colors. The visual impact of the decision to pull the ducts to the outside of the building is partially lost by one of the two design compromises resulting from the client's conservatism. The client vetoed a glass roof for the central mall on the grounds of energy conservation—in spite of the mechanical engineer's arguments to the contrary. This is an argument Vandiver and his engineers would win on their next building at Discovery Park illustrated on the following pages. Even without the glass roof, the central mall provides a clear point of orientation for all people moving through the building. It opens into a carefully preserved rock outcrop and copse of Gary oaks, which carries through one of the design's major themes—a constant visual linkage between the interior spaces and a carefully preserved and restored natural landscape. This mall is now a popular lounge for the staff and waiting area for visitors as well as the building's primary circulation link.

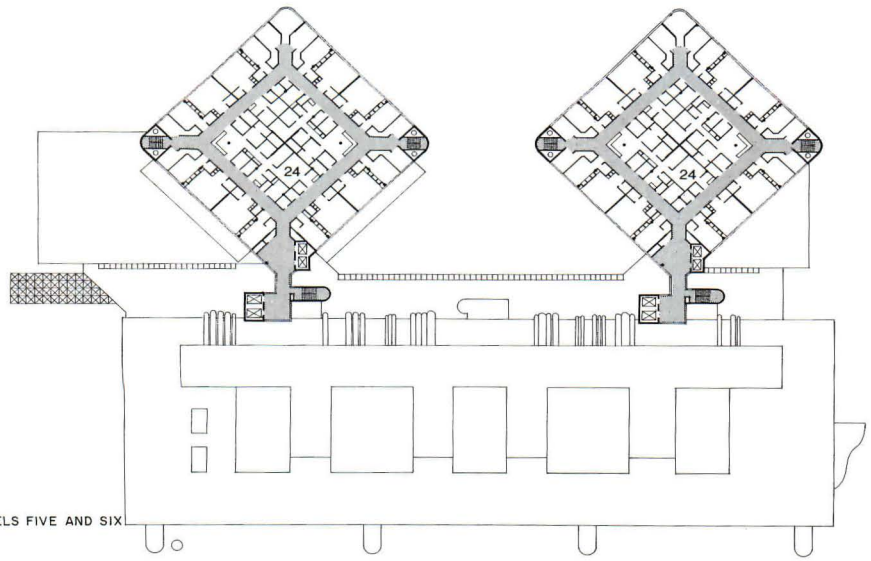
1. *Executive offices*
2. *Business office*
3. *Nursing administration*
4. *Security*
5. *Infection control*
6. *Nutrition services*
7. *Media services*
8. *Library*
9. *Education*
10. *Medical records*
11. *Doctors' facilities*
12. *Doctors' on-call*
13. *Personnel facilities*
14. *Personnel office*
15. *Central registry*
16. *Emergency/medical day care*
17. *Auxiliary and volunteers*
18. *Medical imaging*
19. *Electrodiagnostic services*
20. *Social services*
21. *Physical medicine*
22. *Public area*
23. *Pediatric unit*
24. *Standard nursing unit*



Victoria General Hospital
Victoria, B. C., Canada
Owner:
Victoria General Hospital
Architects:
Beinhaker Irwin/Russell Vandiver Architects—(a joint venture) Russell Vandiver, partner-in-charge (design); John B. Davidson, partner-in-charge (management)

Engineers:
Read Jones Christoffersen Ltd. (structural); Reid Crowther and Partners Ltd. (mechanical); McKenzie, Snowball, Skalbania and Associates (electrical); D. W. Thomson Consultants Ltd. (plumbing)
Landscape architect:
Cornelia Hahn Oberlander

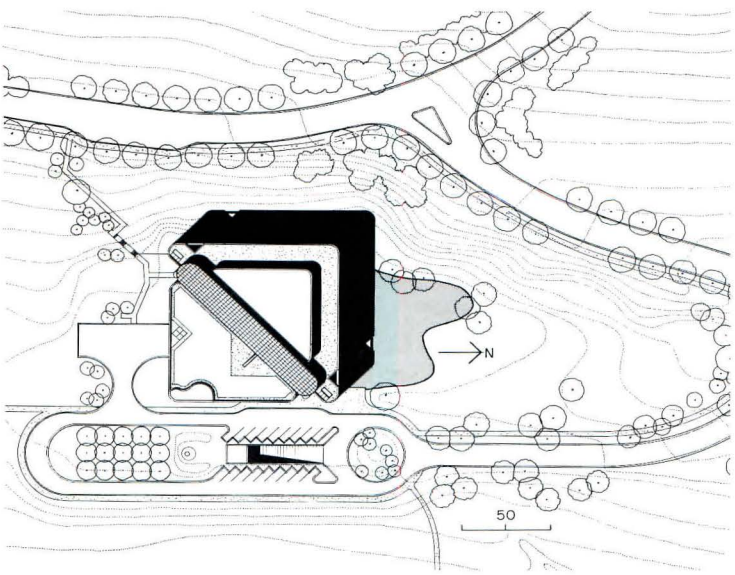
Consultant:
John Gallop Associates Ltd. (graphics)
General contractors:
Dawson-Hall Limited; Farmer Construction Ltd.

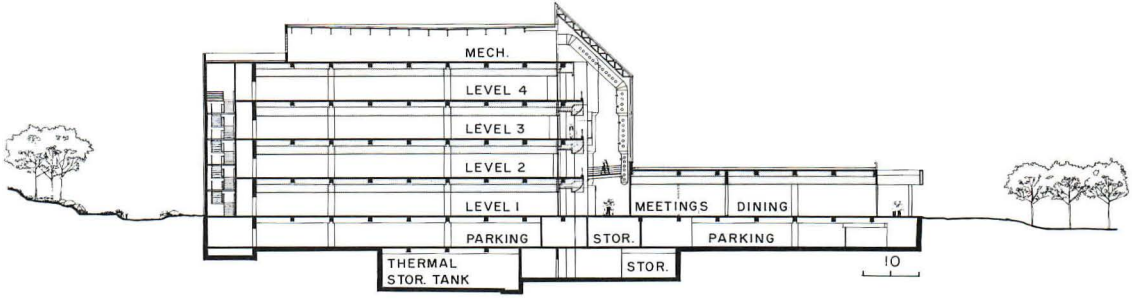


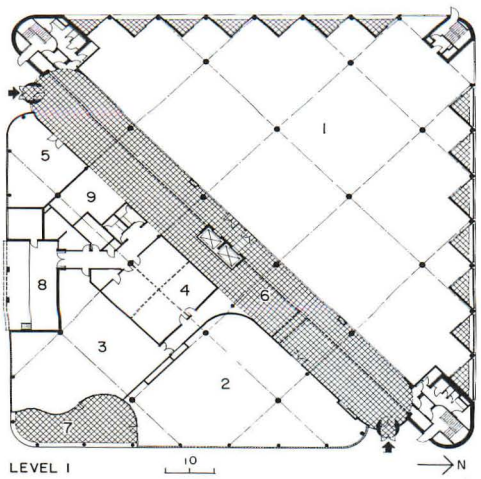
LEVELS FIVE AND SIX

Discovery Parks Multi-Tenant Research Facility
Vancouver, B. C., Canada
Russell Vandiver Architects

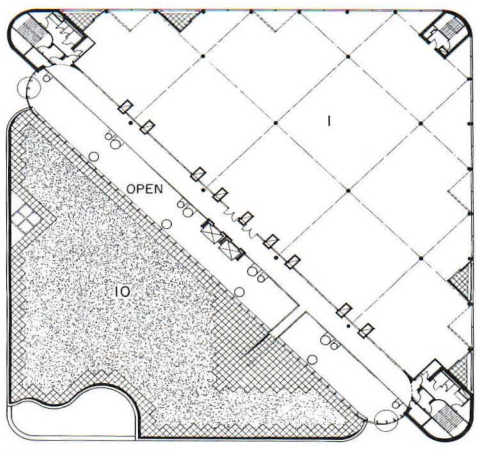
The Multi-Tenant Research Facility is organized into two parts on either side of a skylit central concourse. On one side are four levels of highly serviced loft rental space for young high-tech companies. On the other side of the concourse is a one-story building housing the common facilities serving the entire surrounding technology park. The landscape design uses only indigenous plant materials.







LEVEL 1

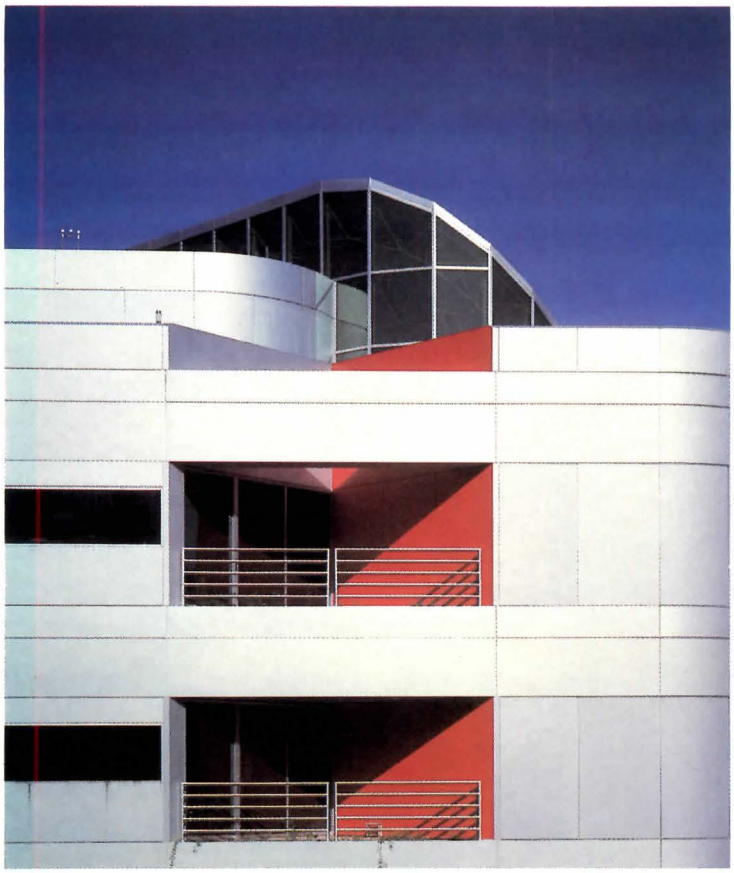


LEVELS 2, 3, AND 4

1. *Research space*
2. *Discovery Club*
3. *Tenant dining area*
4. *Meeting room*
5. *Tenant*
6. *Concourse*
7. *Terrace*
8. *Loading dock*
9. *Vending*
10. *Landscaped roof terrace*

One of the most striking elements of the building is the mechanical system. The air-handling system is essentially a once-through, make-up air system. All of the air is filtered, heated, or cooled and supplied to the concourse. The concourse is a large, open, common circulation space, that also serves as the passive solar collector. This space is maintained at a slight positive pressure in relation to the outdoors and the various tenant spaces. Air from the concourse space is then transferred under controlled conditions to the ceiling spaces of the tenant areas, where it serves as make-up air for general exhaust or specialized fume hood exhausts. Only air from areas such as offices, which are separated from laboratory spaces, is returned to the central air-handling system. A large percentage of the building air supply is exhausted to the outdoors. A separate "run-around-loop" heat-recovery system extracts heat from the exhaust air and this recovered heat is used to preheat the make-up air. Automatic controls optimize the heat recovery as well as pressurization and air balance between return air, general exhaust, and fume exhaust.

Discovery Parks Multi-Tenant Research Facility
Vancouver, B. C., Canada
Owner:
Discovery Parks Incorporated
Architects:
Russell Vandiver Architects—Russell Vandiver, partner-in-charge
Engineers:
Bush Bohlman and Partners Ltd. (structural); D. W. Thomson Consultants, Ltd. (mechanical/electrical/plumbing)
Landscape architect:
Cornelia Hahn Oberlander
Consultant:
John Gallop Associates, Ltd. (graphics)
General contractor:
Dillingham Ltd.



Round Table:
Lighting—an art supported by a technology

To discuss lighting design, ARCHITECTURAL RECORD invited to New York on February 6th a distinguished and thoughtful group of architects, lighting designers, and consulting engineers. We discussed the changes in thinking and technology over the past five or ten years, what we have learned about the effect of lighting on people and productivity, the best of the new products coming from the manufacturers here and abroad, the proper use of daylighting, the proper use of task-ambient lighting, whether lighting can be taught as an art or as a building science or both, and how the entire design community can best learn from each other for the benefit of the client, the user—and architecture.

The Round Table began, as Round Tables often do, with these general questions to the panelists: "In the last five years, say, what new have we learned about the *goals* of good lighting?... What are the criteria for (or how do you define, or what constitutes) good lighting?"

Lighting consultant Paul Marantz began: "Nothing has done more to push lighting concerns into the forefront than the late energy crisis, because it made everyone realize that we had to save energy but still not reduce the quality of the environment. We have pioneered a great deal of new technology—but my concern is that it will become trivialized, a checklist of items to be picked off instead of becoming part of a coherent program of design.

"My concern is not that we don't know what we need to do, but that no one any longer seems to have the time to do it and the will to do it in an entirely thoughtful and rational way."

Consultant Howard Brandston agreed with the comment on "trivialization," and then listed his criteria for good lighting design. "We have lots of new lamps and new technologies to work with, but they are being trivialized by the time pressures and the economics that we have to work with. We need to remember that the goals of good

Gunnar Birkerts, FAIA
Gunnar Birkerts and Associates
Birmingham, Michigan

lighting have nothing to do with the methodologies, but are still to serve the people we are designing the lighting for. I think good lighting design is realized if:

"1. All spaces are properly composed in a clear hierarchy of importance and purpose.

"2. The lighting design provides spatial clarity.

"3. The lighting mood is consistent with the function and design of each space.

"4. It promotes productivity.

"5. It is within the client's budget.

"6. It has fully realized the potential of daylight when it is available.

"7. It is readily maintainable.

"8. It is energy-effective, and

"9. All state-of-the-art alternatives have been considered.

"If you do really good design, all of these things are done."

Consultant Carl Hillmann: "Two things have been happening simultaneously: One was the imperative to save energy—which generated a surge of creativity and *thinking* about lighting design. The second was the great proliferation of technical advances—especially in lamps, which is where lighting design begins: the introduction of HID lamps, the improvements in color of those lamps, the improvement in color of fluorescents, the introduction of low-voltage incandescents, and so on and on..."

Architect Gunnar Birkerts: "I think the most important change is the realization that we have two sources of light to work with—artificial light and daylight. And I think awareness of daylighting is becoming more and more important. With a few notable exceptions, I don't think we architects were very mindful of or skillful in the use of daylight. All of a sudden daylighting has become a science, almost like a new discovery, and I think we will be using a much stronger mix of the two kinds of lighting in the future."

Architect Der Scutt: "In the last 10 or 15 years, architects and interior designers have become increasingly aware of and sensitive to the effects that lighting can provide, be it electric lighting or daylighting. I think lighting is the basic ingredient that makes the architectural environment either superior or mundane; lighting can beautify a building or make a building pedestrian; lighting can be a motivator in the environment or it can be depressing. I would like to give a lot of credit to the lighting consultants, who have promoted lighting effectively and improved lighting a great deal—and I think that most architects could benefit by budgeting money in the fee at the beginning of the project to get the benefit of the tremendous amount of knowledge these people have developed."

Delaine Jones of the New York State Energy Office: "I agree that architects do have a lot to learn from the lighting designers, because so many architects do trivialize lighting design. I think most of us learn lighting design by learning how to drop two-by-four fixtures into a plan—and that's not nearly enough. The engineers, on the other hand, try to quantify lighting design with formulas, and that is not nearly enough either. I

Howard Brandston
Lighting Design, Inc.
New York City

think good lighting is as subjective as good architecture—I hope that we can come up with a good definition of lighting as we talk through the day..."

Architect Peter Coan: "Changes in lighting are being affected by the changes in architecture. Architects and the public are increasingly concerned about the decorative aspects of their spaces, and lighting gives us the opportunity to create drama and beauty.

"We usually can't embellish buildings very much, but we have to have lighting fixtures, and we should take advantage of the decorative aspects of light and of lighting fixtures...."

Consultant James Nuckolls: "For a long time the only way we evaluated light was in terms of footcandles, which was not a very good evaluation. The new approach begins with people, how old they are, whether what they need to look at is easy to see (which doesn't take much light) or difficult to see (which takes a great deal of carefully designed light). Then you begin to design the lighting for the spaces—how long and wide and high they are, and what kind of finishes they have, and whether the main purpose of the lighting is functional or intended to excite the mind. Those are the real lighting issues that come before the light bulbs and wires and footcandles."

Architect Bob Siegel: "Like the

other services in any building, the lighting has to function; but lighting differs from the other services in that the fixtures become a formal design problem, an object in space. I agree with Gunnar Birkerts that the integration of natural light and artificial light is the major formal problem. Charlie Gwathmey and I have been very lucky to have many residences and public buildings to work on because—compared with office design—there are more opportunities for sectional and volume changes that make it possible to think about light in different and maybe more creative ways."

Architect Edward Mills: "Light and architecture are one and the same, because lighting defines our forms and masses and without that we don't have architecture. Lighting also defines time, allowing you to know what time of day it is and what season it is. Lighting—beginning with theatrical lighting in the mid-18th century—allows us to focus on special features in different parts of spaces."

Consultant Lesley Wheel: "In most architectural schools, lighting is taught as a building science, in there with acoustics and air conditioning, which drives me crazy because it's so much more. In interior design schools, it tends to be grouped with color. Years ago, when lighting design as a specialty was in its infancy, we came up with a definition I still like: 'Lighting design is an art supported by a technology.'

"The oil embargo was the trigger for a major change in lighting design. At that time, lighting became more than a matter of

Peter Coan
Redroof Design
New York City

esthetics (which is what I was struggling with) and became also a matter of costs and budgets and bottom lines."

Bob Siegel: "But good architects have always tried very hard to deal with lighting as a critical and integral part of architecture."

Barry Donaldson of Tishman Research: "I would agree that architects have long been deeply involved in understanding and manipulation of light. But I would also argue that with the developments in lighting technology, particularly in the '50s and '60s, many architects seemed to lose awareness of or interest in natural light because lighting could be manipulated so easily by the engineer or lighting consultant. Since the oil embargo, with the resultant greater understanding of the relationship between lighting and energy, and lighting and the thermal performance of buildings, we have seen an increase in the use of lighting designers, and a much more integrated approach to daylighting and electrical lighting. I also believe we are all going back to not just quantitative understanding of light but a qualitative understanding of light; and today we have tools available to do sophisticated calculations on both scores."

Howard Brandston suggested that "new tools" make even subjective studies possible: "The Department of Energy has funded some research to try 'to begin to understand the relationship between appropriate quantitative measures of lighting and an interior environment that results in occupant satisfaction.' So the research is directed not at how much light there is (or even whether it is good lighting), but is the person happy with it. Saving energy is not the purpose of this research; rather, the question is how much energy do you have to use to satisfy the user?"

Engineer Sheldon Steiner: "I don't think there is anyone here who would disagree with your statement that lighting is for people. That's always been the case. If we had been sitting around a table a million years ago and asked the same questions about what is new, somebody would have come in with a torch in his hand. Twenty years ago we would have been talking about how fluorescent lighting makes possible 200 footcandles on the work surface. Today we have the opportunity to focus on quality—because so many new tools are available to us to create quality lighting."

Gunnar Birkerts: "Again, I hope those 'new tools' include tools for designing with daylight. I wonder

Barry Donaldson, AIA
Tishman Research Corporation
New York City

how many lighting consultants are equally at ease designing with daylight as they are designing with electric light?" Consultant Sylvan Shemitz replied, "We start with daylight; we never begin to design the lighting solution for a building until we evaluate the daylighting and its effect." Birkerts: "That's the way it should be and what I intend to filibuster about later [see daylighting discussion below]." Shemitz: "You are an exception. Most architects begin their study of daylight with a catalog from a Venetian blind company."

Delaine Jones: "I'd like to emphasize again that considerations for energy conservation have been the catalyst for most of the new project development we have seen over the recent years, and the catalyst for better understanding of the visual environment. It has caused many architects to think about a subject that they have not thought about since school, and has caused more architects to call on lighting designers because they haven't thought about it and don't know enough about it."

Question to the Round Table: What have we learned about lighting in human terms?

Not nearly enough, said Der Scutt. "We certainly don't have any scientific facts about the biological aspects of daylighting or the psychological aspects of electric lighting. We have a long way to go. . . ."

Jim Nuckolls: "We don't know much about (and we certainly *do* nothing about) the fact that as we age we see differently—and not as well. We've all seen building lobbies where anyone over the age of 40 can hardly see his way to the elevator; and shiny floors which seem to be designed to trip up a 60-year-old. I think barrier-free design has to be extended into the area of lighting.

"Lighting also needs to be designed for greater individual choice and accommodation. We now give people chairs that go up and down, frontwards and backwards; but we seldom have lighting that adjusts to variations in people's eyes, and their preferences as to lighting."

Said Howard Brandston: "I mentioned a DOE study earlier. Its first phase is to identify long-term research needs in lighting design—with emphasis on the subjective and productivity-related issues. It is even funded in the new budget, though the DOE has until now funded very objective studies."

Lesley Wheel: "I sit with Howard on the board of the Lighting Research Institute [a nonprofit organization funded by the Lighting Research Education Fund, a program of the Illuminating Engineering Society in New York City], and I have to say I am very disappointed in the quality of the grant requests that come in. What we need most is to establish longer lines of communication through the architectural profession; what we are getting are requests from the academic community that tend to be similar to the requests we might have gotten 10 years ago."

Bob Siegel: "Maybe like a lot of other things it goes back to the schools—to first- and second-year design when students are doing three-dimensional design problems and dealing with space and shape and light. Maybe it's true that as architects we don't know enough about designing with light. If it is true, then we have to go back to the schools and to the whole concept of educating architects. . . ."

Consultant Wheel: "Some architects are not well trained in the use of light—I spoke before about lighting being taught as a building science, not an art. But good architects are remarkably demanding. As a lighting designer, I have to get better year after year because the demands that are made on us are greater each year. We can't get away with mediocre solutions."

Engineer Steiner: "It's clear that many of the panelists at this Round Table spend time teaching. But the most effective laboratory, the best studio, is the world around us. We see good lighting and we see bad

"Lighting is an art supported by a technology."
Lesley Wheel

lighting. We see lighting that is responsive to the visual task at hand, and we see dismal failures. The successful practitioner is the one who sees the spaces that are visual successes and applies what he or she has seen. . . "

The Round Table was asked about new products and new technology that is affecting lighting
Michael Shanus mentioned lamps: "An important advance is the new small metal halides, which are very efficient and have very good color. There is a 150-watt lamp and a 70-watt that is less than the size of a cigarette. Another new lamp that has helped tremendously is the bent fluorescent. Another advance is the T-8 fluorescent [T-8 means it's one inch in diameter], which has good color, is energy efficient, and allows us to perform some neat tricks with reflectors and lenses that were not practical with the larger T-12 lamps. These new lamps, and the upsurge in interest in quality light versus quantity, have resulted in some very nice improvements in the quality of lighting fixtures."

Lesley Wheel added: "In our office we think the T-8 fluorescents are the wave of the future—cheaper to make and cheaper to use.

John Fuchs
Syska & Hennessy, Inc.
New York City

And the new PL lamp is phenomenal—its shape (it looks like a couple of cigarettes stuck together) lets you do a lot of things you can't do with other lamps. For some reason the color is infinitely better than any other fluorescent tube around, and it lets you get more light in a smaller space. This little guy can replace a 60-watt lamp using only 13 watts." And Sheldon Steiner reported that "the PL lamp is being made available in an 18-inch size that consumes 35 watts—and will probably make for a lot fewer two-by-four and one-by-four fluorescents in large ceilings. It's a real technological breakthrough."

Sy Shemitz spoke of the related problem of ballasts: "Yes, the manufacturers have given us the electronic ballast, but they've stuck it in a metal case the same size as the old magnetic ballast. The European manufacturers have done a great deal to miniaturize ballast for both HID and fluorescent lamps. We need that miniaturization in this country. . . ."

Sheldon Steiner on wiring systems: "The real need these days is for flexibility—so we've seen the development of plug-in wiring systems with plug-in lighting, automatic switching and dimming systems, and under-carpet flat wiring. These systems are now within the economic reach of most designers. We need them because we are increasingly confronted with clients who want to be able to change lighting and wiring as their needs change and as occupants need to be moved around the space. We, of course, make economic analyses of alternative systems that take into account initial costs, the frequency of change anticipated, and the cost of change—but what is skewing those analyses these days is the value of not interrupting the occupants of the building. Not long ago most owners were quite willing to allow you to vacate an area for three or four days to put in new wiring and new outlets to suit a new use of the space. These days, so that changes can be made overnight, raised floors are often economically justified, and not just in computer areas."

Engineer John Fuchs on control of lighting: "Microprocessors and building automation devices now allow you to almost modulate the lighting you have in a space. Not new, but being used more and more, are motion-detecting devices that turn the lighting on and off. We're seeing new lenses with prisms on both top and bottom to reduce brightness."

Added Barry Donaldson: "The new microprocessor technology is going to revolutionize lighting control—variable switching can be programmed into any building automation system. So can automated time-clock controls, or local-occupancy sensor controls, or daylight dimming controls. Five years ago, the cost of those systems was very high, but I think we'll

Richard Hayden, AIA
Swanke Hayden Connell Architects
New York City

soon find systems like these in virtually every new large-scale building."

And, added Carl Hillmann: "Very recently, we learned of a new system that lets you turn fixtures on and off, or change their dimmer setting, by sending a low-voltage pulse along the building wiring, instead of using a separate control-wiring system."

Michael Shanus pointed out that "daylighting cannot be cost-effective unless it is linked with a dimming system to cut the use of electric lighting (and the energy usage) for which the daylighting is substituted. So what we need are better dimming systems that can follow daylight more effectively. Many dimming systems will dim from 100 per cent down to 75 per cent or maybe even 50 per cent. We need full-range dimming—to something like 10 per cent—for fluorescents and HID lamps, without changing their color rendition."

But, the Round Table argued, all the good new tools do not guarantee good lighting
Said Howard Brandston: "A good designer is not a mechanic who walks around with a bag of tools. A good designer is someone who understands what is needed and knows where to find the tools needed to accomplish that."

Architect Stephen Lesser: "As an architect, I am more inclined to want to talk about natural light and the cultural issues involved in lighting than about new hardware. But you have to learn about lighting. For a major interior job I used only incandescents—and as a result the space was, well, rather dark. We need to know about the new tools and what they can do. So do our clients. No one is educating them about the new lamps and new controls, and managing these new systems requires training and understanding."

Said engineer John Fuchs: "It's part of our responsibility, and part of the architect's responsibility, to develop in the very early stages of the game some philosophy about managing the building when we designers walk away from it.

"But we need the palette to work with, we need the new tools. A good designer, whether he is an architect or an engineer or a lighting designer, has to make use of whatever technology is available—and even though the lighting business is becoming more and more technical and complex, it behooves us to keep up with the new tools."

Der Scutt: "Keeping up with the new technology is easier talked about than done. As an architect, I take a certain pride in trying to keep abreast of new technology in all areas of building. I am especially interested in lighting, and have been active in the New York lighting community. Yet I just heard about several new developments that I didn't know anything about. What happens to the architect or interior designer out there across the country, who doesn't have a lighting consultant? How do they understand the latest technology? How do they keep up to date? I think we have a real education problem."

Edward Mills agreed, but added "it's not enough to tell us about a product; we have to physically see what it does and how it works and how it will accommodate our particular design."

Paul Marantz sounded what he called "a small nationalistic caution": "It should have come to everyone's attention that almost every technological advancement in light sources that has been mentioned today has come to us from outside this country—mostly from Germany, Holland, and Japan—and it is my great concern

Carl Hillmann, IALD
CHA Design Inc.
New York City

"Most architects begin their study of daylighting with a catalog from a Venetian blind company."
Sy Shemitz

that our domestic lamp companies are losing (or maybe have already lost) their leadership along with their interest in innovation. These new lamps are being developed by market forces, by the need for more efficient lamps with better color."

John Fuchs agreed: "The Europeans and the Japanese are interested in innovation because they want to enter the huge market in this country. The U. S. lamp manufacturers have belatedly understood that they have to compete by producing not just what they have available, but what the market wants and needs."

Said Howard Brandston: "One area where the U. S. manufacturers are taking the lead is in research on incandescent lighting, because of the marvelous new control systems and because most people, when it comes down to it, really prefer incandescent lighting. That's a plus. The U. S. manufacturers are responding because they understand that if they don't the Europeans and the Japanese are going to take over."

Another new technology: computer synthesis of lighting systems

Reported Sheldon Steiner: "We have, working with the Navy, developed an illumination program that permits a designer to determine what the annual energy consumption of his building will be, taking into account the heat gain and loss of windows or other openings in the building to allow for natural daylighting and the effects of switching or dimming the various electric lighting systems in the building. The system allows you to explore alternatives: making windows larger or smaller, installing light shelves, shading devices, reflectors, and so on. Another computer application we are working on is the synthesis of interiors—exploring various lighting schemes by showing how the room would look on a television screen." [See also "The coming breakthrough of computers as a true design tool," RECORD, September 1984, for a detailed report on creating realistic images at Cornell University's Computer Graphics Program.]

Daylighting: how important, how useful, how can it be used, how does it affect us?

Architect Gunnar Birkerts has long championed the effective use of daylight in buildings for reasons of both energy conservation and strong personal preference—notably in his pioneering low-energy building for IBM in Southfield, Michigan and in a number of essentially underground libraries at Cornell and Michigan. Said Birkerts: "My background in daylight is all empirical, largely

Delaine Jones, AIA
Director, Bureau of Codes and Standards
New York State Energy Office
Albany, New York

intuitive. My interest and enthusiasm for daylighting may go back to my childhood, since I was born way up north in Europe, where you count the days of daylight. . . . I believe that if we thought about it, most of us would prefer to perform our tasks under daylight if at all possible—and that electric light is a fallback position we have to deal with since building enclosures cannot provide us with adequate daylight. What we need to explore more fully is the idea that vision [seeing out] and daylighting are really separate issues. Most often we put in glass as one package—for vision *and* admitting light. I believe we should design primarily for daylight—remembering that the source of daylight is the whole sky dome and not necessarily the sun ray that comes into the building. As a matter of fact, we should try to convert the sun ray through reflection, deflection, and diffusion into what you might call a cold ray of light. We don't want direct light coming in—we want reflected, diffused light. An example: At the time I was searching for a concept for the IBM Southfield building, I had occasion to take a long plane trip. As I look back to that design, which has relatively small window area and window sill reflectors that bounce light upwards and deep into the interior, I realize that everything in the building was also in that plane—reflected, diffused light; good backlighting, no glare, high intensity outside with lower brightness inside. The design just happened on that plane. . . .

"You have to think in relatively simple terms about design for effective use of daylight, and design for daylighting from the start—it can't be retrofitted. Do you need special devices—light shelves, reflectors? Sometimes, but they are costly. A three-foot eyebrow over a window can add a lot, say 25 per cent, to the area of building skin. And that affects the arithmetic a lot."

Michael Shanus of Leo A. Daly's San Francisco office spoke about another pioneering experiment in design for daylighting: "The Lockheed building (RECORD, January 1984) is a five-story, 600,000 square-foot building with a 90-foot cross section—and gets effective daylighting all across that 90 feet. Normally, of course, the level of daylighting trails off sharply as you move away from the window wall into the interior—what we did was to manipulate that curve by using a 15-foot-high window with a 12-foot interior light shelf that 'shades' the interior near the wall and bounces light into the interior. We also sloped the ceiling, in effect 'aiming' it at the window, which raised the interior light level by using the ceiling as a reflector element. Daylighting is supplemented by an indirect lighting system that is controlled by dimmers to maintain an ambient light level (combination of daylighting and indirect lighting) of 30 footcandles. This system uses only 0.25 watt per square foot over the year. Of course, we were not trying to get task-level illumination from that system—only general illumination. A task-ambient system is used as needed. We were lucky to have a client which by the very nature of its business always uses mock-ups, so we were able to use models and build a full-scale mock-up as we tried to develop the system. More of this kind of experimentation is essential.

"Part of the problem with enhanced use of daylight has been that the design process has been fragmented, with the mechanical engineer responsible for the mechanical systems, the electrical engineer responsible for the electrical systems, and so on down the line. Each of these individual disciplines tends to try and reduce its system costs—both first cost and energy cost—as much as possible, almost independent of the other factors. Daylighting, of course, requires windows, and a more complex way of looking at the integration of systems—so an interaction of all the engineers and the architect has to occur from day one. Just putting windows into a building doesn't make it daylit—we have to get the daylight deep into the building.

"I must say I agree with Gunnar that people seem to prefer working under daylight. All the other Lockheed campus buildings are lit with two-by-four troffers and very little daylight, and people do seem to prefer the environment of the new building. We're tracking both the performance of the new building and the user response, but at this early stage it's fair to say just that people who have to move out of the new building go kicking and screaming. . . ."

Sy Shemitz questioned the premise of trying to develop more daylighting in a building instead of lighting it by electricity. "Mr. Birkerts, what is it you want, what are you looking for when you urge us all to agree that we would prefer to perform our tasks under daylight? What is the quality of light you want? Define the feeling—and then let us see if daylighting is the only way to obtain that result. Isn't there a way that you could achieve the quality of light you are after without daylight?"

Said Paul Marantz: "I think there are prejudices showing that we might find it useful to get rid of. It's like the common prejudice that incandescent is 'more noble' than fluorescent. We've talked about artificial light and natural light when in fact all the stuff is really light. All of the sources of light

Stephen Lesser
Rivkin/Weisman Architects
New York City

"It is probably no accident that many of us who are lighting designers came out of the theater."
Paul Marantz

have different qualities, but they are all part of the palette and we probably should treat them all as candidates for consideration. It is the capacity of and nature of daylight to be ever-changing that gives us a sense of procession through the day—and that is almost surely its most important quality. The color in the morning is different from the color in the afternoon; cloudy days alternate with clear days; and that is what we like. The deadening nature of a consistent never-changing electric environment is the difference, and maybe we should build into artificial lighting variability and change. The important thing, I think, is to cease putting values on different kinds of light and to begin to think of them as one continuous source."

Der Scutt: "I agree with Paul Marantz's analysis. The notion of daylight in the dawn-to-dusk cycle is

Paul Marantz, IALD
Jules Fisher & Paul Marantz, Inc.
New York City

a very important ingredient in realizing what is otherwise a static luminous environment. So a balance between daylight and an electric light is critical in creating a psychological motivation for the occupant. I remember talking to Lou Kahn and Richard Kelly when they were designing the Kimball Art Museum, and listening to Lou talk about ways to bring daylight into the building, to be able to see the clouds and the changing color of light—and at the same time protect the art. . . ."

Barry Donaldson: "We must remember that daylight is and should be a strong determinant of form, and that is why architects so readily embrace the use of daylight in their buildings."

Edward Mills: "Exactly the point I was going to make—artificial light is a 20th-century phenomenon, and before that architects designed buildings around the techniques for bringing light into the building in a lot of different ways. The old Supreme Court Building in New York is a six-story octagon-shaped building with light courts that bring light and ventilation down four levels.

"It may complicate things for me to argue that natural light is better brought in directly than indirectly—I think it's important to be able to see the actual source of light. When we cut off a light source and bring in daylight indirectly, we create something of a mystery about what the light is, and to me that's artificial lighting."

Delaine Jones: "It seems like a lot of the concepts we're talking about for daylight actually turn it into artificial daylight. Michael Shanus calls the system for bringing daylight deep into the interior of the Lockheed building 'enhanced' daylighting."

Bob Siegel: "I really agree with you. The important thing about daylight is the change through the day and year. When we do an office interior, we start off with a window wall that somebody else has made. It lets in a certain amount of light; but the next wall that's really interesting is the wall between the private office and the corridor or secretarial space—and we have the opportunity to try and bring some sense of what's going on outside through to that point. The next wall is the interior office, and we work hard to continue that sense of the outdoors through to that point. Thinking about daylight and what's happening outside lets us make a lot of interesting design decisions and use a lot of interesting materials—we can use frosted glass and glass block and transom glass and doors that don't go full height or aren't solid—because we are trying to relate to daylight. We talk to clients about light a great deal, and this arsenal of materials and techniques makes the design of interiors very special."

Howard Brandston: "Bob has been talking about using daylight without necessarily being able to see outside. Gunnar very carefully made a distinction between light

Edward Mills, AIA
Voorsanger & Mills Associates
New York City

and vision—the ability to see out. We've done a lot of lighting with daylight—by managing to cut a couple of holes, or build shelves, or hold back walls—so that you have daylight but may have to go and discover that indeed it is daylight that is putting light into the space."

Architect Richard Hayden: "I would like to change the subject from office buildings to chicken coops. If you were born in a chicken coop, you would think the day was 18 hours long instead of 24—because there are no windows and the farmer controls the light to increase your production. But most of us were born and brought up in a more natural environment—and I think 90 per cent of what we are trying to do with daylight is keep one arm out holding onto a tree as we sit in our million-square-foot office building."

Peter Coan: "I was just thinking about our concern with quality, not just quality of light but quality of life. And when so many of my clients say 'I don't want any more fluorescent lights,' they are saying 'I want this space to be warmer, more friendly.' They are saying 'I want more quality in my life.' "

John Fuchs: "It's very tough to argue about motherhood, apple pie, or daylighting. The problem with daylight is that it's unpredictable. We just plain need artificial light to supplement this wonderful quality that's coming in through the windows—part of the time."

The Round Table then switched to task-ambient lighting—what went right, and what didn't

Sy Shemitz, one of the pioneers of the task-ambient concept, began by defining it: "Task light is something that is directed toward the task. Ambient light is light that fills the environment to break down the contrast between task and surround. Task-ambient, as they defined it years ago, was a single source, one lamp, that lit up both the ceiling and the work table.

"Something has happened to task-ambient lighting. It's grown, it's done well, it commands a fair chunk of the marketplace—but it's been fouled up by some very poor practitioners, it's been misapplied. It was conceived of as an energy-conserving and very humane kind of lighting that would create a very pleasant environment for workers. Mostly what went wrong was that too many furniture people tried to sell themselves as lighting people and made all the mistakes that the ceiling people made in selling themselves as lighting people. It doesn't work to hang kitchen cabinet strips under the cabinets and turn troffers upside down on top of the cabinets. It doesn't work to take a HID source and aim it at the ceiling, creating the same kinds of brightness on the ceiling that we used to have with bare lamp strips. There are some jobs that are good—very pleasant, very successful. But good systems have to be designed—not just bought like pieces of furniture with a lot of optional add-ons."

Barry Donaldson: "What's important in the design of any task-ambient system is, again, the coordination of the designers involved—the architect, the lighting designer, the interior designer, and the furniture designer. It's not uncommon for a lighting designer (or furniture designer) to design a very good task-ambient system assuming certain wall and ceiling and floor reflectances and then for the interior designer to come in with charcoal gray finishes that soak up all the ambient light."

Bob Siegel: "If you think back to the apartments of the 1930s, they had no built-in lighting except maybe in the bathrooms; they had handsome lamps with nice shades on them and the rooms were well lit and warm and relaxed and human—

James Nuckolls, IALD
Incorporated Consultants Ltd.
New York City

"The competence is the same today as it was many years ago. What is different is the incredible explosion of technological capability that is available to us."
Richard Hayden

which seems a very sane way to make light. Most of the systems furniture doesn't let you see the source of the light; it's buried in something; it has no visual quality. We've lost something in the work environment that we have in the great library reading rooms—where there's a series of tables with table lamps on them that give you plenty of light to read by but also create a wonderful light in the room. You can take the same space and have the tables with no reading lights and then deliver light to read by and to brighten the room in some much more complicated and less pleasant way."

Lesley Wheel: "What's important is not this system or that system, but the concept itself. The concept is that the task be lighted to a higher level of light than the ambient, the surroundings. That requires that the majority of the light be on the task and that the ambient light perform a secondary role in controlling contrast. Those are important ideas, developed directly from the energy-conservation movement, that we should not lose sight of."

Richard Hayden: "Agreed. A wonderful thing has happened since Sy coined those words 'task-ambient lighting'—architects began to pay attention to lighting in a way they never did before. Most office-building architects didn't even have lighting in their contract with the developer; someone else came in and put in the two-by-fours and that was the end of it. Task-ambient lighting has seen a revolution and the systems, good and bad, have certainly heightened everyone's interest, and a lot of good has to come from that."

Carl Hillmann: "We need to remember that the essence of Sy's concept was to put focused light on the task and also create a background amount of light with the same source—that's where the economy comes in, that's what saves energy. Furniture systems that don't combine the task and ambient lighting from one source, but instead have one source of light going up and one source going down to the task, dilute a very good idea and put economy and energy conservation out the window. The major emphasis on using task-ambient lighting is, we find, in offices where there is a heavy use of computers, where fixed bright sources in the ceiling cause problems of glare at the screen."

The Round Table then focused on the effects of lighting on people—and on productivity

Paul Marantz: "I am not an expert on the question of measured productivity, so I can only use my intelligence to say that the more interesting, varied, and variable environment would certainly seem to provide the greatest amount of productivity. It is really an architectural problem to make an environment that is efficient and engaging, pleasant and humane."

Barry Donaldson: "Productivity is clearly going to become more and more of an issue, particularly in office building design. There have been a number of studies that clearly document the relationship between lighting and productivity—with results like a 30 to 40 per cent decrease in productivity of the typing pool when offices were delamped for energy conservation.

Der Scutt, AIA
Der Scutt Architect
New York City

When the offices were relamped, productivity went right back up to previous levels."

Stephen Lesser: "The question really is: Does that have anything to do with the lighting? It may just have been the workers took the delamping as something being withdrawn, taken away; and in the impoverished environments of so many offices, if all you've got is lighting and it's taken away, that's the issue, not whether or not the lighting is better. There is so much more in an environmental design that bears upon whether or not people are comfortable—and, I suppose, productive."

Lesley Wheel: "I've read that productivity goes up at least temporarily almost whatever you change, in a kind of boredom factor. But I think these changes in productivity are far from scientifically proved in any direction. I'd love to be convinced, but I'm still a skeptic.

Delaine Jones: "I too would like to be convinced. I think the delamping/relamping study that Barry mentioned, which was conducted by the GSA, stopped too soon. It needed to go on to a complete redesign of that lighting system—reduced over-all lighting but more light on the work." Added Jim Nuckolls: "Even with a new system you don't get the productivity because the worker's perceptions will be that the new system is 'dark' compared to an old office bright with general illumination. You have to explain what task-ambient is all about, and about the comforts of their new chair which adjusts every which way, and all of the other new wonders."

Sheldon Steiner observed that "in jails, a measure of productivity is how quiet the inmates are from day to day. We've found that if you give inmates an opportunity to control the light within their own environment—perhaps just a switch to turn off the light in their cell and perhaps get a second level of illumination for shaving or writing, they respond favorably."

Added John Nuckolls: "Theater lighting has always been used in a most direct way to affect people—and for very precise periods of time; making them laugh in the first act and cry in the second act. There are rules that have been developed in the theater for accomplishing those emotions; maybe they are transferable to architecture."

Stephen Lesser: "The trouble with all the 'scientific' studies about lighting is that every person brings into 'the laboratory' different experience, behavior patterns, likes and dislikes—all of which have a tremendous influence on the results. All of us here are interested in doing better lighting; but let's not put a burden on lighting systems that they cannot bear."

Howard Brandston: "I want to get back to what Paul Marantz said at the beginning of this conversation: He said he was not an expert on productivity, but believed that what's important is a sense of people liking where they are. I submit that we should never make the mistake of first designing for the task. We should light the spaces for people, and then see if we need extra light for the task."

Lesley Wheel: "Agree. The design process, the lighting design process by which most of us tackle our projects, is to make a pleasant space and then see if you have

Michael Shanus, P.E.
Leo A. Daly
San Francisco, California

enough light to see by. It takes a lot less light that way. . . ."

And that concept, argued Howard Brandston, is especially important for people working with computers: "We keep forgetting that we are dealing with the quality of life of human beings. These are not robots trained to do this stuff. People in special computer rooms tend to 'burn out'; they need to be in spaces like everyone else where they can look out and see the green, get the daylight, watch the day pass, get a little bit of human nourishment. We can solve the problems of glare on screens."

Sy Shemitz agreed: "If you can balance the environment properly, you make a very pleasant environment in which to work on a computer—an environment in which people don't 'burn out,' complain of glare or headaches, or take 20-minute breaks to rest their eyes. What you need is to use a screen with a brightness that is comparable or comfortable with its surround; light the wall behind the screen, and the work surface to a pleasant balanced brightness relationship to the screen. We try to deal with the whole environment, and it works. . . ."

"The concern for energy conservation gave us both great opportunities—and grand excuses for bad design."
Delaine Jones

Sylvan Shemitz, FIES
Sylvan R. Shemitz and Associates, Inc.
West Haven, Connecticut

Question to the Round Table: Can good lighting be taught, or is it intuitive?
Paul Marantz: "I think the answer is yes to all of the above, but that the most important way to learn good lighting is to practice, practice, practice. It is only from experience that you can sharpen your skill. It is probably no accident that many of us who are lighting designers came out of the theater—where you get to try new lighting designs on a frequent basis (compared with buildings) and quickly get a sense of lighting in your fingertips—if you pay attention to what's happening, and not happening, all the time."

Der Scutt: "I wouldn't discount the intuitive skills of the better designers. Drafting can be taught, but you can't necessarily teach someone to draw. . . ."

Howard Brandston: "Teaching across the country has been uneven. The Illuminating Engineering Society has programmed a workshop for teachers of lighting, with emphasis not on how to teach it, but on what makes good lighting. There has got to be a really interactive approach between those who teach and those who practice and those who create products. . . ."

Richard Hayden: "I think we can go back to basics—that a good design is a good design, and a talented designer will probably do better designs than one less talented. But there are good courses available. My guess is the competence is the same today as it was 20 years ago. What is different is the incredible explosion of technological capability that is available to us. . . ."

Jim Nuckolls: "But the question is, can lighting be taught? I'm not sure it can be taught, but the skills of lighting can certainly be developed, and at Parsons we are attempting to do just that. We spend a lot of hours on a course specifically for architects and interior designers. But why isn't this kind of training available at the architecture schools?"

Answered Sy Shemitz: "It is at Yale, but apparently not for the same number of hours you are spending at Parsons. We don't talk about calculation and appropriate footcandles—we talk about lighting as a design tool; we try to stimulate the students to think in terms of what a space should feel like, how it should look; where the light falls and where there are shadows, where there are highlights and where there is sparkle. I think it's been a very successful program, ending with a model-building project in which the students work with miniature lamps and low-voltage transformers to light a space with several alternative schemes. It gives them a chance to develop their thinking about space and how light works with space. I wish more schools were doing it."

Jim Nuckolls: "Clearly more schools of architecture need to offer lighting as a strong part of their curriculum."

Architects, lighting designers, and engineers working together: the problem is communication
Said Bob Siegel: "I like working with my lighting consultant, who happens to be Carl Hillmann. I don't find it in any way adversarial. The best way for the architect to work with the lighting consultant is to describe his general intention about a space, where the natural light is coming in, how light could enliven what I hope will be a dynamic space. We try for one-of-a-kind design solutions, and hope for one-of-a-kind lighting solutions.

"It's really fun when you can control the roof profile and the ceiling height and the section of the roof, so that you are combining natural light with artificial light."

Der Scutt: "I have to say that I think engineers are responsible for a lot of the bad lighting in this country. In large-scale office buildings they tend to specify fixtures without really paying attention to what the program is going to be, who the occupants are going to be. In all fairness, they may not know because the client doesn't know. But the real danger comes when that same engineer is called on to design lighting for the kind of job Bob Siegel is talking about. They do not seem to have the technical expertise to do really good lighting. . . ."

Michael Shanus: "As both an architect and an engineer, I can sympathize with what Der Scutt is saying, while not liking to hear it. It is true that on most large-scale projects, the lighting of space is the job of an electrical engineer. The engineer is taught lighting in

Robert Siegel, AIA
Gwathmey Siegel & Associates
New York City

school, he is taught the rules and the calculations; but he usually doesn't have the architectural training to give him an awareness of the impact he is creating on the space. He doesn't have the training to visualize the space and instead, too often, relies on the numbers. So either we have to teach more of the lighting nuts and bolts in architecture school, or teach more about the impact of sensitive lighting in engineering school."

But, said architect Ed Mills: "If we as architects, working with either a lighting designer or an electrical engineer, can't work out a decent lighting system, it is *our* fault."

Lighting consultant Howard Brandston: "I think for a while that the engineers lost credibility because they took rules out of books—it says so in the book, so it must be right. They never applied their eyes or their thinking to the lighting problem at hand. I think today we're seeing an important change. More and more architects are using lighting consultants and really insisting that we work with engineers. I think there has to be a new sense of working together to do the best job, develop a better team spirit—even if that means letting some of the barriers down and some of our egos down a little bit and just getting to work."

Paul Marantz: "As a lighting designer, I'd like to talk about the frustrations of working with architects. One is the very extraordinary pressure of time. What used to be a six-month job now must be done in three months, or two months, or one month. The architect is subject to the same pressure of course, the pressure of money, but it seems to me that at some point we (and the architects) reach an irreducible minimum beyond which we cannot do any original thinking, cannot engage in a creative dialogue, but instead must use out-of-the-drawer solutions, which is not what we came here to talk about. . . .

"My second wish is that more architects could find the language to express what they want in terms of lighting, instead of just handing us a set of drawings and saying, 'Light it.' "

In an end-of-the-day round robin, the panelists offered some fascinating final thoughts
Jim Nuckolls began: "The best thing about being a lighting designer is being truly part of the design team—when you feel what you have to say is being listened to, when there is real give and take between consultant and architect. The worst thing about being a lighting designer is the frequency with which you are told you must solve the problem quickly—which often means the primary reason for being hired is to take the blame for a lot of conditions that were absolutely impossible to start with. Another negative: The number of times the specs for the lighting system get sent to everyone but never seem to get issued by the architect or interior designer, so that when you look at the final job you realize that none of the installed details has anything to do with what you originally designed. Another positive: The number of projects you can get involved with. We bill out about 70 projects a month, which means we get to see more architecture than most architects."

Gunnar Birkerts: "Except on jobs like theater design or museum design, it's often difficult to convince the client to come up with a separate fee for lighting. We

"I think we all owe it to ourselves to try and slow things down just a bit in order to accomplish better work."
Stephen Lesser

often negotiate with the electrical engineer to drop the design aspect of his work and devote that to the lighting consultant. The only alternative is to take the lighting designer's fee off the top of the architectural fee, and that of course is not ideal. . . ."

Howard Brandston: "Fee justification is an amazingly difficult thing. Some of my architect clients have alleged that I make more money, not just than they do, but than their lawyers do. But because the scope of our work is so small, the lighting designer's fee is really a minute amount of money in the cost of most buildings. What we bring to the job, since our scope of work is so small and we work on so many projects, is the opportunity to see a lot of different solutions and a lot of building materials and a lot of building systems—in short, to get a wonderful sense of problems on a wide variety of building types. In my years of practice, we have done well over 1,000 projects ranging from space shuttles to subterranean hideouts, with a lot of office buildings and hospitals and museums in between. Since we are expected to know so much about buildings so that we can solve the lighting design problems, I would hope that lighting would get a little higher priority in the training and continuing education of architects—

Sheldon Steiner, IALD
Flack + Kurtz
New York City

if only so that we can speak with a common vocabulary."

Peter Coan: "What I find remarkable about lighting designers is how they can tune in to so many different styles and ways of thinking. I basically do my own lighting, and then bring in a lighting designer to help me, check things out, ask them 'Does it work?' I think I know how it's going to feel, but I need to make sure that the lighting is really going to work."

Barry Donaldson: "My final thought is simply that the best lighting designs are those where the architect, the lighting designer, and the engineer work very closely together from the very start of the project. I also believe that owners in general are becoming smarter and more demanding than they used to be, and that the kinds of smarts and demands that they are imposing on the design community are creating better buildings. . . ."

John Fuchs: "What I find gratifying is that we are having this dialogue here today. This kind of meeting would have been unheard of 10 years ago. Lighting consultants, lighting designers, electrical engineers, whatever we want to be called, were not long ago treated as a necessary evil to provide a service. Today, with the explosion of technical goodies that are available to all of us, I think more architects are going to see the worth of, the value of, good lighting design. And I hope the next phase of this developing relationship is going to be the architect's ability to actually define what he wants from us. That would make our design process much simpler, better, and more direct than being asked, as we are now, for a half-dozen solutions—almost a shopping list of things for the architect to pick and choose from."

Richard Hayden: "As architects, we are persuaded that the project will be better if we can bring the lighting designers into the design team. We must have, at the moment, at least a half-dozen good lighting designers working with us on various projects, and their value has been proven and will continue to be proven."

Carl Hillmann: "There is a difference between lighting design and lighting consultation. This gets back to process. We lighting designers like to think we have an influence on design at the formative stage instead of coming in later when most of the decisions are made. We like to consider ourselves as part of the process of shaping a building. I find that as often as I try to be in that position, as often as not I am not; I am thought of more as a consultant, after the building is pretty well defined, to come up with a lighting solution. So part of our problem as lighting designers is to try and expand our bar on the PERT chart so we can get in earlier and make a contribution at the early stage when our contribution is most needed."

Delaine Jones: "It's clear that one of the triggers that brought us together, and guided a lot of our discussion, was the concern for energy conservation that began to surface only 15 years ago. It gave us both grand opportunities and grand excuses for bad design. Only when you begin to design with the kind of limits the energy problem imposed do you understand the level of skills we have. The need for energy conservation also caused the explosion of technology that we've talked about today, and caused the return to thinking about lighting problems in a way that we haven't thought for the last 25 years. We're looking again to explore the oldest design techniques—like daylighting—and seeing how they work in the context of today's newest technologies. What we must avoid is letting new technologies lead us into bad lighting—as the introduction of fluorescent lighting did 25 years ago. It was an important breakthrough, but it led to 25 years of bad lighting design."

Stephen Lesser: "An architect really has to have a lighting concept before he can ask much of a lighting designer. He must be able to convey, to communicate, what he wants in terms that both understand in the same way. The other serious problem is time. It takes time for architects, and for lighting designers, to do the job well. I think there is no substitute for time to consider, and then to reconsider, a design. I think we all owe it to ourselves, as part of our culture, to try and slow things down just a bit in order to accomplish better work. That is the only way we will achieve it."

Paul Marantz: "It seems reasonable to argue that architecture is fundamentally a visual medium, that light and architecture are one thing, and that if the architect had the time and the patience to become knowledgeable about all that technology we lighting designers are stuck with, he would do lighting design himself. However, that doesn't happen because, as Stephen Lesser just said, everything is running too fast. It has become clear to me that our best work is done for architects for whom we have done work over and over again for years and years until we are thinking in harmony based on long experience and repetition of practice. Only by working together on that basis can we fine-tune the results we all hope for."

Michael Shanus: "We've heard in the course of the day about a lot of buildings that relied on daylight as a form giver, and that's what made those buildings special. Then we switched to almost-all-artificial light, to a totally controlled environment, where the architects did not need to deal with changing light. What I am hoping for is a return to the use of daylight in conjunction with artificial light—that combination can be made to work and to pay off on the bottom line."

Bob Siegel: "We find that the more we know about a problem, the better we seem to be able to solve it, and I think therefore that it is

Lesley Wheel, IALD
Wheel Gersztoff Associates
New York City

important for us to be working with a lighting consultant who has great technical skills—it's the only way to keep up to speed."

Lesley Wheel: "Lighting should evolve so organically from the building design that maybe we shouldn't have lighting designers. But here we are, and here is the need, and the best thing we can do is to try to see and experience the building the way the architect does. We try to make our vision the vision of the architect. And that is enormously challenging and exciting work."

Der Scutt had the final word: "Light is the shaper of architecture. Lighting is the definer of space. Lighting will either enhance the architectural environment, or offer up only a mundane and static ambience. Lighting should be made to stimulate and motivate the occupant, be it for comfort or performance. Architecture can be made more magnificent with the correct use of light." Which is a pretty good goal to shoot for, and a pretty good way to close a Round Table. *W. W.*

New products

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Not the same old thing
When Lorry Parks and Thomas Lear Grace started their Dallas-based furniture business almost two years ago, it was, in part, because they had difficulty getting hold of the Memphis-Milano line. Although the Memphis rage had spread from continent to continent, the products were barely making it beyond the Eastern Seaboard, and were trickling to the Southwest at a rate that was altogether unsatisfactory to Parks and Grace. So, with a little help from a few Italian connections, Grace Designs was founded.

Last July Grace Designs opened a show room designed by Memphis guru Ettore Sottsass himself. In addition to showing his line, the company has been featuring the work of lesser-known, American designers—including Thomas Lear Grace.

Grace's *Lorry* chair—named for his partner—began with "the idea of representing a psychological moment." Such an approach is fitting for a young company that positions itself at odds with an imaginary nemesis named "Same Old Thing and Associates." According to the designer, the chair represents a state of suspended animation achieved through contrasts: the collision of vertical and horizontal, linear and curvilinear, surface and volume.

A black square, which Grace describes as "an isolation of a piece of space," is the chair's base (and *basis*). When viewed in profile, the black square is the chair's central mass; viewed straight on, it is, in effect, a black stripe and the flip side to the void band of the backrest. The square and the seat are made of maple, and the back is formed from birch. The chair is available in a natural finish or in three color combinations.

The *Lorry* is more than the sum of its parts. It is a construction that seems in the process of a "semantic breakdown," since each piece has its own color and form. For Grace, the "idea of representing a psychological moment" is best achieved through the use of "extreme psychological colors"—i.e., the yellow back, green seat, and pink support triangles of *Land*; the pink back, green seat, and blue support triangles of *Sea*; and the steel blue back, mauve seat, and yellow support triangles of *Sky* (see photos.) Yet Grace blithely asserts that these not-so-natural colors are extreme only if they perform in the neutral ground of "Same Old Thing and Associates." *K. D. S.*
Grace Designs, Dallas.
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Brian Coats photos

Part of a family

Halo Lighting has developed a new line of incandescent, HID, and low-voltage lighting fixtures. Two years of discussion with architects, interior designers, and lighting consultants convinced the company that there was a need for a comprehensive line of lighting fixtures for commercial applications designed to relate visually and functionally. To meet this need, Halo is introducing a full line of coordinated fixtures equipped with standard features, including:

- A housing with a 1 1/2-in.-deep mounting frame to accommodate thicker ceiling materials;
- A one-piece die-cast aluminum socket cap that permits repositioning of the lamp by hand;
- Adjustable bar hangers;
- A mounting bracket with an adjustment span of up to 5 in.;
- A prewired feed-through junction box; and
- A die-cast aluminum plaster frame.

To help specifiers select the appropriate lighting fixtures, Halo has created a slide rule guide (above, right) that enables the user to coordinate incandescent or HID fixtures with downlight, wall washer, low-profile, adjustable, and surface-mounted fixtures. When the guide bar is set to the selected aperture, trim, and lamp group, the slide rule displays the recommended housing, trim, and wattage of the coordinated family.

The new product line and the slide rule guide with supplemental product literature are the first phase of Halo's move into the commercial market. The company expects to release several additions to the line in the near future. Halo Lighting, Div. of McGraw-Edison Co., Elk Grove Village, Ill.

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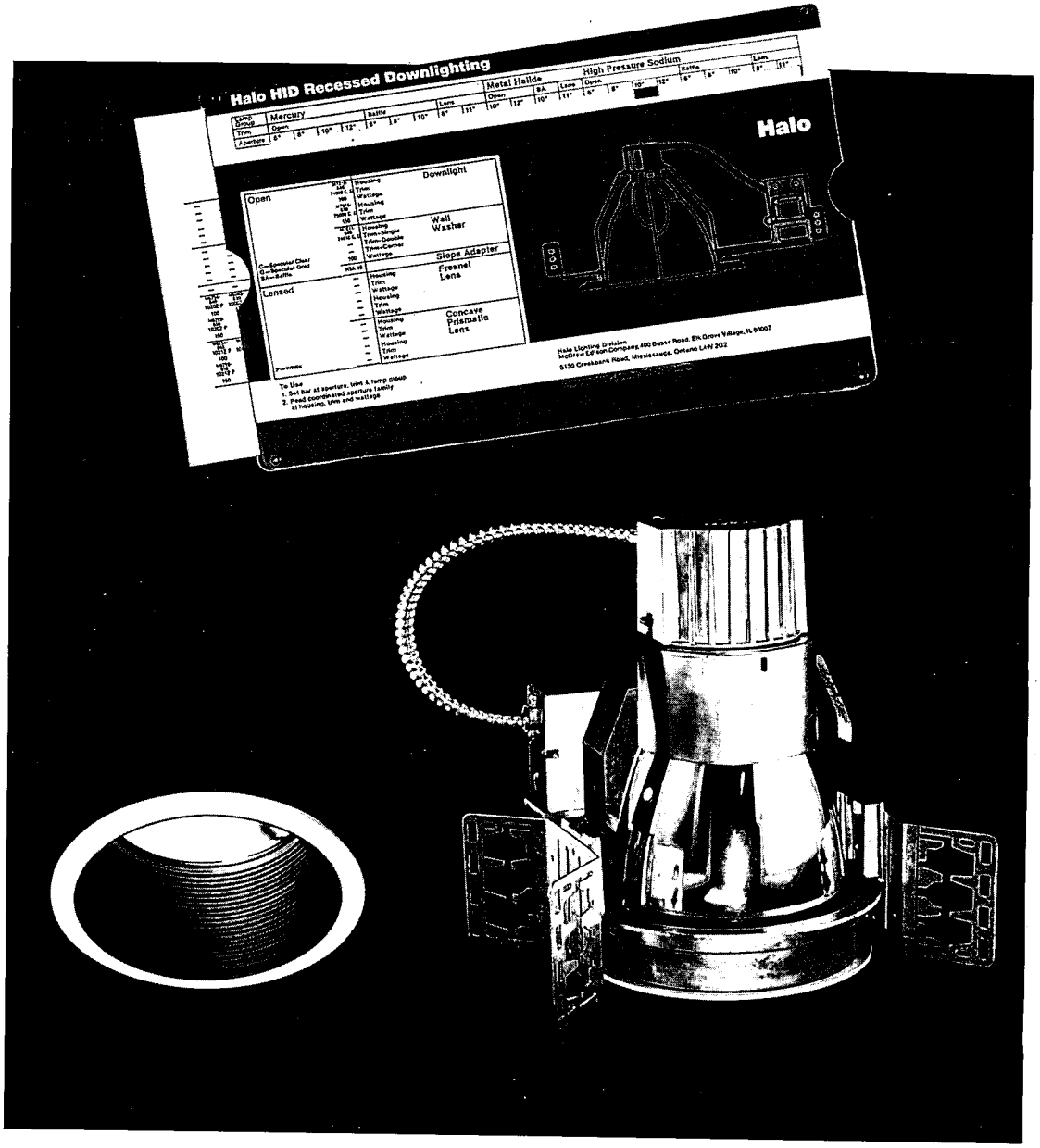

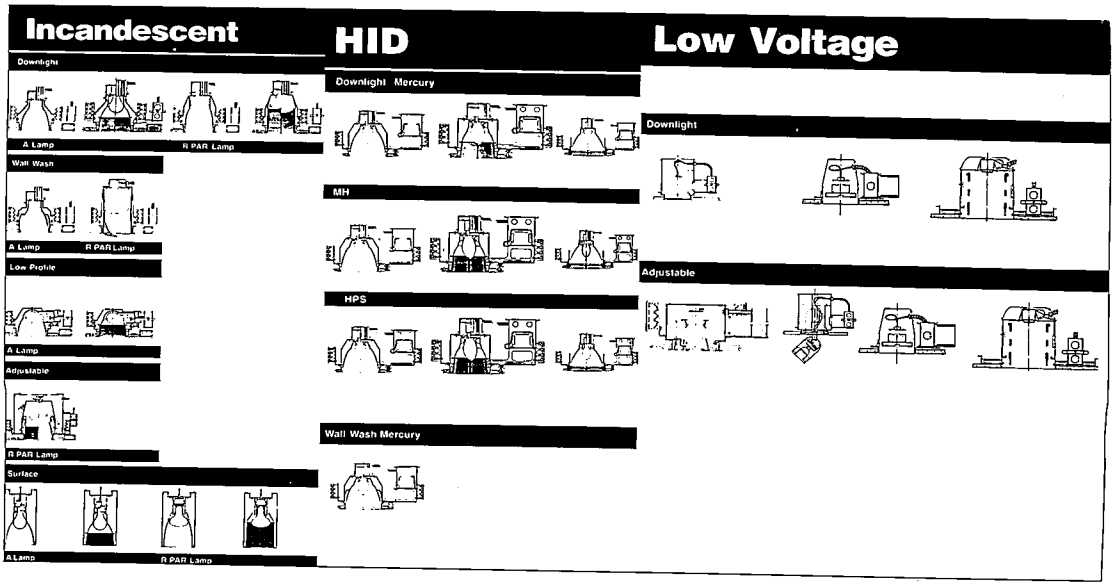

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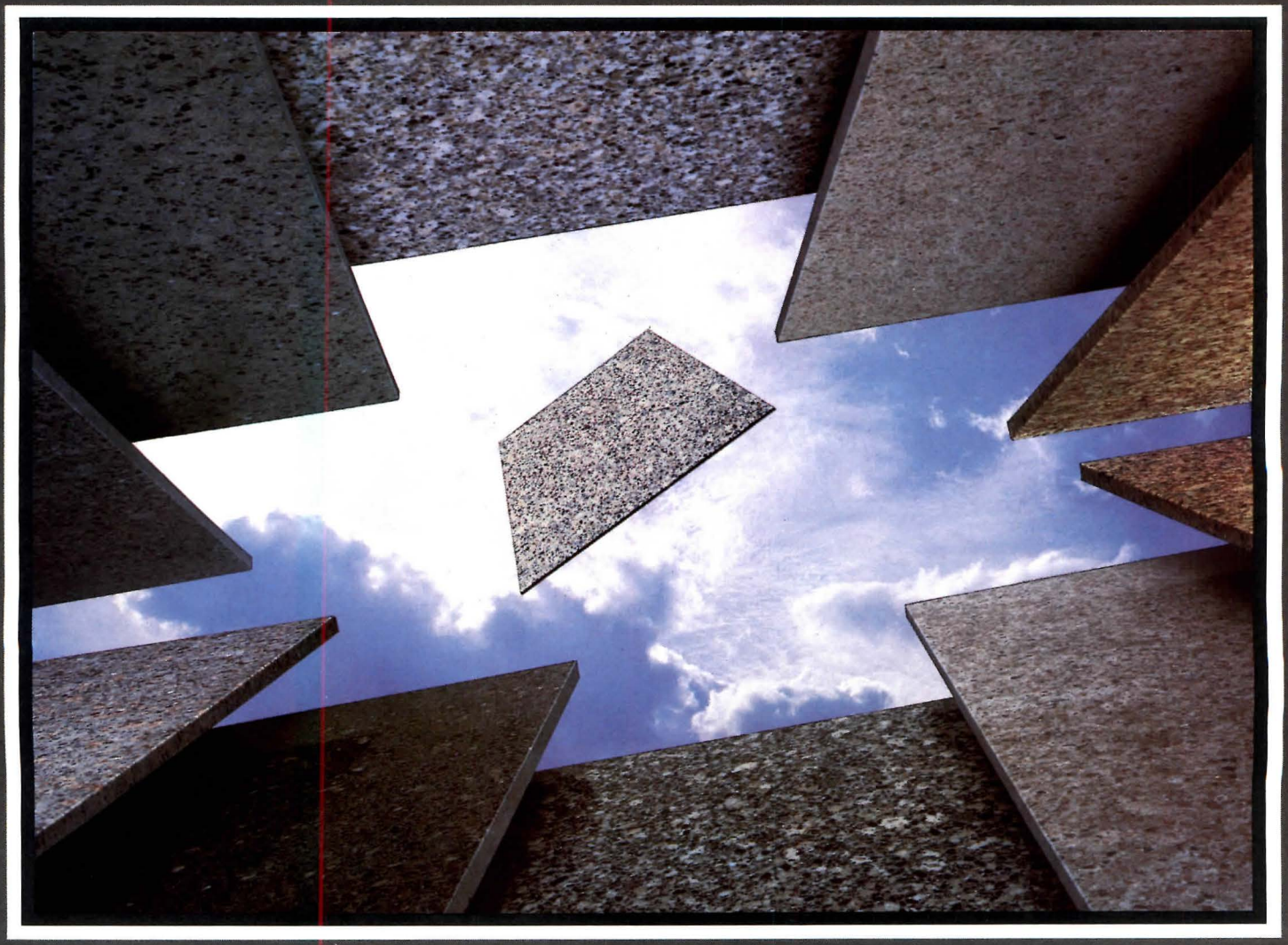

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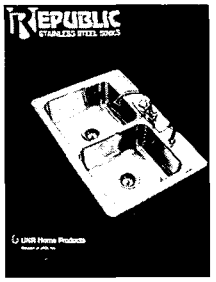

Sinks
A new 12-page catalog features the manufacturer's expanded line of 18- and 20-gauge stainless steel sinks, available with depths of up to 8 in. Scale drawings of each model are included in the literature. UNR Republic Stainless Steel Sinks, Paris, Ill.
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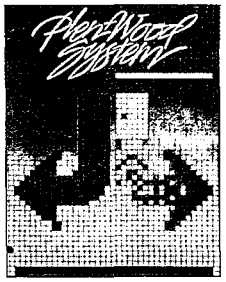
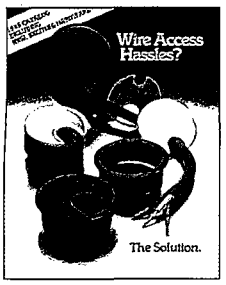
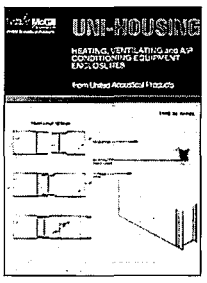
Window extrusions
The manufacturer's vinyl window extrusions are featured in a 6-page color brochure. The strength, stability, thermal efficiency, and dimensional precision of the lineal extrusions are reviewed in the literature. Vekaplast, USA, Zelienople, Pa.
Circle 401 on reader service card



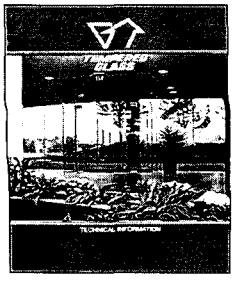
Underfloor heating and cooling
The *Plen-Wood* heating and cooling system is featured in a 36-page color brochure. The system uses the underfloor space as a sealed plenum chamber from which warm or cool air is distributed by a downflow furnace through floor registers to the rooms above. American Plywood Association, Tacoma, Wash.
Circle 402 on reader service card



Grommets
A 12-page color brochure features the manufacturer's line of round, rectangular, and oval cord-access grommets made of plastic, aluminum, plated steel, wood, and solid brass. Dimensions of each model and available finishes are listed. Doug Mockett & Co., Inc., Manhattan Beach, Calif.
Circle 403 on reader service card



HVAC enclosures
Uni-Housing enclosures for hvac equipment are featured in an 18-page brochure. The thermal and acoustical performance of the panels, which can be assembled on the job site, are reviewed in the literature. Diagrams showing recommended installation sequences are included. United McGill Corp., Groveport, Ohio.
Circle 404 on reader service card



Tempered glass
An 8-page color brochure reviews the manufacturing process and the strength and safety of tempered glass. The brochure also contains a section on reference materials, including sources of specifications, standards, and building codes. Glass Tempering Association, Topeka, Kansas.
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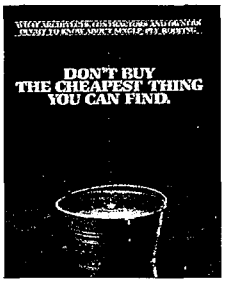
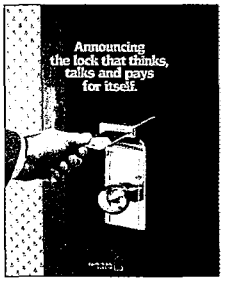
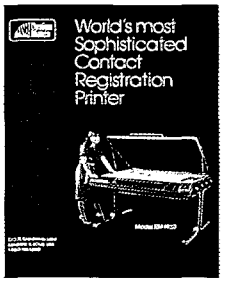


Single-ply roofing
Alphagard, the manufacturer's polyisobutylene single-ply roofing material, is featured in a 4-page brochure. The material, which requires no ballast, fasteners, or seam adhesives, is said to be easier to install and maintain and to last longer than other single-ply roofing materials. AGR Co., Charlotte, N. C.
Circle 406 on reader service card

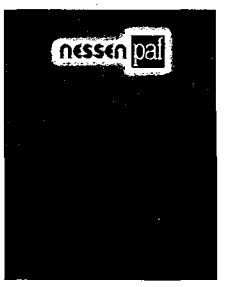
Custom-built bridges
A line of custom-built pedestrian and single-lane vehicular bridges is featured in an 8-page color brochure. Several models made of self-weathering steel and painted steel with wood, steel, and concrete decks are shown. Specifications on foundations and finishes are included. Continental Custom Bridge Co., Alexandria, Minn.
Circle 407 on reader service card



Electronic locking system
A 4-page color brochure reviews the eight independent keycard access levels of the computer-controlled *Saflok* electronic door locking system. Additional system components, including a printer that records all transactions, are described in the literature. Computerized Security Systems, Inc., Troy, Mich.
Circle 408 on reader service card



Contact registration printer
The manufacturer's model *RM 1920* contact registration printer is described in a 4-page color brochure. Features of the printer, including user- or automatic-control of the lighting and vacuum systems and automatic reset to previous exposure settings, are reviewed in the literature. Design Mates, Lombard, Ill.
Circle 409 on reader service card



Lamps
A 12-page color catalog features the manufacturer's new line of Italian-designed lamps made of blown glass, ceramic, and solid brass. A selection of table and floor lamps, torchères, and wall sconces is shown in the literature. Nessen Lamps Inc., Bronx, N. Y.
Circle 410 on reader service card

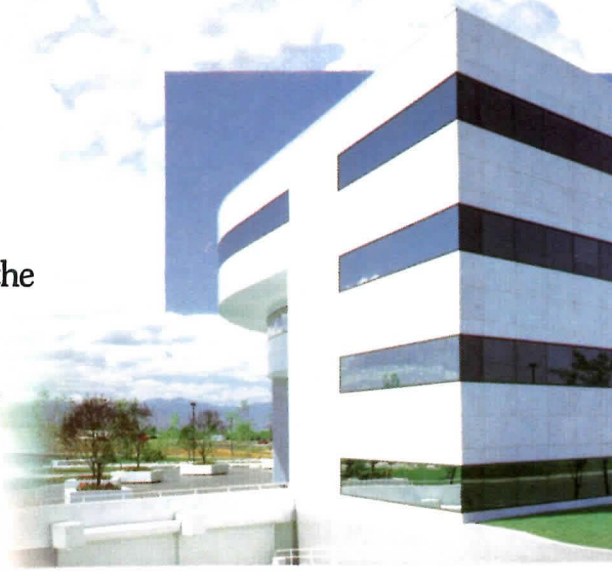
Concrete paving
Bomanite cast-in-place patterned concrete slab and *Bomacron* colored, imprinted concrete are featured in a 4-page brochure. Color photographs show interior and exterior applications of both systems, including an example of the new "Riverside Slate" pattern. Bomanite Corp., Palo Alto, Calif.
Circle 411 on reader service card
Continued

The right glazing system.

For all the right reasons, EFG® exterior flush glazing systems from PPG are right.

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.



The right glazing system uses the right glass. We'd like you to know more about the outstanding flexibility of EFG systems from PPG. Look us up in Sweet's: 8.26a/Pp and 8.1/Pp. Or, to receive details on the EFG systems shown here, write us:

PPG Industries, Inc.
Glass Group Advertising, One PPG Place
Pittsburgh, PA 15272.

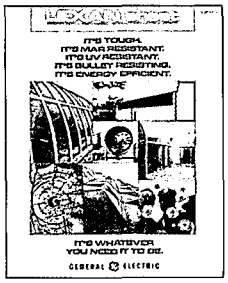
The right glass. The right support.
Right to the last detail.

PPG

Circle 109 on inquiry card

Product literature *continued*

For more information, circle item numbers on Reader Service Card



Sheet glazing
A 20-page color catalog features three new products, including *Lexan Extended Life Glazing* for ultraviolet-intensive applications, *Lexan Thermoclear* profiled sheets, and standard *Lexan* sheets for outdoor signs. Transmission levels and impact resistance are reviewed. General Electric Co., Plastics Group, Pittsfield, Mass.
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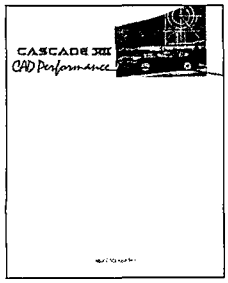
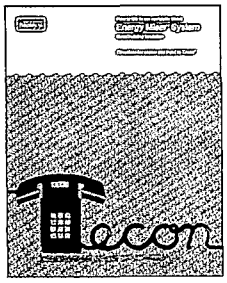


CAD system
The manufacturer's new *Cascade VII* CAD system, which is said to operate faster than standard systems, is featured in a 4-page color brochure. Components of the system, including dual monitors, a tablet, a stylus, a 10-megabyte hard disk, and 5 1/4-in. floppy disk drive, are reviewed. Cascade Graphics Development, Santa Ana, Calif.
Circle 413 on reader service card



Insulation
The *Tecon* "talking computer" program, which supplies calculated insulation thicknesses, annual energy savings, and payback data in response to user inquiry by Touchtone telephone, is described in an 8-page brochure. A sample of the *Tecon* worksheet is included in the literature. Owens-Corning Fiberglas Corp., Toledo.
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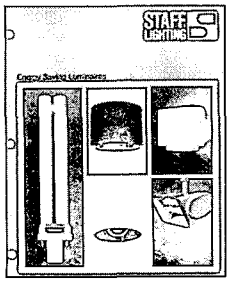

Lighting fixtures
The manufacturer's line of compact fluorescent lamps is featured in a 6-page color brochure. The lumen output, life, and energy costs of fluorescent and incandescent bulbs are compared in the literature. Photographs showing available models are included. Staff Lighting, Highland, N. Y.
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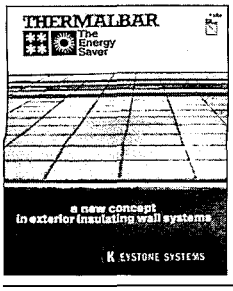
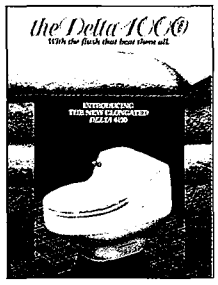


Insulating wall panels
Thermalbar exterior insulating wall systems for new or retrofit projects are featured in an 8-page color brochure. Properties of the panels, which are available in 150 colored aggregate facings and with R values of up to 16.8, and of the thermal insulating backer board are reviewed. Keystone Systems Inc., Chester, Conn.
Circle 416 on reader service card

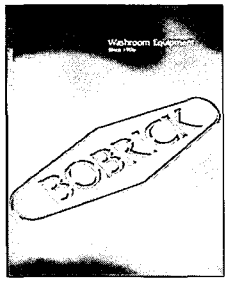
Appliances
A 16-page color catalog includes new additions to the manufacturer's several product lines. Refrigerator-freezers, gas and electric ranges, range vent hoods, dishwashers and disposers, washers, dryers, and room air conditioners are shown. White-Westinghouse Appliance Co., Pittsburgh.
Circle 417 on reader service card

Blinds
A 44-page color catalog reviews the manufacturer's line of horizontal and vertical blinds, interior and exterior shading systems, and awnings. Shading coefficients and additional energy data are provided. Manually operated and motorized blinds are shown. Levolor Lorentzen, Inc., Lyndhurst, N. J.
Circle 418 on reader service card

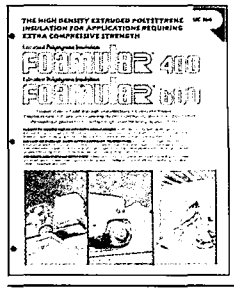


Toilets
Delta 4000 and *4001* toilets are featured in a 6-page color brochure. Both units are made from *Azurelite*, a china-like product that is said to be lightweight and chip-resistant. Both models come with the manufacturer's trip-lever flush mechanism. Delta Faucet Co., Indianapolis, Ind.
Circle 419 on reader service card

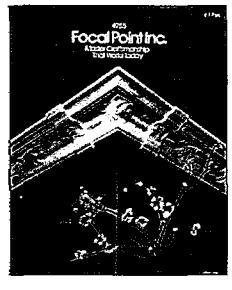
Structural bearing pads
Bearing pad failure as a result of low-quality elastomers and excessive non-uniform loading on the pads is reviewed in a 60-page guide. The manufacturer's *Masticord* bearing pad material, made from rubber reinforced with synthetic fabric fibers, is described. Shear and creep curves are included. JVI, Inc., Skokie, Ill.
Circle 420 on reader service card



Washroom equipment
A 55-page catalog reviews the newest additions to the manufacturer's line of washroom equipment. The *Designer Series*, which includes a towel dispenser/waste receptacle, is featured in the literature. New colors and finishes are shown. Bobrick International, North Hollywood, Calif.
Circle 421 on reader service card



Insulation
Foamular 400 and *Foamular 600* extruded polystyrene rigid foam insulation, intended for industrial and heavy-construction applications, are described on a 2-page leaflet. A chart reviews the products' physical properties, including flexural and compressive strength. UC Industries, Parsippany, N. J.
Circle 422 on reader service card



Ornament
A 12-page color brochure describes the manufacturer's line of architectural ornament made from *Endure-all*, a flexible, lightweight, man-made material. A selection of cornice moldings, ceiling medallions, and domes and rims is shown in the literature. Focal Point Inc., Atlanta.
Circle 423 on reader service card

BREAKTHROUGH.

PEACHTREE has reinvented the double hung window. Inside and out. For the first time, an insulated window has the authentic look of a wood divided lites window. Gone are the ugly snap-in grilles. Unlike any other window, the entire one-piece wood liner is removable. This-breakthrough feature makes the Peachtree window easier to clean, stain or paint. You can't paint it shut.

Twinsul insulated glass is standard on all Peachtree windows. Low E glass is available.

Peachtree's Ariel exterior comes in Driftwood, Colonial White and Nature Brown enamel finishes. Call or write for details.

PEACHTREE WINDOWS & DOORS

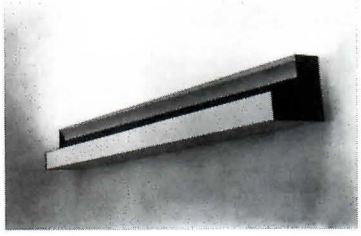
PEACHTREE DOORS INC./ BOX 5700 NORCROSS, GA 30091/404/449-0880

PEACHTREE. THE INNOVATIVE LINE OF INSULATED WINDOWS AND DOORS.

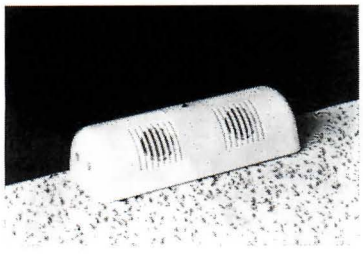
Circle 110 on inquiry card

Continued from page 169

Sun room
The manufacturer's curved-eave sun room kit includes an aluminum framing system and insulated tempered-glass panels. A selection of panel sizes and shapes is available. The Sun Co., Seattle.
Circle 323 on reader service card



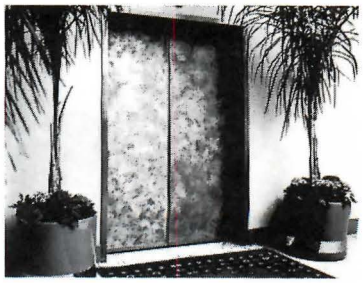
Light fixture
The manufacturer's new fluorescent fixture, made of extruded aluminum, can be used for both wall-washing and indirect lighting applications. The fixture can either be concealed above the ceiling line—projecting light down through a continuous opening along the ceiling edge—or faced upward near the edge of a cove. Elliptipar, Inc., West Haven, Conn.
Circle 324 on reader service card



Occupancy sensors
Light-O-Matic occupancy sensors are designed to turn any type of lighting on and off depending on the presence or absence of people. The sensors can dim and brighten lights and can also control hvac equipment and other electrical devices. A timing control in the unit can be set to keep lights on in a vacated room from 30 seconds to 12 minutes. Novitas, Inc., Santa Monica, Calif.
Circle 325 on reader service card

Wallcovering
The surface of the new three-dimensional *Cross Hatch* pattern is designed to catch and reflect light. The pattern is hand-painted in standard or custom-specified matte or iridescent colors on a 48-in.-wide cotton ground. Art People, New York City.
Circle 326 on reader service card

Translucent window shades
The manufacturer's translucent insulating window shades admit light and help retain heat. Each shade has a clear mylar center and five insulating layers, and can be covered in the customer's own fabric. Appropriate Technology Corp., Brattleboro, Vt.
Circle 327 on reader service card



Etched metal laminates
The manufacturer's metal panels are hand-etched and then sprayed with a protective polyurethane coating. The panels are available in a variety of sizes and can be used for door and wall paneling, counter tops, and as decorative inserts. Harry Lunstead Designs, Inc., Kent, Wash.
Circle 328 on reader service card
Continued on page 181

Design Without Compromise!

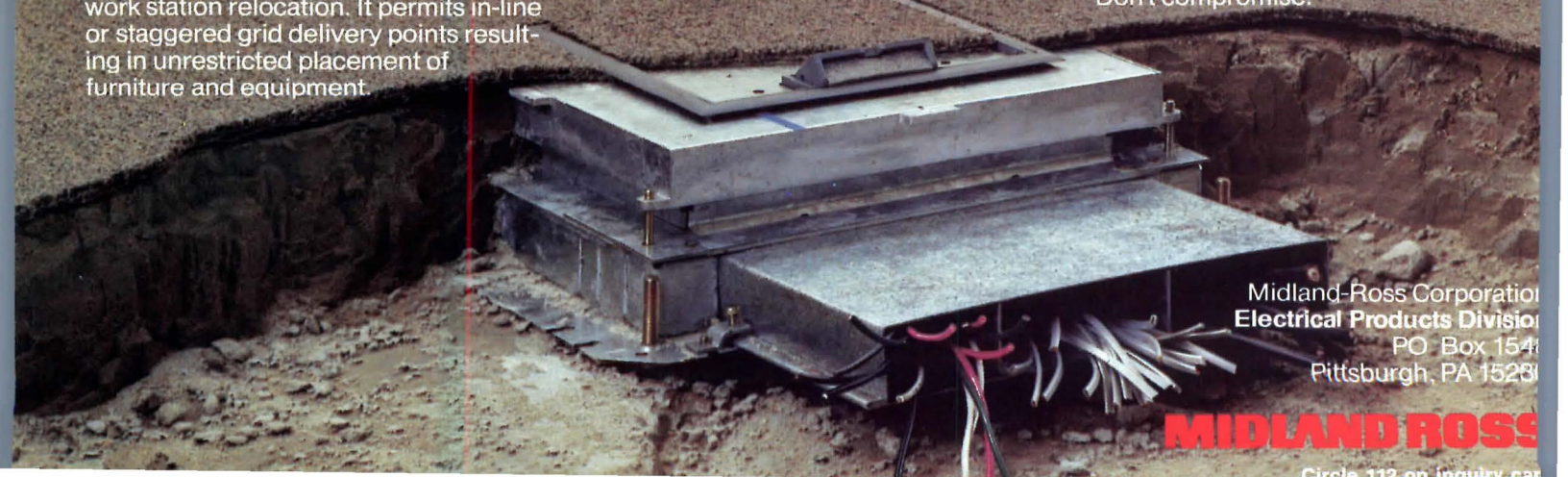
The Mult-A-Cell® in-floor wire management system is unmatched for aesthetics, flexibility, strength and capacity.

It's the ideal solution for design problems you'll face now—or in the future. And it lets you design your buildings and systems exactly the way you want them—without compromise.

Why is the Mult-A-Cell System so superior? First, it's the only system with the *installed* capacity and flexibility to easily expand to serve a variety of future needs such as changing technologies and work station relocation. It permits in-line or staggered grid delivery points resulting in unrestricted placement of furniture and equipment.

Consider the easy access through our unique activating module. The module fits flush with the floor, eliminating tombstones and other service fittings and provides all the power, CRT and communications needs for an individual work station. It can also serve as a transition box for *flat cable* with no reduction in capacity at each distribution point. This hybrid adds yet another dimension to the flexibility of the system and substantially lowers up-front costs. What's more, since the Mult-A-Cell System is a single, three-compartment duct system, installation is quick and simple. It's designed for use in a variety of floo systems and the completed installa tion results in an attractive, obstruc tion-free floor area.

Learn more abou the most complete wire management system on the market. Write for our complete brochure or call us today. 800-MID-ROSS. Don't compromise!



Midland-Ross Corporatio
Electrical Products Divisio
PO Box 154
Pittsburgh, PA 1523

MIDLAND ROSS

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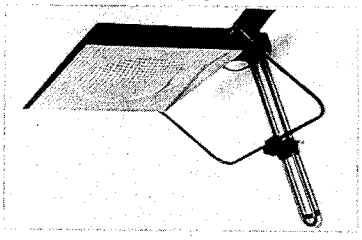
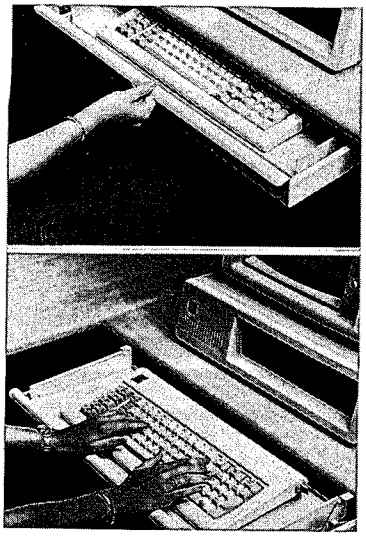


Wall fixture
The position of the manufacturer's new *Cabriolet* light fixture is adjustable. The fixture has a diffuser made of xerographic plexiglass, and the housing can be specified in white, black, or black with red trim. Thunder&Light, Brooklyn, N. Y.
Circle 329 on reader service card

Roofing membrane
The *DynaKap* bitumen roofing membrane is made from an elastomeric asphalt-blend. The cap sheet combines polyester and glass mats to resist roof movement and stress. The membrane's top surface has a white granular protective coating. Manville, Roofing Systems Div., Denver.
Circle 330 on reader service card



Keyboard drawer
The manufacturer's new keyboard drawer can be mounted beneath its *System 2Plus* work surface to form a computer workstation. The drawer pulls forward and an interior keyboard tray lifts up into an operation position. Release tabs lower the tray for storage. Panel Concepts, Inc., Div. of Standard-Pacific Corp., Santa Ana, Calif.
Circle 331 on reader service card

Skip the details.

Software update

For more information, circle item numbers on Reader Service Card

Our October 1984 issue contained a Guide to Computer Software for Architects and Engineers that we promised to update from time to time as we located new sources of architect-specific software. Herewith the first update.

301 INTEGRATED FINANCIAL MANAGEMENT/GENERAL ACCOUNTING SYSTEM
Micro Mode, Inc., 4006 Mt. Laurel, San Antonio, Texas 78240—William Henderson, 512-341-2205 • For use with IBM PC-XT/AT, AT&T 6300, DEC Rainbow and compatible hardware running CP/M or MS-DOS; requires 64k RAM and 10mb disk storage • Price: $6,250; Updates: Semi-annual; $150 each • Training: on-site (travel plus $50/hour).

Integrated Financial Management/General Accounting System is a series of integrated programs designed to meet the needs of A/E firms for control and audit of costs and revenues. Emulates features of the AIA standardized accounting system and ACEC Guidelines to Practice. Entry of time sheets and expense data updates all project files and all related files such as payroll, accounts payable, accounts receivable and general ledger.

302 STEEL-3D
Auto-trol Technology, 12500 N. Washington St., P. O. Box 33815, Denver, Colo. 80233—Tom Gortz, 303-452-4919 • For use with Auto-trol Advanced Graphics Workstation System, which is based on 32-bit Apollo monochromatic or color computers • Price: $20,000 each for first two workstations; $3,500 thereafter; Updates: included with service/maintenance agreement • Training: on-site, in-house, manual and seminars.

Steel-3D enables designers to model basic structural concepts on a screen, develop these concepts into steel-framing schemes and then analyze and refine them with respect to safety, function, feasibility, and esthetics using information from the program's database. Among design analyses performed are forces, deflections and code-check reports. Outputs include pen plots of the geometry, deflected shapes and shear and moment diagrams. *Steel-3D* interfaces with *A-Frame* (see listing below) to produce finished steel-framing drawings.

303 A-FRAME
Auto-trol Technology, 12500 N. Washington St., P. O. Box 33815, Denver, Colo. 80233—Tom Gortz, 303-452-4919 • For use with Auto-trol Advanced Graphics Workstation System, which is based on 32-bit Apollo monochromatic or color computers • Price: $3,000 each for first two workstations; $1,000 thereafter; Updates: included with service/maintenance agreement • Training: on-site, in-house, manual and seminars.

A-Frame drafting software generates framing-plan drawings, elevations and column schedules for structural steel buildings either from information in the database of *Steel-3D*, a graphics design and modeling system (see above), or by defining the member end-points and selecting the member designations from a menu. A full catalog of rolled shapes from the AISC Manual of Steel Construction is included.

304 DOCUDRAFT
DocuGraphix, Inc., 1340 Saratoga/Sunnyvale Rd., San Jose, Calif. 95129—Donald E. Block, 408-446-9700 • Turnkey system is based on Motorola 68010 workstation and includes 17-in. high-resolution monochromatic display, single-button mouse, detachable keyboard, expandable 15mb Winchester hard disk drive, 2mb RAM and dot-matrix printer. Multiple-pen plotters or laser printer are optional. • Price: $35,900 for base system; Updates: included with service/maintenance contract • Training: on-site, in-house, seminars, on-screen-help and manual.

Docudraft enables users to generate, store, access, and amend two-dimensional drawings and all text associated with these drawings

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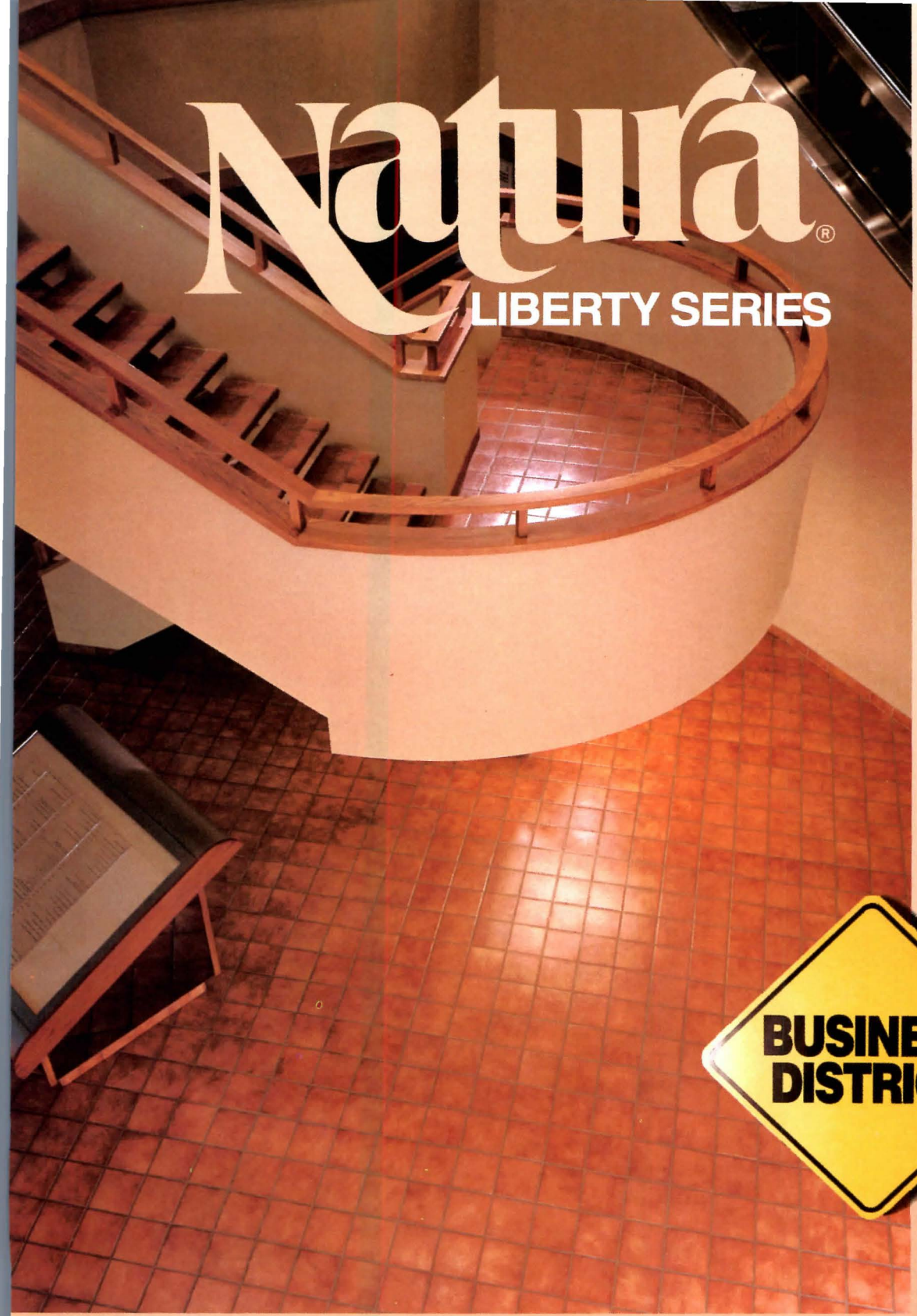
Circle 118 on inquiry card

Circle 119 on inquiry card



Rugged beauty that means business.

"Natura Liberty" is more than beautiful; this glazed ceramic tile is tough enough for the busiest floors — commercial or residential. Its unique color-on-color glazes have enduring good looks that can withstand any high-traffic location. Yet it won't overwork you when it comes to maintenance.

See the entire line of the new, easy-care "Natura" ceramic tiles in the showroom of your Florida Tile distributor. For the name of your nearest distributor call: **1-800-FLA-TILE.**

BUSINESS DISTRICT

Atlantic National Bank, Orlando, Florida
Builder/Developer
Demetree Industries, Orlando, Florida
Architect
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For more information, circle item numbers on Reader Service Card

and accompanying specifications, project manuals, or other documents. The software supports symbols and parts libraries and has a relational database and multiple windowing with zoom, pan and scroll, which permits simultaneous access to, and development of, several parts of a project's construction documents. *Docudraft* operates with or without user prompts and help screens.

305 VERSACAD
T&W Systems, Inc., 7372 Prince Dr., Suite 106, Huntington Beach, Calif. 92647—Bob Murphy, 714-847-9960 • For use with IBM PC, PC-XT or compatible computers; version also available for 200-series Hewlett-Packard computers with a hard disk; IBM version requires two floppy disk drives or one drive and a hard disk; uses HiPad, Summagraphics, Kurta or Versa Cad digitizer and Houston Instruments or Hewlett-Packard plotter; Hewlett-Packard versions support HP digitizer and plotter • Price: $1,995 for IBM version; $4,995 for HP version; Updates: billable • Training: seminar, in-house, on-site, manual and videotapes.

Versacad is a two-dimensional design and drafting system that permits users to assemble drawings using nine primitives contained in memory: lines, arcs, circles, rectangles, ellipses, regular polygons, Bezier curves, fillets, and text. These primitives may be created, scaled, and located along user-selectable coordinates in several different ways. Other features are automatic dimensioning, symbols libraries, windows and snap modes. A bill-of-materials feature is optional.

306 CADAPPLE
T&W Systems, Inc., 7372 Prince Dr., Suite 106, Huntington Beach, Calif. 92647—Bob Murphy, 714-847-9960 • For use with Apple II+, Apple IIe or Franklin ACE 1000 or 1200 with two floppy disk drives or one drive and a hard disk; supports HiPad digitizer and Houston Instruments or Hewlett-Packard plotters; requires 64k RAM • Price: $1,795; Updates: billable • Training: seminars, in-house, on-site, manual and video tapes.

Cadapple is a two-dimensional drafting system featuring single key-stroke commands, user-generated symbols, 250 layers, grids, and the capability to handle a 4,000-object drawing. Options include network-capability and high-resolution color with the addition of a graphics board and Princeton SR-12 color monitor.

307 PRIME MEDUSA AEC - ARCHITECTURAL DESIGN
Prime Computer Inc., Prime Park, Natick, Mass. 01760—Mark Pipas, 617-879-2960 • For use with PW 200 stand-alone workstation, all Prime 50-series 32-bit virtual-memory CPUs with PW 150 or Tektronix 4109 or 4115B terminals • Price: $6,000 - $12,000 for software; turnkey packages available; Updates: free • Training: in-house and manual.

Prime Medusa AEC - Architectural Design is a two- and three-dimensional graphics package for solids-modeling, schematics, working drawings, bills of materials, and reporting. Some of its features are variable-bay structural grid, multi-line wall placement, automatic scheduling and standard symbols and details libraries. Additional software modules are available for program development, database administration and system interfacing.

308 DRAFT/NET
Graphic Horizons, Inc., 60 State St., Suite 3330, Boston, Mass. 02109—Mary Cancian, 617-396-0075 • Graph/Net CID turnkey system consists of PERQ2 super-mini computer, 1mb memory, portrait

Continued

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screen, 35mb Winchester disk drive, floppy disk drive, workstation with built-in digitizing tablet and dot-matrix printer/plotter; hardware options include wide-screen upgrade, 2mb memory, Ethernet sub-system, 1/4-in. streaming tape cartridge, color monitor subsystem, photo-digitizing subsystem, Canon laser printer, Houston Instruments pen plotters, Versatec electrostatic printer/plotters and Benson electrostatic plotters • Price: $45,000-65,000 depending on software modules and hardware options purchased; Updates: free for first 12 months; available with service/maintenance contract thereafter • Training: manual and three days on-site training included with purchase price.

Draft/Net is a general purpose drafting program that generates lines, rectangles, angles, splines, arcs, complex curves, or circles at any scale, in different line widths rounded off to any module. Line segments may be edited, moved, rotated, repeated individually or joined with other segments to create symbols, which may be similarly modified or copied. The software is designed to minimize the use of a keyboard and uses simplified commands to make learning the system easier.

309 VU/NET
Graphic Horizons, Inc., 60 State St., Suite 3330, Boston, Mass. 02109—Mary Cancian, 617-396-0075 • Graph/Net CID turnkey system consists of PERQ2 super-mini computer, 1mb memory, portrait, screen, 35mb Winchester disk drive, floppy disk drive, workstation with built-in digitizing tablet and dot matrix printer/plotter; hardware options include wide-screen upgrade, 2mb memory, Ethernet sub-system, 1/4-in. streaming tape cartridge, color monitor sub-system, Canon laser printer, Houston Instruments pen plotter, Versatec electrostatic printer/plotters and Benson electrostatic plotters • Price: $45,000-$65,000 depending on software modules and hardware options purchased; Updates: free for first 12 months; available with service/maintenance contract thereafter • Training: manual and three days on-site training included with purchase price.

Vu/Net is a three-dimensional perspective simulation program that enables a designer to examine interior or exterior perspective views from specific viewpoints or in a sequence. Viewpoints may include those for perspective, plan or elevation views, all at various scales. Displays may contain hidden lines or facing walls only, with or without toning. The software also displays outlined or fully toned shadows cast by the project for any location and time of day, month and year.

310 COMPUTER DATA BASE FOR STRUCTURAL SHAPES
American Institute of Steel Construction, The Wrigley Building, 400 N. Michigan Ave., Chicago, Ill. 60611—William Noble, 312-670-2400 • These databases are available in card deck, 9-track magnetic tape or 8-in. diskettes suitable for IBM 3741-compatible computers • Price: $40 each; Updates: none planned • Training: Explanations of the variables specified in each of the data fields is provided.

These databases correspond to information published in Part I of the 8th edition, AISC Manual of Steel Construction for the properties and dimensions of the following structural shapes: W, M, S, HP, C, MC and WT. Included are database formats, explanations of variables, and listing of a read/write Fortran, program and database images.

311 KOALACAD
Zericon Inc., 1100 S. Main St., Racine, Wisc. 53403—Dave Zimmerman, 414-633-7381 • For use
Continued

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with IBM PC or PC-XT with 192k memory, color adapter and two disk drives or Apple II+ or IIe with 128-192k RAM and two disk drives; supports Hewlett-Packard, Houston Instruments or EnterGraphics plotters • Price: $395 introductory—includes KT2010 precision Koala digitizing tablet; Updates: $50 with return of old disk • Training: seminars, in-house, on-site, manual and application hotline.

Koalacad is a two-dimensional drafting package. Its capabilities include dual dimensioning in English, metric, fractional or decimal units, 256 registered overlays, variable text parameters, grids, symbols libraries, cartesian-, polar-, local-, or relative-coordinates, and 12-decimal-place accuracy. The software permits automatic measurement of distance, length and angular relationships. Among commands are stretch, mirror, rotate, fillets, blends and chamfers.

312 FACILITY MANAGEMENT SYSTEM
The Computer-Aided Design Group, 2407 Main St., Santa Monica, Calif. 90405—Don Carter, 213-392-4183 • For use with IBM 370, 30XX and 43XX series running MVS/TSO or VM/CMS and 3270-series terminals (3279 for viewing graphic output); DEC/VAX models running VAX/VMS using VT100- or VT200-series terminals (VT125, 240 or 241 required for viewing graphic output) • Price: approximately $25,000 per software module; Updates: included with service/maintenance agreement • Training: computer-aided-instruction on IBM PC and manual.

Facility Management System is a computer-based management tool intended for users or managers of facilities comprising a half-million or more sq ft. The program integrates stand-alone computer-aided drafting (not included) and database management with separate software modules, each designed to help facilities managers make informed decisions. Among the 17 separate modules available are space programming, cost estimating and budgeting, move coordination, master planning, and real-estate management.

313 ACOUSTICOMP-RT
Acoustic Design Associates, Inc., 2560 Electronic Lane, Suite 112, Dallas, Texas 75220—Richard Schrag, 214-350-4546 • For use with IBM PC, Osborne and TRS-80; requires 64k RAM; program written in Basic source code • Price: $295; Updates: none available • Training: manual.

Acousticomp-RT is used to compute and optimize the reverberation time of a room at each of six frequency bands, given the volume and finish materials. The variables may be altered to test alternatives and optimize design. Finish materials' absorption coefficients may be input manually from manufacturer's literature or automatically by selecting materials from a pre-programmed list. The program suggests optimum reverberation times for comparison with calculated results.

314 E2000
Carrier Corp., P. O. Box 4808, Syracuse, N.Y. 13221—Christopher Jones, 315-432-6838 • For use with Hewlett-Packard Model 16 or Model 36 under the Series 200 computers and compatible HP peripherals including monochrome or color high-resolution displays, printers, plotters, digitizers, cables and data storage units • Price: Turnkey systems from $21,000 to $49,000; leases from $450 to $1,050 per month; additional workstations from $14,500 to $26,000 ($310 to $550 per month on lease); Updates: annual update fee is $1,200 • Training: seminars, in-house, on-site, manual, computer-aided instruction, and hot-line.

E2000 is a general-purpose design and drafting package that can

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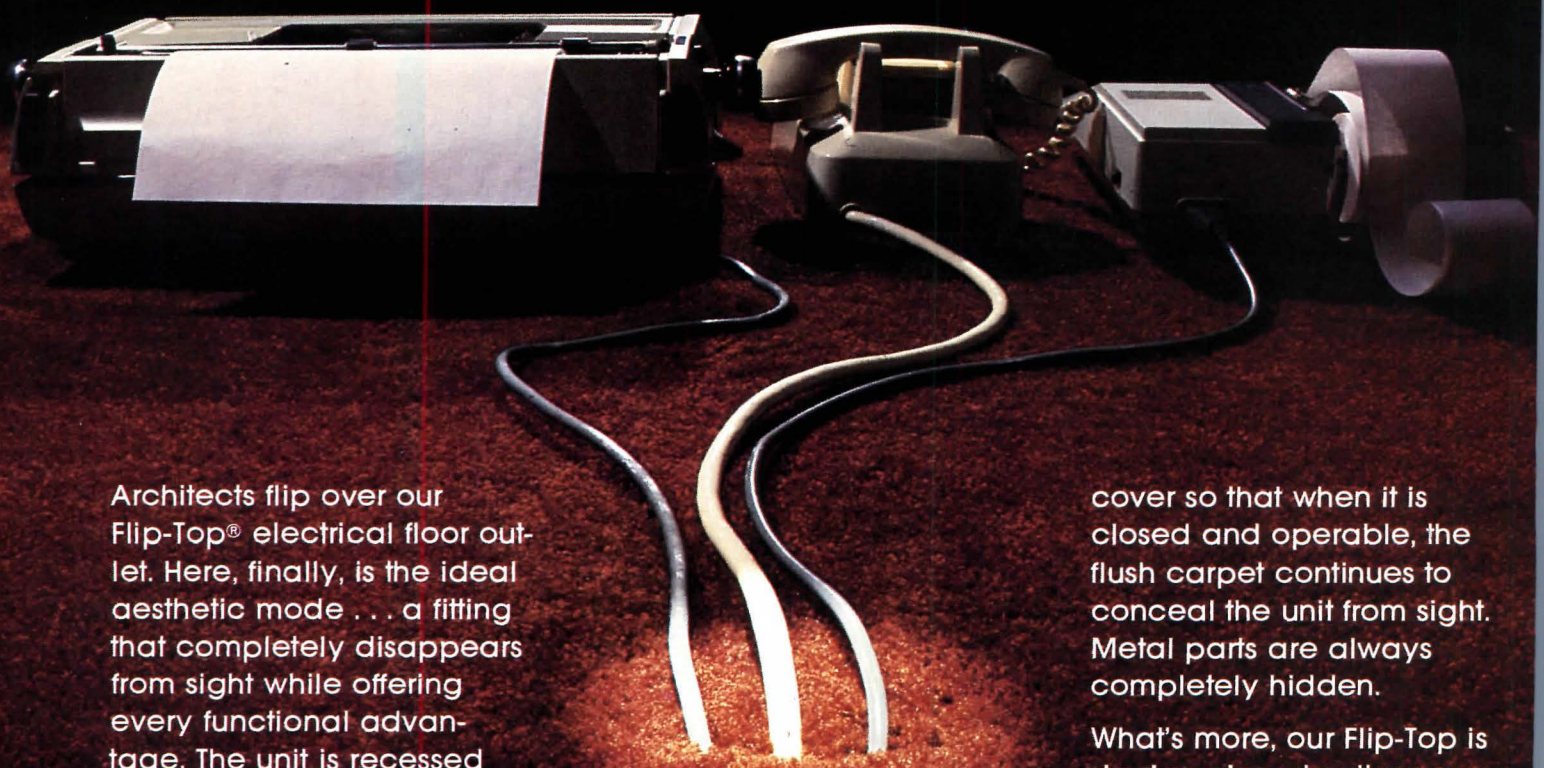

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generate multi-color presentation drawings and half-tone bluelines as well. It is equally suited to needs of architectural-, civil-, electrical-, industrial-, mechanical-, and structural-engineering disciplines, and offers several applications packages tailored to specific tasks: computer-aided drafting and bill of materials, specifications writing, financial management, word processing, hvac and sheet metal. A scaled-down, less expensive version, called *E2000 Jr.*, is available for the IBM PC.

315 RISK ANALYSIS
J & S Associates, 13407 Quapaw Rd., Apple Valley, Calif. 92307—Jon Prescott, 619-247-7219 • For use with IBM 360/370, DEC-VAX/VMS, VAX/780, IBM PC and DEC Rainbow • Price: $5,000 - $7,000 one-time license fee, depending on options; Updates: free • Training: manual; additional training negotiable.

Risk Analysis is a planning tool designed for general-business applications where management wishes to assess, with as much certainty as possible, the specific risk of a new business venture.

316 EASYTHREE
BruningCad, 611 E. Skelly Dr., Tulsa, Okla. 74135—William F. Albu, 918-663-5291 • For use with *Easydraf2* turnkey system which consists of an MC68000-based processor, 1.9mb RAM, 14.5mb Winchester hard disk drive, dual 3 1/2-in. floppy disk drives, 1024 by 768 16-color monitor mounted on an articulating arm, 3-button optical mouse and full modular keyboard; printer not included • Price: $2,500 for software only; Updates: offered as part of comprehensive support package for one per cent of system price per month • Training: on-site.

Easythree is a three-dimensional add-on modeling package to *Easydraf2* (for drafting) intended to assist architects and clients with massing studies, functional relationship studies, interference checking and schematic presentation drawings. Up to nine active display windows permit simultaneous design, alteration and evaluation in the frame of reference most convenient to a user. Drawings may later be incorporated in *Easydraf2*.

317 TQ CONTINUUM CAD
TecQuipment Inc., P. O. Box 1074, Acton, Mass. 01720—Andrew Spencer, 617-263-1767 • Turnkey system consists of MC68000-based CPU with 330k RAM, 12-in. monochromatic monitor, dual 8-in. disk drives, keyboard, Houston Instruments DMP-29 8-pen plotter and Houston Instruments DT-11 digitizer • Price: $15,000 for basic system; Updates: free • Training: on-site, in-house, seminars, manual and help-routines.

TQ Continuum CAD assembles three-dimensional wire-frame drawings from two-dimensional data (including primitives and symbols from libraries) input to a database via keyboard and digitizer. Drawings may be viewed, edited or plotted from any viewing position. Applications include solar views for landscape or solar heating plans, exterior and interior eye-level views and topographic projections for multi-structure relationships. Add-on word-processing and graphics software modules permit text and drawings to be integrated. Spreadsheet and database programs are available as well.

318 PRODUCTION LINES
LCM Corp., 155 E. Campbell Ave., Suite 203, Campbell, Calif, 95008—George MacDonald, 408-374-7868 • Turnkey system consists of IBM PC with 512k RAM, 5 1/4-in. floppy disk drive, 30mb Winchester hard disk drive, keyboard, color monitor, joystick, Calcomp 1043 8-pen, E-size plotter, and workstation furniture • Price: $34,000; Updates: free

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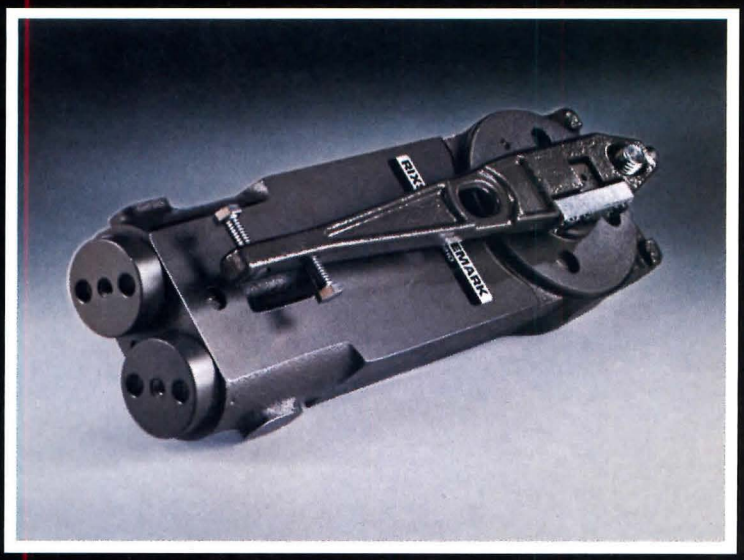

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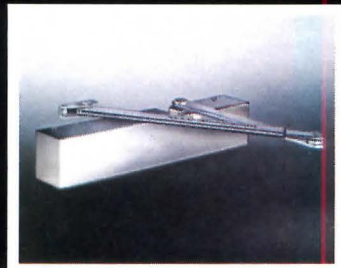

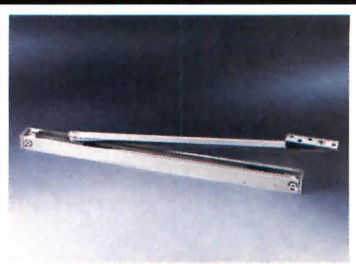

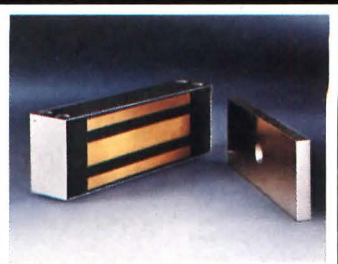

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during first year; $600 per year thereafter • Training: on-site installation and training included.

Production Lines is a two-dimensional electronic overlay drafting system for architecture and surveying. Images are entered into the program's database using coordinates based on real numbers; line lengths are entered in feet and inches, eliminating the need for scaling factors or user-defined units. Other features include interactive prompts, a multi-level command structure and built-in word processing with note-libraries.

319 ADP ARCHITECTURAL DESIGN PACKAGE
CalComp, 2411 W. La Palma Ave., Anaheim, Calif., 92801—Diana Harrelson, 714-821-2299 • Turnkey system consists of 32-bit CPU with dual MC68000 processors, 20/65/143mb Winchester disk drive and two-display design station with keyboard and digitizing tablet/stylus; 1/4-in. or 1/2-in. streamer tapes available • Price: $5,000 for software; $65,000 for hardware; Updates: provided as part of service/maintenance contract • Training: seminars, manual and in-house or on-site instruction.

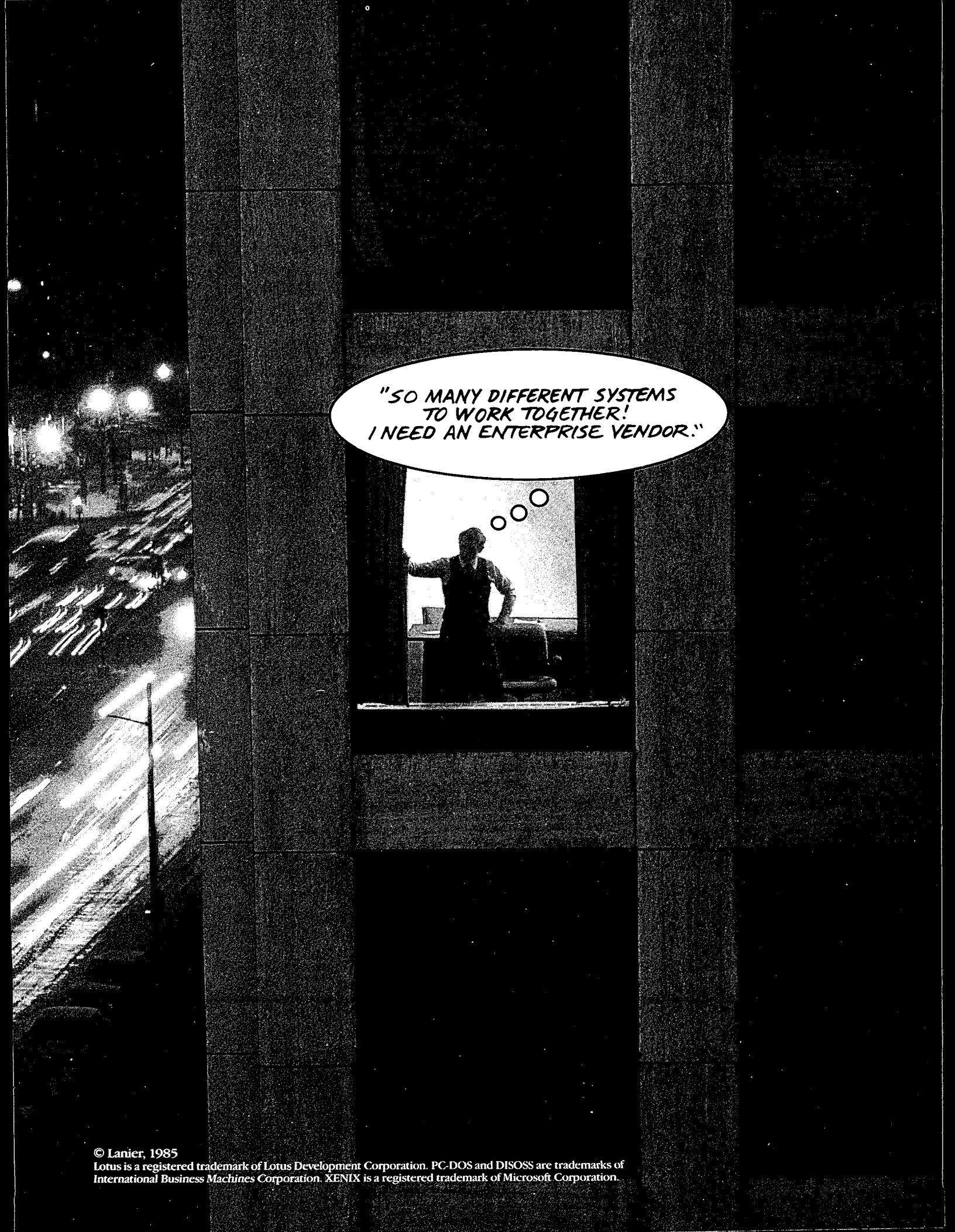
ADP Architectural Design Package comprises a set of general-purpose design tools that enable users to create and revise plans, elevations and sections and generate isometric and perspective views automatically. Macro commands simplify the editing of wall lines where two walls cross. Available symbols libraries include doors, windows, plumbing fixtures, electrical symbols, appliances and cabinets. Non-graphic attributes-libraries enable finish schedules to be generated from optional *Report Writer Application.*

320 SOLIDS MODELING
CalComp, 2411 W. La Palma Ave., Anaheim, Calif. 92801—Diana Harrelson, 714-821-2299 • Turnkey system consists of 32-bit CPU with dual MC68000 processors, 20/65/143mb Winchester disk drive and two-display design station with keyboard and digitizing tablet/stylus; 1/4-in. or 1/2-in. streamer tapes available • Price: $8,500 for software; $65,000 for hardware; Updates: provided as part of service/maintenance contract • Training: seminars, manual and in-house or on-site instruction.

Solids Modeling generates three-dimensional orthographic or perspective displays, with hidden lines removed, of any design concept, from detailed furniture layouts to full site plans. Drawings may be produced in a two-dimensional mode and extruded into the third dimension, or two-dimensional drawings can be generated from information in the three-dimensional database.

321 FPMA - FACILITIES PLANNING AND MANAGEMENT
CalComp, 2411 W. La Palma Ave., Anaheim, Calif. 92801—Diana Harrelson, 714-821-2299 • Turnkey system consists of 32-bit CPU with dual MC68000 processors, 20/65/143mb Winchester disk drive and two-display design station with keyboard and digitizing tablet/stylus; 1/4-in. or 1/2-in. streamer tapes available • Price: $5,000 for software; $65,000 for hardware; Updates: provided as part of service/maintenance contract • Training: seminars, manual and in-house or on-site instruction.

FPMA - Facilities Planning and Management utilizes standard libraries of furniture and equipment symbols and standard report formats to assist in the preparation of stacking and blocking diagrams, facilities layout drawings and facilities management reports. Programmatic design information is stored in a database for on-going property management.



Manufacturer sources

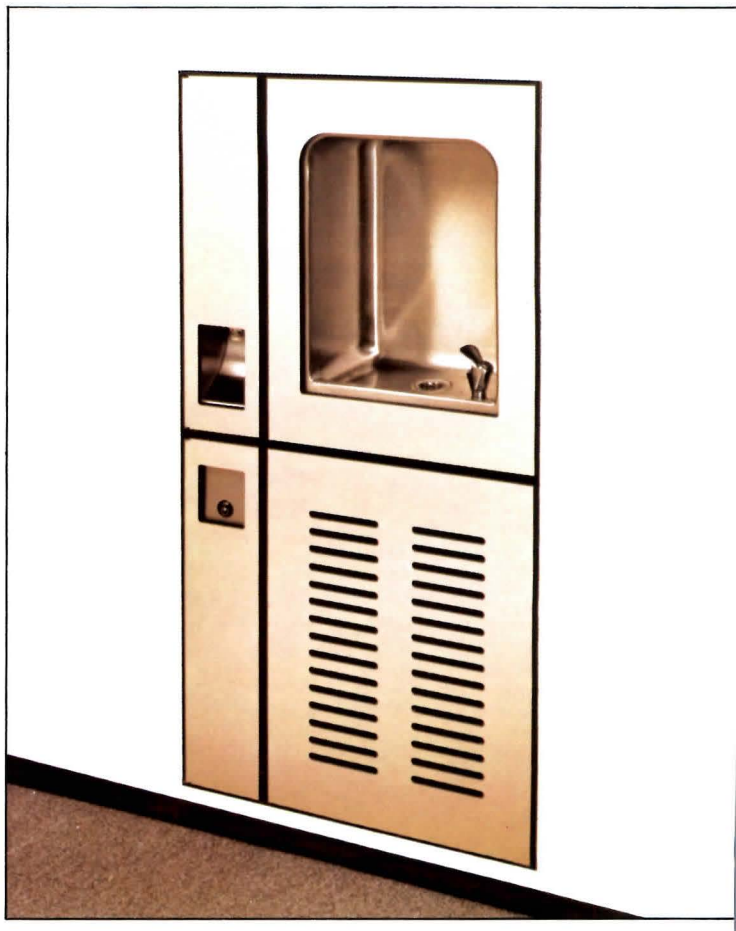
For your convenience in locating building materials and other products shown in this month's feature articles, RECORD *has asked the architects to identify the products specified*

Pages 114-119
Helene Curtis Industries
Corporate Headquarters
by Booth/Hansen & Associates
Page 114—(top) Window frames and penthouse curtain wall: Kawneer. Glazing: Ford Glass. Railings: Custom by architects. (bottom) Partition; wood and glass interior doors: Custom by architects, fabricated by Olsen Woodworking. Display case: Associated Fixtures. Sprinkler system: Global Fire Protection. Ceiling system (throughout): Custom by architects, fabricated by Fisher-Albright. Ceiling tile: United States Gypsum.
Page 115—Marble flooring and benches: Installed by Natural Marble Supply. Vase: Niedermeyer (Mario). Air diffusers (throughout): Titus. Elevators: Westinghouse. Uplights: Custom by architects, fabricated by Kirlin. Paints: Glidden.
Pages 116-117—Vinyl wallcovering: GTR Wallcovering (Genon). Secretarial seating: Rudd Cyborg. Carpeting: Mohawk (Judicial Suede). Vertical blinds: LouverDrape. Lounge furniture: Custom by architect, fabricated by InteriorCrafts. Upholstery: Scalamandre; Zographos. Art: Installed by Edwin Houk Galleries. Files: Shaw Walker.
Page 118—(top) Pavers: Hanover. (bottom and facing page) Locksets: Best Hardware. Blinds: Levolor. Carpet: V'Soske. Chairs: Knoll.

Pages 120-123
Reliance Standard Life Insurance Company
by John Milner Associates/David Beck Architects
Page 122—Pendant light fixture: Custom reproduction, fabricated by Central Brass. Blinds: Levolor. Paint: M. A. B. Gold paint: Kempf. Desk: Modern Mode.
Page 123—Board table: Original. Chairs: Dresser Industries. Hinges: Stanley.

Pages 124-129
The Gramercy Condominium
by Agrest and Gandelsonas, Architects
Page 124—Security grid: Zimmerman Iron Works.
Page 125—Stainless steel and tempered glass entrance: Coordinated Metals. Granite slate flooring and walls: Zanin. Recessed downlights: Progress Lighting.
Pages 126-127—*Cove lighting*: GTE. Paint: Pittsburgh Paints.
Page 127—(all photos) Ceiling lights: GTE. Desks and column-mounted light fixtures: Custom by architects. Laminate: Nevamar.
Pages 128-129—Track lighting fixtures: Lightolier. Locksets: Schlage. Paints: Benjamin Moore.

Pages 130-137
Saint Meinrad Archabbey Monastery and Library
by Woollen, Molzan and Partners
Continued on page 213



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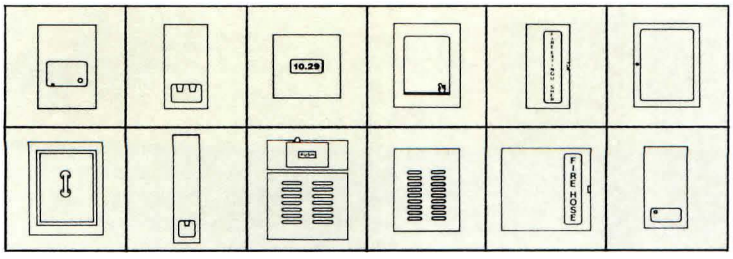

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Continued from page 211

Page 130—Sandstone wall: Indiana Sandstone. Limestone trim: Fluk-Cut Stone. Half-round windows: Anderson Wood Products. Operable windows: Pella. Tile roofing: Ludowici-Celadon.
Page 131—Copper roofing: Coudret. Skylight: Wasco.
Pages 132-133—Stucco panels: Thoro System Products. Leaders and gutters: Coudret.
Page 134—Lightning rod: Kevin Lynch & Sons.
Page 135—(top) Wood trusses and tension rods: Unadilla Laminated Products. Wood ceiling: Anderson Wood Products. Flooring: Harris-Tarkett Wood Products. Cylindrical downlights: Prescolite. Cement block: Central Concrete Supply. Wood-framed windows: Pella. Food service cart: Precision Metal Products. (bottom) Window shutters: Pinecrest. Paint: M. A. B. Paints. Hardware: Yale Security Products. Floor: Polished concrete.
Pages 136-137—Railings: Hoosier Fence. Metal and glass entrances: Amarlite Architectural Products. Brick pavers: General Shale. Deck waterproofing: Carlisle.

Pages 138-145
The Seagram Museum
by Barton Myers Associates
Pages 138-139—Pavers: Unilock. Iron fence: Custom by architects, fabricated by Edward Lau Iron Works. Floodlights: Hubbell. Metal roofing: Westeel-Rosco. Masonry: Toronto Brick. Block: Boehmers/Mason; Kappelar Masonry. Atrium and window glazing, sealed unit, and Georgian polished wire glazing: Pilkington Glass. Tempered glass: Glassec Industries.
Page 140—Fixed window frames: Kawneer.
Page 141—Industrial luminaires: Holophane. Brick flooring: Toronto Brick. Rolled steel: Algoma Steel. Plate sections: Dofasco; Stelco. Hollow tube steel: Stelco. Angles: Lasco. Paints (throughout): Pratt and Lambert; Benjamin Moore; Sherwin Williams.
Page 142—Coffer ceiling: Custom, fabricated by Ontario Canvas Craft.
Page 144—Bentwood chairs: Aarkash. Table: Michigan Maple.

Pages 146-151
Victoria General Hospital
by Beinhaker Irwin/Russell Vandiver Architects
Pages 148-149—Aluminum-framed windows, glazing and entrance: Kawneer Canada Ltd. Entrance canopy: Custom by architects. Door pulls: Hager. Built-up roofing: Permalite. Metal cladding: Tectum.
Page 150—Paints (throughout): Pittsburgh Paints, General Paints and Bapco.
Page 151—Sprinkler heads: Viking.

Pages 152-155
Discovery Parks Multi-Tenant Research Facility
by Russell Vandiver Architects
Pages 152-153—Anodized aluminum panels and window frames: Consolidated Aluminum (Alucobond). Pavers: Westcon Construction Products. Pole-mounted lights: Moldcast. Signage: Custom.
Page 154—Reflective glazing: Lord & Burnham. Glass block: Canadian Pittsburgh Industries. Entrance doors: Kawneer Canada Ltd. Atrium space frame: Custom.
Page 155—Elevator: Montgomery Elevator. Lights, glass doors: Kawneer Canada Ltd. Metal slat assembly: Custom.

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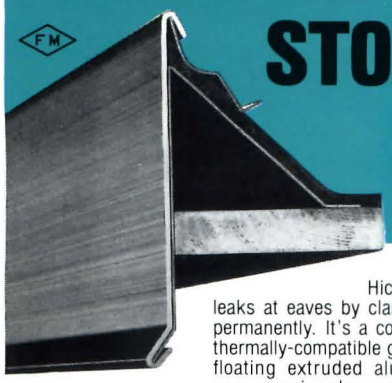

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FACULTY POSITIONS VACANT

Assistant Professorships In Architecture and Landscape Architecture, University of Cincinnati. Applicants are sought for Assistant Professors who will teach in the Design Studios as well as give lectures and seminars in the fields of Architectural Technology and Landscape Architecture. The faculty member in Architectural Technology will join a team of six Architects and Engineers responsible for teaching the full range of Architectural Technology. There is a particular interest in a contribution from a Building Science approach based in Research. The faculty member in Landscape Architecture will teach the theory, history and practice of Landscape Architecture primarily to Architecture students. A strong design ability founded on a knowledge of history as well as practice are desired. Successful candidates will have at least a Masters Degree, preferably a PH.D, plus some experience in Research and/or Professional practice. The University of Cincinnati Is An Affirmative Action Equal Opportunity Employer. Applications from Minorities and Women are of great interest. Send Applications, Resumes, and Illustrations of Work to: John Meunier, Director, School of Architecture and Interior Design, College of Design, Architecture, Art, and Planning, University of Cincinnati, Cincinnati, Ohio 45221-0016.

Opening September '85 for two faculty positions in 4 yr. construction curriculum. BS & MS in bldg. construction, architect, CE or ME & 2 yrs. of exp. in the U.S. with bldg. construction firm are the minimum requirements. Additional exp. and/or PhD desired. One position is to teach mechanical & electrical systems & statics; 2nd position is to teach architectural drafting, blueprint reading & bldg. materials. Each position should be able to consult with advanced AR design students on technical subjects in addition to, lecturing to construction & AR students. Send resume to: Paul Brandt, Head, Dept. of Building Science, Auburn University, Alabama 36849. Applications will be received until May 1, 1985 or until position is filled. Auburn University is an Equal Opportunity/Affirmative Action Employer.

Assistant Professor School of Architecture and Interior Design, University of Cincinnati. Primary responsibilities teaching of design, and aesthetics of light and sound. Desirable, though not essential, experience and background in computer graphics. Master's Degree minimum qualification, with some professional experience and/or academic research experience. Ph.D. desirable. Send curriculum vitae and examples of design and scholarly work by May 1, 1985: John Meunier, Director, School of Architecture and Interior Design, College of Design, Architecture, Art, and Planning, University of Cincinnati, Cincinnati, OH 45221-0016. Telephone 513-475-6426. Affirmative Action Employer. Women and minority candidates encouraged to apply.

POSITIONS WANTED

Architect seeks position or partnership/ownership transition opportunity with established design firm. I have extensive experience as principal of established 60 person architectural firm of substantial reputation and possess demonstrated marketing, management and client relationship skills complimented by numerous personal, design recognitions and enhanced profitability. Replies to: PW-1679, Architectural Record.

Prof. Internship for Summer 1985 Wanted. Assoc. Prof. w/15 yrs. exp. NCARB cert. MCP-UD, Harvard. Design/urban design/programming/production. Specialize in large, complex projects. Resume/ref. available. Contact Robert T. Meeker, 314 E. Olive St., Bozeman, MT 59715.

POSITIONS VACANT

Design Director-Architectural Design — We are seeking a Design Director for our 100-person San Francisco architectural firm. This person will be responsible for the design quality of all architectural projects, will function on a Principal-level and will report directly to the CEO. In addition to demonstrated design abilities, this leadership position requires proven communication, presentation and people management skills. The ideal candidate will have a minimum of 10 years experience in large-scale commercial projects, with a concentration in high-rise, office, residential and hotel projects. Familiarity with CADD is preferred. We offer an attractive compensation package, with a base salary in the range of $75,000. Qualified candidates are invited to send a resume to: Whisler-Patri, c/o Marjanne Pearson, 3170 Sacramento St., San Francisco, CA 94115, (415) 931-1221. EOE M/F.

Justice Architect — For Orlando, Florida office of national A/E firm. Requires registration plus 3-5 years experience in justice building types, good client skills, strong design background. We offer opportunity for continued professional development with an established firm plus a competitive salary and benefit package. Submit cover and resume including salary requirements to: Hansen Lind Meyer, 455 S. Orange Ave., Suite 400, Orlando, FL 32801. An Equal Opportunity Affirmative Action Employer.

Architect req. by medium-sized dsn. firm in the South. Degree and 2-4 yrs. exp. in project devlop. is req. Ability to accept diverse dsn. dev., contract doc., spec. and constr. admin. respon. in a growing firm is essential. Long term growth and excellent salary in an attractive location is offered. Contact our reps. with conf. resume at: G. Marshall Assoc.-P.O. Box 66083-Chicago, IL. 60666.

Project Architect for firm in MidWest is req. Qualified person should have degree and reg. in addition to 5+ yrs. exp. in project prod. phases. Ability to lead and coord. schematic and contract doc. phases as well as provide client and contractor liaison is req. Prelim. dsn. ability a plus. Stable firm offers long term growth in a challenging environ. Contact our reps. with conf. resume at: G. Marshall Assoc.-P.O. Box 66083-Chicago, IL. 60666.

Interiors Dsnr. req. by prominent interiors design firm in the South. Degree and reg. preferred along with 5+ yrs. exp. in complete interiors dsn. and space planning for major corp. office, commercial and office bldg. projects. Ability to assume proj. respon. and provide comp. design and planning as well as client liaison is req. Firm offers long term growth oppor. in an attractive location. Contact our reps. with conf. resume at: G. Marshall Assoc.-P.O. Box 66083-Chicago, IL. 60666.

Marketing Director -- Architectural firm seeking experienced professional to lead marketing effort. Responsibilities include development and execution of marketing plan, development prospective clients, and coordination of effort with all principals of the firm. Architectural license required. Compensation and advancement based on demonstrated results. Challenging opportunity. Submit resume and letter of interest to: E. Gigoux, MWM, 2333 Harrison, Oakland, CA 94612.

Project Architect with demonstrated health facility project management experience, for key responsibilities in a rapidly growing design oriented 40 person architectural firm located in an attractive Southern New England metropolitan area. Position requires minimum B.Arch. and 3 years experience with the project management of large scale hospitals and health facilities and excellent organizational and client interaction skills. *Send resume to: Bruce P.* Arneill, AIA, President, Stecker LaBau Arneill McManua Architects, Inc., 100 Allyn St., Hartford, CT 06103. EOE.

Interior Design position avail. with growth oriented A/E in the SouthWest. Qualified person should have degree coupled with 5+ yrs. exp. in comprehensive interiors dsn. and space planning for major office, medical, comm. and/or retail facilities. Ability to assume project role as well as all assoc. client liaison is req. Contact our reps. in conf. at: G. Marshall Assoc.-P.O. Box 66083 - Chicago, Il. 60666.

Studio Designer position open with prominent SouthEast design firm. Qualified person should have degree and reg. coupled with 6-8+ yrs. proven dsn. exp. on major corp. office, inst. and/or high rise projects. Ability to assume key dsn. ldrshp. within studio, conduct presentations, sketch and coord. projects is essential. Growth opportunity within active firm in an attractive location. Contact our reps with conf. resume at: G. Marshall Assoc.-P.O. Box 66083-Chicago, IL 60666.

Project Architect req. by growing firm in the South. Degree and reg. along with 5+ yrs. exp. with proj. dsn. dev. and production phases is essential. Ability to effectively direct proj. dev. and prod., provide client liaison and coordinate projects through conclusion is desired. Long term growth position and comp. compensation is offered. Contact our reps. in conf. at: G. Marshall Assoc.-P.O. Box 66083-Chicago, IL. 60666.

Architect wanted for progressive design firm in Birmingham, Alabama. Applicants should be registered with 5 years experience minimum. Office, commercial and mixed use background preferred. Challenging growth opportunity for person with ability to manage entire project, including architectural/engineering team and preparation of contract documents. Please send resume to: P-1666, Architectural Record.

Architect — A national multi-disciplinary firm providing architectural and engineering services has an opening for an experienced senior design architect as Assistant Director of Design. Must have 12-15 years of registered experience with a strong academic background and a portfolio that includes completed commercial, institutional and multi-family residential projects. This is a long-term opportunity in the Southeast. Contact Pat Hudson at 615/385-3310.

Medium-sized architectural office located in the Midwest is looking for an in-house Structural/Mechanical Engineer. Requirements include MSME, wide range of mechanical and structural knowledge, experienced person who has design ability and can supervise. Must be able to relocate in small midwestern community. Salary negotiable. Duties include design of mechanical and structural systems from conceptual stage through production and construction of various commercial projects. P-1667, Architectural Record.

Interior Architecture Designer — Position for designer to develop interior design projects for commercial buildings throughout various phases. Responsibilities include design procedures, supervision of contractors, liaison with clients, product research, drawing of plans and blue prints, creating detailed project specifications. Minimum requirements: BA in Architecture and/or applied arts in related field(s); 2 years experience. Annual salary $25,000. Send resume to: Vignelli Associates, 410 E. 62nd St., New York, NY 10021. Attn: Laura Hillyer.

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FINE ARTS COMPLEX COMPETITION

Arizona State University announces an invited one stage type two competition, sponsored in part by a grant from The National Endowment for the Arts, for a museum and a performing arts complex (160,000 sq. ft.). Registered architects/firms are invited to send for the Prospectus. Five firms shall be selected and retained to develop designs. Prospectus will be mailed March 15 to April 15, 1985. Competition contestants will be selected by May 27, with the final submissions due November 1, 1985. To receive Prospectus write: Department of Planning and Construction, Competition Professional Advisor, A.S.B. 306, Arizona State University, Tempe, Arizona, 85287.

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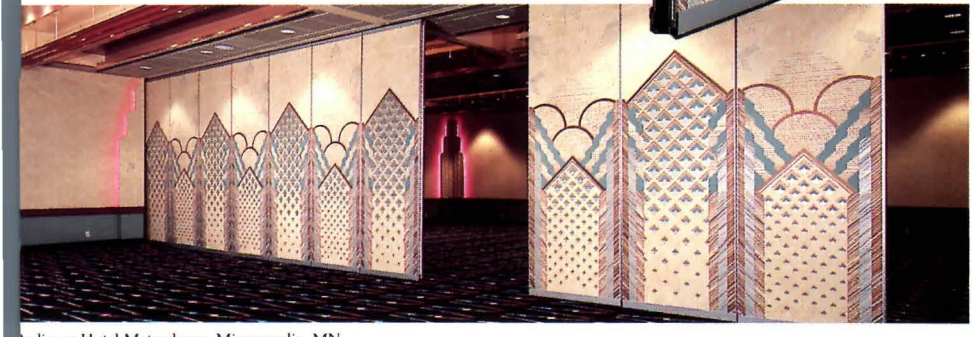
BUSINESS OPPORTUNITIES

Large Architectural firm looking for South Florida market. Miami based design oriented small architectural/interior firm seeks merging, acquisition or association with medium to large firm of varied specifications. Goals of the association would be to expand and diversify the practice for neutral benefit. If interested send firm brochure to: BO-1678, Architectural Record.



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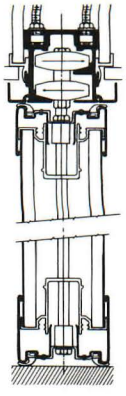

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