

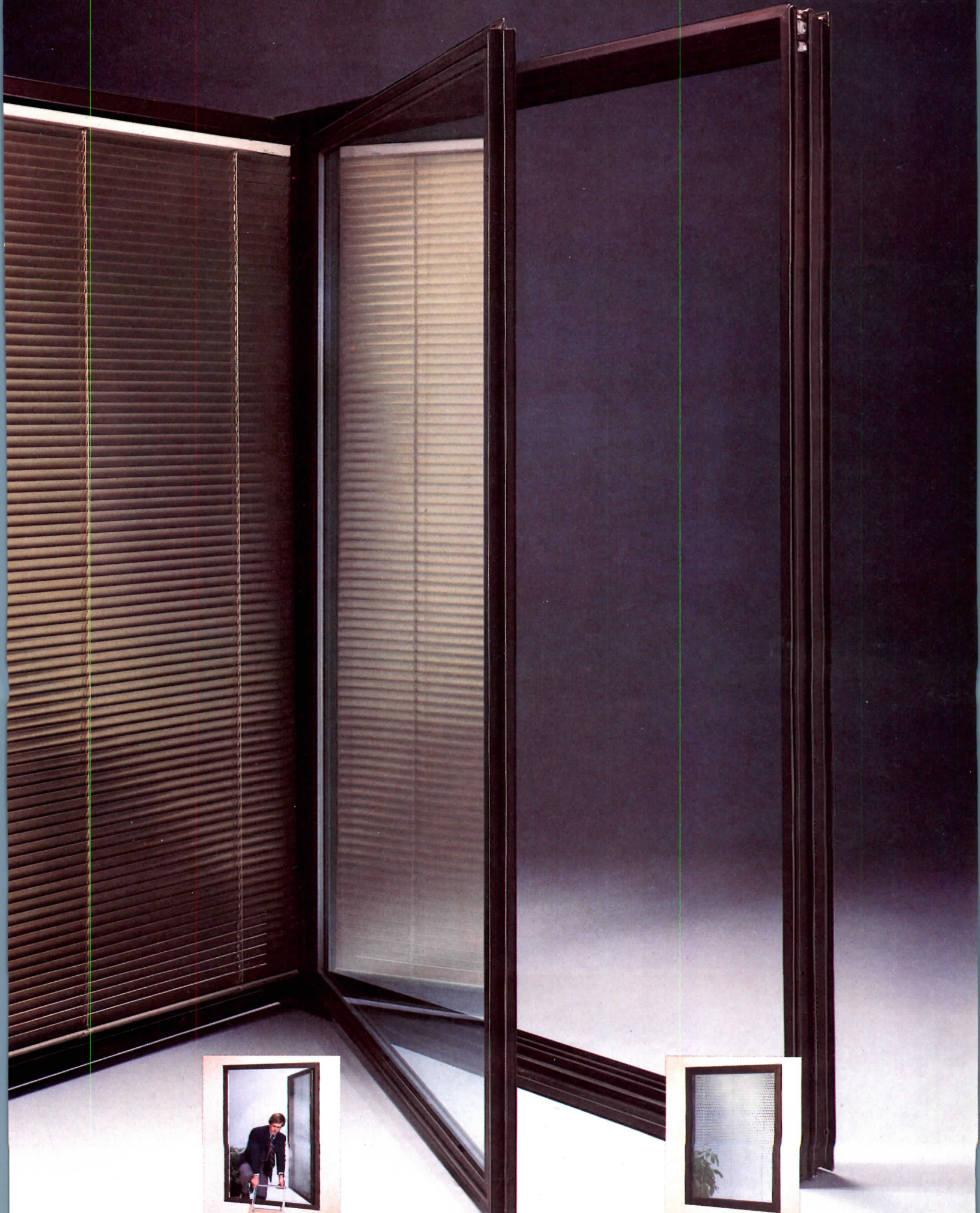
ARCHITECTURAL

# RECORD

Business Design Engineering  
A McGraw-Hill Publication, Six Dollars a Copy  
April 1983







**Emergency Exit**



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fixed glass**

Your January 1983 issue [pages 102-115] carried a cover feature story on the Area 2 Police Center in Chicago. Your reporter refers to the "site in the historic but down-at-the-heel Pullman district." I strongly protest this gratuitous, superficial and unsubstantiated cheap shot.

Pullman is a City, State and National Historic Landmark District. It is distinguished as the nation's first totally planned and designed industrial town (1880-1884). It is unique in the degree to which the local property owners and residents have linked historic preservation and neighborhood revitalization since 1966. There are many visual and statistical indicators that clearly and objectively contradict the opinion of your article. More than 40,000 people a year come to see our "down-at-the-heel" neighborhood.

It would be interesting to see how well your featured building compares with Pullman in another hundred years!  
*N. J. Pointner II, AIA, AICP  
President  
Planning Resources, Inc.  
Chicago*

An overly zealous adherence to the canons of modern architecture led the compiler of your portfolio of recent work by Murphy/Jahn Architects in January to treat the Pullman Historic District in a manner that was both offensive and unjustified.

It was offensive not only to the Historic Pullman Foundation, a major force for restoration within the district, but also to hundreds of residents—including many architects—who have made Pullman a model for sensitive preservation of an urban neighborhood. A trained eye coupled to an unshackled mind will find in the streetscapes here evidence of high quality in the original plan along with equal evidence that, with respect to human vitality, the plan is still working.

The portfolio gave your readers a basis on which to judge the validity of your favorable comments on the new area police headquarters, which is near our historic district. We ask only that those same readers be given an equal opportunity to weigh your cavalier treatment of what we have achieved.

*John H. Lindenbusch  
Executive Director  
Historic Pullman Foundation  
Chicago*

Your article "A smooth blend" in the January issue of ARCHITECTURAL RECORD [pages 98-101] excellently illustrated a very fine interpretive restoration of our ground-floor space in the Shreve and Lamb office building for R. J. Reynolds Tobacco Company. We are indeed proud of this fine project.

We do find, however, inaccuracies in crediting this project which we wish to have you correct.

The architect of record for this project is Hammill-Walter Associates, Inc., Architects, of Winston-Salem, North Carolina, with C. Laurence Robbs, AIA, as project architect. Croxton Collaborative was selected by Hammill-Walter Associates and R. J. Reynolds, after interviewing several interior design firms, on the advice of Lloyd G. Walter, Jr., AIA, and the selection was concurred in by Marley P. Carroll, FAIA, of R. J. Reynolds. Croxton Collaborative was the designer of the interiors as consultants to Hammill-Walter Associates, who as architects were also responsible for many elements of the restorative work, cost estimating, inspections, general project management and coordinating all consultants.

*Betsy J. Annese  
Senior Public Relations  
Representative  
Corporate Public Relations  
R. J. Reynolds Tobacco Company  
Winston-Salem, North Carolina*

Re: RECORD's October 1982 editorial ["On getting more of the public to care about good design," page 9].

One suspects that the public, which you envision embracing the architectural profession, would feel more confident in your intentions if you would desist in referring to architects as persons of the masculine gender.  
*Laurel Lovrek, AIA  
Architecture & Planning  
East Windsor, New Jersey*

#### Correction

RECORD's review of the recent exhibition *Precursors of Postmodernism* (January 1983, page 61) failed to report that the exhibition was presented by The Architectural League of New York and sponsored by Alessi S.p.A. of Italy.

**Through April 17**  
*Haarlem: The Seventeenth Century*, an exhibition of Dutch art; at the Jane Voorhees Zimmerli Art Museum, Rutgers, the State University of New Jersey, New Brunswick, N. J.

**Through April 30**  
*Landmarks Reviewed*, an exhibition of contemporary photographs examining American landmarks; at the Pensacola Museum of Art, Pensacola, Fla.; the show is to travel later. For information: Barry M. Winiker, 173 W. 78th St., New York, N. Y. 10024.

**April 5**  
"Emerging Voices 1983," a lecture series by young architects from around the country; the series will continue on Tuesday evenings through the month; at the Urban Center, 457 Madison Ave., New York City.

**April 6-16**  
"Architecture Week," including lectures, walking tours, movies and exhibits, sponsored by the Baltimore Chapter of the AIA. For information: Shari Coale, Executive Director, Baltimore Chapter, AIA, 720 E. Pratt St., Baltimore, Md. 21202.

**April 14-15**  
7th Conference on Roofing Techniques, at National Bureau of Standards, Gaithersburg, Md. For information: R. Mathey, B348 Building Research, NBS, Washington, D. C. 20234 (301/921-2629).

**April 18-20**  
Annual meeting and Loss Prevention Seminar, Association of Soil and Foundation Engineers; at Monteleone Hotel, New Orleans. For information: ASFE, 8811 Colesville Rd., Suite 225, Silver Spring, Md. 20910 (301/565-2733).

**May 15-19**  
Interior Design International, exhibition of international contract furnishing and interior design; at Olympia, London.

**May 22-25**  
National convention, American Institute of Architects, at New Orleans. For information: Public Relations Department, AIA, 1735 New York Ave., N. W., Washington, D. C. 20006 (201/626-7300).

**May 31 through June 3**  
Second International Congress on Building Energy Management, at Ames, Iowa. For information: Secretariat of ICBEM-II, c/o Prof. James E. Wood, 102 Scheman Bldg., Iowa State University, Ames, Iowa 50011 (515/294-6222).

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# On learning how to think about computers in architecture

I am writing this editorial fresh from the task of editing a Round Table on computer use that will appear in next month's Business pages. That task left me with the conviction that I really should urge you to do some pretty serious investigation of what's happening in this exploding technology and decide how you're going to play it at your firm.

Mind you, I am approximately the last person who should be offering advice on computer technology. For a long time, I was one of those who figured I could make it at least to early retirement without actually understanding much about computers. A course on computer applications in publishing set up by McGraw-Hill for its chief editors left me, well, nervous. I learned a lot more by watching my son manipulate a small black box that he plugs into his television set. It enables him not only to make what seem to me fairly complex mathematic computations, but to manage his small but incredibly complex budget with none of the despair that marks my own such efforts. And I've learned most by looking over the shoulders of people in RECORD's business and circulation departments as they learned to use our in-house system for budgeting, word processing, circulation control, and research.

Thus I have learned—not how to program a computer, not how it works, not how to (as the computer mavens put it) crunch numbers—but at least to understand what the computer can do for our business of editing and publishing RECORD.

And I come away from this learning experience—and from the insights of the Round Table you'll have to wait until next month to read—with the conviction that every architect needs to take the time now to understand what the computer can do for the business of creating architecture. Not that every architect has to make a big investment in, or a big commitment to, any of the computer applications discussed in the Round Table. What I think you can no longer afford is to hope *you* can make it to early retirement without deciding whether or not computers make sense in your practice.

The Round Table left me with no strong feeling that anyone who has not already computerized has missed an important boat. Sure, many (perhaps most) of the bigger firms are already into computer use in fairly sophisticated applications—and they argue that their productivity is up, their work is better, and their clients are impressed. And, indeed, the same is true of many smaller firms. But there was, even among the experts at the Round Table, no clear consensus on the best way to get started, the most productive applications, and what the future holds in terms of integrated systems.

If there is one conviction that did come out of the Round Table, it is that every professional must make the necessary commitment to find out about computer applications in architecture. You can't delegate that responsibility—panelists from large and small firms alike agree that it is the principals of a firm, who know best where they want the firm to go, who must make the commitment to educate themselves.

How do you do that? I hope the articles we've been running have been a good help. And I urge you to look for RECORD's new annual publication, called *The Computer... for architects and engineers*—a compendium of our articles, plus a buyers' guide and a guide to computer service bureaus and distributors. But if I were in practice, I'd want to *talk* with some experts. Perhaps by lunching with a fellow architect who has gotten into computer use. Perhaps by attending the AIA Convention in New Orleans, May 21-25, which will offer a variety of workshops and exhibits on computer use in architecture. Perhaps by attending SYSTEMS '83—"the biggest automation and reprographics show for the A/E profession,"—to be held in Dallas June 8-10. (You can get a schedule by writing A/E SYSTEMS '83, P.O. Box 11318, Newington, Connecticut 06111.) Perhaps by attending one of the annual international congresses on Computers/Graphics in the Building Process in Washington, D.C. Or one of the PSMA's semiannual meetings. Or perhaps by attending one of the 12 excellent seminars on all phases of computer use in architecture and engineering—including one for the bewildered beginner—organized by Sweet's. (For details call the "seminar hot line"—800/257-9406.)

Once again: I dare not offer you any advice on what you should do about computers in your office; only that, if you haven't, you ought to start educating yourself. Remembering all the time of course, that while the computer is a very *useful tool to an increasing* number of firms, it is still only a tool. And that the business of the profession is creating good architecture—with whatever tools suit your needs. As one panelist reminded the Round Table: "The medium is *not* the message." W. W.

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# Construction-economy update: The dam is starting to break...

*But factories and offices won't show it for a while*

The message of the 1983 *Construction Outlook* was one of recovery (ARCHITECTURAL RECORD November, 1982, page 39). In this first update, recovery is not only taking hold, it is gaining new sources of strength.

With interest rates falling sharply through the second half of 1982, construction contracting advanced even faster than expected. As measured by the Dodge Index of construction activity, the value of newly started work rose 22 per cent between last year's second and fourth quarters. In dollar terms this means that the annualized rate of contracting for construction of all kinds was \$30 billion stronger in the final quarter than in the second.

That change alone virtually guarantees stronger demand for building products and higher employment in the construction trades during 1983's first half, as the additional work started last fall is brought to completion in the months ahead. But...

## The 1983 outlook is even better than previously projected

Developments since last fall now support a forecast of still higher contracting for new construction in 1983. In particular:

- Housing starts, which were originally estimated at 1.325 million units, can now be expected to reach 1.475 million in 1983—mostly because mortgage rates have fallen faster than assumed.
- Public works construction, which had been heading for another decline in 1983, is now positioned for a gain instead, due to the new fuel tax and the acceleration of previously planned public projects.

Compared with the original scenario—1983 would bring a good gain in housing, but little more than that—the construction market's recovery is broadening to embrace public works as well. The turnaround of commercial and industrial building, however, requires the support of vigorous general economic expansion, and it will take most or all of this year to create that environment.

## One critical assumption: that monetary policy will continue to support the recovery

In 1983 the biggest single threat to the continuation of the half-year-old recovery of construction contracting is the possibility that interest rates may rise again (Finance, RECORD, March 1983, page 39). It happened not long ago under similar circumstances. There are hardly any good

reasons for a retightening of credit in 1983, but there is one compelling reason for continued ease: the economy's sputtering recovery with still lower interest rates.

Short-run economic strategy clearly calls for maximum stimulus, and it is on the way: • The chairman of the Federal Reserve has indicated that as long as inflation remains dormant, monetary policy will continue to support the economy's recovery—the course the Fed set last summer. Considering the extent of idle capacity throughout the economy, the risk of renewed inflation in 1983 is negligible. • Appeals to cancel the 1983 income tax cut have been politely dismissed. There will be time enough in 1984 (or more likely 1985) to determine what kind of tax increases and spending cuts are needed to deal with the remaining hardcore deficit.

For these reasons, national economic policy—and most importantly, monetary policy—can be assumed to behave in a supportive way as the economy struggles out of deep recession during 1983 and 1984. As long as this assumption holds, the rest of the construction outlook will follow a familiar and predictable pattern.

**Residential building: Volume will ease back from January's roaring start**  
Everything clicked for housing in January: mortgage rates declined, the weather was generally mild, builders and buyers were optimistic. As a result, the housing market got off to a roaring start in 1983's opening month, when the seasonally adjusted rate of starts leaped to 1.7 million units from December's 1.3 million.

Conditions in the housing market are improving, but they aren't that good—yet. The extraordinary January rate must be interpreted as a statistical aberration, the consequence of everything going right in a month when seasonal adjustment factors allow for a lot of things to go wrong. Since \$80,000 price tags and 13 per cent mortgages are not quite consistent with a sustained volume of building at a rate of 1.7 million units, it is to be expected that once the building season begins in earnest, housing starts will settle down within the more credible range of 1.4 to 1.5 million units.

The rate of housing starts will ease back from an unrealistically high first-quarter volume, and later rebound to a rate of 1.55

## 1983 National Estimates Dodge Construction Potentials

First Update  
March 1983

Nonresidential Buildings		1982 Actual	1983 Forecast	Percent Change 1983/82
Floor Area (millions of square feet)	Office Buildings	260	185	-29
	Stores & Other Commercial	309	340	+10
	Manufacturing Buildings	116	110	-5
	<b>Total Commercial &amp; Manufacturing</b>	<b>685</b>	<b>635</b>	<b>-7</b>
	Educational	75	75	—
	Hospital & Health	71	69	-3
	Other Nonresidential Buildings	111	116	+5
	<b>Total Institutional &amp; Other</b>	<b>257</b>	<b>260</b>	<b>+1</b>
	<b>Total Nonresidential Buildings</b>	<b>942</b>	<b>895</b>	<b>-5</b>
	Contract Value (millions of dollars)	Office Buildings	\$ 17,225	\$ 12,775
Stores & Other Commercial		10,774	12,300	+14
Manufacturing Buildings		9,251	6,400	-31
<b>Total Commercial &amp; Manufacturing</b>		<b>\$ 37,250</b>	<b>\$ 31,475</b>	<b>-16</b>
Educational		\$ 6,124	\$ 6,475	+6
Hospital & Health		7,858	8,050	+2
Other Nonresidential Buildings		7,975	8,500	+7
<b>Total Institutional &amp; Other</b>		<b>\$ 21,957</b>	<b>\$ 23,025</b>	<b>+5</b>
<b>Total Nonresidential Buildings</b>		<b>\$ 59,207</b>	<b>\$ 54,500</b>	<b>-8</b>
<b>Residential Buildings</b>				
Dwelling Units (thousands of units)	One-Family Houses	633	900	+42
	Multifamily Housing	422	575	+36
	<b>Total Housekeeping Residential</b>	<b>1,055</b>	<b>1,475</b>	<b>+40</b>
Floor Area (millions of square feet)	One-Family Houses	993	1,410	+42
	Multifamily Housing	411	575	+40
	Nonhousekeeping Residential	60	57	-5
	<b>Total Residential Buildings</b>	<b>1,464</b>	<b>2,042</b>	<b>+39</b>
Contract Value (millions of dollars)	One-Family Houses	\$ 37,535	\$ 57,250	+53
	Multifamily Housing	16,261	24,200	+49
	Nonhousekeeping Residential	4,280	4,400	+3
	<b>Total Residential Buildings</b>	<b>\$ 58,076</b>	<b>\$ 85,850</b>	<b>+48</b>
<b>Nonbuilding Construction</b>				
Contract Value (millions of dollars)	Highways & Bridges	\$ 12,275	\$ 14,500	+18
	Sewer & Water	7,357	7,000	-5
	Other Public Works	6,276	6,400	+2
	<b>Total Public Works</b>	<b>\$ 25,908</b>	<b>\$ 27,900</b>	<b>+8</b>
	Utilities	\$ 11,428	\$ 10,000	-12
<b>Total Nonbuilding Construction</b>	<b>\$ 37,336</b>	<b>\$ 37,900</b>	<b>+2</b>	
<b>All Construction</b>				
Contract Value (millions of dollars)	Total Construction	\$154,619	\$178,250	+15
	Dodge Index (1977 = 100)	111	128	

\*\*FW Dodge basis

*Prepared March 1983 by the  
Economics Department,  
McGraw-Hill Information  
Systems Company, George A.  
Christie, vice president and chief  
economist.*

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## 1983 Regional Estimates Dodge Construction Potentials

North-east	Connecticut, District of Columbia, Delaware, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, Eastern Pennsylvania, Rhode Island, Virginia, Vermont	1982	1983	Percent Change 83/82
		Actual	Forecast	
Contract Value (millions of dollars)	<b>Nonresidential Buildings</b>			
	Commercial and Manufacturing	\$ 6,438	\$ 5,875	- 9
	Institutional and Other	4,584	4,675	+ 2
	<b>Total</b>	<b>\$11,022</b>	<b>\$10,550</b>	<b>- 4</b>
	<b>Residential Buildings</b>			
	One-Family Houses	\$ 5,687	\$ 8,825	+55
	Multifamily Housing	3,066	4,650	+52
	Nonhousekeeping Residential	1,052	925	-12
	<b>Total</b>	<b>\$ 9,805</b>	<b>\$14,400</b>	<b>+47</b>
	<b>Nonbuilding Construction</b>			
Highways and Bridges	\$ 2,471	\$ 2,825	+14	
Other Public Works	2,884	2,800	- 3	
Utilities	1,171	1,000	-15	
<b>Total</b>	<b>\$ 6,526</b>	<b>\$ 6,625</b>	<b>+ 2</b>	
<b>Total Construction</b>	<b>\$27,353</b>	<b>\$31,575</b>	<b>+15</b>	

Mid-west	Northern Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, North Dakota, Ohio, Western Pennsylvania, South Dakota, Wisconsin, West Virginia	1982	1983	Percent Change 83/82
		Actual	Forecast	
Contract Value (millions of dollars)	<b>Nonresidential Buildings</b>			
	Commercial and Manufacturing	\$ 7,419	\$ 5,225	-30
	Institutional & Other	4,803	4,675	- 3
	<b>Total</b>	<b>\$12,222</b>	<b>\$ 9,900</b>	<b>-19</b>
	<b>Residential Buildings</b>			
	One-Family Houses	\$ 5,374	\$ 7,925	+47
	Multifamily Housing	2,394	3,550	+48
	Nonhousekeeping Residential	402	425	+ 6
	<b>Total</b>	<b>\$ 8,170</b>	<b>\$11,900</b>	<b>+46</b>
	<b>Nonbuilding Construction</b>			
Highways and Bridges	\$ 3,022	\$ 3,475	+15	
Other Public Works	2,681	2,450	- 9	
Utilities	2,718	1,500	-45	
<b>Total</b>	<b>\$ 8,421</b>	<b>\$ 7,425</b>	<b>-12</b>	
<b>Total Construction</b>	<b>\$28,813</b>	<b>\$29,225</b>	<b>+ 1</b>	

South	Alabama, Arkansas, Florida, Georgia, Southern Illinois, Kansas, Louisiana, Mississippi, Missouri, North Carolina, Nebraska, Oklahoma, South Carolina, Tennessee, Texas	1982	1983	Percent Change 83/82
		Actual	Forecast	
Contract Value (millions of dollars)	<b>Nonresidential Buildings</b>			
	Commercial and Manufacturing	\$14,103	\$12,200	-13
	Institutional and Other	7,590	8,300	+ 9
	<b>Total</b>	<b>\$21,693</b>	<b>\$20,500</b>	<b>- 5</b>
	<b>Residential Buildings</b>			
	One-Family Houses	\$17,790	\$26,775	+51
	Multifamily Housing	7,086	10,150	+43
	Nonhousekeeping Residential	1,604	1,600	-
	<b>Total</b>	<b>\$26,480</b>	<b>\$38,525</b>	<b>+45</b>
	<b>Nonbuilding Construction</b>			
Highways and Bridges	\$ 4,250	\$ 5,225	+23	
Other Public Works	4,650	4,700	+ 1	
Utilities	3,198	3,900	+22	
<b>Total</b>	<b>\$12,098</b>	<b>\$13,825</b>	<b>+14</b>	
<b>Total Construction</b>	<b>\$60,271</b>	<b>\$72,850</b>	<b>+21</b>	

West	Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming	1982	1983	Percent Change 83/82
		Actual	Forecast	
Contract Value (millions of dollars)	<b>Nonresidential Buildings</b>			
	Commercial and Manufacturing	\$ 9,290	\$ 8,175	-12
	Institutional & Other	4,980	5,375	+ 8
	<b>Total</b>	<b>\$14,270</b>	<b>\$13,550</b>	<b>- 5</b>
	<b>Residential Buildings</b>			
	One-Family Houses	\$ 8,684	\$13,725	+58
	Multifamily Housing	3,715	5,850	+57
	Nonhousekeeping Residential	1,222	1,450	+19
	<b>Total</b>	<b>\$13,621</b>	<b>\$21,025</b>	<b>+54</b>
	<b>Nonbuilding Construction</b>			
Highways and Bridges	\$ 2,532	\$ 2,975	+17	
Other Public Works	3,418	3,450	+ 1	
Utilities	4,341	3,600	-17	
<b>Total</b>	<b>\$10,291</b>	<b>\$10,025</b>	<b>- 3</b>	
<b>Total Construction</b>	<b>\$38,182</b>	<b>\$44,600</b>	<b>+17</b>	

First Update  
March 1983

million by the fourth quarter. The year's total is likely to be something above 1.45 million—with an outside chance of breaking 1.5 million units. The highest probability estimate for 1983 is a mix of 900,000 one-family homes and 575,000 multifamily units.

If the economy's recovery picks up momentum in 1983's second half, it is not hard to imagine that the Federal Reserve will begin backing away from monetary stimulus before year-end. When it does, mortgage rates are expected to firm in the range of 12.0 to 12.5 per cent. Assuming that rates are not pushed up again by excessive monetary restraint, or bid up by stronger loan demand in 1984, housing starts next year are tentatively forecast to increase further to 1.65 million starts under conditions of stable rates. As multifamily building approaches a ceiling of 600,000 units, single-family housing is projected to exceed one million units in 1984.

### Nonresidential building: Excess capacity will delay the turnaround—but opportunities still exist

Contracting for commercial and industrial building typically lags general business activity by as much as a year. With the economy only now beginning to recover, it will take most of 1983 to set the stage for the next expansion of nonresidential building. Before adding new buildings, it is first necessary to take up the considerable slack in under-utilized existing structures.

It is hard to say whether there is more excess capacity in factories or in offices at the moment. The slack in both areas is considerable, though for different reasons.

### Industrial

Unused manufacturing capacity has been accumulating steadily since 1979, severely limiting the need for new industrial building. In 1982, at the recession's low point, contracting for factory space fell to 116 million square feet—the lowest volume in over 20 years—and even that turned out to be more than industry required.

Through 1983, rising industrial output will begin to absorb idle capacity, but the utilization rate, now at 68 per cent, isn't likely to be higher than 72 per cent by year-end. Whenever capacity utilization is below 75 per cent, as it was in 1982 and will be in 1983, the demand for industrial

construction is limited to rock-bottom essentials: relocation, replacement, and the expansion needs of those few industries which somehow manage to avoid recession. The turnaround of the industrial production this year will be the first necessary step toward the recovery of industrial construction in 1984, but it won't generate any more than minimum demand for buildings in 1983.

### Offices

Although the problem of surplus industrial space is due to weak demand, the current surplus of office space is more a matter of too much supply. Either way, the marketplace requires a downward adjustment of construction.

Office building peaked in 1981 when a record volume of 325 million square feet was offered to a market that was capable of digesting about 200 million square feet on a continuing basis. Even though some of that surge of building was intended to satisfy a backlog of need carried over from prior years, when the growth of the white-collar labor force outpaced new construction, an adjustment was inevitable.

A 20 per cent decline in contracting in 1982 (to 260 million square feet) wasn't enough to restore balance. At that rate of contracting, more new space was still being added than could be used, and vacancy rates rose sharply. Balance between demand and supply in the office building market can only be established by further reduction of building in 1983—perhaps by as much as another 25 to 30 per cent.

Despite the need for further correction, opportunities exist in the highly localized office building market. Much of the present surplus is concentrated in several Southwestern metropolitan areas, leaving many other cities with potential for development.

### Retail

Store and warehouse contracting is nonresidential building's best bet for improvement in 1983. A 10 per cent advance in last year's final quarter, and a further gain in January, may be early signs that retail building is once again doing what it usually does: following housing.

Since the late 1970s, when housing starts toppled from their 2-million-unit level, the retreat of contracting for stores/warehouses paralleled homebuilding closely. By 1982, both housing and retail building

Architectural Record April 1983 39

### Residential Building Contract Value

Seasonally adjusted annual rates, in billions of dollars

Year/Quarter	Total	One Family	Multi-Family	
1982	I	\$51.6	\$34.9	\$16.7
	II	54.4	34.4	20.0
	III	58.2	36.0	22.2
	IV	68.2	44.7	23.5
1983	I	\$78.1	\$51.3	\$26.8
	II	83.5	55.3	28.2
	III	88.3	59.2	29.1
	IV	93.7	63.4	30.3
<b>1982</b>	<b>\$58.1</b>	<b>\$37.5</b>	<b>\$20.6</b>	
<b>1983</b>	<b>\$85.9</b>	<b>\$57.3</b>	<b>\$28.6</b>	
<b>% Change</b>	<b>+48</b>	<b>+53</b>	<b>+39</b>	

\*Includes Nonhousekeeping Residential Buildings

### Nonbuilding Construction Contract Value

Seasonally adjusted annual rates, in billions of dollars

Year/Quarter	Total	Public Works	Utilities	
1982	I	\$41.9	\$28.7	\$13.2
	II	31.9	25.8	6.1
	III	34.5	24.3	10.2
	IV	40.9	24.8	16.1

year, a gain of almost 15 per cent.

### Nonbuilding construction: Two job bills should give public works a temporary lift

Beginning soon, two new programs will pump up public works construction in the mid-1980s in much the same way that the Local Public Works Act did in the 1970s. And the object is the same as before: to create jobs.

One of these two new programs, the Surface Transportation Assistance Act of 1982, is near enough to implementation so that its 1983 impact can be roughly estimated. Each year from 1983 through 1986 it will add an extra layer of Federal funding of about \$5.5 billion to the nation's pre-existing \$9-billion-a-year basic transport construction program. The new increment will provide its own funding via a 5 cents-a-gallon fuel tax, the proceeds of which will be split 80 per cent for highway and bridge construction and 20 per cent for mass transit equipment purchases.

money, which is to be provided through a supplemental appropriation in fiscal year 1983, is "new" and how much will be "borrowed" from future budgets. What is clear is that after several years of budgetary restraint, public works construction will be getting a temporary lift in 1983 (and 1984) that will be at least the equivalent of the Local Public Works Act of the late 1970s.

### The near-term outlook: recovery by stages

Housing started things off in the second half of 1982. That beginning is due to be reinforced by a rise in public works construction during 1983. By 1984, the gain in housing and public works will be joined by the recovery of commercial and industrial building.

The fulfillment of this progression to full recovery depends heavily on what happens to interest rates toward the end of 1983. For the time being, there is not much risk that interest rates will rise sharply and stall the construction market's long-awaited recovery.



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the key to success  
is adaptability.

**The Outlook****Nonresidential Building Contract Value**

Seasonally adjusted annual rates, in billions of dollars

Year/Quarter	Total	Commercial/ Industrial	Institutional	
1982	I	\$65.7	\$45.5	\$20.2
	II	56.5	35.9	20.6
	III	58.7	35.6	23.1
	IV	55.9	31.8	24.1
1983	I	\$55.8	\$33.5	\$22.3
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	III	53.3	30.1	23.2
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<b>1982</b>	<b>\$59.2</b>	<b>\$37.2</b>	<b>\$22.0</b>	
<b>1983</b>	<b>\$54.5</b>	<b>\$31.5</b>	<b>\$23.0</b>	
<b>% Change</b>	<b>- 8</b>	<b>-16</b>	<b>+ 5</b>	

**Residential Building Contract Value**

Seasonally adjusted annual rates, in billions of dollars

Year/Quarter	Total	One Family	Multi- Family*	
1982	I	\$51.6	\$34.9	\$16.7
	II	54.4	34.4	20.0
	III	58.2	36.0	22.2
	IV	68.2	44.7	23.5
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	IV	40.9	24.8	16.1
1983	I	\$33.5	\$25.5	\$ 8.0
	II	35.6	27.6	8.0
	III	38.7	28.7	10.0
	IV	43.8	29.8	14.0
<b>1982</b>	<b>\$37.3</b>	<b>\$25.9</b>	<b>\$11.4</b>	
<b>1983</b>	<b>\$37.9</b>	<b>\$27.9</b>	<b>\$10.0</b>	
<b>% Change</b>	<b>+ 2</b>	<b>+ 8</b>	<b>-12</b>	

had declined by 50 per cent.

Soon housing will be leading the recovery of stores/warehouses through 1983 and 1984. If the housing forecast of 1.475 million starts for 1983 is on target, allowance for a brief lag means that the demand for stores/warehouses will be close to 280 million square feet this year, a gain of almost 15 per cent.

**Nonbuilding construction: Two job bills should give public works a temporary lift**

Beginning soon, two new programs will pump up public works construction in the mid-1980s in much the same way that the Local Public Works Act did in the 1970s. And the object is the same as before: to create jobs.

One of these two new programs, the Surface Transportation Assistance Act of 1982, is near enough to implementation so that its 1983 impact can be roughly estimated. Each year from 1983 through 1986 it will add an extra layer of Federal funding of about \$5.5 billion to the nation's pre-existing \$9-billion-a-year basic transport construction program. The new increment will provide its own funding via a 5 cents-a-gallon fuel tax, the proceeds of which will be split 80 per cent for highway and bridge construction and 20 per cent for mass transit equipment purchases.

Because the new program doesn't take effect until the second quarter, its 1983 addition to highway/bridge construction funding will be less than the eventual \$4.4 billion annually. Moreover, there is bound to be some substitution of these new Federal funds for projects that otherwise would have been built with increasingly scarce state and local taxes. On balance, STAA-82 is likely to add a net \$2 to \$2.5 billion to highway and bridge construction in 1983, and more in 1984, 1985 and 1986.

The other new program hadn't taken final form as this was written, but it was close enough to passage to anticipate its major provisions. Under pressure from Congress to come up with more of a jobs program than the user-tax-supported highway bill (which many argue will have only a neutral impact on net employment), the administration is offering a \$4.3-billion package of job-stimulating expenditures and "humanitarian" aid. Other proposals would add an extra billion or more to this base. In the bill's present status, roughly

three-quarters of the \$4.3 billion is construction related, with funds for highways, airports, water resources, Federal office buildings, prisons and military housing, as well as for community-development block grants and urban-development action grants.

It is unclear how much of the money, which is to be provided through a supplemental appropriation in fiscal year 1983, is "new" and how much will be "borrowed" from future budgets. What is clear is that after several years of budgetary restraint, public works construction will be getting a temporary lift in 1983 (and 1984) that will be at least the equivalent of the Local Public Works Act of the late 1970s.

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# Computers: How to protect your rights when you buy one

*An experienced attorney reveals what you must do before and after purchase to get your considerable money's worth*

By John W. Greenfield

There is no "computer law." The legal rights of the purchaser of a computer are defined in the same terms as those of a purchaser of any other goods, such as pencils or automobile supplies. They are covered by the Uniform Commercial Code which has been enacted by all states.

There are numerous court decisions rendered by the different state courts construing the same statutes. Although these court decisions are not binding from one state to the next, they are given careful consideration by a court in one state if a court in another state has considered a similar factual situation under the same statute laws. Thus, this is an area of the law that does not change greatly from one state to the next.

## **It's up to the buyer to know his rights—and to enforce them**

It is the buyer's ability to recognize, preserve, and successfully enforce the rights and remedies afforded by law that will most effectively cause the seller to adequately respond to his problems and resolve any disputes.

The body of law and legal principles that apply to the purchase and sale of hardware is readily identifiable. However, problems related to software may not lend themselves to neat legal classifications.

The remedies discussed here apply to the purchase of software packaged with hardware. Where the purchaser acquires an extensively modified or specifically and uniquely designed software application, however, it is more accurately characterized as design services, and hence not treated under the law the same as the purchase of a thing.

The successful resolution of a dispute may include any of the following remedies:

- The manufacturer refunds the purchase price and takes the equipment back;
- The manufacturer repairs or replaces the equipment so that it works to the user's satisfaction;
- The buyer receives an adjustment or reduction in price, or other compensation from the seller;
- The buyer recovers money damages based on the seller's breach to provide the equipment contracted for.

## **The buyer must be sure the contract describes the system accurately**

It must be the contract, not correspondence, sales literature,

and oral explanation, that accurately describes the system. And the more sophisticated the system, the more specific and detailed the contract should be. It is important that the specific features and capabilities required in the equipment be stated, and such a description may go beyond the manufacturer's specifications.

Generally, disputes arise after the sales agreement has been entered into and equipment delivered and installed.

There are two critical time periods in which the buyer must be keenly aware of the operation of the equipment and the assertion of his rights in the event the equipment does not operate properly. The first period runs from delivery to the point when the equipment is accepted by the purchaser. The second begins with acceptance, and exists for a "reasonable period of time" afterward. During this time, defects that were not apparent but did exist prior to acceptance may show up.

## **The buyer must check the equipment thoroughly upon delivery**

The purchaser's ability to avoid or resolve a dispute at this point rests with his diligence in thoroughly checking and testing the equipment to ensure that it meets the specifications and in fact does what the sales contract provides. It is important that the buyer be satisfied that the equipment performs properly and that he not accept faulty equipment with the expectation that the seller will take care of problems during the warranty period.

There is often a natural tendency to want to put the equipment on line and into operation. To protect himself, however, the buyer must temper his enthusiasm for the new equipment with cold, critical tests. Furthermore, all tests need to be documented. A record must be kept of any discrepancy or "bug," including function and time of event and people involved. It may also be useful or important to have a knowledgeable and independent third party determine whether or not the system is functioning properly.

## **Acceptance is a critical point in the purchase and sale transaction**

It is generally defined by law as occurring when the purchaser takes possession of the item. However, the purchaser and seller in a sales contract can

define acceptance differently. Acceptance may occur after the equipment has been delivered, installed, the software loaded, and "checked out." The seller will attempt to make the buyer accept the equipment as soon as possible, while the "honeymoon" is still on.

It is important that the buyer be acutely aware of the point of acceptance. Before goods are accepted, the buyer has the absolute right to reject non-conforming goods. He can require "exact performance by the seller of his obligation" as a condition to his acceptance of the goods. Thus, it is critical for the purchaser to thoroughly inspect, review, test, and try out the computer equipment before the equipment is accepted. Acceptance is generally acknowledged by signing a specific document, at which time an initial warranty period begins.

## **A buyer can revoke his acceptance of the equipment**

He can revoke his acceptance if the equipment deviates or is so defective that its nonconformity substantially impairs its value. The buyer's ability to revoke accepted goods or equipment depends on his proof of "substantial impairment of value," and he has the burden of proof if the dispute should evolve into litigation.

The test is substantial impairment of value to the buyer. Therefore, the difference in dollar value of the system as it exists and as contracted for is not controlling.

In an early case, the courts ruled that the purchaser of an automobile could revoke its acceptance where it was shown that the nonconformities of the automobile affected the user enough to shake his faith in the car. The court held that the car's value was substantially impaired where "the operator was fraught with apprehension." Thus, an engineering firm could show that if a computer was inconsistent in its functioning so that it could not be relied on to complete a large job—i.e., it had malfunctioned on previous large jobs—there would be substantial impairment in the value.

A buyer can revoke his acceptance of goods within a reasonable time after acceptance. Generally, the courts have recognized that a revocation of acceptance occurs after attempts at repair and adjustments have failed. There is no specific formula as to what constitutes a reasonable time.



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**A buyer can revoke acceptance even after attempts to negotiate a settlement**

This has been upheld by the courts. Also, the attempted negotiations were held to extend the "reasonable time" in which the buyer could revoke acceptance.

Prevention of surprise to the seller is the purpose of requiring revocation within a reasonable time. A buyer may not accept equipment, use it for a period of time, and then revoke the acceptance if he has not told the seller of the equipment's non-conformity.

This point emphasizes the importance of a buyer's documenting clearly, specifically, and in detail all matters of non-conformity of the equipment. It is important that the seller be given detailed written communications concerning the problems with the computer: when it malfunctioned, how it malfunctioned, how long it took to repair. The buyer must "build his record" as to the malfunctions and nonconformity.

Note the distinctions between the buyer's right to revoke and the buyer's right to reject. Before acceptance, the buyer can insist on exact compliance with the purchase contract. After acceptance, he must show substantial impairment of value to him before he can revoke acceptance. In this context, it is important to note that the seller has the right to repair and adjust as necessary to remove the impairment in value to the buyer.

However, the time in which the seller can cure is not unlimited. Again, there is no formula to define exactly the period in which a seller can repair. It is a function of the degree of sophistication of the equipment and the problems involved.

**The seller generally tries to limit his exposure to liability**

Thus, virtually every purchase contract for a large computer system includes a provision that the seller's responsibilities for a defective system are to repair and/or replace the equipment. These provisions serve to limit the sellers' exposure to liability, for where remedies are not so limited, purchasers can sue sellers for the difference in value between the defective equipment installed and the contract price and for consequential and incidental damages (discussed below).

The problem presented to the buyer by such a clause—and the origin of many disputes—is that

the seller's attempted repairs and/or replacement of parts may not put the equipment into proper operating condition.

If the seller does not repair, then the clause "fails of its essential purpose" and is not effective. The seller can be said to have not repaired if he fails to meet the following conditions:

- Repairs and/or replacement must be made within a reasonable time.
- Repair and replacement efforts must be effective. The courts have held that commendable efforts and considerable expense alone do not relieve a seller of his obligation to repair.
- The defect must be permanently repaired.

The amount of money needed to repair a defect is not necessarily relevant. Courts have held that the impairment of the value to the purchaser may be substantial, even though the cost of curing the defect may be relatively small.

Nor does the seller have an unlimited opportunity to repair. Some courts have held that the seller is entitled to only one opportunity to correct a defective part. While this is probably not a universal rule among courts and among all fact situations, courts have clearly held that the seller does not have the opportunity to "tinker with the article indefinitely in the hope that it may ultimately be made to comply with the warranty."

**What should the buyer do if all else fails?**

If the buyer takes the position that the seller's attempted repair and replacement efforts are inadequate and the equipment is still substantially impaired in value, he should safely store the equipment and not use it. To attempt to use the equipment contradicts the position that the equipment is substantially impaired and that the buyer is revoking his acceptance.

The buyer can assert a security interest in the equipment and, before he allows the seller to regain possession of the equipment, insist that the seller return to the buyer any money paid to the seller and also pay for the storage costs.

**The buyer must give clear, specific notice to the seller after rejection or revocation**

The notice should factually state that the value of the equipment to the buyer is substantially impaired and detail the specifics, including:

- The failed attempts to repair.

- The previous notices of non-conformity.

Certain monetary damages in addition to a return of the purchase price may be available to the buyer in the event the equipment fails to meet the contract requirements and has been rejected or revoked. These include:

- *Incidental damages.* If a buyer has successfully returned the equipment to the seller and has shown the court that it was defective, then the buyer may be able to prove incidental damages, such as cost of shipment, preparation of space to install the equipment, storage costs, etc. These damages are incidental to the purchase and return of the equipment.

- *Consequential damages.* In some instances where damages result as a consequence of the failure of the equipment, these damages may be recovered from the seller. Examples of consequential damages might be where a CAD system fails, and an engineering company has to pay extensive outside drafting costs to prepare plans. Consequential damages are more difficult to recover, but generally are greater in amount than incidental damages.

Although sellers usually insert a clause that says their damages are limited to only repair and replacement of parts, some courts have held that where the repair/replacement provision fails of its essential purpose—i.e., the equipment is not repaired or replaced and operating satisfactorily—then the other limitations on damages fail, and the buyer can recover the incidental and consequential damages he can prove.

*John W. Greenfield is a partner in the Atlanta law firm of Greenfield, Ellis and Jenkins. Mr. Greenfield specializes in the representation of engineers and architects, as general counsel and as defense counsel, in lawsuits covered by errors and omissions insurance policies.*



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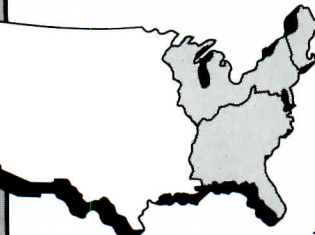
## Manville

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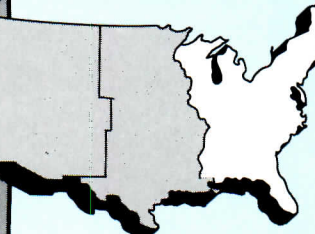


# Costs: Are they really coming down?

## Summary of Building Construction Costs



	Number of metro areas	Districts Eastern U.S.		
		10/82 to 1/83	1/82 to 1/83	1977* to 1/83
Metro NY-NJ .....	18	1.22	4.93	1490.12
New England States.....	33	1.15	5.75	1480.74
Northeastern and North Central States.....	120	1.32	4.08	1544.60
Southeastern States .....	106	1.19	5.03	1554.95
<b>Average Eastern U.S.....</b>	<b>277</b>	<b>1.25</b>	<b>4.70</b>	<b>1537.42</b>



	Number of metro areas	Districts Western U.S.		
		10/82 to 1/83	1/82 to 1/83	1977* to 1/83
Mississippi River and West Central States.....	122	1.08	4.39	1546.65
Pacific Coast and Rocky Mountain States.....	106	.87	5.57	1623.99
<b>Average Western U.S.....</b>	<b>228</b>	<b>.98</b>	<b>4.94</b>	<b>1582.61</b>

<b>United States: Average.....</b>	<b>505</b>	<b>1.13</b>	<b>4.80</b>	<b>1557.82</b>
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\* Using only cities with base year of 1977

Based on a survey by the McGraw-Hill Cost Information Systems Division for the period September 1982 through January 1983, the average cost of the following construction materials fell by .3 per cent: Specifically, concrete was down .8 per cent; block up 1.7 per cent; plywood down 4.7 per cent; lumber down 2.4 per cent; gypsum board up 5 per cent; asphalt shingles down .5 per cent; reinforced steel up 1.3 per cent; structural steel down .4 per cent; conduit up .9 per cent; pipe (copper) down 2.9 per cent.

Even though some decreases offset increases in the last quarter (RECORD, January 1983, page 45), it would seem that these costs may be following consumer costs' downward trend. And indeed they are for the short term.

But there are upward pressures around the corner for some segments of the industry. With users now trying to lock in on low-cost supplies, any construction volume increase will result in a "material lag," due to low supplier stock. And indications are that housing starts will continue to increase in 1983 so that those materials most commonly used in housing construction should show the greatest upward pressure. Labor

rates for this period indicated no significant increase over the last quarter. Union labor, prodded by the increase in non-union competition, and a high unemployment rate, responded with more competitive contracts. Last year ended the ever-increasing settlement trend in construction contracts.

The variation by region in 1982 was significant. The New England area had the highest increase, while the Midwest tended to hold down the rate of increase.

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

*James Stewart  
Cost Information Systems  
McGraw-Hill Information  
Systems Company*



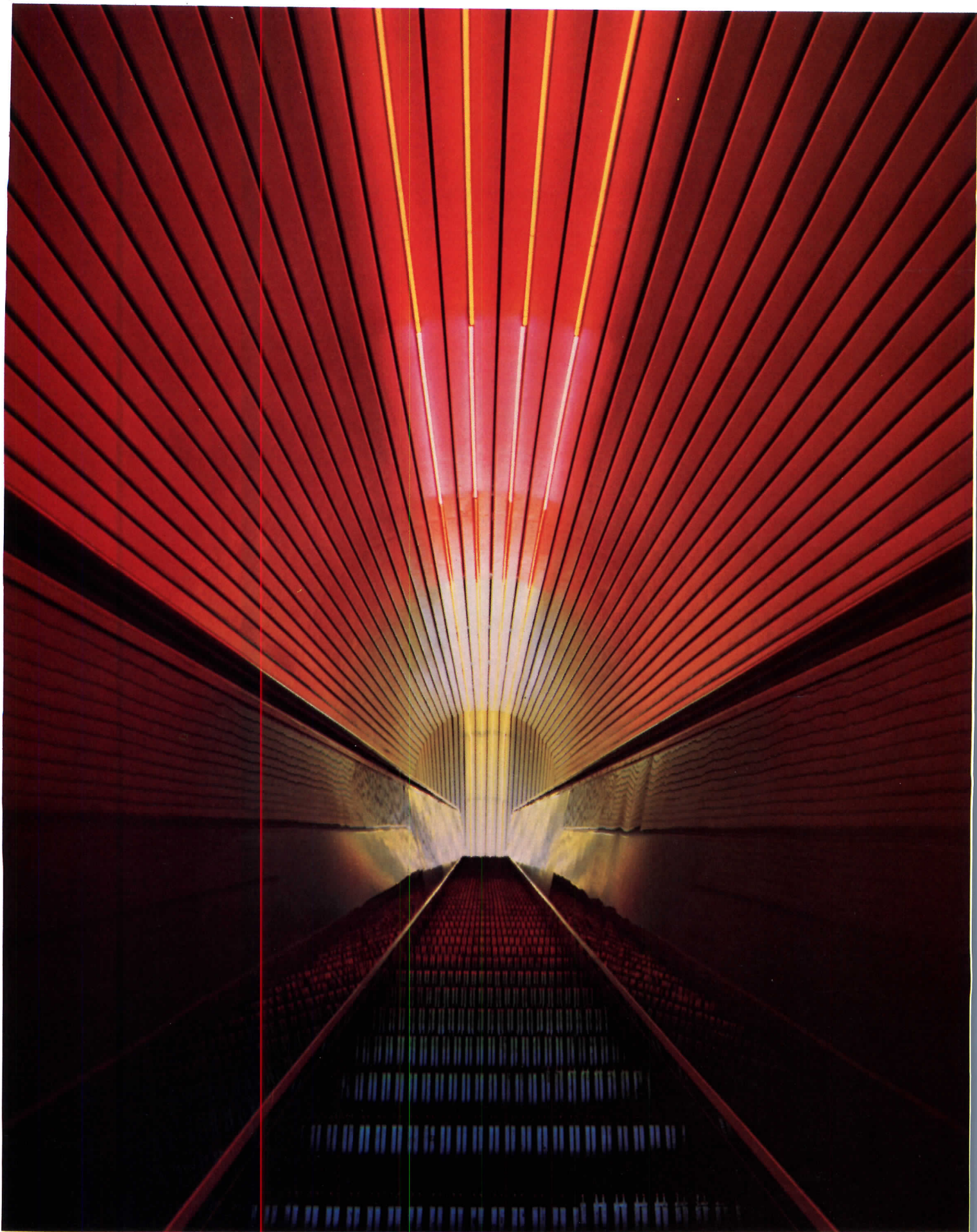
## Historical Building Costs Indexes

### Average of all Non-Residential Building Types, 21 Cities

1977 average for each city = 1000.0

Metropolitan area	1977			1978			1979			1980			1981			1982		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
Atlanta	1171.5	1712.6	1925.6	1958.3	2007.3	2004.7	2098.6	2175.9	2238.1	2090.6	2078.0	2208.8	2212.2	2302.0	2360.6			
Baltimore	1018.4	1107.7	1304.5	1323.2	1422.7	1429.7	1446.5	1485.7	1486.7	1600.5	1544.9	1567.8	1603.3	1615.9	1639.5			
Birmingham	1029.7	1142.4	1329.9	1372.5	1387.3	1389.2	1407.2	1420.0	1436.1	1463.1	1469.9	1502.5	1490.1	1478.2	1468.1			
Boston	1023.4	0998.6	1236.0	1290.1	1286.9	1280.5	1283.7	1321.3	1331.9	1413.5	1432.5	1463.5	1508.3	1495.3	1502.0			
Chicago	1007.7	1032.8	1199.7	1233.5	1266.4	1323.6	1323.6	1279.3	1315.8	1342.7	1344.7	1343.0	1376.5	1413.9	1425.8			
Cincinnati	0848.9	0991.0	1323.9	1325.1	1331.5	1385.8	1385.2	1348.2	1400.3	1400.7	1350.4	1353.5	1349.9	1361.5	1362.6			
Cleveland	1034.4	1040.8	1287.5	1305.1	1356.7	1357.8	1388.2	1402.0	1451.7	1454.2	1459.5	1449.4	1469.9	1511.4	1511.4			
Dallas	1042.4	1130.6	1431.9	1459.4	1459.7	1464.2	1481.9	1588.7	1685.0	1693.9	1750.6	1740.8	1765.0	1777.3	1834.3			
Denver	1038.8	1100.4	1495.6	1486.0	1470.9	1510.7	1487.4	1494.7	1522.2	1587.6	1632.2	1709.7	1724.0	1715.2	1679.1			
Detroit	1018.1	1087.3	1275.3	1303.1	1404.4	1449.6	1447.4	1446.6	1578.8	1579.6	1580.3	1589.8	1604.6	1627.1	1638.0			
Kansas City	1023.5	0951.5	1125.8	1141.5	1219.3	1219.8	1233.2	1236.1	1263.0	1262.8	1323.4	1284.3	1336.9	1384.5	1381.8			
Los Angeles	1022.5	1111.0	1255.3	1255.3	1312.4	1339.8	1387.5	1396.4	1457.2	1473.3	1474.3	1491.6	1507.0	1500.9	1503.3			
Miami	1004.5	1080.9	1330.1	1339.5	1349.1	1358.7	1380.6	1402.5	1395.0	1387.5	1369.1	1350.7	1357.5	1375.1	1392.1			
Minneapolis	1060.2	1196.8	1302.2	1302.2	1327.4	1327.6	1327.7	1328.0	1391.1	1433.2	1442.6	1450.8	1540.8	1572.8	1576.8			
New Orleans	1001.3	1138.8	1291.9	1323.3	1353.5	1474.4	1505.7	1528.4	1529.6	1560.4	1572.7	1573.2	1626.4	1631.3	1616.9			
New York	1005.4	1043.0	1247.1	1264.3	1301.1	1307.9	1319.4	1319.6	1326.2	1397.3	1419.2	1417.8	1472.6	1497.7	1491.8			
Philadelphia	1013.8	1074.2	1487.5	1493.0	1515.6	1523.4	1539.5	1596.6	1628.9	1634.2	1660.7	1676.9	1755.7	1762.5	1769.4			
Pittsburgh	1016.1	1015.0	1227.0	1278.2	1310.0	1325.7	1341.7	1369.0	1437.6	1450.3	1493.2	1526.7	1487.4	1458.4	1479.5			
St. Louis	1039.1	1198.8	1275.9	1271.1	1238.6	1244.6	1320.0	1323.4	1343.0	1379.2	1397.3	1399.5	1436.3	1433.8	1451.2			
San Francisco	1083.2	1326.8	1473.4	1554.1	1567.0	1614.0	1644.8	1650.8	1741.6	1763.9	1776.4	1777.0	1804.5	1813.8	1810.1			
Seattle	1142.5	1137.9	1373.4	1427.4	1554.9	1578.9	1616.8	1621.8	1672.3	1685.9	1814.9	1905.5	1968.8	1940.9	1962.7			

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



*A futuristic look using Hunter Douglas Luxalon linear ceiling graces the Detroit Science Center. The colors are produced with carefully planned lighting.*

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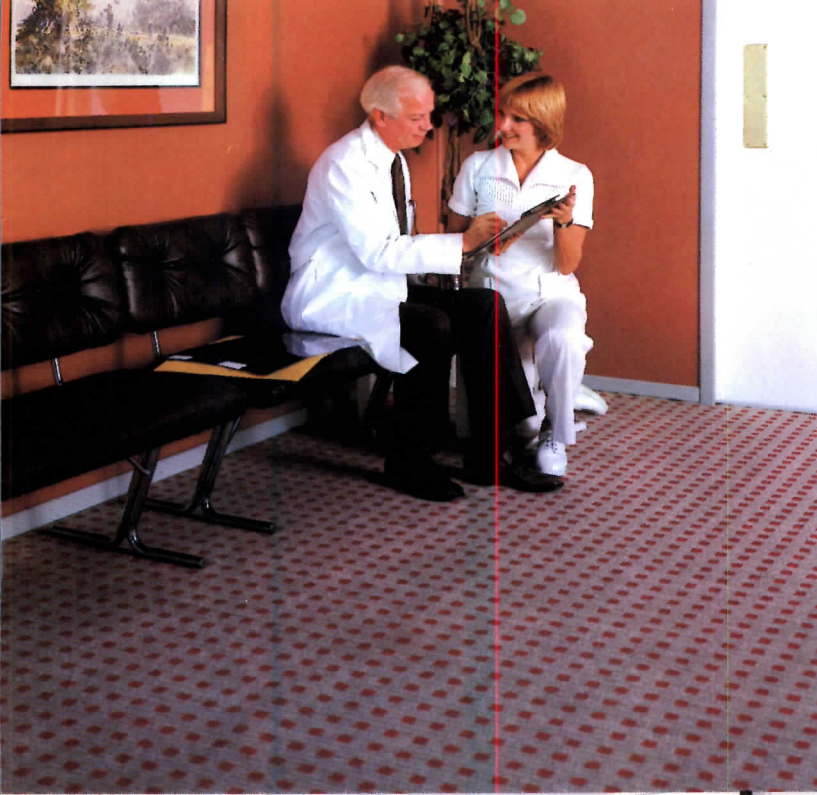
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# Computers: The wonderland of computer language

*Sweet's computer expert conjurs up a dialogue between an architect and a computer systems consultant*

By Harry Mileaf



'Twas brillig, and the slithy toves  
Did gyre and gimble in the wabe;  
All mimsy were the borogroves,  
And the mome raths outgrabe.

Beware the Jabberwock, my son!  
The jaws that bite, the claws  
That catch!  
Beware the Jubjub bird, and shun  
The frumious Bandersnatch!

from Lewis Carroll's *Jabberwocky*.

"Tut, tut, child," said the duchess.  
"Everything's got a moral if only  
you can find it."

from Lewis Carroll's *Alice's  
Adventures in Wonderland*.

It was Friday morning, and I was summarizing our latest research about the use of computers by architects, as well as trying to finish an article for ARCHITECTURAL RECORD. It had been a grueling week, and I looked forward to putting both projects to bed so that I could take the afternoon off and go up to Cape Cod for a long weekend. The phone rang. From years of habit I picked it up at the first ring. "Damn it, I blew it," I said to myself. I had promised myself that I wouldn't answer the phone so as to make sure nothing interfered with my weekend.

I recognized Alice's voice. "Hello, Alice. How are you?" "I'm fine, Harry, Look, I'm in a bind this morning, so I have to talk fast."

"Go ahead," I said "I have someone coming over this afternoon. I'd like you to sit in."

"Why?" "I really can't explain now, Harry, but it's important to me." "Alice, I was planning to leave early today and go up to Cape Cod."

"Oh," Alice said, sounding disappointed. There was a pause. Then she continued. "It won't take much of your time, Harry. Maybe an hour at the most. You'll get away early enough." She paused again, and I could hear her take a deep breath. "Look, Harry," she continued, "This is important to me. I've given you a lot of my time for those research programs over the last couple of years. I've never once turned you down. Now I need you. Are you telling me you're too busy?"

A terrible silence followed her question. She gave it time to sink in. She was right of course. She had always helped. I waited, let out a sigh of defeat, and agreed to come.

"Thanks, Harry. He's coming at two. Why don't you get here a few minutes earlier."

"All right," I answered, not too enthusiastically.

It was about 1:15 when I got in a cab and headed for Alice's. Alice ran a successful architectural practice, which had been experiencing controlled growth over the last three years. She had about 25 people on her staff, two-thirds of them professionals. Alice was bent on becoming involved with computers. But she was one of those people who made a commitment only when she felt knowledgeable enough. So she was still unsettled as to what to do or how to do it. Because she didn't have the staff manpower

to commit to it, and didn't have the time herself, she had spent the last two years sporadically dealing with consultants. Aside from a dedicated word processing system, nothing much came out of these dealings. "I'm not going to do anything until I know what these guys are talking about," Alice confessed to me about six months ago. "I wish Berlitz gave a quick course in computerese," she joked.

The cab ride was slow, so I leafed through the two books I had bought the day before for my niece: Lewis Carroll's *Through The Looking-Glass* and *Alice's Adventures In Wonderland*. I was surprised at how many of the passages I still remembered. I was starting to become involved when the cab pulled up to the curb.

Alice's office had grown, and had a prosperous, successful look about it. She had hoped for even greater expansion after getting started with computers, but incorporating more advanced ones in her practice was proving to be an elusive venture. "Hello, Harry," Alice greeted me. "A computer system consultant will be here soon..."

"Another one?" I interrupted.

"Yes," Alice continued. "But I don't have time to explain. Please don't participate in the discussion. I just want you to listen and advise me later. Oh, good," Alice said, glancing at the books I was holding. "You have something to read while I finish a report. Thanks, Harry, I really appreciate this."

I sat and browsed through the books, stopping now and then to reread passages I recalled. Finally, a voice on the intercom said: "Mr. Walter Russo is here." He was of average height, but overweight, and had a large dangling mustache that made him look amazingly like a walrus. "How can I help?" he asked.

"Well," Alice answered, "I want to incorporate more computers into my practice, and I'm looking for a consultant to help."

"Do you have WP?" Mr. Russo asked, after a long pause.

"WP?" Alice asked. Then a knowing look came over her face. You mean word processing. Yes, we have a system."

"Good," Mr. Russo said approvingly. "It's good you started in OA."

"OA?," asked Alice, and Mr. Russo replied, "Office automation. Where else would you like to start?"

"I don't know," Alice admitted. "Perhaps I should tell you something about my practice..."

"No need for that," Mr. Russo interrupted. "I've been in this business a long time. I can get the computer to do anything you want. Suppose we start with the computers that are available..."

This time Alice interrupted. "Is that a good place to start, since I really am not sure of what I want to do?"

Mr. Russo retorted, "If you don't know where you want to go, what's the difference how you get there?"

That statement had a remarkably familiar ring to it, and I went rifling through *Alice's Adventures in Wonderland*. Sure enough, there it was. Not exactly the same words, but the gist was there.

"Look," Mr. Russo said, "I've been through this many times. It's a classic situation. Let me explain the options. It will get clearer as we go along." And he started to speak...

Something happened. I saw his lips start to move, but they were not synchronized with the words I heard. I know the words I heard were not what he said, but I felt sure they were what he meant: "The time has come," the Walrus said,

"To talk of many things:  
Of shoes—and ships—and sealing wax—  
Of cabbages—and kings—  
And why the sea is boiling hot—  
And whether pigs have wings."

I shook my head and concentrated on Mr. Russo's actual words:

"... My experience," continued Mr. Russo, "has shown that we should first decide on whether we want to go micro, mini, or maxi, and figure out how much RAM and ROM we need; and then we can look into such vendors as IBM, NCR, NRI, RDC, HP, GTE, AED, CDC, CCI, CCSI, and perhaps NEC or DEC. Let me handle this part. I'm a member of ADAPSO, I have my own set of DATAPRO, and regularly attend NCGA and SCSC. I like DEC because of SNA, HASP, and BISYNC. But we still have to consider the CPU, mag system, CRT, and maybe even a modem."

Mr. Russo paused to let that sink in, and waited for a sign from Alice to continue. She was noticeably developing a tic. "Whatever we decide," he went on, "we should keep to *standard I/O operations with RS-232, ANSI, SIOO, ASCII, and IEEE compatibility*; and we should use transparent multiprocessing and virtual memory operations in batch,

*Continued on page 73*

# Stanley Series 5000 Weather Products.

## DOOR SEALS

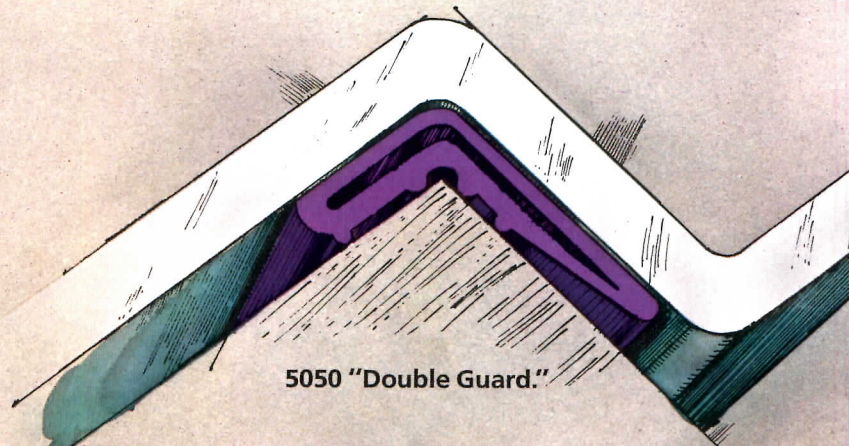
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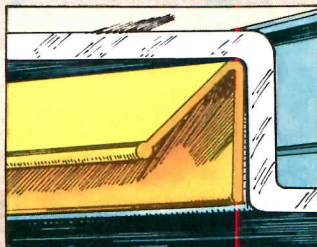


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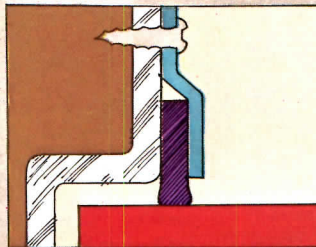
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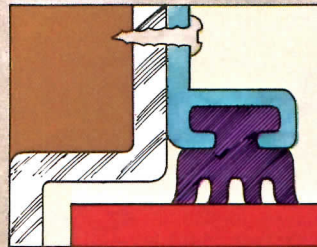
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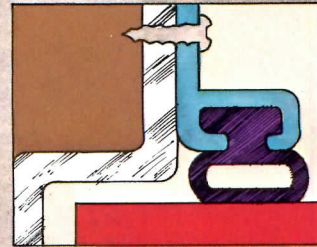
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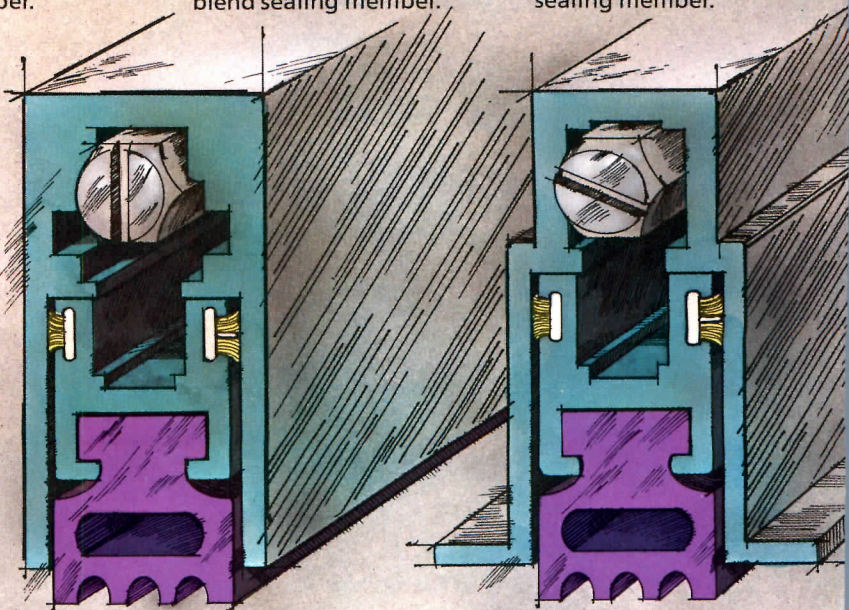
Automatic door bottoms also available in high grade medium-duty models (both surface-mounted and mortise).

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5120 Surface-Mounted Heavy-Duty.

5120 Mortise Heavy-Duty.

The Center for Fire Research conducts the only comprehensive fire research program in the country relevant to the general public (other Federal agencies have programs for specific purposes, such as military, civilian aircraft and wildland fire control).

A number of spectacular fires—such as the MGM Grand and Stouffer's—have brought the importance of research to public attention. According to the University of Pittsburgh's chairman of the Graduate School of Public Health, Dr. Yves Alrarie: "Because of synthetic materials, fires are burning faster and hotter and are emitting bizarre new varieties of fumes and gases."

In the past, the center produced engineering data for children's sleepwear standards, guidelines for siting of residential smoke detectors and performance tests for both residential and commercial detectors, fire-safety data for residential wood stoves and fire-safety evaluation systems for all types of construction. Currently, it is conducting fundamental studies in combustion research, completing work on a smoke-control design manual and developing test methods for evaluating inhalation toxicity of various burning materials.

Elimination of the centers would leave the United States with the dubious distinction of being the world's only industrial nation without a national building research laboratory. According to technical writer James Bishop: "The Europeans were way ahead of us, and we were just beginning to catch up. Even if Congress changes course later on, the damage will be done, because the dedicated experts will be gone. It's policy by budget."

Not surprisingly, the cuts are creating waves of protest. One of the first to object to the cuts was AIA president Robert Broshar, calling the attempt to curtail building- and fire-research programs "shortsighted." Noting that NBS had been doing important work in structural safety, fire safety and building codes, Broshar says these and other cutbacks in building-industry-related activities by the government would create "greater hardship for America's private sector already burdened by troubled economic times."

At Senate hearings February 22, Ernest Ambler, director of the National Bureau of Standards, was called on to testify in his official capacity for

the cuts, but he revealed his personal objections on questioning. Both Mildred Dresselhouse of MIT and Richard Bland, former chairman of the Fire Prevention and Control Administration, voiced their objections, based on the resulting lack of any central clearing house for technical data related to construction.

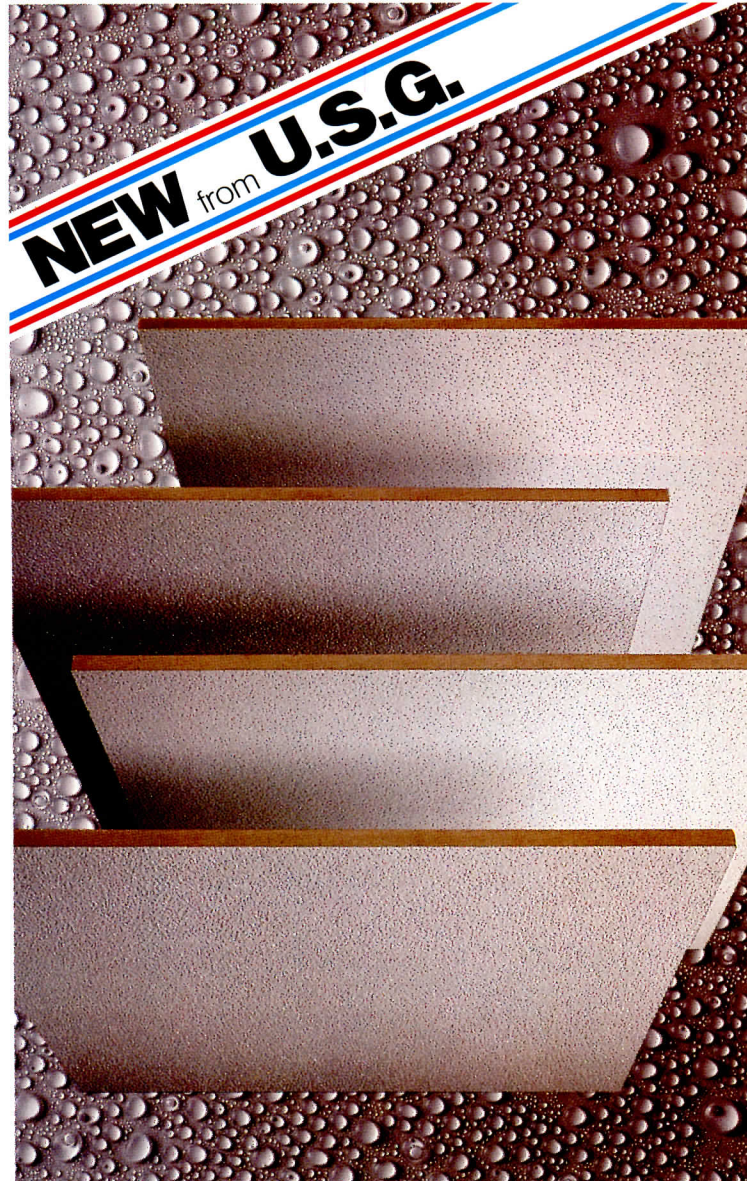
Building systems expert Ezra Ehrenkrantz says: "The centers are the strongest team we have, a key ingredient to clear communications. They keep every little community from having to write their own conflicting codes, and—in this sense—are essential for the nation's industrial productivity."

According to Gene Brewer, president of the National Institute of Building Sciences, this is not the first time that the centers have come under close scrutiny. His quasi-public organization with much private industry support was set up to monitor all construction-related research in the United States, and to help determine what activities are most appropriate for the public and private sectors.

Brewer presented a position paper (as is required by the NIBS charter) to House hearings on March 22. In it, the NIBS board of directors recommended continued funding of the centers, sufficient to evaluate what research the centers *should* be in. "Let's figure out what is their business," says Brewer.

"Even on product development, there is a distinct difference between the types of research that the centers do. Proprietary research is the responsibility of private industry, but private industry won't do research without a short payback time."

Brewer does not see much opportunity for NIBS, which lacks research facilities, to take up much of the slack. And, he doesn't see other organizations—such as the Underwriters Laboratories—doing it either. *Peter Hoffman, World News, Washington and Charles Hoyt*



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TS and real-time modes. I believe in IOF/TSO interactive output. The hardware should be based on software evolved from languages such as DOD's ADA, or else RPG, APL, FORTRAN, COBOL, PL/1, SPSS, PASCAL, FORTH, or some basic BASIC. I like CICS command level programming. Also important is that the language allow unhindered throughput, and some handleable output, such as standard FCB forms or even COM."

I shook my head again. I am fairly experienced with computers, but Mr. Russo was speaking quickly, and I was barely keeping up with him. Alice's mouth was hanging open, and I expected at any moment she would cry out "off with his head!" But that would have been out of character.

Mr. Russo went on: "Of course, the software should run on some de facto standard OS or DOS, like say CP/M for micros. PDP will run RSX11, RSTS, TSX or UNIX. And IBM's MVS op sys, like MVS/SP or MVS/SE, is desirable. Also, CMS/XL software operates in a VM/SP environment. We should thoroughly evaluate such OS versions as MFT, MVT, VSI, VS2, or MVS—CICS/VS, JES I and JES II." Mr. Russo hesitated. "Maybe we should just stick to a UNIX compatible system that is fault tolerant. We also should have utilities for sort/merge, language translation, data sets, and link-edit, as well as JCL procedure libraries and partitioned data sets (PDS), and we really should consider a CMS (conversation monitor system), either with or without an accelerator. For storage, I'd recommend 20 MB real with 30 MB virtual, except, of course, in a CICS setting."

"Of course," replied Alice. I almost fell off my chair.

"But let's get to the important factors," Mr. Russo went on, "... data bases. You've got to have some kind of DBMS or MIS, maybe a relational DBS. We should provide for sequential, direct, ISAM, or VSAM files, and IDCAM utilities to process VSAM, with a VTOC entry system. Let's look into an IRM and MRP, as well as DDS, CSS, CUFFS, DSS, EIS, EMS, FCS, FPS, IFPS, INDAS, CODASYL, TOTAL, to name just a few. I lean toward an interactive VSAM with a problem solver." Mr. Russo stopped, seeming to ponder an important point. He stroked his mustache a couple of times, and asked Alice, "Is this your only office location?"

"We're considering opening an office in Chicago," she answered.

"Oh! Then communications become important. If not between offices, then between here and some clients. We'll have to consider FTU, DTU, and FBTU, and maybe perhaps SBS, with an FCC-approved mode, a CNS-A tariff. We'll have to check out AT&T's LADTS, CSDC, NCTE, SLC and a dimension PBX, and decide on full or half duplex. We should check with CCITT on a NUI and DDU. I'll check into satellites on C-band—that's 6 Gigahertz on uplink and 4 on downlink—or maybe K-Band at 14 Gigahertz. That will affect our SNA and SDLC communications protocol. I also would check out an omnimode modem for point-to-point or multidrop lines; and we shouldn't forget the CTCA. "And that brings us to CAD/CAM..." Mr. Russo started to go on.

"I don't think we have time for that subject right now, Mr. Russo," Alice cut him off. "We'll have to continue this next time. You've given us enough to start on. We'll have to give it some thought. Then I'll get back to you."

We said our goodbyes, and Alice and I watched Mr. Russo leave. "Well, Harry, what do you think?"

I had to search for the proper words. "How many of them have you met with?"

"I believe he's the fifth."

"I can sympathize with you," I said. "I don't know how you can digest that and make any decisions."

"That isn't what's bothering me, Harry," Alice said.

"No?" I was perplexed.

"No." Alice answered.

"What really has me worried is that I'm starting to understand them."

#### POSTSCRIPT

*The acronyms and abbreviations in this article came from just the first few pages of a popular weekly computer journal. Even though it might read like a trip through the looking-glass, after a while, believe it or not, it begins to make sense.*

*Mr. Mileaf is director, Technology and Product Development for Sweet's Division, McGraw-Hill Information Systems Company. His achievements for Sweet's include Mechanical, Electrical and Civil Engineering Catalog Files, technological planning over the past 15 years, and 11 research studies over the past 3 years on influences in the construction industry. Mr. Mileaf is the author of 16 books on technical subjects.*



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## Office notes

### Offices opened

Associated Architectural Design Group is a new multidisciplinary architectural firm headed by Stephen Boggs, president.

W.P. Frizzell Architects of Florida announces the opening of a new Atlanta office.

Michael Lynn announces the joining of Michael Lynn & Associates, P.C., Brodsky & Associates, P.C. and the New York office of Max O. Urbahn/Nafie, along with the successor firm of Lathrop Douglas, which is called EGL Associates, to create an association of over 75 architects. The firm has established its headquarters at 300 Park Avenue South, New York, New York.

Kenneth Neumann and Robert Greager announce the firm of Kenneth Neumann Robert Greager & Associates Architects Planners, 26877 Northwestern Highway, Suite 100, Southfield, Michigan.

Jeffrey Michael Tohl announces the establishment of The Architecture Studio for the practice of architecture and planning, interior design and design consultation. It is located at 11325 Santa Monica Boulevard, Los Angeles, California.

The Architecture Four Collaborative is a recently incorporated firm offering professional services in architecture, planning and urban design. Offices are located at 1002 Walnut Street, Suite 201B, Boulder, Colorado.

### Firm changes

David T. Schowalter has joined the New York office of Welton Becket Associates as vice president, director of interior design.

Burlini/Silberschlag Ltd., AIA announces the promotion of Donald C. Pinge and John C. Whitmire. The firm name will change to Burlini/Silberschlag/Whitmire, Ltd., Architects and Planners, AIA. Mr. Pinge has been appointed principal-in-charge of production and interior design.

Philip L. Vander Myde has joined Dewberry & Davis as managing principal for architecture.

Harry M. Segner has been named a marketing representative at Ewing Cole Cherry Parsky.

Ferrenz and Taylor, Inc. announces the addition of Richard Clark as the firm's president. The new firm name is Ferrenz, Taylor, Clark and Associates, Inc.

James M. Dorsey, Jr. has been named vice president and office

manager for W. R. Frizzell Architects.

Hammond Beeby and Babka Architects announces that John M. Syvertsen has become a principal and Tannys Langdon, Dennis Rupert, Charles Young have become associates.

Harper & Buzinec Architects/Engineers, Inc. announces the appointment of Albert J. Carreño to executive vice president.

Hoyem-Basso Associates, Inc. Architects/Engineers announces that Edward J. Waranowicz has joined the firm as vice president and director of mechanical engineering. John Garbacik, Jr. has also joined the firm's mechanical department as project administrator. Noray Sarkisian is the firm's new vice president and director of electrical engineering.

Huygens and DiMella, Inc. has named J. Robert Taylor an associate of the firm.

Iffland Kavanagh Waterbury, P.C. announces the appointment of Helen E. S. Iffland as comptroller, Albert J. Bayruns, Frank C. H. Lin, Robert G. Weiland as associates.

ISD Incorporated announces the promotions of William Maguire, Susan Carter Merritt and Gary P. Hays to principal design managers and the election of Mel Hamilton as vice president in charge of the Chicago office.

Johnson-Dempsey & Associates, Inc., Architects and Planners announces that Mark Kellmann has joined the firm's design staff as a design associate.

Bernard Johnson Incorporated announces that David R. Dibner has joined the firm as senior vice president in charge of the Washington regional office.

Paul E. Neff has been made a partner in the firm of Jones + Boruff Architects and Planners, Inc.

Joseph R. Loring & Associates, Inc. announces the following appointments—senior associates: Barry L. Maltz, Herbert Nudell, Francisco F. Palacios, Michael Wein; associates: Edward J. Martinez, Erich Strauss, John C. Taylor.

MWM, Mackinlay/Winnacker/McNeil & Associates, Inc. announces the promotion of two architects. Michael D. Thomas has been named principal and vice president of the firm and Judith L. Rowe has been named principal associate.

Fischer/Schutte/Jensen, Inc., an architectural firm, has merged with Marathon Engineering, Inc.

James Nelson has been named director of West Coast operations for John Portman & Associates.



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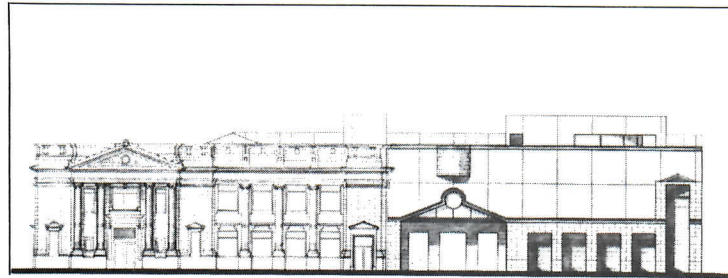
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While the international competition for the design of the new Humana headquarters in Louisville, and Michael Graves's winning entry, were garnering headlines, a quiet competition was under way among local architects for the renovation of a nearby building for use as an employee fitness and conference center and the design of a connecting link with the Graves

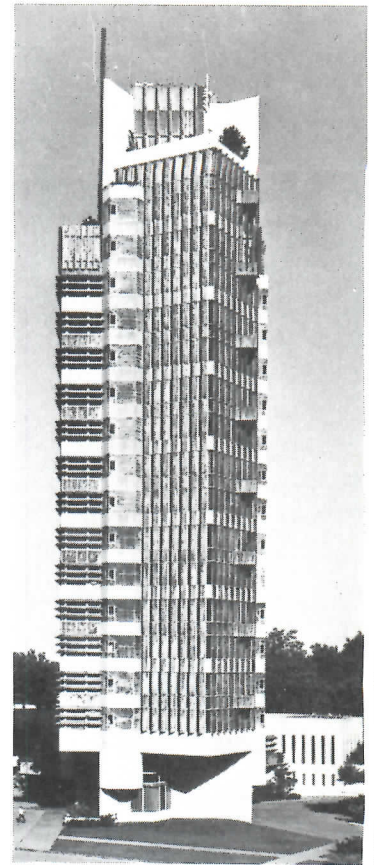
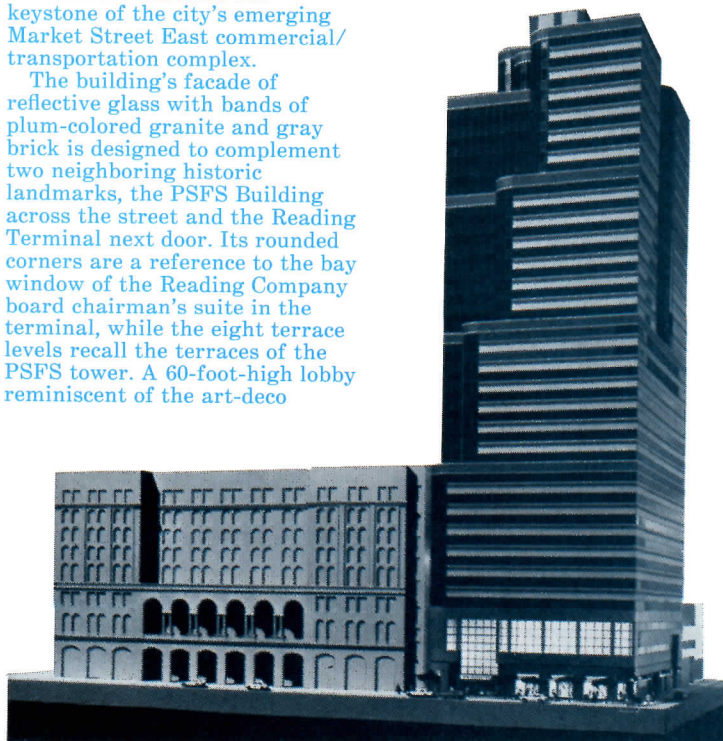
building. Chosen from among five finalists, the Louisville firm of Grossman, Chapman/Kingsley will recycle the 1914 neoclassical structure and add a new section containing exercise facilities. The addition will consist of limestone, granite, and glass deployed to make an orderly transition between the limestone of the old bank and the granite facade of the new tower.

### A new hub for Philadelphia

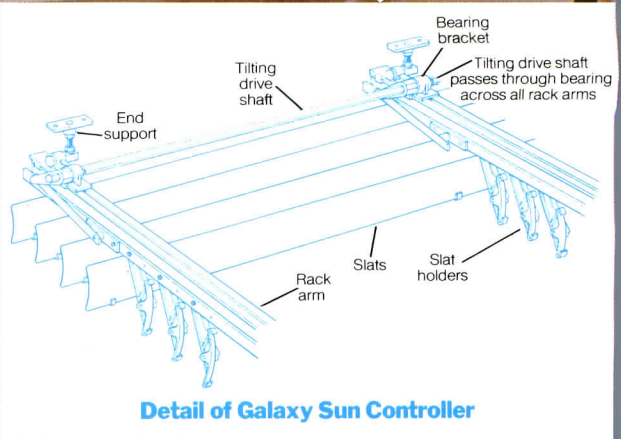
A 32-story, 720,000-square-foot office building that will rise at 11th and Market Streets next to Philadelphia's new commuter rail station will form the keystone of the city's emerging Market Street East commercial/transportation complex.

The building's facade of reflective glass with bands of plum-colored granite and gray brick is designed to complement two neighboring historic landmarks, the PSFS Building across the street and the Reading Terminal next door. Its rounded corners are a reference to the bay window of the Reading Company board chairman's suite in the terminal, while the eight terrace levels recall the terraces of the PSFS tower. A 60-foot-high lobby reminiscent of the art-deco

period will link the tower with two levels of retail space and with the Market Street transportation network below. An 11-story glass atrium between the new tower and the terminal will preserve portions of the terminal's brick wall in a landscaped space inspired, according to architect Gerald M. Cope, by artist Maxfield Parrish's Tiffany glass mosaic, "The Dream Garden." Architects for One Reading Center are Cope Linder Associates and Bower Lewis Thrower in joint venture.



This prestigious award, conferred annually on a building that has stood for at least 25 years, has been won by the Price Tower in Bartlesville, Oklahoma, which was designed by Frank Lloyd Wright in the early 1950s and completed in 1956. In conferring the award the jury commented: "Frank Lloyd Wright clearly is the prophet of a personal interpretation that can still inspire and teach. The Price Tower is an embodiment of his organic philosophy that buildings should grow out of the ground forming a base, body and finial. It is a philosophy that has had a rebirth in modern office building design and a rediscovered relevance to what is happening in the architectural profession today." Though small (37,000 square feet, 186 feet high), the tower is complex in form. Floor slabs are cantilevered from vertical fins and rotated 30 degrees except in one corner. No two elevations of the copper- and glass-sheathed 19-story tower are alike, but, as the building's nominators noted, "each complicating element reflects some special condition of the plan." Well-maintained and still in use, the building stands as "Wright's quite charming version of American business."



Detail of Galaxy Sun Controller

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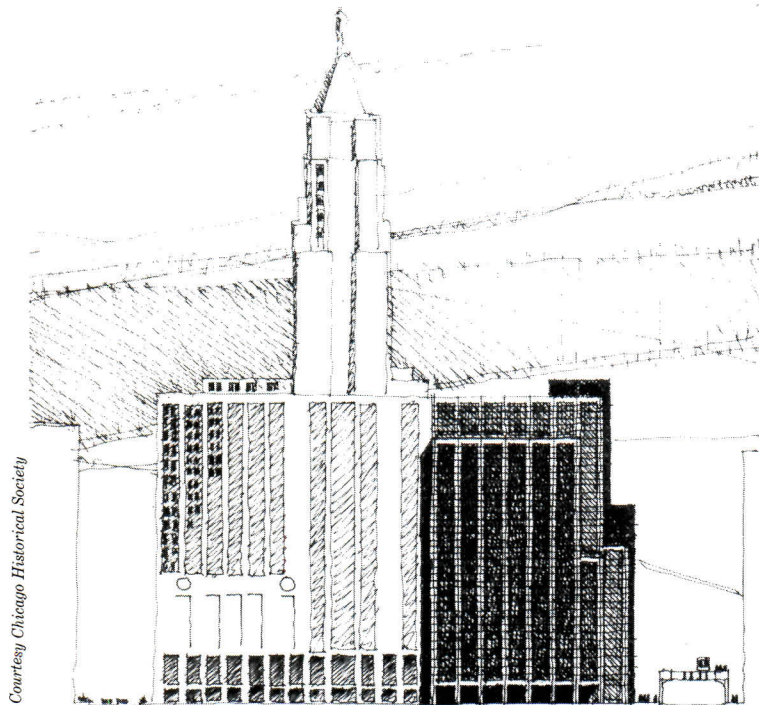
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## To build a building



Courtesy Chicago Historical Society

*The Architect's Vision: From Sketch to Final Drawing*, at the Chicago Historical Society through June 15, offers rare insight into the design process as exemplified by three recent and noteworthy Chicago buildings: a loft renovation for Helene Curtis Industries' new headquarters by Booth/Hansen and Associates; the addition to Holabird & Root's 1929 Chicago Board of Trade building by Murphy/Jahn Associates with Shaw, Swanke, Hayden and Connell; and One Magnificent Mile, a mixed-use development by Skidmore, Owings & Merrill. The exhibit shows how the architects addressed these very different design problems by tracing the projects from the inception of the design to the construction of the building. Included in the show are the designers' original

sketches, design and model studies, presentation drawings and renderings, working drawings, and photographs documenting the various stages of construction. The presentation of One Magnificent Mile also illustrates the use of the computer as a design aid. *The Architect's Vision* was curated by Sabra Clark.

*Preliminary design sketch of the south elevation of the Board of Trade addition*

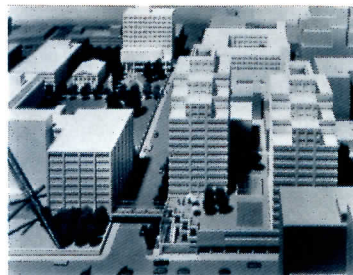
## Jules Gregory to receive AIA's Kemper Award



Princeton (N.J.) architect and urban designer Jules Gregory, FAIA, has been selected to receive the AIA's highest service honor, the Edward C. Kemper Award, in 1983. The award recognizes an AIA member "who has contributed significantly to the institute and the profession of architecture." It is conferred on Gregory for his "tireless promotion of the concept that the

architect's responsibility goes beyond the design of fine buildings but must also involve a leadership role in enhancing the quality of life in our cities." In addition to his service to the AIA, Gregory has taught urban design at several institutions and is principal in the Princeton firm, Uniplan.

## A technological center grows in Brooklyn



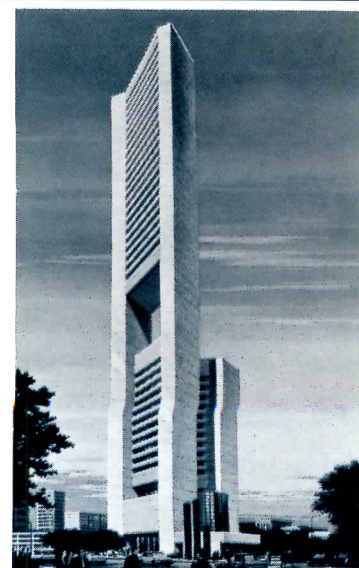
What MIT is to Boston's Route 128 and Stanford University is to Silicon Valley, Polytechnic Institute of New York City hopes to be to New York City. The institute, by agreement with the city, will act as sponsor-developer for a Metropolitan Technology Center to occupy a 16-acre site adjacent to its Brooklyn campus and the Civic Center area of downtown Brooklyn. The land, much of it now devoted to marginal or deteriorating uses and thus more easily reclaimed, will be redeveloped to provide new and expanded facilities for Polytechnic as well as attractive urban park sites for high-technology, research-oriented businesses. Related support components will include an Institute for Telecommunications Technology, a Technology Information Center, and meeting, hotel, and recreation space. Polytechnic officials estimate that the \$16 million pledged by New York City to help in land clearance and preparation could be parlayed to as much as \$125 million in private investment, including the \$45 million in improvements planned by the institute. Prentice & Chan, Ohlausen are architects for the development.

## A transitional tower for a changing neighborhood



A 20-story office building on a block between Boston's financial district and the city's waterfront preservation area is designed to mediate between the two. The building's six-story rough red granite base merges with a lighter color polished granite tower to make a transition from the small-scale brick buildings in the historic district to the concrete-clad towers of the financial district. The 350,000-square-foot building will have retail spaces at street level and two levels of parking below grade. A through-block lobby will contain a six-story atrium with multilevel reflecting pools. Architects are Goody, Clancy & Associates.

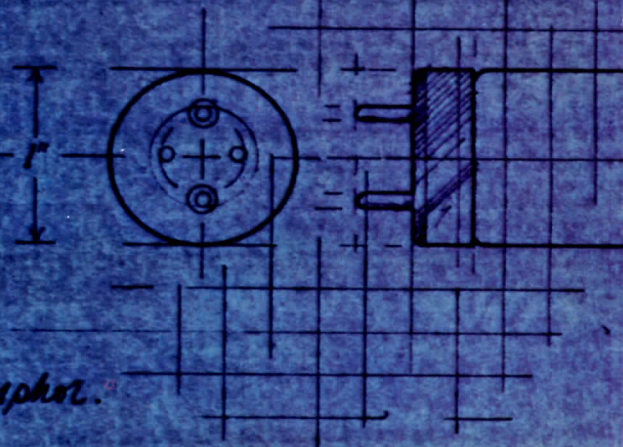
## A landmark office tower in Singapore



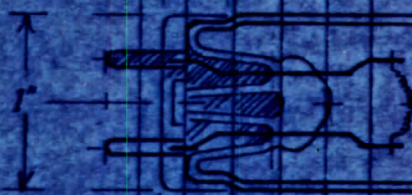
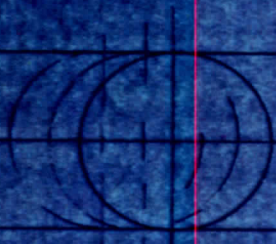
Designed to anchor Singapore's "Golden Horseshoe" business district, Hong Leong Plaza is a V-shaped concrete and glass structure with 13- and 30-story wings accented by a five-story atrium at the vertex. A 50-foot-high air space breaks the taller wing at the 13-story level. Architects for the 497,000-square-foot project are 3D/International of Houston.

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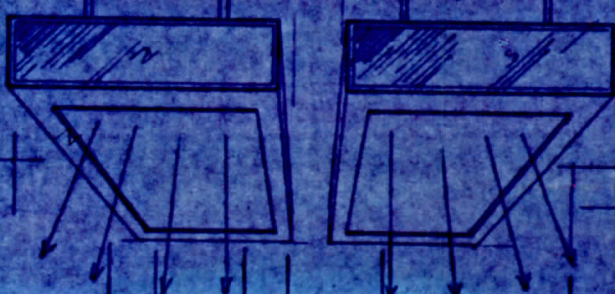
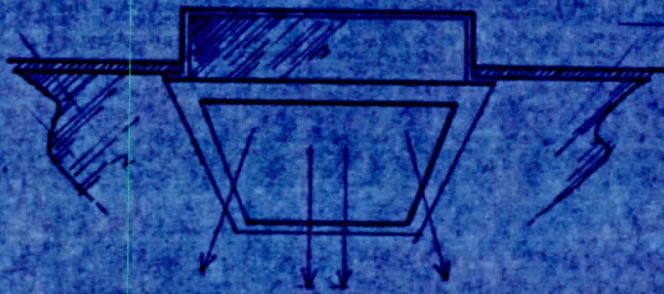
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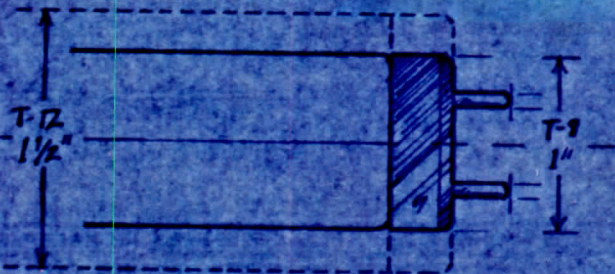
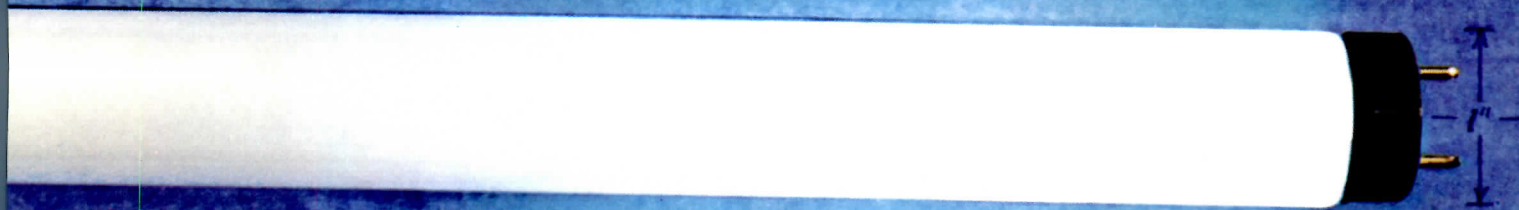
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Octron  
Lamps



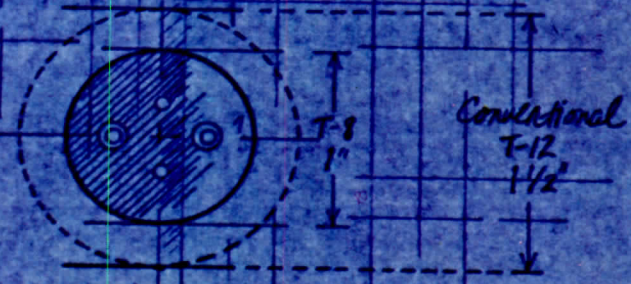
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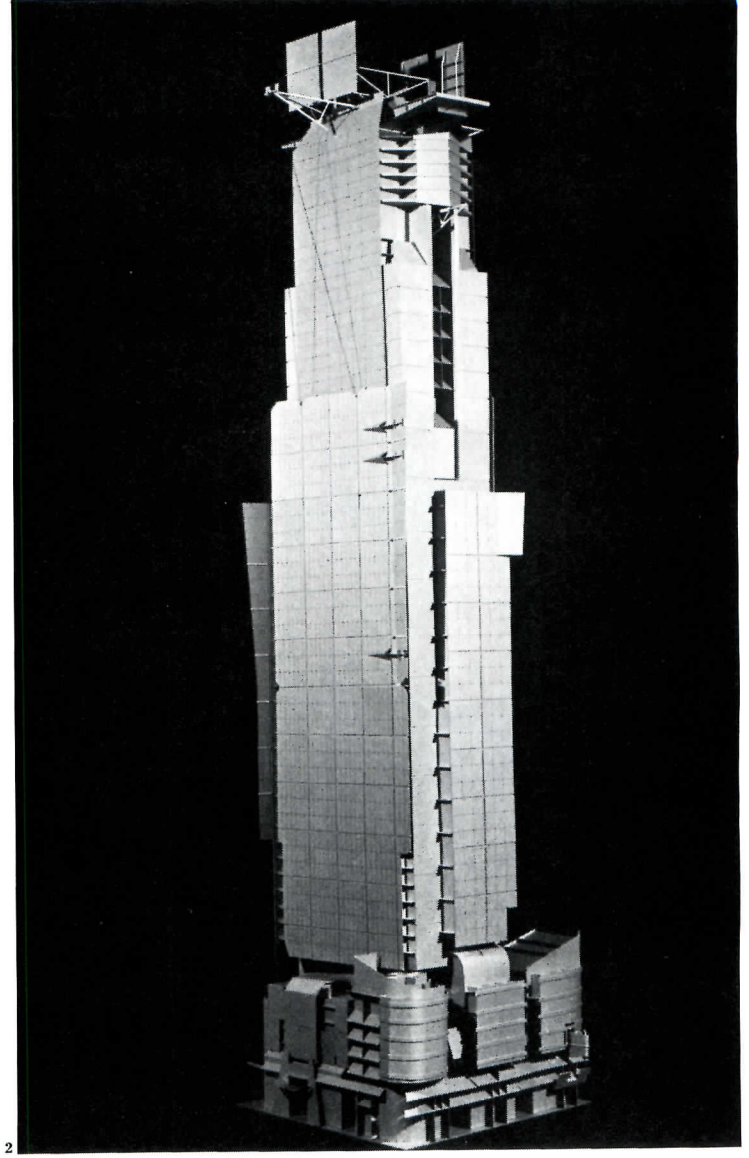
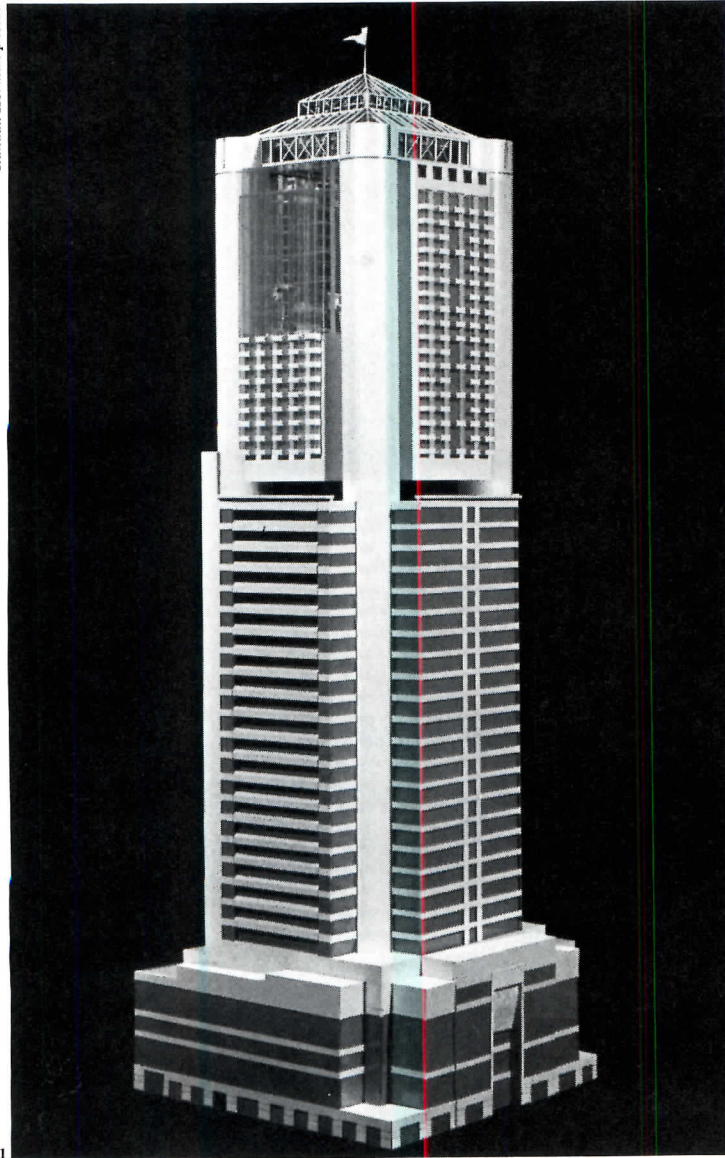
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## Design awards/competitions: Soling Architecture Student Design Competition

Anything but routine "student exercises," two recent competitions conducted by academic sponsors deserve the attention of architects inside and outside the ivory tower. On pages 88-90 we illustrate the winners of the Soling Architecture Student Design Competition for the design of a mixed-use, high-rise building in Manhattan. Under the aegis of Syracuse University, eight architecture schools were invited to submit projects developed during a special semester-long studio incorporated into each school's regular curriculum. Owing to required compliance with actual zoning and structural codes,

Randall Korman photos



The Soling Competition is only the latest in a series of programs sponsored by Syracuse University to establish a forum for schools of architecture in the eastern United States. Unusually ambitious in scope, the present event was made possible by real estate investment specialist Chester B. Soling, an alumnus of the Syracuse School of Architecture. Werner Seligmann, dean of the school, and Randall Korman, head of the university's graduate architecture program and Soling Competition director, were determined that the subject of the competition should possess sufficient complexity, import, and timeliness to illuminate the range of pedagogic approaches *and skills among the* participating schools. It was also essential that the practical and theoretical richness of the

problem should merit each school's devoting an entire semester's studio to its solution. The particular case study they selected, a mixed-use high-rise in a controversial zoning district of midtown Manhattan, posed a formidable architectural and urbanistic challenge. Korman devised a suitably rigorous procedure for pre-design briefing, design development, and multi-stage jury review.

In addition to Syracuse, the eight participating institutions were the Cooper Union, Cornell University, Harvard University, the Institute for Architecture and Urban Studies, the Rhode Island School of Design, the University of Virginia, and Yale University (Columbia and Princeton universities were also invited but declined, owing to internal scheduling conflicts). No

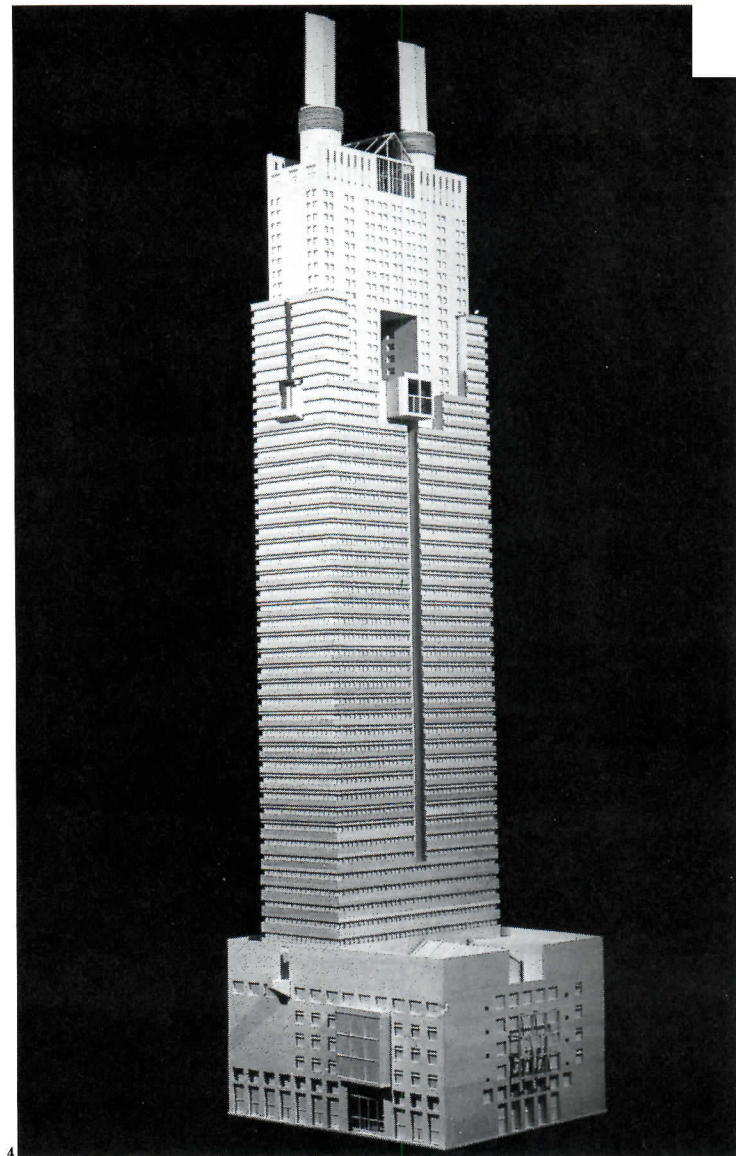
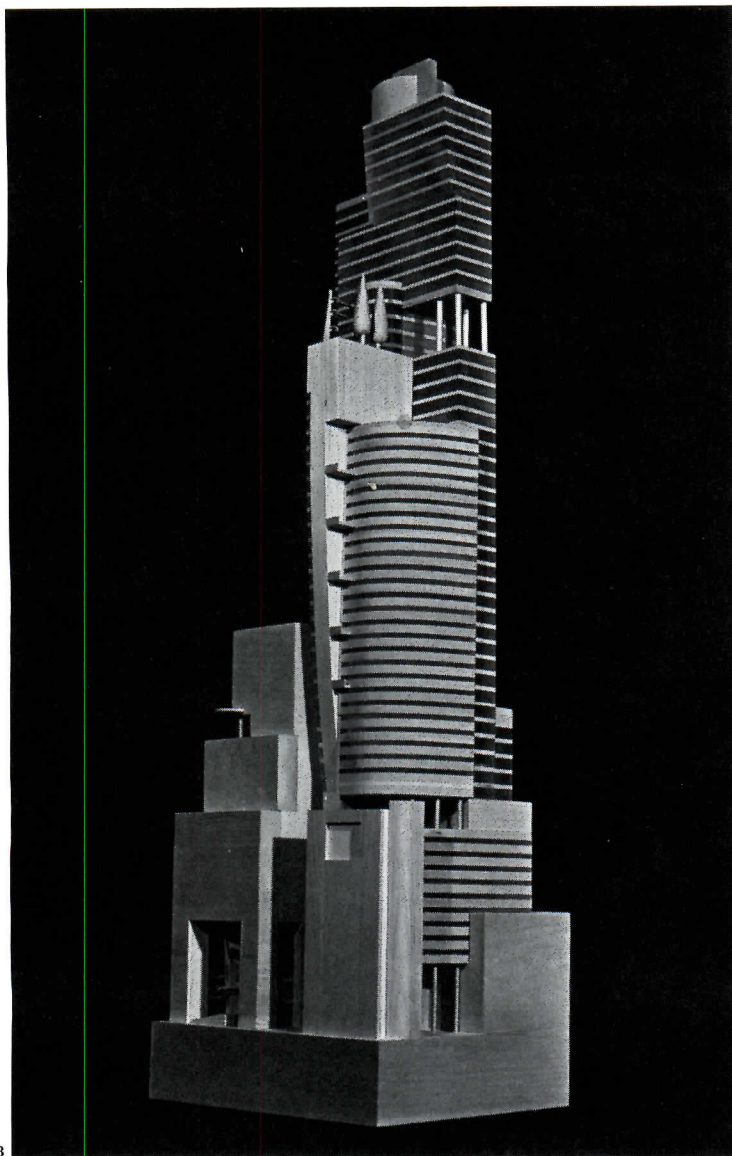
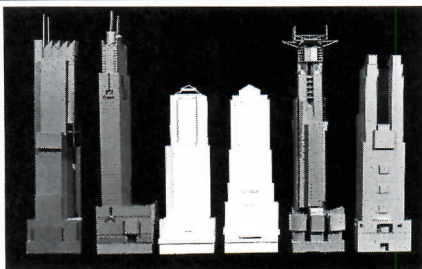
school was allowed to enroll more than 20 individuals in its competition studio section, and the studio advisor at each school was asked to supervise the selection of two finalists for jury review.

The program called for a building of approximately 40 stories, with retail facilities and a 1,000-seat theater in its lower levels, speculative offices in the main body of the tower, and a 300-room hotel in the upper stories. Located on a 38,000-square-foot plot on the west side of Broadway, bounded by 52nd and 53rd streets, the proposed site allows the project to become a key urban link between Columbus Circle and Times Square, and places the building inside New York's specially zoned theater district. (In order to assemble a "typical" site, the

program asked competitors to assume the hypothetical demolition of the Broadway Theater, which occupies the northern half of the specified lot.) When the competition was organized, no project had yet been built under new zoning ordinances passed in 1982 that were intended to redirect the course of midtown development. By requiring entries to honor these regulations—and be structurally feasible—the competition offered an opportunity to test the effectiveness of the new zoning in a particular site.

Given the limitations of a semester-long studio and students' inexperience with design problems of this magnitude, the competition sponsors provided summaries of relevant information from the

assessed by a panel of high-rise design experts, student competitors had a rare chance to test their mettle against "real-life" problems. The Harvard Architecture Review's competition for a gate in Cambridge, Massachusetts, (see pages 91-93) was open to both students and practitioners (about one third of the submissions came from students). Though altogether different from the Soling in the nature of its program, the Harvard competition also challenged designers to evaluate the impact of new buildings on the quality of an irreplaceable urban fabric.



New York City building code, standard data on components such as elevator cabs, and a computer-generated digest of zoning code information and envelope studies, donated by Skidmore, Owings & Merrill. Competitors also attended an all-day information session on high-rise projects, conducted by zoning specialist Patrick Too, of the New York City Department of City Planning; architect Raul DeArmas, of Skidmore, Owings & Merrill, who presented an overview of tall building design; Glenn Garrison, of John Burgee, Architects, who spoke on skin design; Alan Ritchie, also with John Burgee, who addressed the problems of systems planning; engineer Marvin Mass, of Cosentini Associates, who discussed mechanical systems; and Leslie Robertson, of

Robertson, Fowler & Associates, P.C., who gave an engineer's view of structural systems.

Prior to the ultimate jury session, a technical review committee rated all finalists according to their compliance (or noncompliance) with the competition program, building codes, zoning regulations, and structural, mechanical, and building systems. The members of this committee, which met for eight hours, were Patrick Too; Glenn Garrison; Leslie Robertson; William Hellmuth, of SOM; Bruce Fowle, of Fox & Fowle Architects; and William Scarbrough, of the Syracuse School of Architecture. All but one of the 15 finalists passed the program review, most obeyed the building code, and none failed on structural grounds. However, a third of the submissions violated

the zoning regulations by a wide margin (the committee passed projects with only minor irregularities). These entries were disqualified from consideration for the two top jury prizes, but remained eligible for an honorable mention.

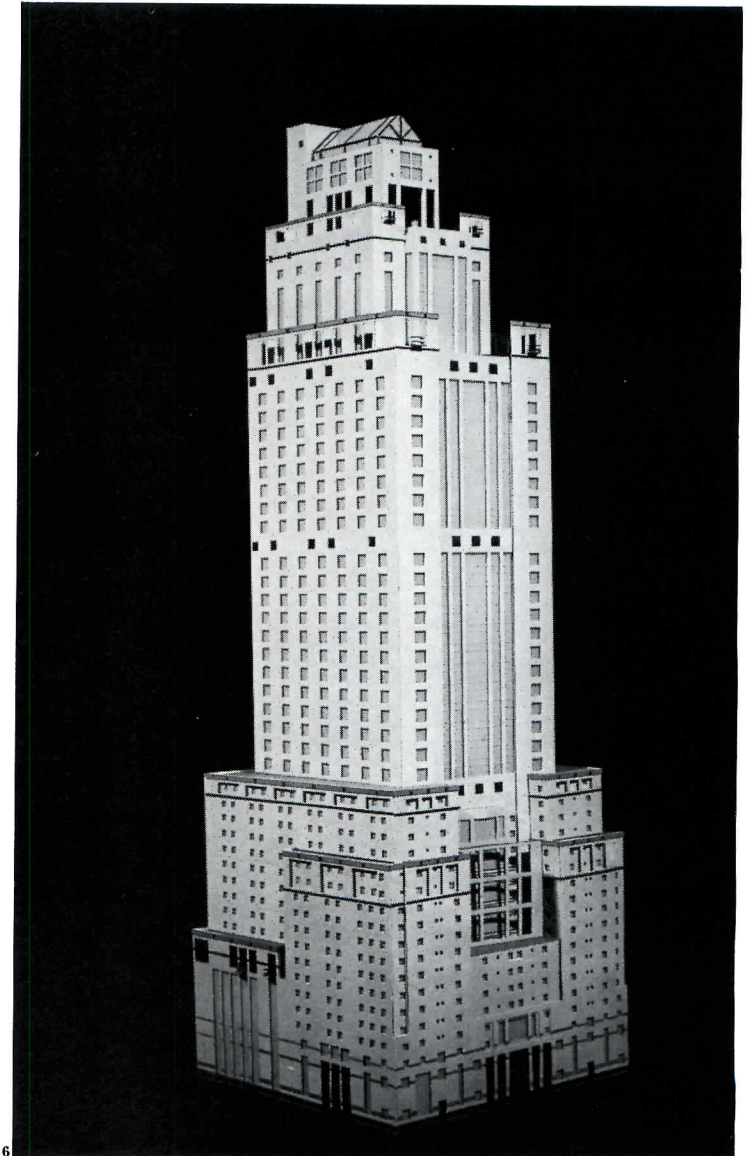
The final design jury consisted of architects John Burgee; Raul DeArmas; Bruce Fowle; James Freed, of I.M. Pei & Partners; and Richard Hayden, of Swanke, Hayden & Connell, Architects. This panel awarded the \$1,500 first prize to Richard Cook and Peter Wiederspahn, fifth-year students at Syracuse University (figure 1), who based their architectural composition on a four-pier structural frame tied by two Vierendeel mats. Vertical stacking separates individual program elements: a theater conspicuously located at street

level, offices in the shaft of the tower, and a skylight-crowned hotel (entered on the 35th floor). The jury was impressed by the elegant, well-organized plan and coherent relation of program to structure. Of all the projects reviewed, this was deemed the most practical. Nevertheless, in the final reckoning, several jurors felt that this entry lacked the extra measure of imagination or flair apparent in other designs.

Kevin Havens of Harvard received the \$1,000 second prize for a project (figure 2) that he described as "an alien. It's not a safe venture, but rather a proposition about...the channeling of energy from earth to sky and back again. It's all about Broadway." Panel members were particularly taken with the level of innovation



5



6

apparent here, and the idiosyncratic imagery generated by the design vocabulary. The jury praised the massing of the base for its sensitive response to the small scale of the surviving brownstones and shops that compose the street fronts of much of the theater district.

The longest and most animated jury discussion concerned the scheme designed by Yale student Frank Lupu in a studio directed by Frank Gehry (figure 3). Warmly praised for its ingenious planning and romantic sculptural form, the project was nonetheless ineligible for a top prize owing to its nonconformity with stipulated zoning. As a gesture of high esteem, the jury created a \$500 Special Merit Award for this design. Lupu conceived the tower as a "composition of dreams, memories, traditions, images,

and possibilities which together fill up the site and allow the audience and users of the building to live out their own fantasies—whether they are looking down the mountainous crags from their office window, walking through the distorted world onstage, living out some dream in their hotel room, or standing on the high diving board on the 41st floor, choosing between exercise and chasm."

The jury welcomed Lupu's decision to begin with a fantasy of the city and work back to a reasonable building. "Many competitors tended to be problem solvers, not designers," observed John Burgee. "They got lost in the trees, so the forest suffered. That's why we liked the Yale design. It violated the codes but it produced an innovative, imaginative solution." James

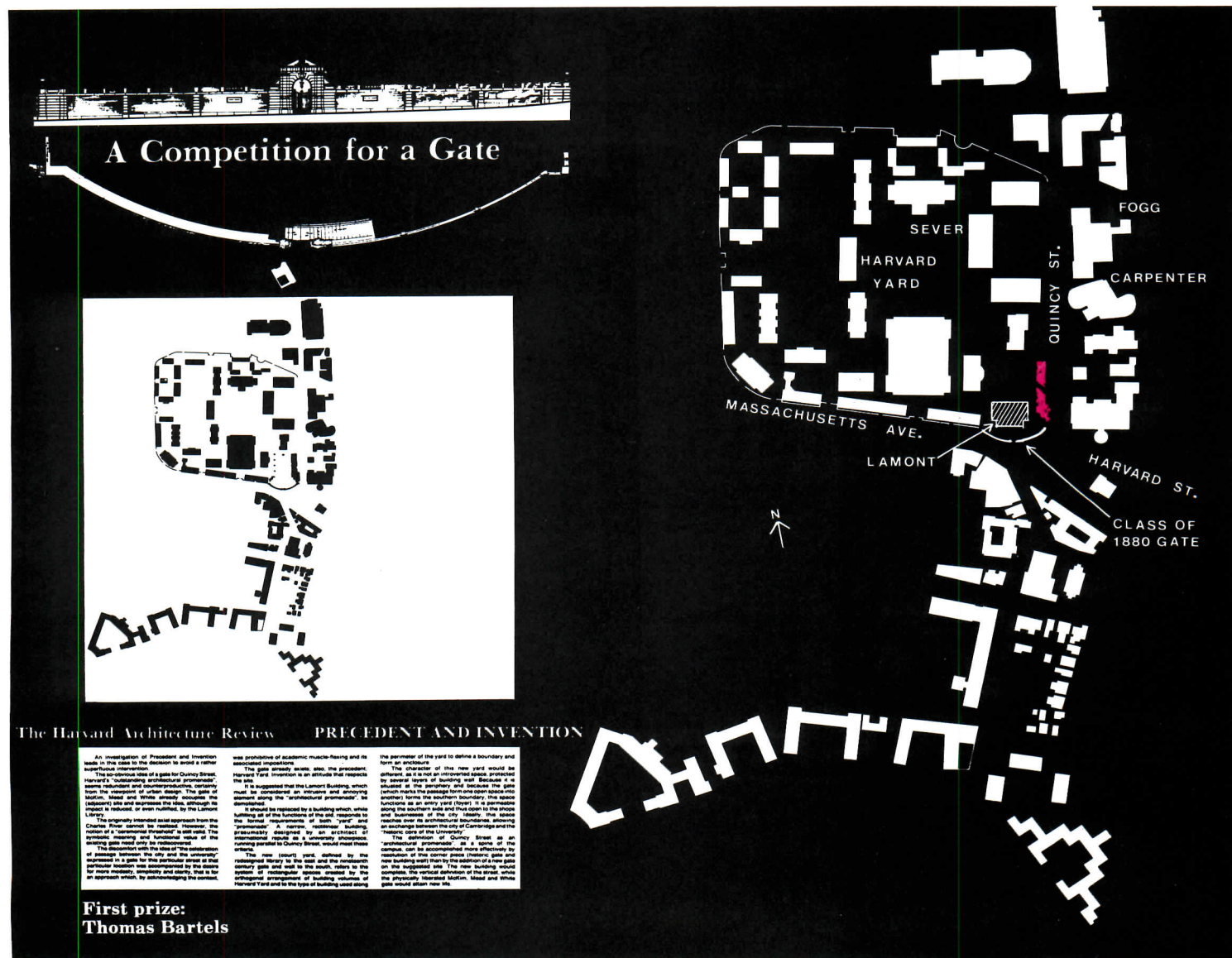
Freed remarked: "The first-prize design is likeable because it is doable, the Special Merit Award project is likeable because it is so rich, so inventive, so poetic." Lupu's approach to the development of program spaces differed markedly from the vertical stacking employed by most entries. His hotel and office blocks rise side by side, wrap, and interlock, allowing for unusual massing. "This is a building that will never be built for reasons of zoning," said Freed, "but it *should* be built, and thus is a strong criticism of zoning restrictions." Engineer Leslie Robertson concluded, "I'm not sure just how this thing would work out structurally, but I'd love to have the commission to do it."

The jury presented \$250 honorable mention awards to

Thomas Peterman of Harvard (figure 4), and to the team of Mark Weintraub and David Bushnell, of Cornell (figure 5). Craig Konyk of the University of Virginia received a \$100 citation (figure 6). Summing up the competition proceedings, John Burgee congratulated the students on their impressively high degree of competence. "I'd be interested in meeting some of these students," said Richard Hayden, to which Burgee returned, "I'd like to meet the faculty."

An exhibition of models and drawings of the 15 finalists in the Soling Competition, sponsored by Syracuse University, will be on display at the New York City headquarters of the National Institute for Architectural Education from April 20 to May 20.

# Design awards/competitions: The Harvard Architecture Review Competition for a Gate



**The Harvard Architecture Review PRECEDENT AND INVENTION**

An investigation of precedent and invention leads to the decision to avoid a rather "academic" intervention. The decision was to gain for Quincy Street, Harvard's "outstanding architectural promenade," some residential and non-residential, oriented from the viewpoint of urban design. The gate of habit and White's study occupies the adjacent site and expresses the idea, although its impact is reduced, or even nullified, by the Lamont Library.

The originally intended axial approach from the north is altered to replace, however, the notion of a "ceremonial promenade" is still valid. The symbolic meaning and functional roles of the existing gate need only be reinterpreted.

The decision with the gate of the "academic" building across the city and the "academic" promenade in a gate for the particular street at that particular location was accompanied by the desire for more modesty, simplicity and clarity, that is for an approach which, by reintroducing the context, was prohibitive of academic muscle-flexing and its associated implications.

The gate directly assists, also, the precedent. Harvard Yard's intervention is an attitude that respects the site.

It is suggested that the Lamont Building, which must be considered an obstructive and annoying element along the "architectural promenade," be demolished.

It should be replaced by a building which, while joining all the functions of the old building to the formal, "programmatic" of both "yard" and "promenade," "programmatic" building, presumably designed by an architect of international repute, is a necessary, observed, turning parallel to Quincy Street, would meet these criteria.

The new courtyard, void, defined by the "academic" building to the east and the new building to the west, and the new courtyard system of rectangular spaces created by the architectural intervention of building volumes at Harvard Yard and to the type of building used along the perimeter of the yard to define a boundary and form an enclosure.

The character of the new yard would be defined, as is not an interpenetrating structure, by several layers of building walls. Because it is a matter of the perimeter and not the gate (which marks the passage from one open space to another) forms the southern boundary, the space functions as an entry yard (oyer). It is permeable along the eastern side and thus open to the street and substance of the city. Hence, the axial reaches over its architectural boundaries, allowing an exchange between the city of Cambridge and the "historic core of the University."

The definition of Quincy Street as an "architectural promenade" as a series of the enclosure, can be accompanied more effectively by reduction of the central axis building gate and new building north than by the addition of a new gate on the suggested site. The new building would complete the vertical definition of the street, where the physically elevated Martin, Mead and White gate would allow new life.

**First prize:  
Thomas Bartels**

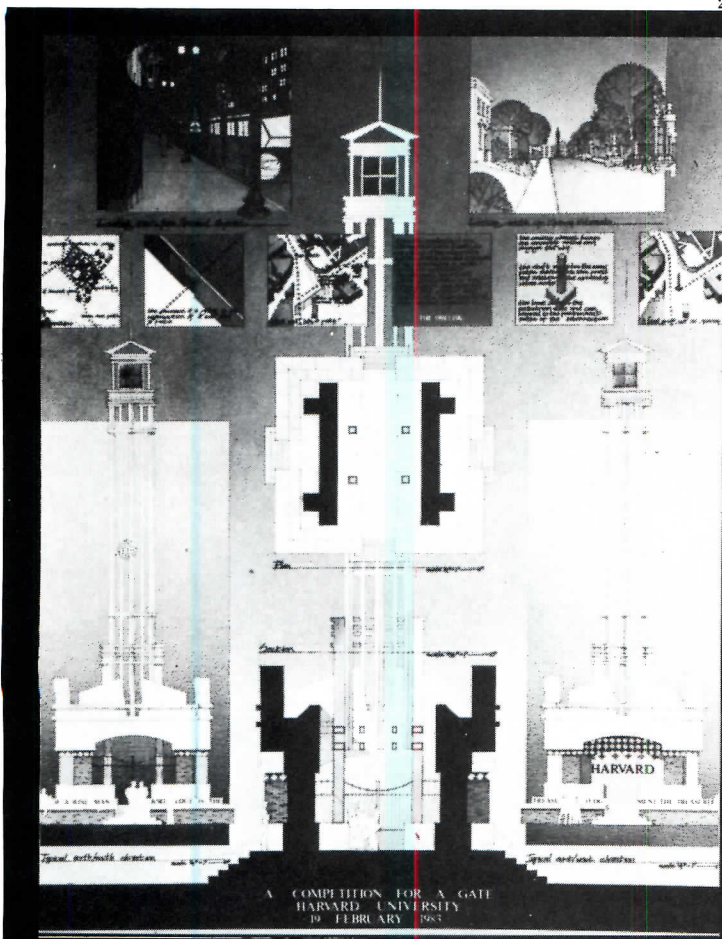
With the stated aim of exploring the related themes of precedent and invention, the student editors of the *Harvard Architecture Review* held a competition for the design of a public gate at the edge of Harvard's campus on Quincy Street—a theme that itself harks back to the late 19th century, when the university enclosed Harvard Yard with walls and ceremonial portals. The competition site marks the southern end of Quincy Street, a thoroughfare flanked by a distinguished, if heterogeneous, cluster of buildings that includes Le Corbusier's Carpenter Center, H.H. Richardson's Sever Hall, McKim, Mead and White's Fogg Art Museum, and James Stirling's Fogg addition (now under construction). The five premiated entries in the

competition (illustrated above and on pages 92-93) were selected from a total of 311 submissions received from 32 states and eight foreign countries. Competition jurors were Henry Cobb, chairman of the Harvard Graduate School of Design's architecture department; architect Ed Jones, of London and Toronto; Laurie Olin, chairman of Harvard's landscape architecture department; Jaquelin Robertson, dean of the University of Virginia's School of Architecture (and competition jury chairman); architects Stanley Tigerman, of Chicago, and Susana Torre, of New York; and Anthony Vidler, professor of architectural history at Princeton University. In addition to the \$1,000 first prize, \$500 second prize, \$250 third prize, and two \$150 fourth prizes, the

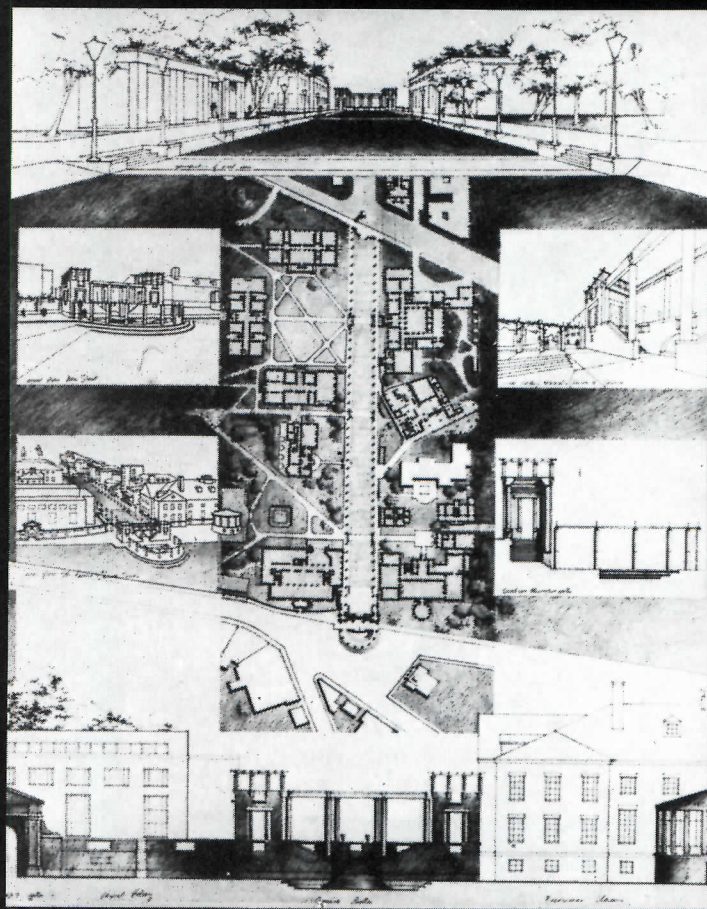
panel awarded \$100 honorable mentions to Frano Violich, Stephen Krog, Mary Pepchinski, Wes Jones, and to three teams: Joseph DeBel, Vinay Kapoor, and Steve Johnson; Victoria Meyers and Tom Hanrahan; and Maritere, Jorge, and Luis Trelles.

In a controversial decision, the jury elected to award the first prize to a scheme (figure 1) that dismisses the idea of an actual gate as "redundant and counterproductive." As an alternative, the author of the project, Thomas Bartels, a visiting critic at Virginia Polytechnic Institute, advocates a strategy for the creation of a new courtyard *alongside* the Quincy Street site. This court would be accessible from Massachusetts Avenue through the existing Class of 1880 Gate, designed by McKim, Mead and White to form

part of a no-longer-extant southern axial approach from the Charles River (the gate and its elliptical wall appear above in plan and elevation). In the text of his presentation board, which takes the form of an edited version of the *Review's* announcement poster, Bartels expresses the desire for a more modest alternative to the "academic muscle flexing" symbolized by construction of a new gate. His plan calls for demolition of the 1949 Lamont Library, which currently blocks the northern axis through the Class of 1880 gate (Bartels does not state whether he would preserve the Alvar Aalto-designed poetry room inside). Lamont would be replaced by a long, rectangular structure forming the eastern side of the courtyard, at once restoring the



**Second prize:**  
Sandra Parèt, Andrew Roth, William Ryan



**Third prize:**  
Cary Tamarkin, Timothy Techler, Steve Johnson

centrality of the old gate, reflecting the orthogonal pattern of Harvard Yard, and redefining Quincy Street as a major thoroughfare.

The second-prize design (figure 2), by Sandra Parèt, Andrew Roth, and William Ryan, all with the Baltimore office of RTKL Associates, also eschews a conventional gate in favor of an open tower, or obelisk, on a traffic island at the intersection of Quincy Street, Harvard Street, and Massachusetts Avenue. Rejecting a gate as too simplistic for the physical and symbolic complexity of the site, this design team opted for "a focal point, not an opening."

The conversion of Quincy Street into a raised pedestrian mall, with a central lawn and terminal gateways, is delineated in the third-prize design (figure

3) by recent Harvard graduates Cary Tamarkin, of Kallman McKinnell & Wood, Timothy Techler, of Cambridge Seven Associates, and Steve Johnson, of Koetter & Associates. The two fourth-prize entries, (figure 4) by Craig Spangler and Stephen Bartlett, also of RTKL, and (figure 5) by Frederic Schwartz, of Venturi, Rauch and Scott Brown, both concentrate more directly on the gate as an architectural element. Schwartz proposes that, in exchange for the closure of Quincy Street to vehicular traffic by the City of Cambridge, Harvard fund the installation of a tree-lined public square with a Vietnam memorial obelisk at its center, on axis with his gate.

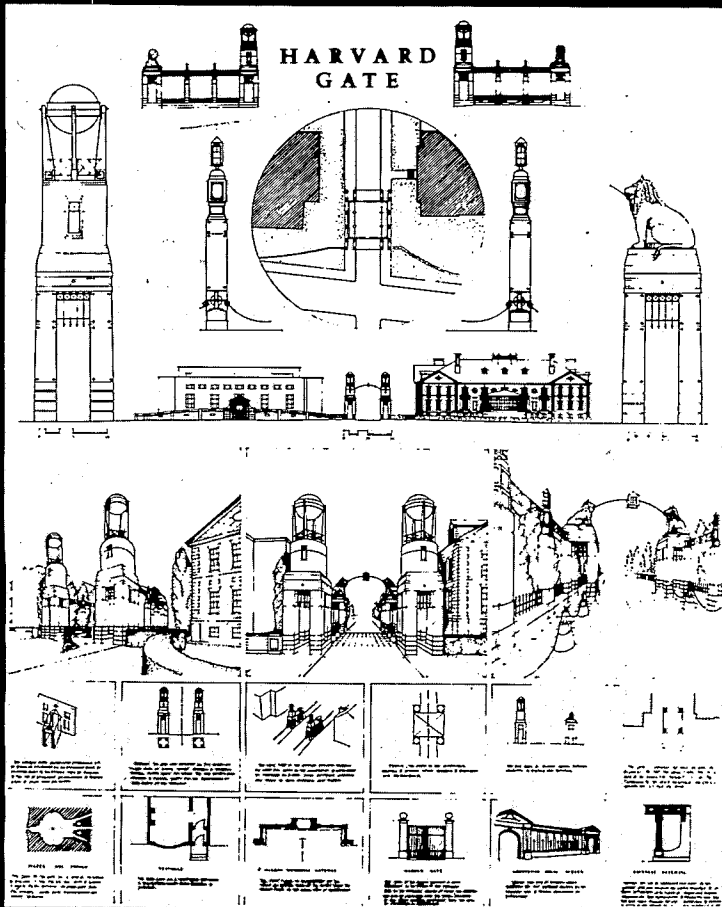
Remarking on the encyclopedic range of historical antecedents cited by many competitors, juror

Susana Torre noted a "proliferation of imagery that has no substance, no judgment whatsoever." She discerned too ready a reliance on the photocopier as a source for metaphoric referential motifs, a process which in many cases bypasses a genuine understanding of the utilitarian determinants of imagery, or its place within a larger cultural and formal matrix.

Laurie Olin regretted that, in attempting to organize the "rag bag of buildings" along Quincy Street, few entrants saw the value of vegetation as a spatial device. He suggested planting four parallel avenues of trees: "That would give you a nave and side aisles, and if you fiddled with the spacing, you could get that extruded volume we all know from Elm Street,

America. ... Just stop it when you hit Massachusetts Avenue and you would have this spectacular gate."

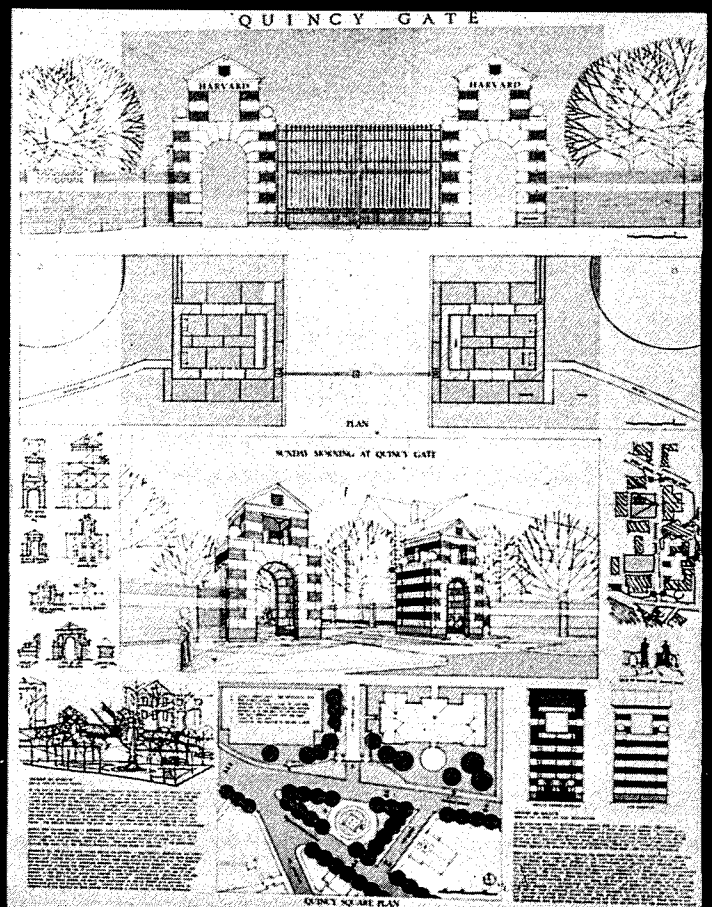
The jury's award of top prizes to two projects that failed to satisfy the stated brief, but expanded upon its literal meaning, was "in a good tradition of the liberal spirit," according to Ed Jones. He characterized Bartels's project as expressing "an embarrassment about the idea of making honorific form in the present age." Jones found a similar reluctance to erect official barriers in the second-prize design, along with a reminiscence of City Beautiful ideals. In his opinion, the most intelligent schemes sought some ordering principle for Quincy Street without imposing a single dominant architectural motif.



**Fourth prize:**  
Craig Spangler and Stephen Bartlett

Anthony Vidler was struck by "the realization that abstraction and abstract modernism [have] become a kind of second-hand precedent. . . . Whereas abstraction represented in the best kinds of modernism a getting back to basic principles and an understanding of the root structure of a problem, abstraction now becomes a language which is quoted with ignorance of the basic principles. . . . The first scheme won precisely because it refused the elaboration of a language to cover its lack of understanding of principle. . . . Unless precedent is understood in relationship to the idea of type, it's meaningless and nonconstructive, and if it is represented in terms of a model, it becomes the kind of imitative obscurity we see in so many of these schemes."

Stanley Tigerman questioned the value of the explicit academic analysis of precedent and invention—concepts which are ordinarily part of the designer's intuitive process: "When it comes to a conscious level then unfortunately, for me, much of it becomes trivialized as it becomes representational." Henry Cobb commented on the jury's preoccupation with the way competitors explored issues implicit in the problem of the gate rather than how they conceived specific proposals for actual structures: "I think what we see here is a lot of interesting speculation related to principle, but we do not see very much of that ultimate transformation in which principle becomes embedded in architecture and becomes vivid through architecture, as opposed to being



**Fourth prize:**  
Frederic Schwartz

simply talked about . . . I think the vividness of the first-prize winner is a vividness at a very schematic level." Cobb stressed the importance of these proposals in assessing Harvard's historic position in Cambridge, and its present responsibility to the city in planning new buildings.

Jaquelin Robertson commented that, although he had not voted to award it first prize, Bartels's scheme represented an "extraordinarily inventive act," if one defines invention as discovery. Robertson saw particular value in the broad urban scale of the first three prize-winners, although he was especially impressed by the third-place entry. If Harvard were in fact to build a gate across Quincy Street, he argued, this design would unquestionably

yield the most successful contribution to city and university alike. "The more one looks at this, the more one realizes these people are still fighting to make something out of American urbanism and not giving up on it, and I find that commendable."

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# Offices go to the suburbs for peace and quiet

One can get convincing arguments about their choices both from firms housing their staff in cities, which offer easy face-to-face communication with professional and business peers and the mental stimulation of competition and cultural variety, and from those electing the suburbs, which offer the high productivity encouraged by fewer irrelevant interruptions, as well as pastoral peace and quiet and freedom from stress. And both sides seem to be winning: office building activity in both settings has moved apace recently, though early signs begin to show supply catching up with demand.

Suburban office buildings, which are considered in this study, have great diversity of form and program. This variety stems largely from the absence of constraints imposed by built-up sites and stringent building codes. The chief advantage of suburban office buildings, however, is undoubtedly the availability and low cost of land. The cost of construction and appurtenances may, of course, range widely, from relatively luxurious corporate headquarters to thrifty speculative buildings for rentals.

The need to attract and provide for staff carries both advantages and challenges for suburban firms and their architects. Many employees welcome the reduced commutation time and the privilege of direct and private travel from home to workplace. But the numerous cars converging on these locations must be accommodated through the day. The architects who designed the four buildings shown here went to considerable and inventive effort to minimize the visual impact of the requisite parking spaces.

If a company has moved from a city, its staff may be acutely aware of isolation and regretful for such lost amenities as accessible restaurants and shopping. Corporate headquarters especially will therefore often provide cafeterias and dining rooms that are more than pleasant. They may even make available such services as small shops and bootblacks.

Looking at these and other office buildings, RECORD editors observe a fast-spreading trend to appeal to fitness-conscious suburbanites—the provision of generous, even lavish, health centers including exercise machines, whirlpool baths, saunas, racquetball courts, running tracks and dance studios, as well as professional staff. *Grace Anderson*

# Traditional motifs meet in an up-to-date office village

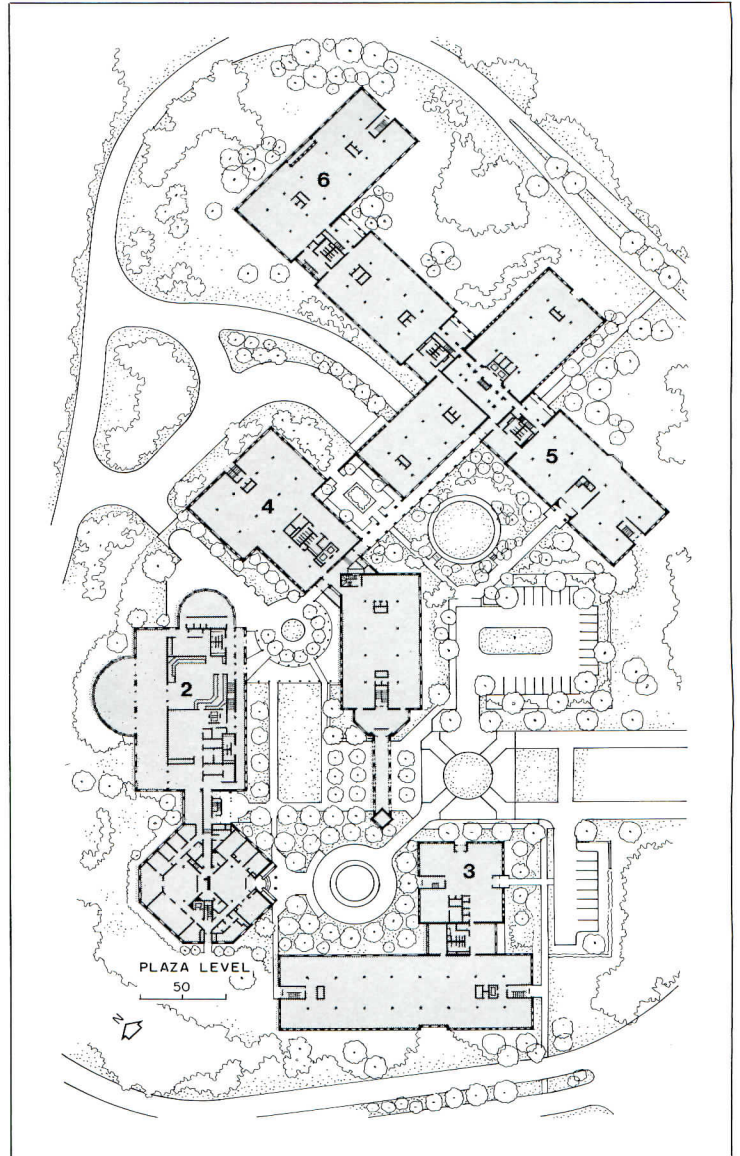
Beneficial Center  
Peapack/Gladstone, New Jersey  
The Hillier Group, Architects

Both in its aspect and its parts, the office building at Beneficial Center differs as much from the monolithic megastructures characteristic of many suburban offices as it does from the matching buildings that often serve as a business "campus." The traditional mien of the complex arises from The Hillier Group's convincing concoction of architectural style—late 20th-century eclecticism derived from Colonial architecture and touched by Palladian motifs, with more than a hint of Italian village in the site plan and clock tower. Brick walls and sloped copper roofs strengthen feelings of familiarity, and the complex's various parts are easily distinguishable from each other.

Despite its human scale, the complex is in fact quite large—about 1.25 million square feet. The appearance of Beneficial Center results not only from the concern of the company for the comfort of its employees, but equally from the concern of the community about the impact of a major corporate headquarters on fragile surroundings. Those surroundings include prosperous estates and well-maintained countryside—this is hunt country—as well as a tiny village nearby, and residents patently deplored the corporate monoliths a few miles down the road. Limited to a height of 45 feet and lying in a vale, the center shows only glimpses from the road of its roofs and, of course, the clock tower. The beckoning eminence of the 88-foot tower, already something of a neighborhood landmark, was allowed a variance for necessary water storage.

The site, notwithstanding its seemingly natural contours, is in many ways man-made. Owing to the height limitation, many facilities were placed below grade. Architect John Pearce, Jr., who was Hillier's principal-in-charge, figures that as much as 300,000 cubic feet of soil were removed for basements and garages, and their relocation raised one field 14 feet. Pedestrian tunnels join all buildings.

Modernity cannot be denied, however. Palladio never had to worry about the automobile. Beneficial's neighbors did, though, troubled by the traffic and parking required by 1,200 people (now about 950). The effect of traffic was reduced by the construction of a new interchange and an underpass from the highway, and by flextime scheduling, which spreads out times of arrival and departure. Only visitors' cars in a small lot near the entrance are visible; workers and executives use two low brick garages of simple but sympathetic design (not shown on this site plan) or parking space beneath the entire complex.





The buildings at Beneficial Center dispose themselves irregularly on 30 acres to embrace arcades and a diversity of courtyards, and to avoid a lengthy, perhaps intimidating, linearity. The octagonal executive center for the financial, insurance and credit company (1 on the site plan) and the clock tower face a central cobblestone carriage sweep (above). Other buildings include the employee center (2), offering food service indoors and out, as well as a convenience store and exercise center; operations (3), in a building

inspired by Stratford Hall in Virginia (see shadow above); finance (4); insurance (5); and the computer center (6), from which heat is drawn for the entire complex. Parking is accommodated in similar brick buildings (not shown on site plan) on the other side of the ring road; the garages provide space for 800 cars, with space for another 400 under the complex.

The Hillier Group emulated a couple of admirable Italianate devices to protect pedestrian progress through Beneficial Center. The brick arcade at left below, one of several similar arcades in the complex, extends from the clock tower, seen through the arched skylight, to the main reception area. (The executive and insurance centers have alternative entries of their own.) The long gallery at the

front of the employee center (directly below) gets daylight both from large arched windows looking out on a court and from high light scoops. All buildings are connected below by pedestrian tunnels that are skylighted, planted, brick walled and surprisingly attractive.



**Beneficial Center**  
Peapack/Gladstone, New Jersey

**Owner:**  
Beneficial Corporation

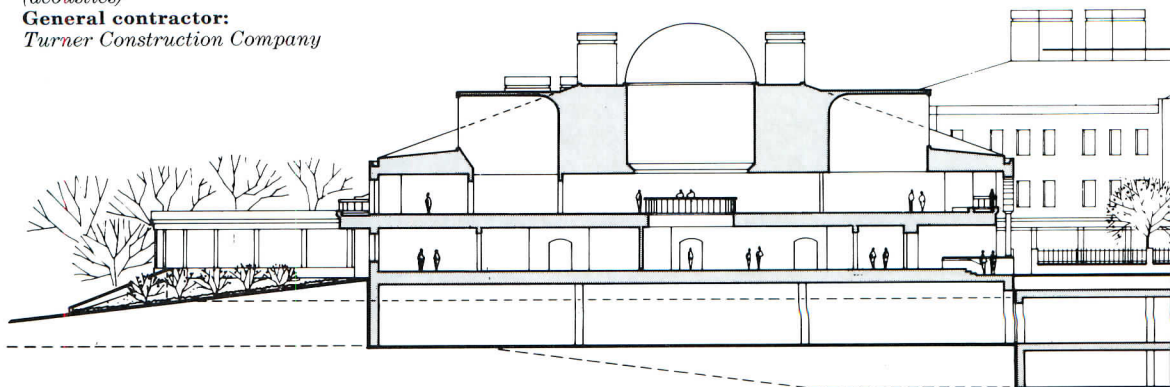
**Architects:**  
The Hillier Group—J. Robert Hillier, project designer; John Pearce, Jr., principal-in-charge; Brian Woods, Robert Formanek, Ernie Hunt, Guy Geier, Ken Jandura, Steve McDaniel, John DeLuca, Fred Thornberg, Mary Wasserman, Dannie Alderson, project team

**Engineers:**  
Paulus, Sokolowski & Sartor (structural); Jaros, Baum & Bolles (mechanical); Van-Note Harvey Associates (civil)

**Interiors:**  
The Hillier Group (public spaces); Inner Plan (office systems and employee facilities); Percy Leach (executive offices)

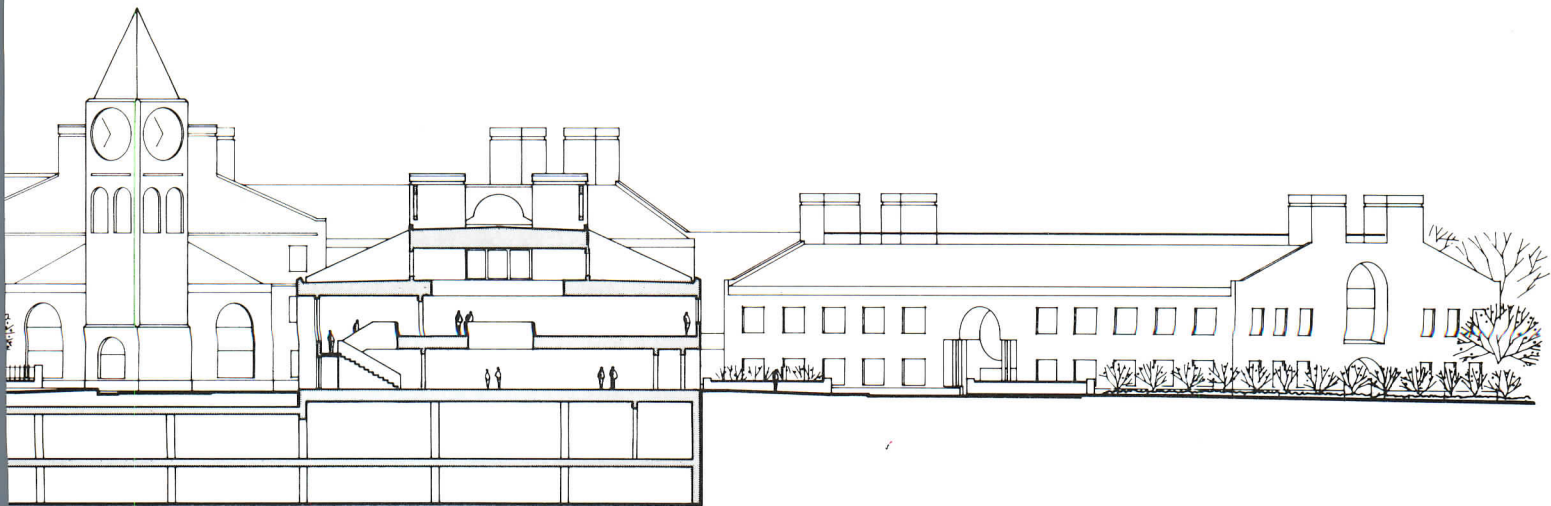
**Consultants:**  
Jason M. Cortell & Associates, Inc. (environmental); Environmental Design Associates (site design/landscape); Garmen Associates (traffic); Hubert Wilke (audio-visual); Acoustical Design, Inc. (acoustics)

**General contractor:**  
Turner Construction Company



A rotunda at the center of executive suites (top left) is lit by a translucent dome surmounting the octagonal building. In the executive dining room (top right), as in other parts of the executive section, carefully chosen antiques, rugs and wallpaper approach museum quality. The refectory mode of dining was deliberately chosen to foster informal interaction among executives. Other employees lunch

in the cafeteria (bottom left), where the gracefully framed bay window commands a far-reaching view of forested countryside. Most of the sizable work force is equipped with flexible work stations (bottom right), and private offices have been kept away from the windows so the center can have light and views.



# A taste of commedia dell'arte surprises an office park

Harlequin Plaza  
Englewood, Colorado  
Gensler and Associates/Architects

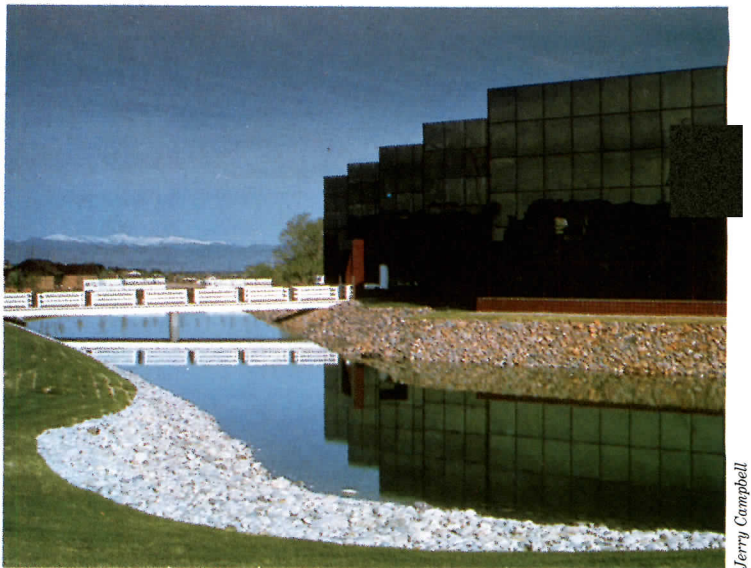
Assigned the task of designing a speculative office building in the Denver suburbs, Gensler and Associates decided to defy the almost crippling restraints of budget and office-park building rules and a context that includes scores of similar low-rise buildings, thousands of parked cars and no other kind of building to relieve the monotony. Fortunately, the architects had some powerful allies on their side: their own design talent, the eager and imaginative cooperation of their landscape architects, The SWA Group, and the grandeur of the Rocky Mountains on the distant horizon.

One of the architects' first decisions was to divide the building into two parts to reduce its requisite bulk—about 364,000 square feet and no higher than four stories. Placed toward the bottom of a natural bowl, the angled buildings simply turn their backs on the man-made surroundings.

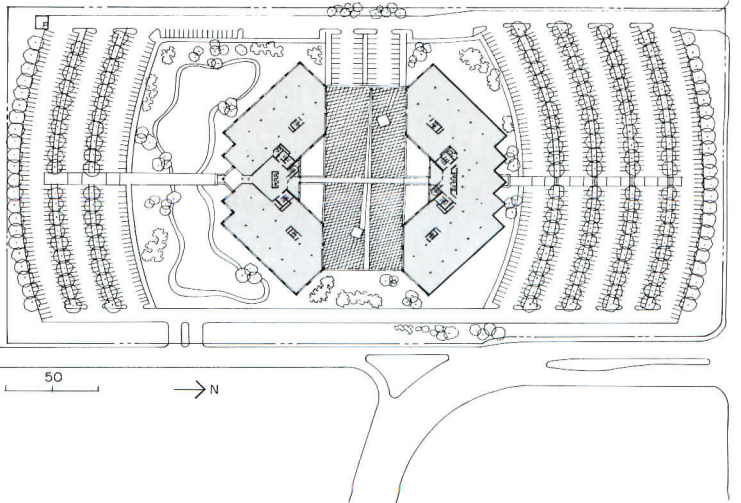
This action only partly achieves pleasant views, however, since the windows at the backs of the buildings necessarily overlook the parking lots. In addition to plants and terraces that partially obscure automobiles, the architects curved the parking rows and gave the back walls angled serrations to limit the breadth of view from any window. The inflected wall planes also added interest and interior planning possibilities to the extremely large floors—about 50,000 square feet each—which were designed to serve rental offices whose tenants and sizes would be determined later. Not incidentally, the stratagem produced a number of extra corner windows.

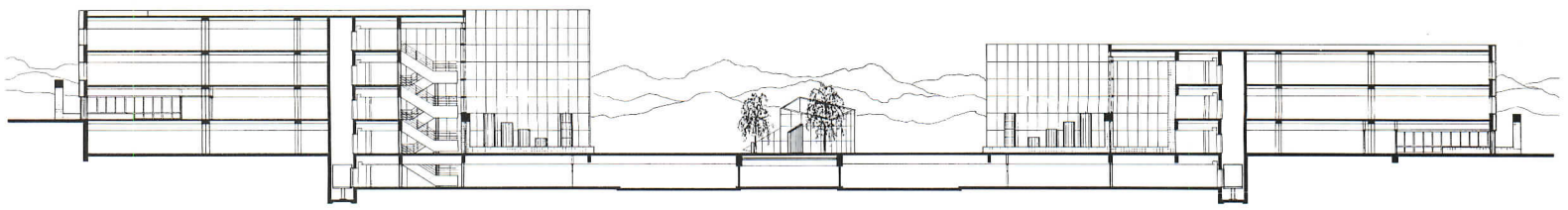
The two building halves embrace a large courtyard (the office development requires that at least 40 per cent of any site be left as open space). To suggest urban fabric and provide easy pedestrianism, a walkway runs the length of the 18-acre site, leading across a bridge and through the buildings and their entrance atriums to intersect the axial courtyard, which opens a perpendicular vista to distant mountains.

At the same time, the courtyard serves as more than a mere pleasure. Its floor is also the roof of a garage (the office park also requires that no *more* than 40 per cent of any site be given to visible parking space). And because the placement of mechanical elements on the roofs of the office buildings would have exceeded the height limitation, this equipment was installed below grade. To discover the magical uses to which the landscape architects put mechanical intrusion into the central courtyard, see the following pages.



Jerry Campbell





*An angular pair of buildings edges the sides of a long courtyard with a black-and-white checkered floor that gives Harlequin Plaza its name. Design controls included both budget—\$37 a square foot for shells and atriums—and energy conservation; the Denver area, with its rarefied air, takes the latter very seriously. The grayish reflective glass walls sit on plinths of maroon quarry tile, its squares*

*echoing the grid of maroon mullions on the curtain wall. At both court and rear entrances, the plinth jogs forward to become low walls along the paths and then is used to erect detached square portals. Users enter one building from its parking lot via a bridge that spans a detention pond.*

*David Tryba photos except as noted*

Gensler and Associates conceived of Harlequin Plaza as a "jewel box," and The SWA Group gave them the jewel to fill it. George Hargreaves, the project designer for the landscape architects, puts the plaza in the vanguard of a new approach that leaves the soft planting and asymmetrical plans of late years as far behind as it does traditional French or English gardens. The bright colors, the tense shapes of the

central walls and the liveliness of the black-and-white pavement are in deliberate contrast with the reflected sky and clouds on each side. The diamond shapes turn into squares when the pavement is viewed from some vantages. As Hargreaves says, "It violates the laws of camera perspective."



Jerry Campbell

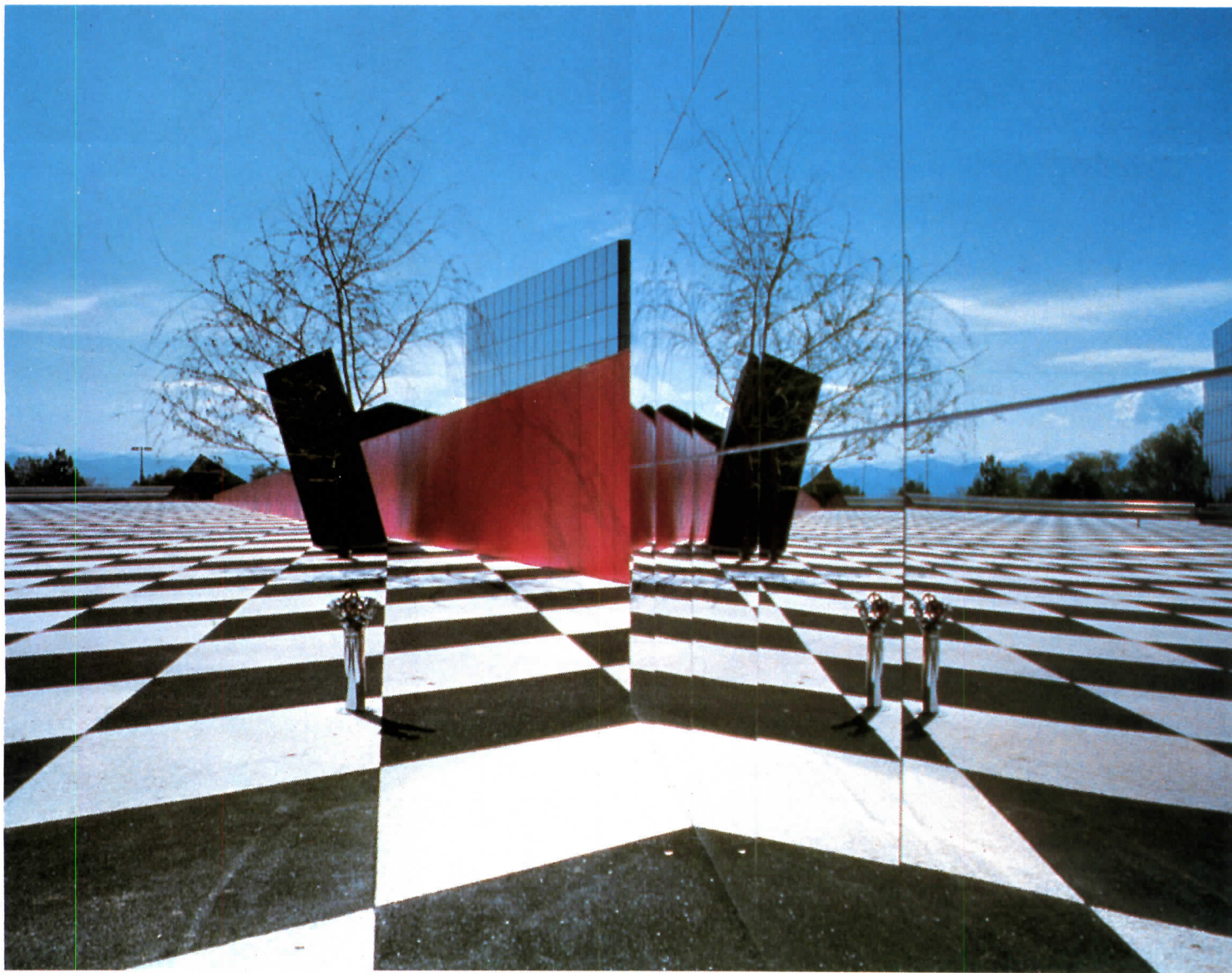




Because the courtyard floor is the roof of both garage and service space, mechanical elements protrude into the plaza. The SWA Group turned these into sculptural objects shaped to recall the mountains. White air-exchange ducts cluster around the front doors; a canted box marks the boiler flue. The reflective sheathing around chillers (directly below) uses the same material as

the building walls, though without mullions, and produces an effect as disturbing in fact as in photograph. Through the center of the plaza runs a channel two feet deep and 40 feet wide, the only practicable area on the garage roof to load soil and water (see section on page 119). Metal walls on either side flank a waterway and fountains. To focus on Mt. Evans in the distance, Hargreaves forced the perspective

of these elements, tapering and converging the walls and graduating the height of the fountains as they point to the mountains. The black figures, by sculptor Harry Marinsky, were added by the owner to populate the space after work hours and on the weekends.



Jerry Campbell



**Harlequin Plaza**  
Englewood, Colorado

**Owner:**  
Quebec Partners

**Architects:**  
Gensler and Associates/  
Architects—Walter A. Hunt, Jr.,  
principal-in-charge; Robert Davis,  
project designer; Randy Bemis,  
project architect; Gary Kvisted,  
project manager; Steven Cronk,  
Betsy York, project staff

**Consultants:**  
The SWA Group (landscape  
architect, site planning)—George  
Hargreaves, project designer  
**Engineers:**  
N. V. Tsiouvaras & Associates  
(structural); Hadji & Associates  
(mechanical); Garland D. Cox  
Associates Inc. (electrical)  
**General contractor:**  
Centric Corporation

# Low-keyed luxury marks offices in a piney woods

Marion Corporation  
Daphne, Alabama  
Loftis Bell Downing and  
Partners, Architects

The headquarters of the Marion Corporation were in effect custom-fit like a piece of good tailoring, but the fine quarters are not simply self-indulgence. The company has a staff of about 150 in this building, with an extraordinarily high proportion of executives and managers. Moreover, the nature of the corporation's business—oil refining, distribution, drilling and exploration—requires that its practitioners remain on the qui vive, sometimes working long hours at unexpected times. And in any case, an impression of hospitable comfort and self-assured prosperity conveys a desirable image in a highly competitive field.

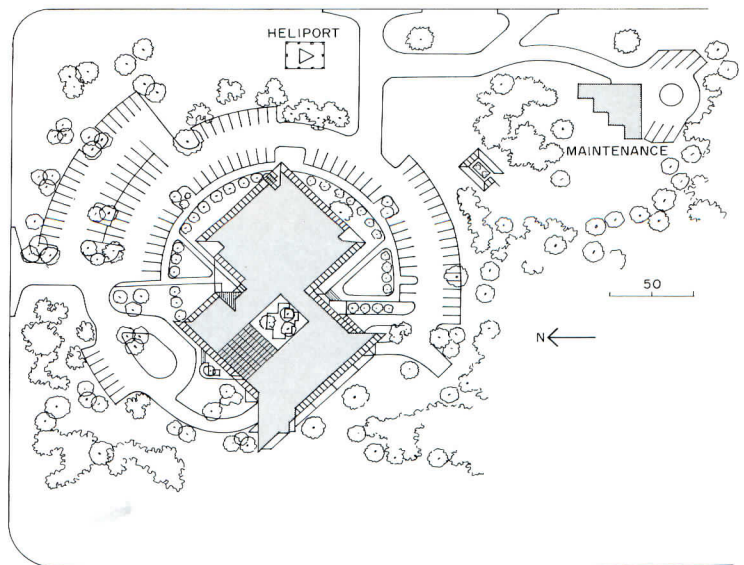
Gilded ostentation would have suited neither the company's style nor the building's location in a rural area on the eastern shore of Mobile Bay, however, and only cognoscenti are likely to recognize the technical address of Loftis Bell Downing's modest-seeming structure amid the pine trees. Diagonal poured concrete columns at the corners—designer Ross Bell calls them "wing walls"—provide vertical support. These are connected by outside laminated timber beams for horizontal support. The largest beam, over the front entry (opposite), stretches 120 feet to allow a clear span of 100 feet, and is four feet deep. Similar beams, all of Southern yellow pine in keeping with the geography, appear also in the interior. Steel bolt heads are exposed where beams meet joists.

The building plan, which was indeed custom-fit during a three-day charette at the company's former office in Mobile, splits the building into two squares, their corners intersecting to form an open courtyard. The front half houses the reception area, the executive suite and those departments most likely to receive visitors and customers. In the back half, perimeter offices form cordons around the computer and around secure areas. Despite the number of offices at the periphery, however, circulation areas wrapped around the central courtyard on both floors get ample daylight and views from the glass courtyard walls, from the skylights overhead and through large windows at the ends of corridors near the wing walls.

The quality of finishes and detailing gives the building its stamp of luxury. Granite floors, wood railings and liberal fenestration surround excellent furniture and a generous and thoughtful art program. And the fitness facilities that have become de rigeur for corporate offices include two racquetball courts and a billiard room, well-used.



© Nick Wheeler photos



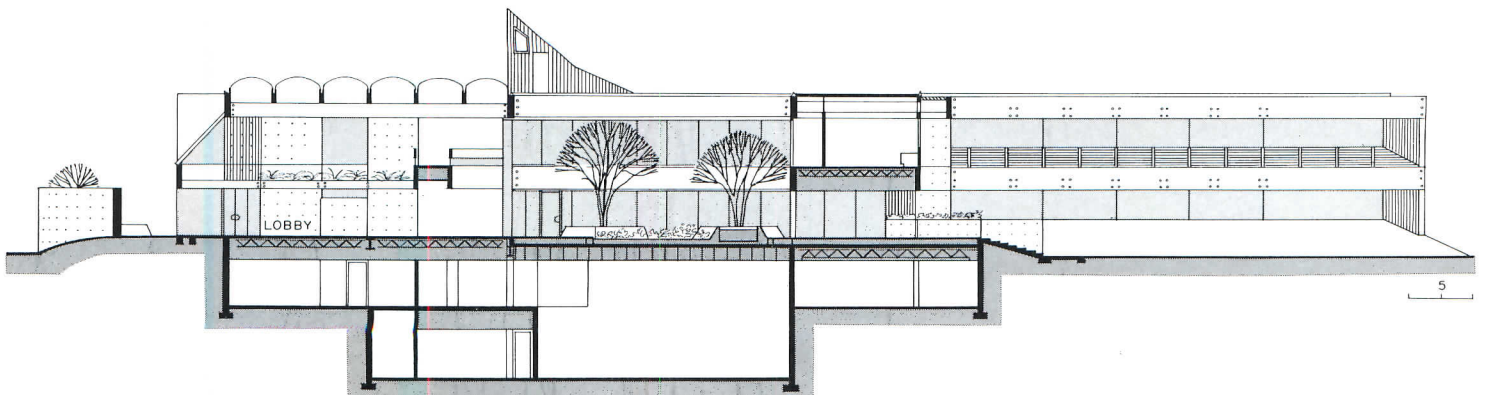
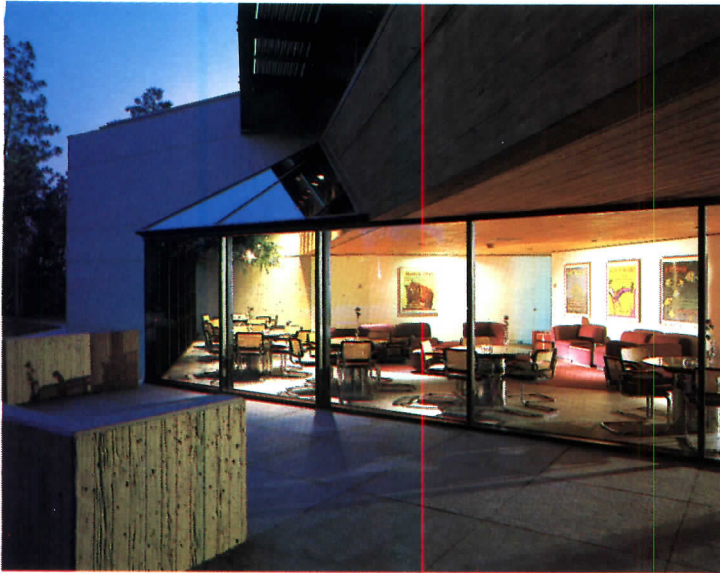


*Visitors to Marion Corporation's headquarters enter beneath an overhang under a sloped glass skylight, where they can get a superlative look at the 100-foot span of the four-foot-deep laminated timber beam (above). Employees, on the other hand, come in at the back by splayed steps (center opposite) that lead to a covered open-air walkway and the central court. The radial employees' parking lot is*

*concealed by existing pine trees and new planting; executives park in the basement below a sod-covered roof outside first-floor offices (top opposite). A wood balcony cantilevered off a wing wall at the second floor (top opposite) serves the chairman's office.*

The employees' lunchroom, seen here from the outside (top left) and the inside (bottom left), is more stylishly furnished than commonplace facilities elsewhere, with comfortable seating and polished granite tables complementing the flame-treated granite floors. A small kitchen adjacent contains a refrigerator and microwave oven. In both the reception area (top right) and

executive offices (bottom right) the laminated pine beams are exposed. Lighting units above desks are wired invisibly with mineral insulated cable run across the top of beams, and perimeter hvac units, separately controlled in each office, are tucked out of sight behind counters.

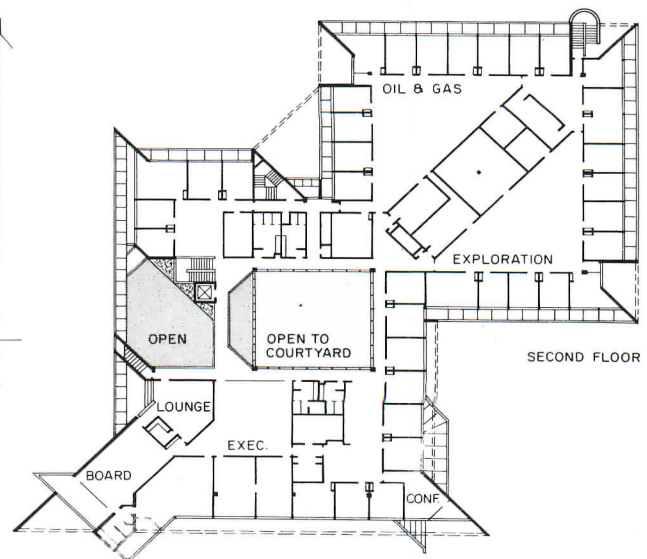
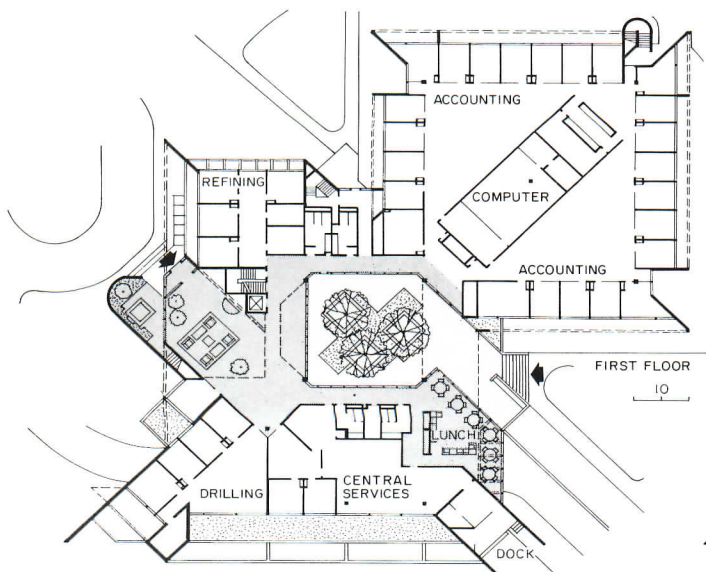
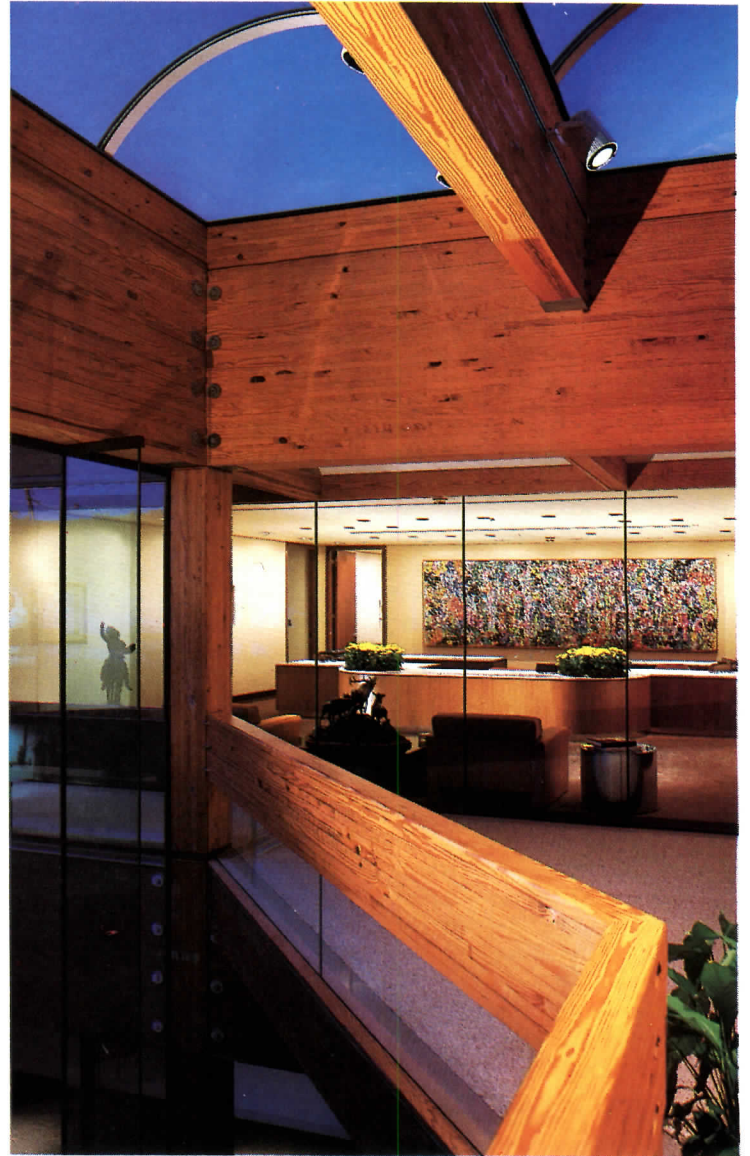


A corridor on the lower floor looks out on the central court through a glass wall with glass mullions (below left). The floor of the court overlies two racquetball courts (section opposite), where action can be followed from a glass-walled lounge in the basement. A skylighted balcony corridor on the second floor leads to the executive suite (below right).

Marion Corporation  
Daphne, Alabama

**Architects:**  
Loftis Bell Downing and  
Partners—Ross Bell, AIA, partner-  
in-charge and designer; Chris  
Marciszewski, AIA, project  
architect  
**Associated architect:**  
Victor W. Glazner, AIA  
**Engineers:**  
Cornforth Associates (structural);

Schulein and Halpain (mechanical/  
electrical)  
**Consultants:**  
Pendergraft's Inc., and Jerome  
Sutter (interiors); Lambert &  
Associates (landscape); John  
Phillips (signage); John Watson  
(exterior lighting)  
**General contractor:**  
Stuart Construction



# Architecture defers to majestic surroundings

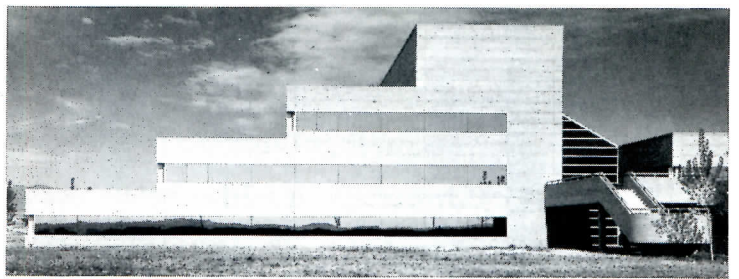
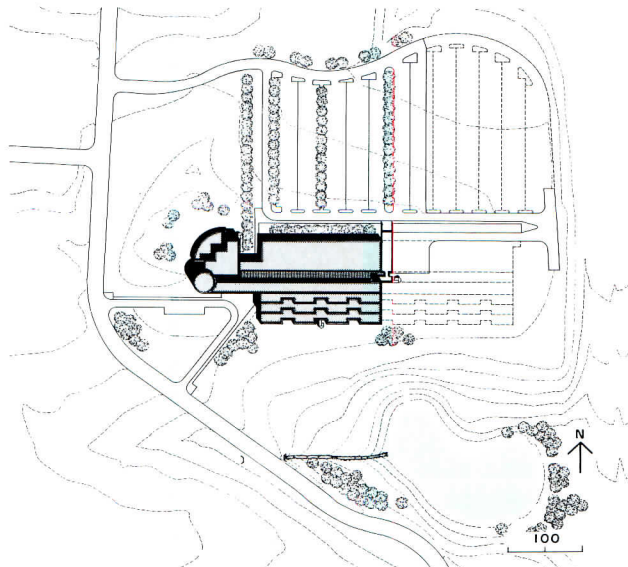
With all respect to the architects, the most impressive thing about Rocky Mountain Energy Company's offices is not the building but the site—a grassy ridge under the celebrated big sky with the Rocky Mountains in the distance. Indeed, the architects have admitted as much with their gracious shaping of a building that in both form and material acknowledges its superb surroundings.

Located between Denver and Boulder near major highways and an airport, the building extends along the top of a ridge, its floors stepping back to continue the slope of the swale in front. In further courtesy to the landscape, pronounced niches resemble, in a distinctly man-made way, the gullies leading to a retention pond at the bottom of the hill.

Designed for a company with interests in coal, uranium and trona (natural soda ash), the building accommodates 450-600 people, predominantly engineers, mineralogists and other scientists, in a quiet, almost academic, atmosphere. The architects had recourse to a plan they had made use of before—to wit, the placement of fixed elements like meeting room, executive offices and dining rooms in one node, and of general office space in other extendible wings (see, for instance, Kohn Pedersen Fox's building for AT&T Long Lines in the November 1981 RECORD). At Rocky Mountain Energy, this separation confers two advantages. First, the wing containing office space can be extended westward if the company should need to expand. Second, the permanence of the fixed elements allowed the designers a certain formal freedom. A brick drum marks the entrance at the same time it contains a meeting room, and a quarter circle at one corner houses the cafeteria. An executive office penthouse sits above the cafeteria, its wall sawtoothed to capture views of the mountains.

A wide spine travels the length of the building, its long trussed skylight illuminating the balconies that link the various departments. At the second level of the three-story building, three bridges span the lower corridor to carry traffic to offices at the back of the building and to reduce the length of the spine for both eyes and feet.

The exterior wall corresponds deftly to the landscape. Built of light brown sand-cast Virginia brick with soft-textured edges, the wall is striped with double rows of headers on either side of a sandstone course. Long windows of butted glass, their corners distinguished by re-entrant metal panels and columns, emphasize the length of the building as it hugs the ridge.





*Stretched along a ridge in the foothills outside Denver, the offices of Rocky Mountain Energy Company make their own statement even as they make obeisance to their surroundings. The building's three office floors step back to maintain the rise of the hill, and three recesses mark the division of company departments inside, as well as complementing the topography of the site (above*

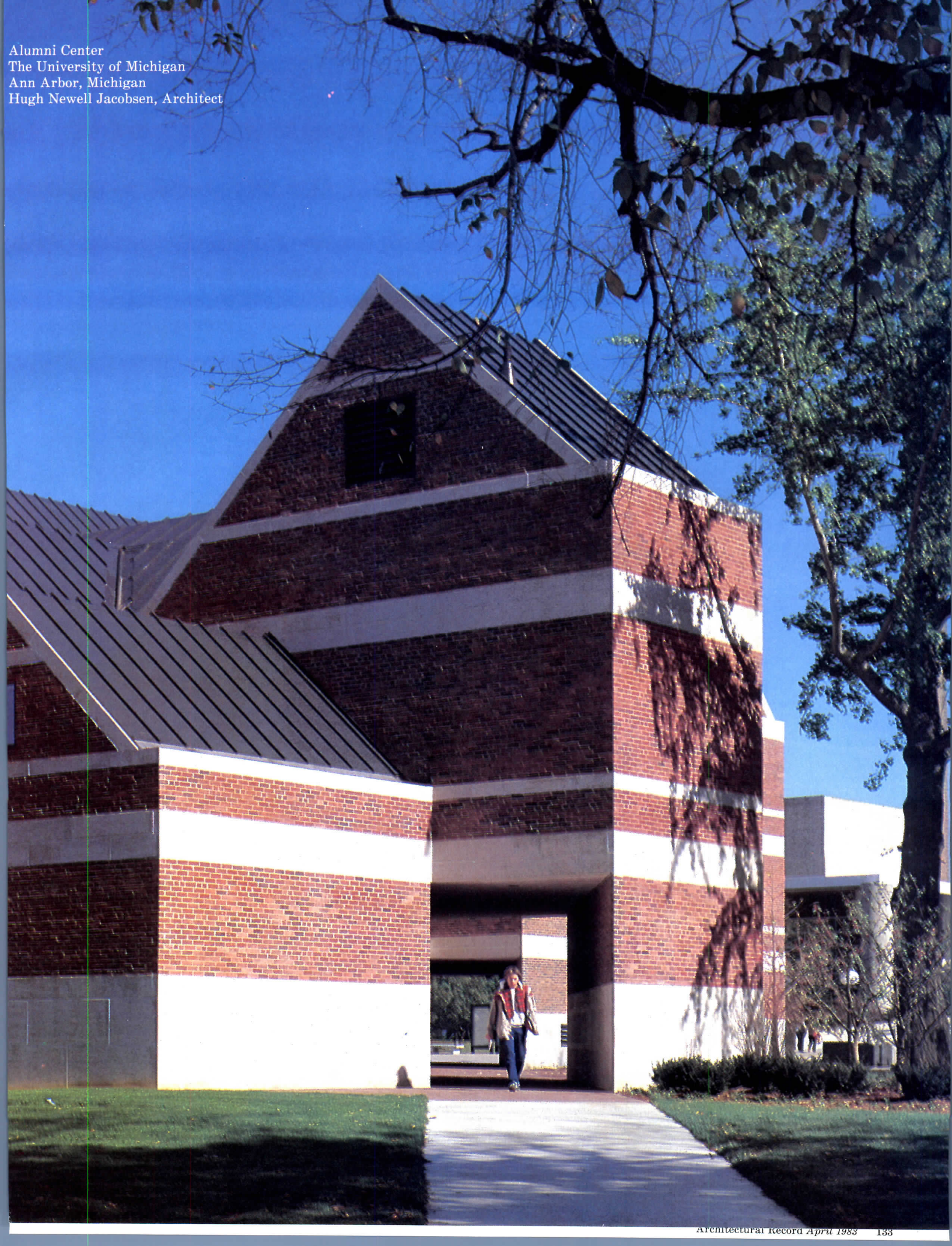
*and site plan at far left). A curving glass wall allows a view of mountains from the cafeteria and access to outdoor eating terrace in good weather (near left). The dining area sits below executive offices and next to a brick cylinder that contains meeting space.*

# Bridging the past





Alumni Center  
The University of Michigan  
Ann Arbor, Michigan  
Hugh Newell Jacobsen, Architect





*L-shaped in plan, the alumni center wraps around a landscaped entry courtyard that gives access from a parking ramp to the east and from the Michigan League. The entrance proper (opposite and left below) is via a portico set on the diagonal path tunneled through the building to preserve a long-established "right of passage" for students accustomed to cutting across the once-vacant corner lot the building now*

*occupies. Heavy masonry piers set obliquely to follow the axis of the gables shelter the glass wall of a triangular reception foyer (right and below) tucked into the angle between the wings. Despite the center's frank historicism, its 20th-century origins are plainly announced by the sleek planes and flush glazing of a facade broken only by oriel windows.*





Any lingering doubt that, for all its deference to its elders, this is a thoroughly contemporary building vanishes with the first step inside, where Jacobsen's sure-handed use of materials and meticulous detailing are everywhere evident. The focal point of the interior, as of the exterior, is the two-story Founders Room (opposite and below) with its oak floors and navy-carpeted walls. Used as a single meeting place for up to 350 persons, this hall can be divided by demountable partitions into four smaller spaces, each with its own slate fireplace. A smaller gem among the alumni center's consistently fine rooms is the two-story James A. Kennedy Memorial Library (left).



*Alumni Center*  
*The University of Michigan*  
*Ann Arbor, Michigan*  
**Owner:**  
*The University of Michigan*  
**Architect:**  
*Hugh Newell Jacobsen—Charles Parker, project architect*  
**Engineers:**  
*Kraas and Mok (structural); Gamze, Korobkin, Caloger, Inc. (mechanical/electrical)*  
**General contractor:**  
*Jeffress-Dyer, Inc.*



# On making budget jobs something special

It is quite some distance from Windows on the World on the 110th floor of the World Trade Center in New York to the L. L. Evan restaurant on the parking lot of the Apex Shopping Center in Warwick, Rhode Island—where the hamburgers are \$1.50 and an “ocean smorgasbord of shrimp, crab, and lobster with our own seafood sauce” is \$3.25. But if the prices, the menu, the budget, and the view of the two restaurants are very different, what is not different is the design attention given both jobs by architect Warren Platner.

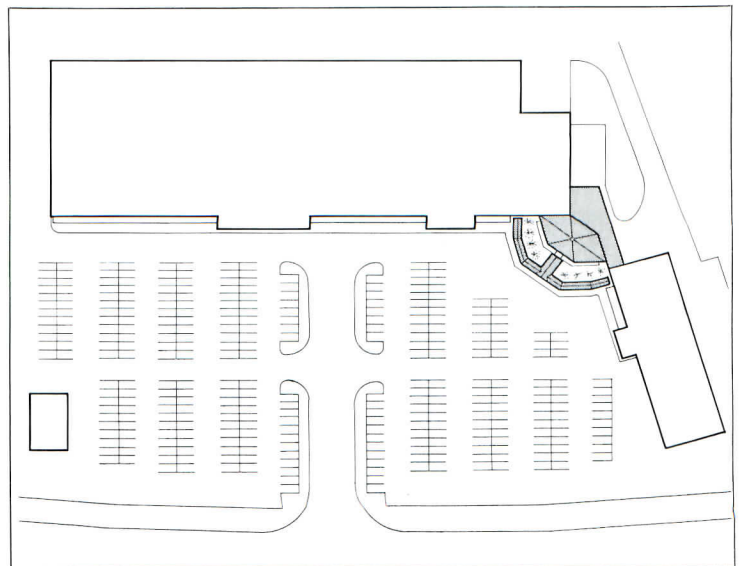
The site is a suburban shopping center, where the closest thing to a magnet store was the Apex discount store—“apparel, toys, garden equipment, and household goods.” The owner approached Platner with the idea of developing a restaurant/coffee shop/snack bar to attract and hold shoppers. The restaurant was sited in an open space between the two main shopping-center buildings, its fabric canopy an extension of the arcade fronting both sets of stores. Its hexagonal peaked roof, a checkerboard of yellow and white porcelain-enameled steel tiles topped by a gold-leafed aluminum finial, is as visible day and night as the more familiar orange roofs—and serves the same purpose. The fabric canopy frames a tree-shaded outdoor dining terrace that at least partially screens the parking lot. Viewed from the arcade, the all-glass walls act as a show window, and provide plenty of daylighting for what is primarily a daytime restaurant. Inside, the high peaked roof creates an unusual sense of space and visual excitement. The interior is also enlivened by two other design devices: The tables in the rear are on a platform raised three steps—a modest version of the level changes at Windows on the World—intended to give everyone a view and a sense that, even far from the glass wall, they are sitting in “a special place.” The second special element is the wall paintings. Set in alcoves, framed in white with forced perspective, are three tulip murals, designed and painted in acrylic on plaster board by the architects (see interior photos, next pages).

The restaurant has a total of 4,100 square feet, of which 2,150 are in the seating areas, and cost \$650,000, including all furniture and equipment, as well as fees. It has proven immensely popular and, especially in winter when the terrace cannot be used, there is often a waiting line. Which surely is the result of some combination of good and modestly priced food and careful, imaginative, and creative design. And perhaps there is a moral here... *W.W.*

©Peter Aaron/ESTO photos except as noted



R. Grantham





R. Grantham

*The site plan (left) shows the centerpiece location of the new restaurant. The roof is steel-framed with a ceiling of tongue-and-groove planking and rigid insulation under the steel-tile roof. The outdoor dining area provides a screen from the vast parking lot, and in summer a lively and active view from within. The tulip finial, a favorite device of architect Platner, was fabricated in the office, and is echoed in the wall paintings inside.*

The interiors are inexpensively but rather elegantly executed. The raised floor area for the center tables, alcoves along the outside walls and against the raised area, the wall paintings, plain but effective lighting, and the hanging ferns help to create a sense of "special place" for each table. The tables are butcher-block oak with metal bases; the bentwood chairs are beech; the floors carpeted in the

raised area, slate on the lower level. The wall paintings were done in the architects' office.





**Owner:**

*Apex*

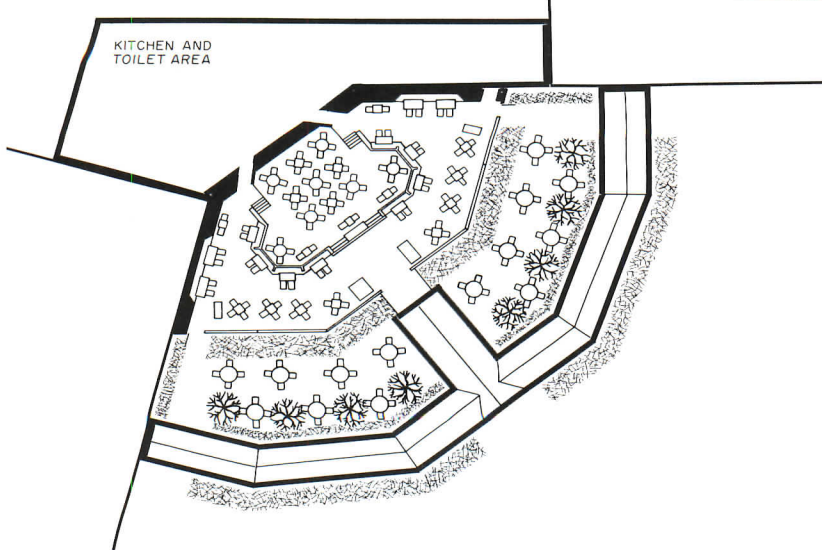
**Architects:**

*Warren Platner Associates,  
Architects—associates of Mr.  
Platner on this project: Ron  
Grantham, Paul Goettlich, and  
Carol Beach*

*(mechanical)*

**General contractor:**

*Bacon Construction Company, Inc.*





→  
Toujours les foires San Denis  
face et des ports  
d'après image



# An architecture drawn from life

A review of *Le Corbusier Sketchbooks* by Kurt W. Forster



Atelier International, Ltd.

The recent polemics surrounding Le Corbusier and the significance of his work for modern architecture have begun to substitute a crudely simplified view for the enormous richness of his work. The timely publication of his sketchbooks by the Architectural History Foundation and the MIT Press in collaboration with the Fondation Le Corbusier—four massive volumes with thousands of sketches and jottings annotated by François de Francieux—now reveals at close range what one suspected all along: virtually no aspect of Le Corbusier's life, hardly a facet of his experience, and barely a subject of his reflections are missing from their pages. Even the architect's familiar and most controversial ideas—the *unité d'habitation*, the renovation of world cities, and the famous villas—acquire new aspects and suggest hidden origins and ramifications.

Le Corbusier's architectural imagination remained fastened on a very few fundamentals. Everybody will at once think of machines and urbanism, but it is worth stressing—and the sketchbooks bear it out—that two things, the architecture of the past, and the agelessly simple structures we call vernacular, fix the vanishing points for the architect's gaze into history. Again and again, Le Corbusier places his own work into the perspective of the past, not for facile evocation but to measure with a yardstick larger and more precise than that of the moment.

With a few deft strokes of the pencil he puts two defeated proposals above and below a sketch of the *Campo santo* in Pisa: the proposed Centro-soyuz for Moscow, marked as "rejected," and the scheme for the United Nations headquarters in New York, said to have been "taken up without saying thank you." Both projects integrated highly diverse elements on a vast scale; both proposed the remaking of an entire site for which only history on the one hand, and the future, such as his own plans for Chandigarh, on the other, offered any real comparisons. These were projects for buildings that would have brought about major alterations in established cities; even more, they would themselves have become monuments both to the institutions they were designed to house and to the new era of world cities. If, therefore, one were to think of Le Corbusier as the implacable enemy of the historic city and as the ruthless advocate of wholesale destruction, one would mistake a necessary polemic of half a century ago for policy and for the whole of Le Corbusier's thought on the matter. When, late in his life and in the history of Venice, Le Corbusier developed a hospital scheme for the city in the lagoon, he noted that Venice is a "unique center in the world... that will not be destroyed by vandalism but saved by revival." His project recommended a delicate operation on the fragile patient in hope of restoring her to a new phase of life. But Venice and his own life were already rapidly waning.

Le Corbusier died a kind of Empedoclean death on August 27, 1965 while swimming at sea near his tiny cabin at Roquebrune. The architect's life is not without a lore comparable to that surrounding the ancient philosopher, man of science and politics, and visionary whose mysterious disappearance gave rise to the story of his death in the crater of Mount Aetna. Le Corbusier's life may be no less controversial than it was protean: the prophetic figure merged with the technocratic planner, the painter turned pamphleteer only to talk painting, the architect who wished to be as much a designer for industry as a master of building but precisely to shape even those things which were no longer seen.

Through years of bitter frustration and others of frantic success, Le Corbusier never stopped talking to himself and to others. And he spoke as directly with the pencil and the pen as he did in words. Even in writing he insisted on "writing the spoken word," and he interrupted or continued the spoken discourse with the telling pencil: "I speak on paper." And speak Le Corbusier's sketches do, of the variety of his interests and experiences through which the architect sustained a voracious but analytical appetite for the world. Only large but lapidary words are able to encompass the range of his spontaneous notations. With unswerving questioning Le Corbusier grasps the shards of experience, seizing them as the fragments that tell of a whole and not as the mere debris along the path of his life. While he persistently tracks down ideas or transforms inchoate impressions over many days and even years, there is virtually

Kurt W. Forster is Professor of the History of Architecture at MIT, formerly Professor of the History of Art and Architecture at Stanford University. He is a frequent contributor to numerous scholarly journals, including *L'Arte*, *The Journal of the Society of Architectural Historians*, *Architectura*, *Archithèse*, *New Literary History*, and *Daedalus*. Most recently, Mr. Forster edited *OPPOSITIONS 25: Monument/Memory*.

nothing that might not erupt on the pages of his sketchbooks at any moment. These handy little pads were not simply travel companions, filled with the shorthand of his reactions to everything that crowded into view, they were also a *journal intime*, a very private record of his thoughts and feelings. That he had guarded these notebooks jealously—all seventy-three of them were found in a leather case among his belongings in the apartment at rue Nungesser et Coli—and that he ordered and numbered them as well, only shows how important they were to him. They must have been sounding board as much as record books. What catches his eye or wells up from memory claims its place on the page: the travel bag of a Japanese businessman, a polemic phrase or a telephone number, a cloudy sky or a piece of furniture, a foot, a flower, or an engineering diagram. He was right in saying that the key to everything is “to look, to observe, to see, to imagine, to invent, to create.” These words trace the stages of a metamorphosis from a receptive state to an active one in which the features of a landscape can ultimately turn into those of a face.

Among the constants that stay the flow of ever-varying impressions and transformations, there is one that surely stems from the oldest capabilities of the human mind: the mimetic reading of objects, whether a piece of African sculpture, the weather vane on a chimney hood (8), or the reproduction of the largest scale, that of the landscape itself (7) in “the miniature” of a building. Le Corbusier was simultaneously capable of pure Cartesian abstraction and mimetic disguise of his own mind in the world of objects. The significance that sets this mimetic order apart from simple borrowing of images lies in the power of human imagination. Image-making establishes its own order among the things it has found. An act of counterfeiting them in the imagination is required for the hand to accomplish its magic.

The shaping hand itself becomes the subject of the crayon, and it gradually assumes over the decades the open form that rendered it symbolic of the very process of life that it sustains in the first place, only to close again in order to cradle and anchor on its thumb the hand of his dying wife, Yvonne. The hand is the instrument of this inventive work, and there is only one hand for all its innumerable tasks: “One draws in order to penetrate, and to incorporate what one sees into one’s own history.”

This absorption and incorporation can start with seemingly unpromising subjects. Sketching is a quintessentially nineteenth-century medium—in the sense that painting itself came to assimilate its chief characteristics—and it has the advantage over its modern successor, photography, of requiring a concerted effort. This effort lies in transcription, and it entails a necessary transformation. Transcription needs not only care, it can also produce leaps of the imagination. Instead of deferring the work of the mind, sketching depends on it, and its practice during a lifetime begins to generate meanings of its own.

The very earliest sketchbook that has come down to us intact dates from the first year of World War I. It touches already on what were to remain lifelong subjects of interest: landscape—especially the human presence in it—the work of artisans and craftsmen, remains of ancient architecture, vernacular building, furniture, exhibition plans, and at least one example of what is still called “primitive art.” The second sketchbook of 1915 adds the themes of housing, women, mathematics, engineering, and the third, of 1918-19, elaborates on all of these with the significant addition of vivid color, especially for scenes of openly erotic character. The range is quickly staked out, but it remains nearly inexhaustible.

Spain, Algiers, South America, and later India bring other experiences to the surface: Le Corbusier’s northern European intellect casts a strong analytical light on these cultures, but his senses react as if electrified. The vanquished and subjugated of the colonies and former colonial territories return to their European masters a sense of life the Westerners seem incapable of sustaining by themselves. From Delacroix and Géricault to Le Corbusier and Camus, the European perception is caught in the tragic dilemma of primitive existence. Incarnate in the body and hence imbued with a sense of temporal fullness, savage existence both pains the European and offers itself up as an image of unattainable relief from transcendence. Could Le Corbusier have

sensed it this way? Listening to jazz music in a hotel on Majorca at Easter 1932, he wonders whether “disguised in the deluxe hotel and in the virginity of Easter. . .the products of the first machine age have reached their sexuality. It is a song of hidden, prohibited, forbidden sex. It’s the world’s great torment. . .”

His evocation of the “camelback hills” and their instant transport from the Mediterranean to the “estuary of Santos in Brazil” accomplishes one of those leaps of the imagination that completely change the meaning of things and shapes.

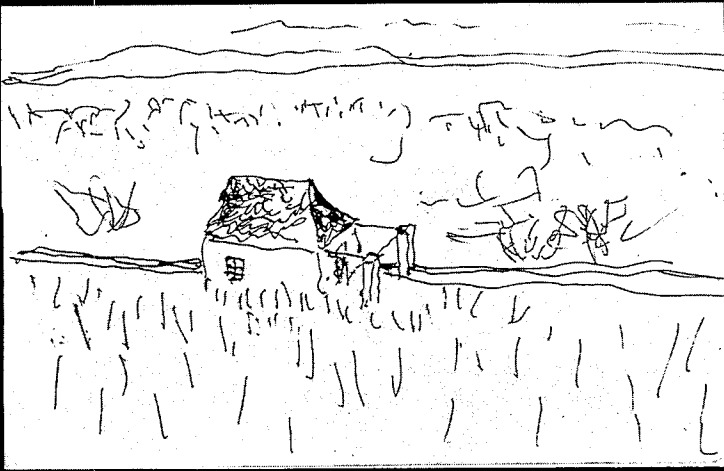
From his frustrating experience of “European renunciation,” he asks the planners and economists of his day: “Oh sociologists of minimum housing, why don’t you study the stages of the human heart?”

For Le Corbusier, primitive construction wore many faces and it seemed to hold a still unfulfilled promise for architecture. Just as the life of primitive peoples appeared long superseded by civilization—of interest only to the ethnographer or to the nostalgic holiday-maker—so it had been a long time since Karl F. Schinkel’s conviction that vernacular building in the Alps was architecture of an essential kind.

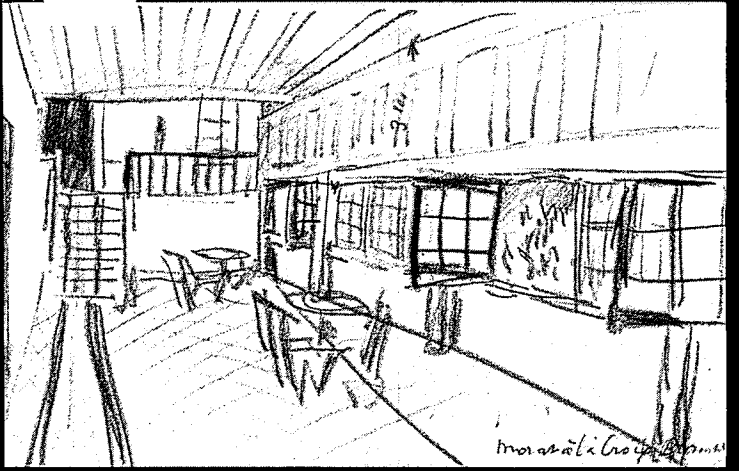
Exploring the possibilities for the construction of housing for the workers in a watchmaking factory, Le Corbusier traveled through Normandy in 1917 and made rapid jottings of simple rural buildings in the region. No shed was too elementary, no detail of slate-covered houses in half-timber construction too technical or pedestrian for his pencil. Among these sketches, as on the pages of the earliest surviving pad, one encounters several of those elements that later formed the true core of Le Corbusier’s architectural principles: the split-level apartment in his *unités d’habitation* and elsewhere, the bands of windows, make their early appearance in the records of rural buildings, as at the inn to the White Cross at Morat in his native Switzerland (3). Le Corbusier not only seized these elements in their rudimentary and unlearned state, but also preserved in his mind their scale and economy. The orientation of the rooms to one side (and hence their special fenestration), the standard heights, low ceilings, simple, even coarse detailing, the built-in furniture and parsimonious distribution of space are all part of the farmhouses in the Swiss Jura and of other rural cultures he knew. Building for the new “urban peasant,” Le Corbusier gave him a little house aboard the ark of his *unité d’habitation*. Or, in the weekend house of 1935 near Paris, he returned the urbanite to a kind of ancient dwelling in which cement and glass walls met with shallow vaults and sod-covered roofs: a newly Pompeian abode under the ashes from the eruption of industry. Like the artists of the Blue Rider group who were fascinated by Bavarian devotionalia and the folk art of behind-glass painting, like Bartok who found rhythmic and melodic elements in Hungarian folk music to augment his own imagination, Le Corbusier reacted strongly to rural buildings of Switzerland and France, and later to those in South America and India. This search and reflection provided, for the life-long autodidact that he was, the very fuel of his work.

When he withdrew periodically from the machine-age pace of his work and relaxed from the hectic travels of his later years, he went to his cabin at Roquebrune. In 1952 Le Corbusier built this tiny hermitage (5), perhaps as a kind of Laugier hut of *his* architecture—executed with entirely vernacular materials and means—in a gesture which defies both the grandeur of his own plans he had carried forward with such fervor, and the self-set limits of his modern architecture. The cabin, like the sketchbooks, stands as a passing, almost inadvertent, monument to his life work in the laboratory of architectural imagination.

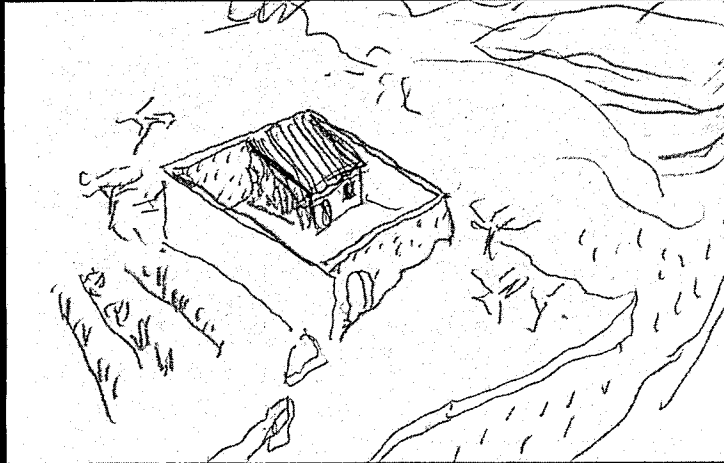
1. *From a sketchbook of the year 1917*
2. *Landscape in Neuchâtel (1916)*
3. *Interior of an inn at Morat, Switzerland (1916)*
4. *Vernacular architecture in Castile, Spain (undated)*
5. *Sketch for Le Corbusier’s cabin at Cap Martin*
6. *From a series of sketches made in South America (1929)*
7. *A landscape with Mount Fuji as seen from an airplane (1955)*
8. *Weather vane on a chimney hood (1955)*
9. *Grave of Yvonne Le Corbusier (1962)*



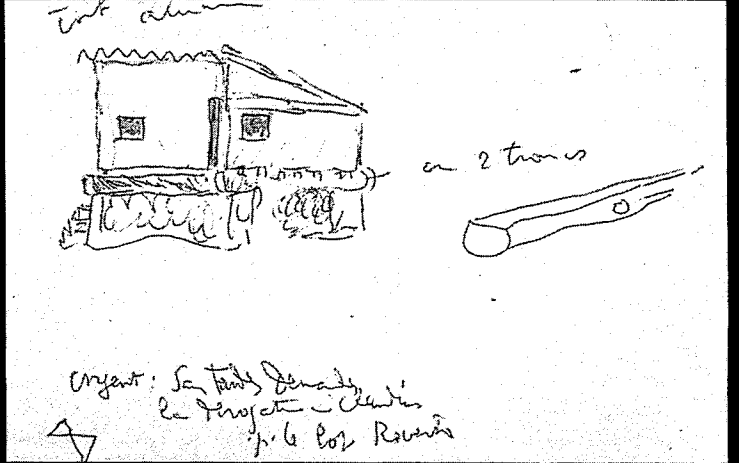
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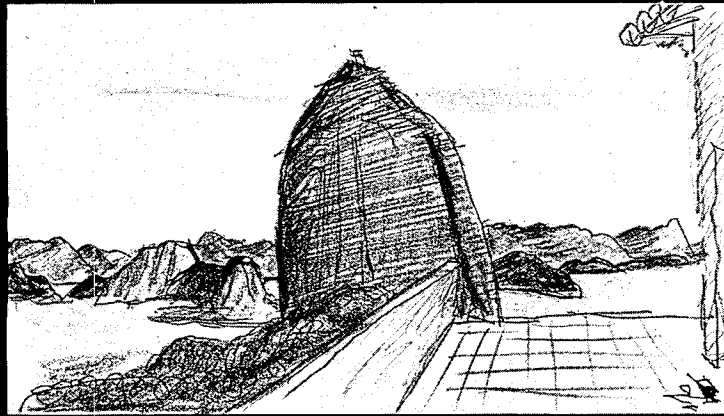
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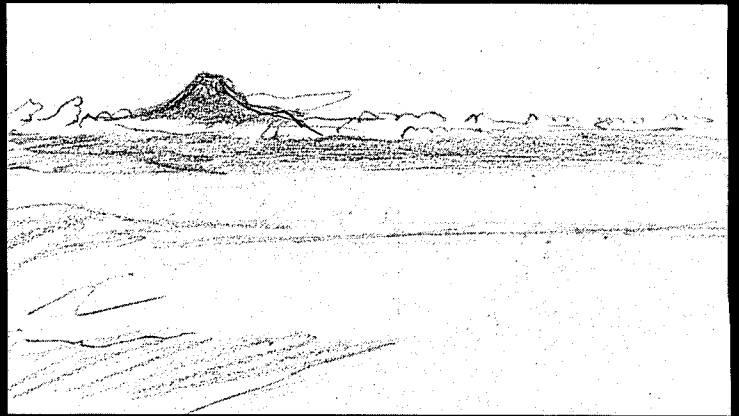
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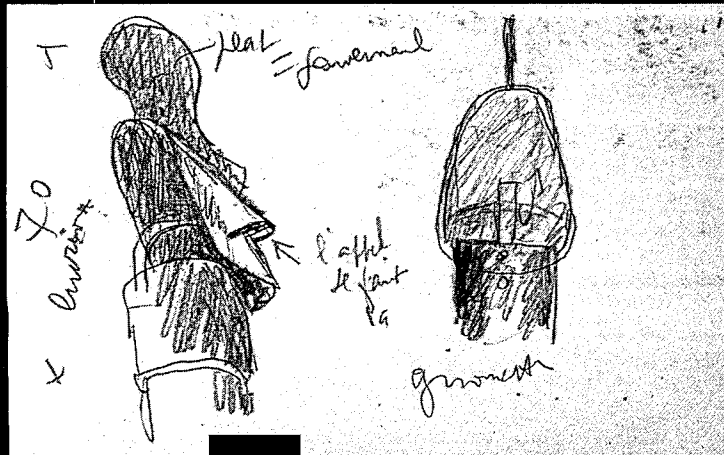
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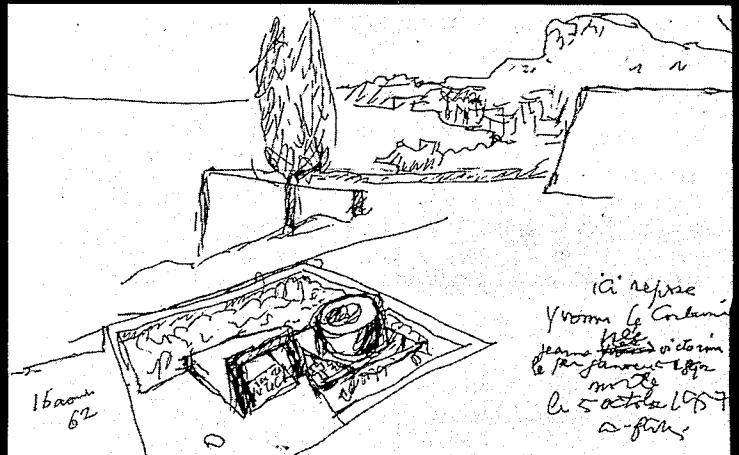
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# Not just another glass box

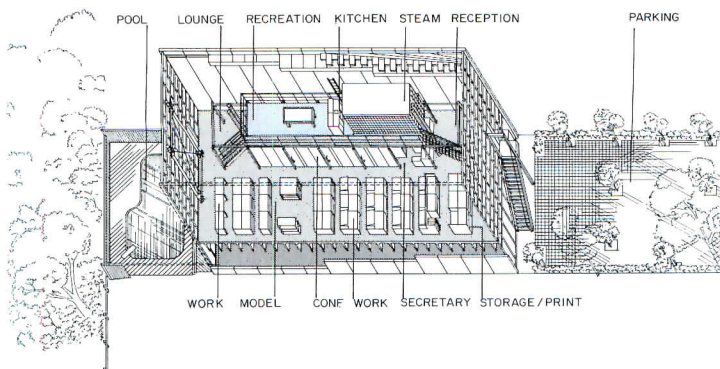
IKOY Office Building  
Winnipeg, Manitoba  
IKOY Architects

Some architects prefer to have their romance with technology in private; others—Norman Foster, Gunnar Birkerts, and Helmut Jahn, to name but three—are not so shy. Into the second category falls IKOY Architects, “an office of working principals dedicated to interacting with all members of the firm to develop an architectural process philosophy of high-speed economic construction reflective of today’s technological society.” Witness the IKOY Office Building, a 50-by-100-foot box that appears (and correctly so) to have been assembled—as opposed to built—on a narrow urban site adjacent to the commercial/retail core of Winnipeg, Manitoba. The 10,000-square-foot two-story structure (11,600-square-foot, counting the second-floor mezzanine) is essentially an argument, and a colorful one at that, for standard industrial stock items: all components (mechanical, electrical, and furnishings) are straight from the catalog—either utilized “as is,” or assembled “to suit.” It’s not Centre Pompidou, and it’s not to everyone’s esthetic predilection, but for sheer “high-speed economic construction,” one would be hard put to produce a more impressive pair of construction schedule/budget numbers than 90 days at \$35 per square foot.

And as for IKOY’s stated commitment “to interacting with all members of the firm,” one looks to the architects’ second-floor offices (the first floor is speculative) where intra-office communication is guaranteed...where the proverbial fishbowl apparently served as model (photo top right). Not only are all equal in the “Big Room,” all are visible. Which is the point. But life at IKOY Architects is not without its compensations (even if it is without privacy). As can be seen in the axonometric (right), when not bent over their drawing boards, firm members may be found on the mezzanine gourmandising in the well-stocked office kitchen, taking a steam in the glass-block office steam room, playing billiards at the office billiard table, working out their frustrations on the office punching bag or doing a few laps in the office pool (outside). The office fishing cabin and office sailboat are off premises.



Gerry Kopelo/Photographic



IKOY Office Building  
Winnipeg, Manitoba

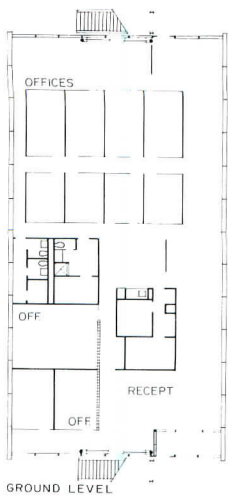
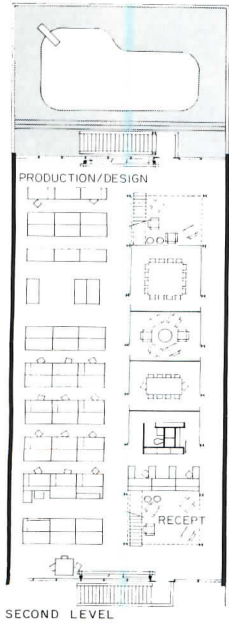
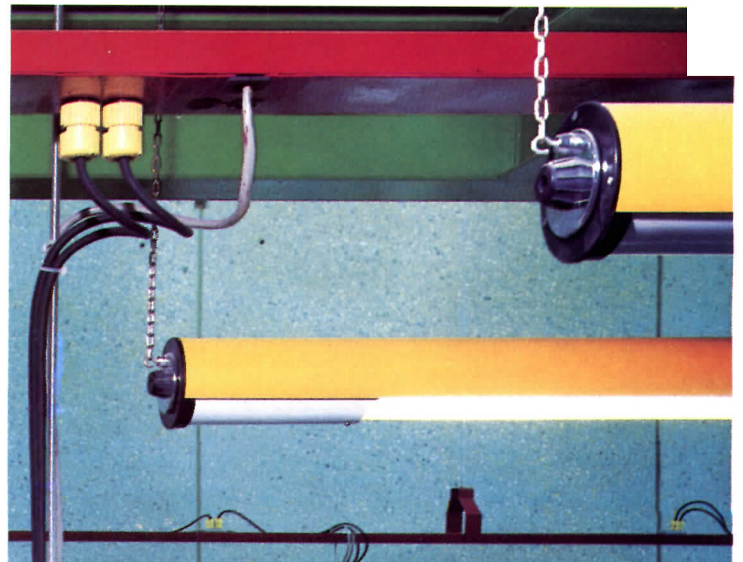
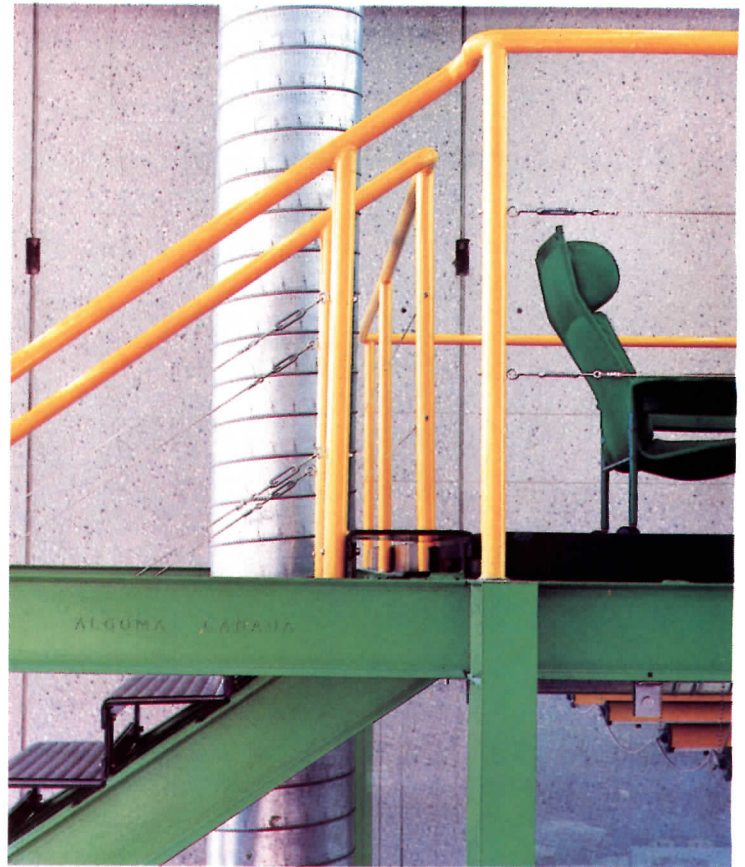
**Owner:**  
IKOY Architects

**Architects:**  
IKOY Architects—Terrance Stratton, project architect; Ron Keenberg, designer; Don Blakey, Bob Gregoire, design team

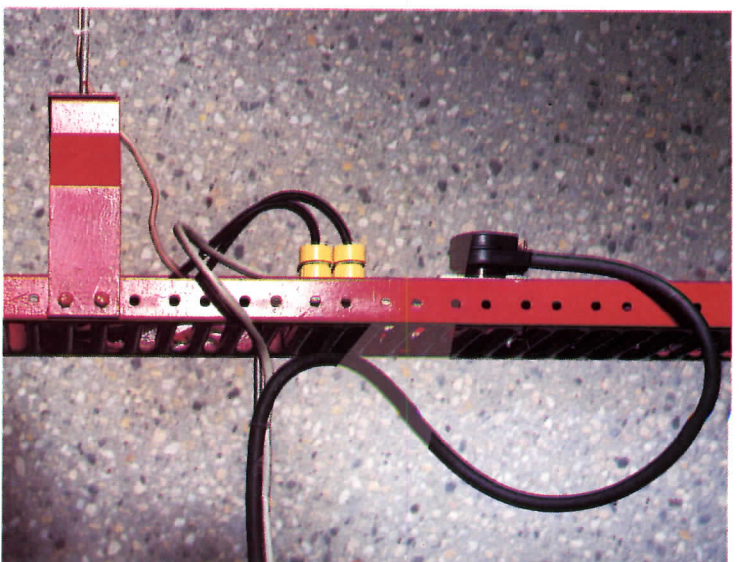
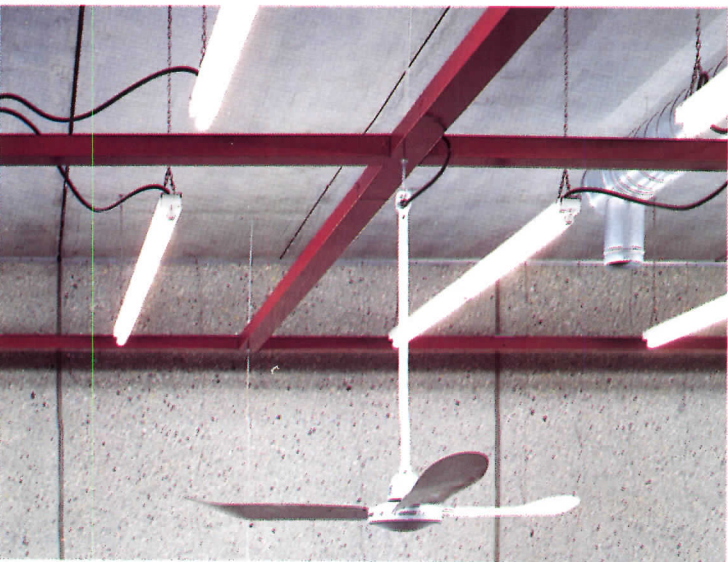
**General contractor:**  
IKOY Architects



The IKOY Office Building is, according to architect Don Blakey, "an homage to the industry." And by that he refers to the myriad suppliers and manufacturers who provided the "off-the-shelf" components that went into the construction and outfitting of the two-story structure. As befits such an "homage," nothing is hidden—not mechanical, not electrical, not structural. The building is an assembly of precast concrete load-bearing sandwich panels (on the east and west) and prefabricated aluminum-frame reflective-glass curtain walls (on the north and south). Lateral stabilization is supplied by two cross-braced steel frames at the north and south (photo top far right, and previous page). In the details (photos right), one notes IKOY Architects' obvious delight—and meticulousness—in assembling their office.







# Up on the roof

Seattle Garden Center  
Seattle, Washington  
Arne Bystrom, Architect

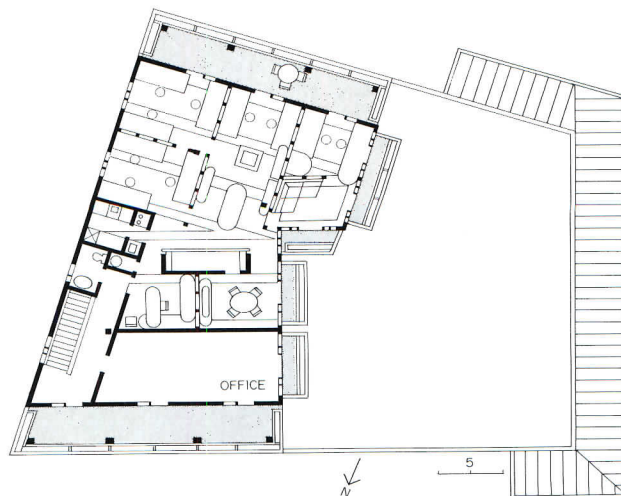
"It represented a time, a style, a history, a presence that no new structure could capture," reminisces architect Arne Bystrom, by way of explanation for his (and two partners') refusal to bow to "expert" wisdom and allow the turn-of-the-century Seattle Garden Center to be razed. But no mere sentimentalists, Bystrom and two partner merchants saw in the deteriorating structure (photo top far right) not only a pleasant, albeit neglected, architectural footnote to Seattle's thriving Historic Pike Place Public Market (farmer's market), but a sturdy little building that begged to be revitalized. The trio purchased the two-level structure from the city, and Bystrom restored the building to, if not its original splendor, at least to its original state. With accommodations for the first-level garden center partner and second-level kitchen-wares shop partner secured, Bystrom set about providing the nonaccommodated partner (himself) with a space. The only space available, of course, was up on the roof. Bystrom's third-level addition—his period-piece office (photos right)—caps the building "in an idiom complementary to the original." The addition was stepped back "to be consistent with the art deco style" (the building was *art deco'd* in the '30s); the zigzag coping and fluted columns were duplicated. . . the zoning envelope was filled.

Looking inside the new offices—through windows fabricated in an abstract pattern of rectangles and squares—one sees an idiosyncratic brand of arts and crafts: the floor alternates patterns of green and brown linoleum; the ribbed-glass partitions create patterns, light, and privacy; the Douglas fir millwork is in a stepped pattern. All the furniture and built-in cabinets were specially designed.

During the summer, draftsmen can steal a few minutes from their drawing boards out on the terraces under Maybeck-inspired trellises overgrown with wisteria; during the winter, those same draftsmen can no doubt be found warming their hands by the grand wood stove. Two most welcome amenities.



Arne Bystrom, Ashley Ellen Bystrom photos



Seattle Garden Center Building  
Seattle, Washington

**Owner:**  
GCB Partnership  
**Architect:**  
Arne Bystrom, Architect  
**Engineer:**  
Darrold Bolton, P.E. (structural)  
**Consultant:**  
Stan Volk, Smith Brothers Heating  
**General contractor:**  
Burfitt Construction Company



# 'Style' on a budget

Offices for Himmel, Bonner Architects  
Chicago, Illinois  
Himmel, Bonner Architects

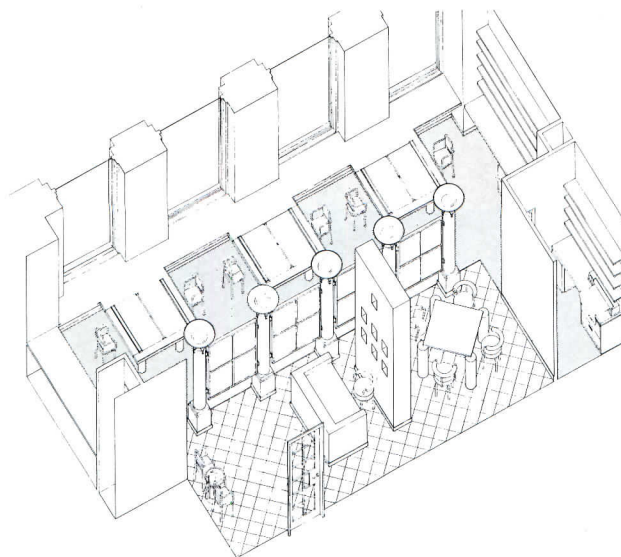
In answer to the question "what does \$18 per square foot buy," architects Scott Himmel and Darcy Bonner would offer "our office." And though the 42- by 22-foot room with a view of the Chicago River is not for sale, it is a sprightly tribute to the fledgling firm's talent for making something if not out of nothing, out of a little—a little drywall, a little paint, a little linoleum, a little millwork. . . . The something Himmel and Bonner made? "We attempted to generate some style." And the style they attempted to generate (in fact generated)? Quite conspicuously, the post-modern one.

The slightly-less-than-1,000-square-foot office has been subdivided into public (reception/conference) and private (studio) sectors by means of four masking screen walls "floating" between five *Sonotube* columns capped with gold (plastic) dish capitals supplying ambient light. On the public side, according to the architects, "the screen walls mimic a street facade by presenting blind iconic [acrylic] windows" (photo far right); on the private side, the partitions become pin-up boards (photo top right). The distinction between public and private is reiterated on the floor: an acoustically hard chessboard linoleum for the public; an acoustically soft gray carpet for the private. Within the public area, a thick violet wall—punctured by square openings—stands to divide reception and conference.

Completed 18 months ago, Himmel and Bonner characterize their office as "vintage 1981." Though no one would disagree, 1981 wasn't such a bad year.



© Barbara Karant/Karant & Associates, Inc.



*Offices for Himmel, Bonner Architects  
Chicago, Illinois*  
**Owner:**  
*Himmel, Bonner Architects*  
**Architects:**  
*Himmel, Bonner Architects*  
**General contractor:**  
*Maritime Construction Company*



# Mediterranean metaphors



Cidade de Goa Resort Hotel  
Goa, India  
C.M. Correa, Architect



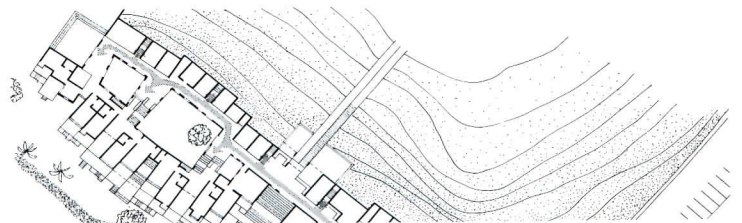


The former Portuguese territory of Goa lies midway between Bombay and Mangalore on the Arabian Sea. From the 16th to the 18th centuries the soldiers and missionaries from Portugal built so splendidly there that it was said: "Those who have seen Goa need not see Lisbon." The remains of European forts, churches, chapels and convents combine with Goa's magnificent coconut palm fringed beaches to form a remarkable Mediterranean enclave within the sub-continent. Today, Goanese still share a southern European world of street cafes, tavernas and handsome arcaded squares.

Bombay architect Charles Correa (himself a Goan) designed the 100-room Cidade de Goa hotel as a little hill town meandering down a gentle slope to the beach. A single labyrinthine street, alternately sloped and stepped, links the lobbies, restaurants, shops, a taverna, and courtyards with the hotel suites. Built of concrete painted in rich earth colors and finished inside and out with local materials, crafts and Hindu artifacts, the one- two- and-three-story hotel appears appropriately Goan in the vernacular sense. But Cidade, of course, means city. Correa, knowing that topographical and vernacular suitability do not by themselves a city make, nor yet a luxury hotel, has enriched his project by devising urban metaphors of a nostalgic sort that evoke memories of the high Renaissance architectural elegance brought by the Portuguese.

Correa's effort began with simple means. He decided to revive the art of fresco and cause to be painted as murals on the hotel's most prominent walls a number of hallucinatory, somnabulistic and phantasmal images (overleaf and pages 158-159) done in the early manner of the father of Surrealist art, Giorgio de Chirico. Cidade de Goa is in some ways "Chirico city," the latter a painting critic's phrase describing this poetic artist's way with town squares: silent, arcaded, shadowed and empty but for the content of dreams—a classical statue in the foreground perhaps, a locomotive or chimney stack on the far horizon, ancient architecture in between. For Goa's luxury hotel, the legerdemain of making the real appear unreal and the unreal real was entrusted to Bombay's noted film poster painter P. Bhiwandkar working from sketches prepared by Correa. Suitably missing from the *pittura metafisica* of Correa and Bhiwandkar are Chirico's sense of strange foreboding and look of the uncanny. Their work instead is very cheerful and often funny—as befits its carefree setting. *Mildred F. Schmertz*

Joseph St. Anne photos

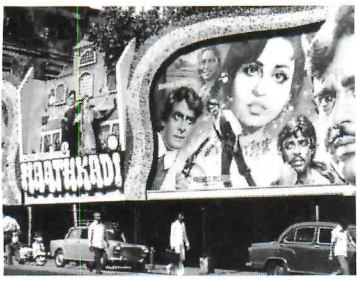


**Cidade de Goa Resort Hotel**  
Goa, India

**Owner:**  
Fomento Resort Hotels/ITC  
**Architect:**  
C.M. Correa; design team—Satish Madhiwalla, Monika Correa, Andrew Fernandes, Nachiket Kalle, Prakash Date  
**Engineers:**  
Auduth Kamath (structural);  
Maneck Dastur (hvac)  
**Consultants:**  
Kishore Pradhan (landscape);  
Suri & Suri (acoustics)







*Vasco da Gama's visits to Goa are celebrated in the sculpture of three conquistadores (above) showing him in conversation with Alfonso Albuquerque and a friend. The taverna (left) is adjacent to a sunlit courtyard. It is furnished as a typical Goan bar. Rooms and terraces (opposite page left) overlook the beach. The film poster (top) is by P. Bhiwandkar, the same artist who did the frescoes.*

*Cidade de Goa Resort Hotel*  
Goa, India

**Owner:**

Fomento Resort Hotels/ITC

**Architect:**

C.M. Correa; design team—Satish  
Madhiwalla, Monika Correa,  
Andrew Fernandes, Nachiket  
Kalle, Prakash Date

**Engineers:**

Auduth Kamath (structural);  
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**Consultants:**

Kishore Pradhan (landscape);  
Suri & Suri (acoustics)

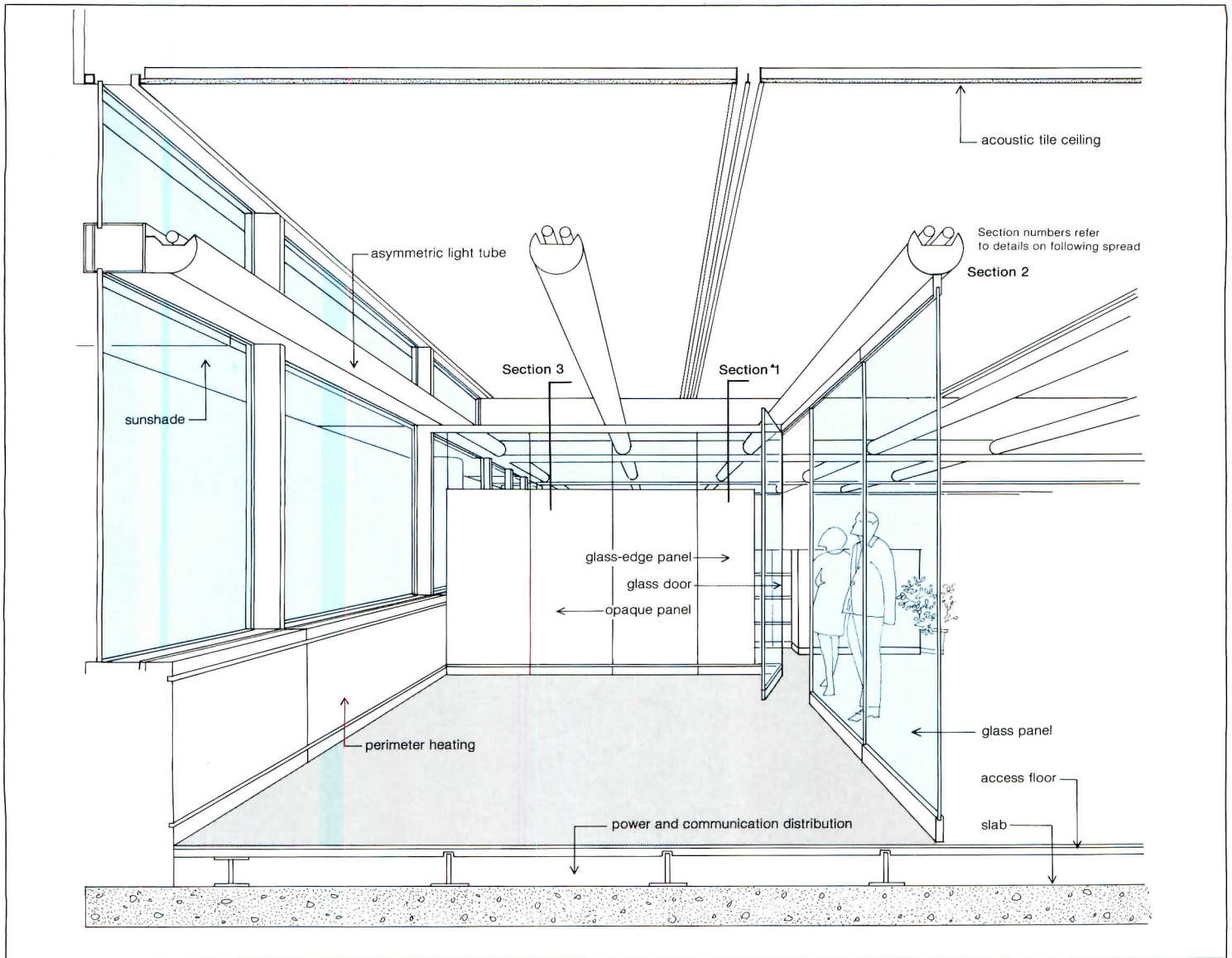


Chirico once wrote: "What shall I love unless it be the enigma?" Correa and Bhiwandkar, resourceful if impudent founders of the Bombay Surrealist Revival Style, offer their enigmas playfully. Who is the figure in the window? Why is he there? Whose heel and white skirt are revealed at the base of the arch and where might he/she be going? What mystery lies beyond the guarded door? As they invite the hotel guests to withdraw and dream, the architect and fresco painter make witty use of Chirico's artifice: his deep perspective, heavy

shadows, wall planes and arches marching to infinity. Because they share a common language of Mediterranean architectural forms, Chirico's nostalgia for a lost Italy transforms almost imperceptibly into Correa's nostalgia for a lost Goa. And not all the artifice derives from Chirico. Sign painter Bhiwandkar also makes skillful use of the techniques of trompe-l'oeil. Which grilled window is real? Can one sit on that bench, stand on that balcony, walk through that space? Correa's hotel offers vacationers many games to play.



# Partitions and lights work as a modular pair to create luminous space



A team of architects, interior designers, a builder, and the company's own facilities group—as well as a lighting and a partition manufacturer—collaborated in the development of an inside-out and outside-in approach to the design of a new 500,000-sq-ft office facility for CIGNA Corporation. (CIGNA is the merged organization of Connecticut General Life Insurance Company and INA Corporation.)

The new building was designed from outside-in for the daylighting. Says TAC partner Chip Harkness, "From the beginning we had the idea of a building using daylight in conjunction with electric light. And if you are counting on natural light, you can't have a lot of solid partitions between the windows and where people work."

The building was designed from inside-out in terms of spatial organization. "Given a linear plan for daylighting," said Interspace principal Barbara Graf, "we had to develop 'pieces' of contiguous space and organize them to meet site and operational constraints. While these ideas were being developed, Interspace also was developing criteria for the lighting and the partition systems. At the appropriate juncture, these merged with the work of the architect on the building as a whole."

The client's charge to the designers was to produce a new building that would serve the company as well as, if not better than, their existing buildings of which the company is especially fond—a late '50s building by Gordon Bunshaft of Skidmore, Owings & Merrill, which attracted considerable architectural attention at the time, and a late '60s building also by SOM.

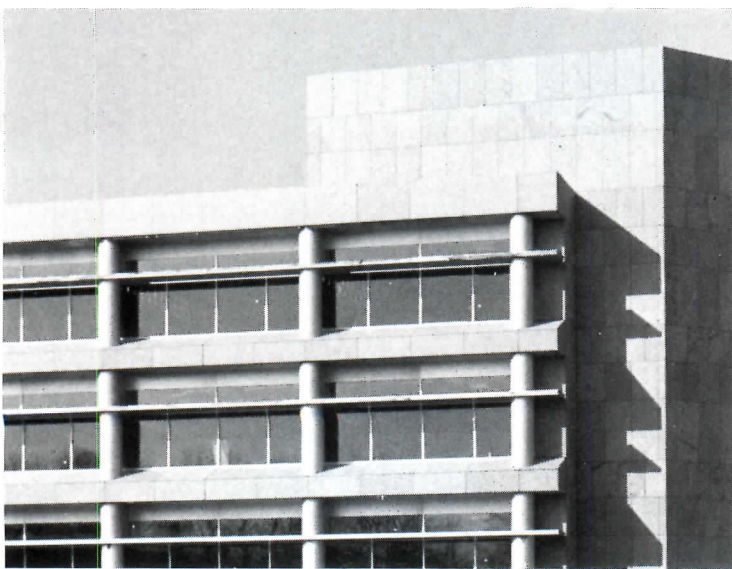
What benefits accrued from the team approach, the extensive field research, and the mock-up testing with which the team became involved? Says CIGNA's Irving Friedman: "The collaborative environment created by the design team during the conceptual process continued throughout the mock-up testing and construction phases. And the continual challenges from the designers and our staff caused us to be a much more participative owner." Said Victor Antes of Interspace: "Without the kind of support we had from the owner, never would we have had the confidence to suggest radical departures to manufacturers." And said Hauserman's Jeff Stodd: "Input from this sophisticated owner and from leading-edge designers began to challenge a number of our market-research paradigms. We found that the development process was as important in terms of process as it was in terms of product." *R.F.*

© Peter Aaron/ESTO except as noted



Engineering

Robert E. Fischer



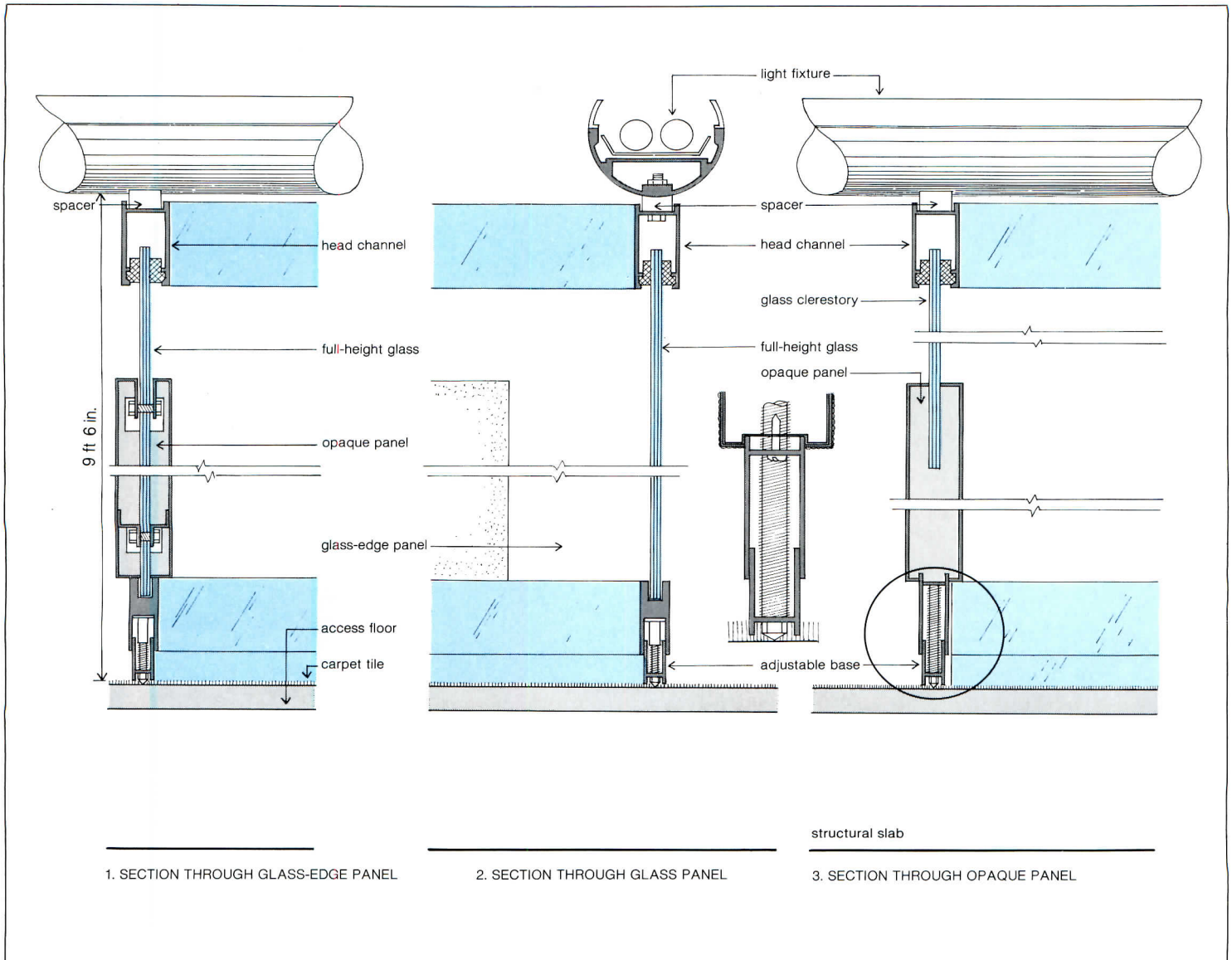
Sunlight on a February morning streams into the two-bay mock-up of CIGNA Corporation's new office facility in the rolling countryside near Hartford. In response to the client's requirements that interior space be open, flexible, and that it provide visual contact with the outdoors, Interspace developed a unique, unitized partition system that virtually floats in space, that integrates with the 22-ft-long indirect-source light tubes, and that is easily moved. The clues to the designers' seeming sleight of hand are found, first of all, in their skillful articulation of glass and opaque areas (corners are turned with glass-edge panels, and glass filler strips bridge the space between mullions and the first opaque panel), and, secondly, in their dispensing altogether with post supports (head channels tie to the light tubes for lateral support).

These tubes are anchored to hollow "beams" dropped below the building's steel structural beams. The integrating function of the light tubes with the partitions is emphasized by a reveal 6 in. from the bottom of the "beam" and by the contrasting gray color below the reveal. The client agreed to a higher ceiling (12 ft 6 in.) than usual for two reasons: 1) to get the most from daylight, and 2) to achieve a lofty appearing space.

# Offices that float—the details

Three types of panels comprise the unitized system: 1) glass-edge, 2) glass, and 3) opaque. The glass-edge panel is a 1/2-in. sheet of tempered glass, onto which is hung a fabric panel, leaving a 2-ft 4-in. clerestory at the top and a 9-in. vertical strip along one side. The opaque panel is a 7-ft-high steel panel wrapped in fabric with a separate piece of glass at the top for a clerestory. The designers and collaborating

manufacturer found, somewhat to their surprise, that the clerestory needed only to be inserted into a structural neoprene gasket set in a recess at the top of the panel in order to achieve sufficient rigidity. For erection, head channels are bolted to the bottoms of light tubes and beams. Then each 3-ft panel is slipped into the gasketed head channel and moved into place. Leveling bolts are in the base.

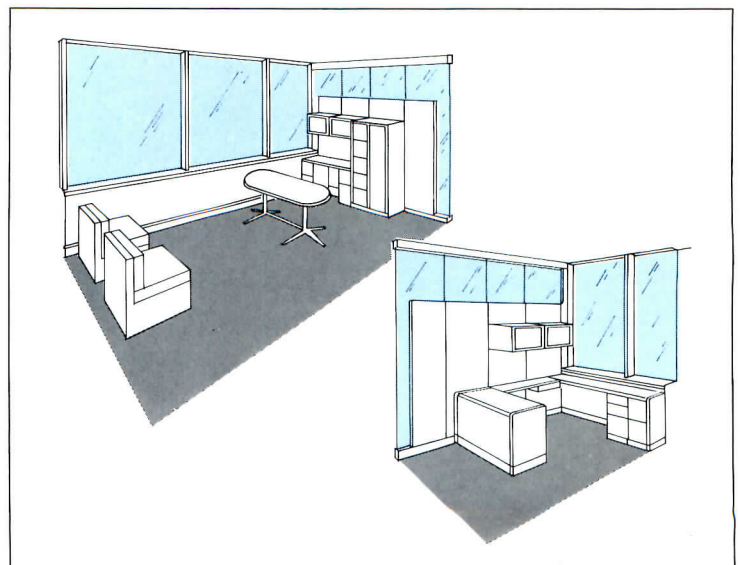


1. SECTION THROUGH GLASS-EDGE PANEL

2. SECTION THROUGH GLASS PANEL

3. SECTION THROUGH OPAQUE PANEL

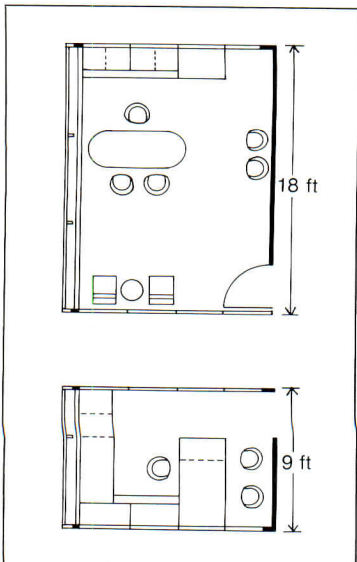
*In the beginning CIGNA wanted a 3-ft module for partitioning. The designers were able to give them the 3-ft module for partitions aligned perpendicular to the windows—tapped holes for attaching channels are provided every 3 ft in the bottoms of light tubes and in the dropped beams. The client agreed to increase the module to 6 ft in the other direction when it became clear from an early mock-up with cardboard tubes on 3-ft centers that their closeness visually “lowered” the ceiling.*



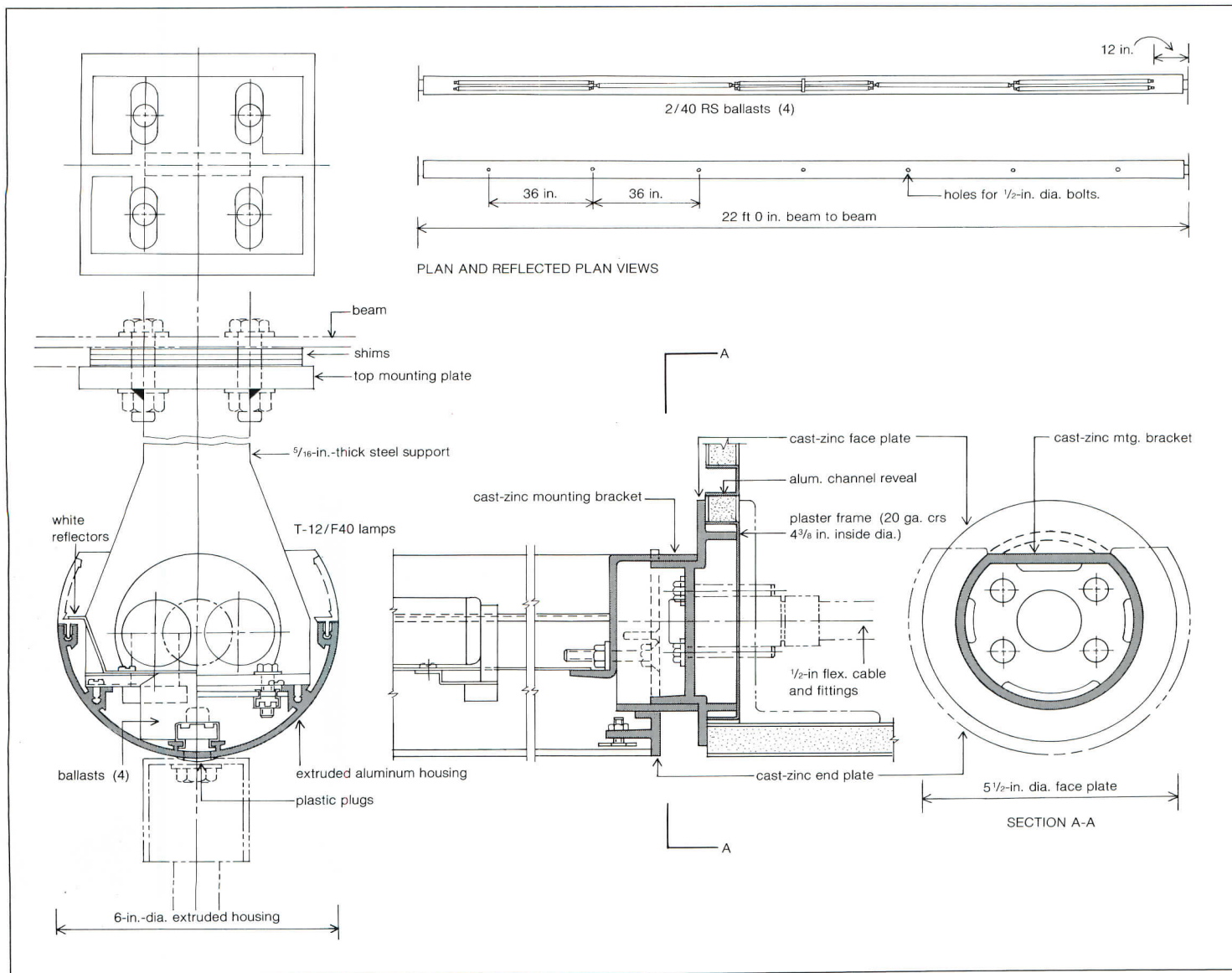
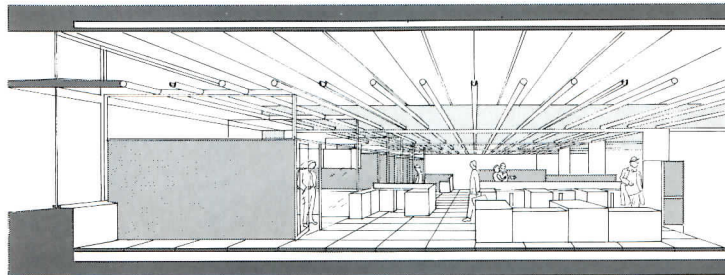
Early in their investigation of partition options, Interspace found that the system in CIGNA's original buildings suited the company's objectives of flexibility and openness better than anything then on the market. But because the company had additional criteria for the new building, the designers suggested that a new system be developed through a) modification of the existing system, b) modification of standard systems or c) development of a custom system. The idea of a completely new unitized (post-less) panel system began to emerge as the interior designers and lighting consultants studied existing systems, independently, to test generic systems against the criteria. A marked change occurred when the designers realized that the light tubes being proposed could serve also as partition support. Working with The E. F. Hauserman Company (one of three manufacturers who showed interest in the project), the designers arrived at a system of 3-ft unitized panels answering all the criteria: 1) minimum number of parts, 2) assembly and disassembly with minimum tools, 3) transparent glass fronts and clerestories, 4) modular enclosures and any length of run, 5) hang-on capability for furniture, 6) functional and esthetic compatibility with other building components, 7) non-destructive to ceilings and floors, 8) fixed-wall appearance with a minimum of detailing. The butted joints of the panels are sealed by a gasket comprising a single accordion pleat of neoprene.

*Because the window mullions are 6 ft apart, partitions occurring between mullions will abut a mullion-like assembly of two nested channels inserted between sill and head of the window. (The horizontal bar at the head of the right-hand window is a substitute anchorage used only for the mock-up.) Shading of the south glass will be accomplished by an integral mesh-type roller shade for the lower*

*windows, and by a two-position Venetian blind for the clerestories, to be adjusted by maintenance staff to two different tilts—once each in September and October, and again in February and March. In summer the Venetian blinds will be fully raised. Summer sun is blocked by an overhang. Because it was not clear that a 3-ft interior light shelf was economical, it was eliminated from the design.*



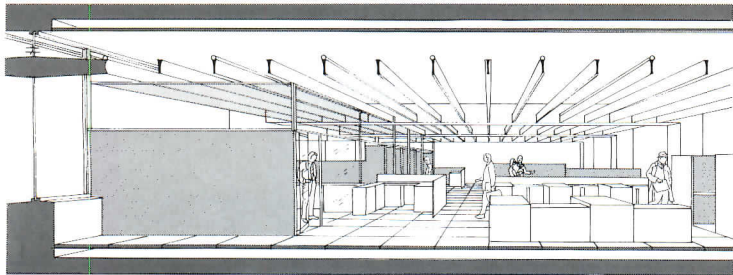
# Tubes glow with light and anchor walls



*By the time the designers were ready for serious proposals from fixture manufacturers, they knew they wanted a system to anchor partitions, and were considering an up/down lighting approach. Peerless Electric Company (one of two finalists in mock-up testing, and the selected manufacturer) first suggested using an existing extruded indirect system. But a few months later they presented to the team a new high-efficiency uplight (now patented) that combines indirect lighting with a strip of visible lens performing two functions: 1) it allows lamps to be higher in the fixture, increasing efficiency, and 2) it gives a hint of brightness, letting occupants know where the light comes from. Five lamps give as much light as eight in a conventional fixture, but the company decided to use eight to give 75 footcandles instead of 50.*



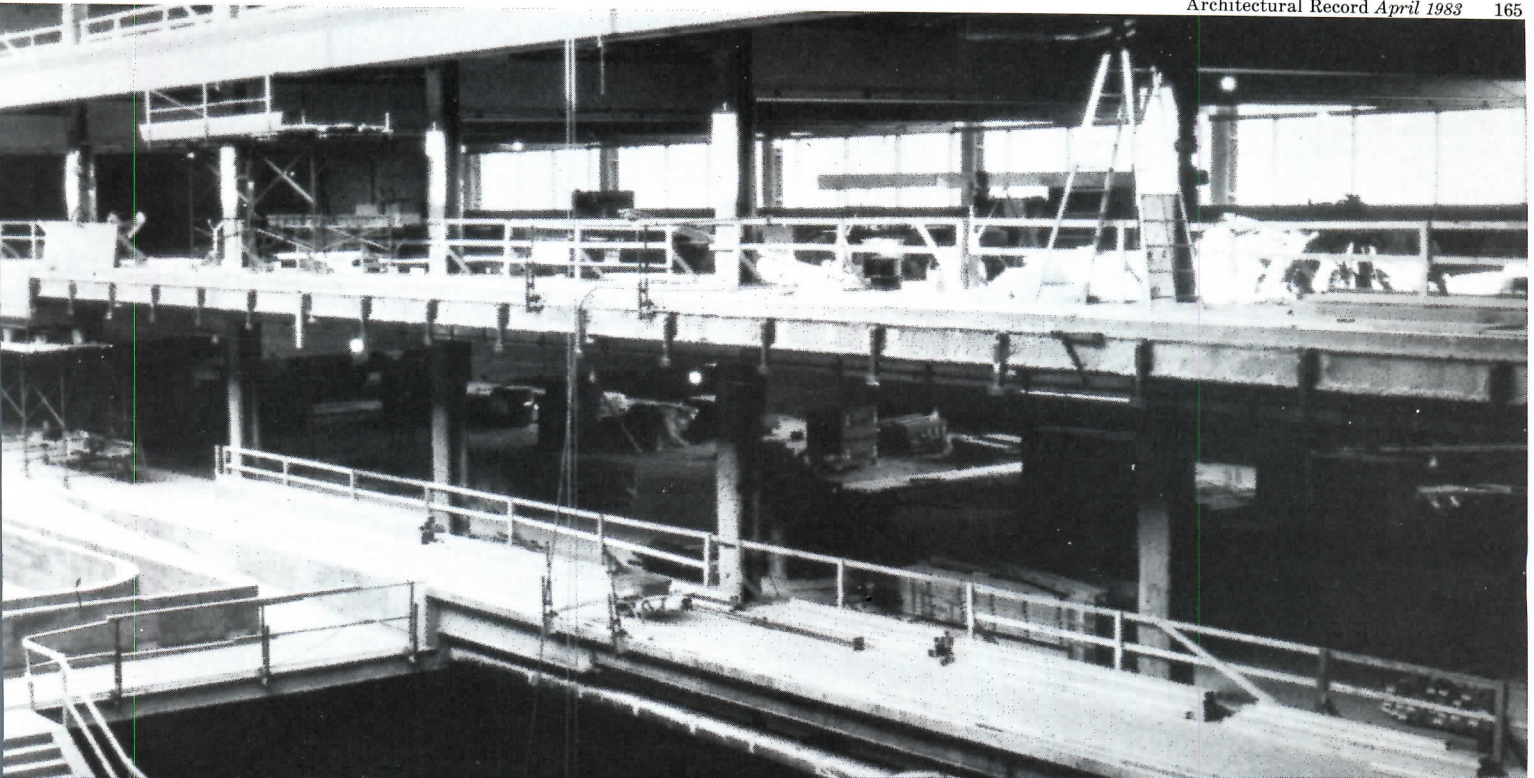




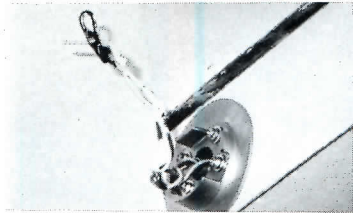
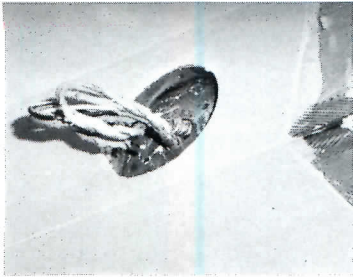
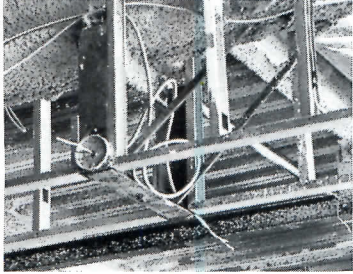
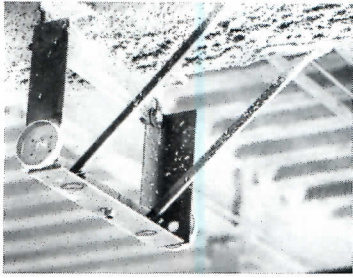
Two of the many lighting options studied by consultants Raymond Grenald Associates are shown at left. Both one-way and two-way grids of light tubes and baffles were considered in keeping with the original 3- by 3-ft modular grid. The tubular system across page has two dummy tubes for every lamped tube, so that light came from tubes on 9-ft centers.



A view of one bay of the mock-up (above) shows the relationship of the transparent perimeter private offices to the interior work stations. The uplight reflected from the concealed-spline acoustic-tile ceiling has a pleasant, slightly-perceptible modulation which, with the transparent partitions, helps create the open feeling desired by the company. The 22-ft-long light tubes have one hanger in the center to control deflection. The indirect light from the tubes, fitted with cool-color, high-color-rendering lamps, complements the daylight from the windows. Evenness of the lighting has functional as well as esthetic attributes since it offers glare-free illumination for use of the CRTs. The system meets the Connecticut energy-code requirement of 1.6 watts per square foot. The outer three fixtures can be switched by a programmed light-control system.



## Emphasis on quality of space and finish

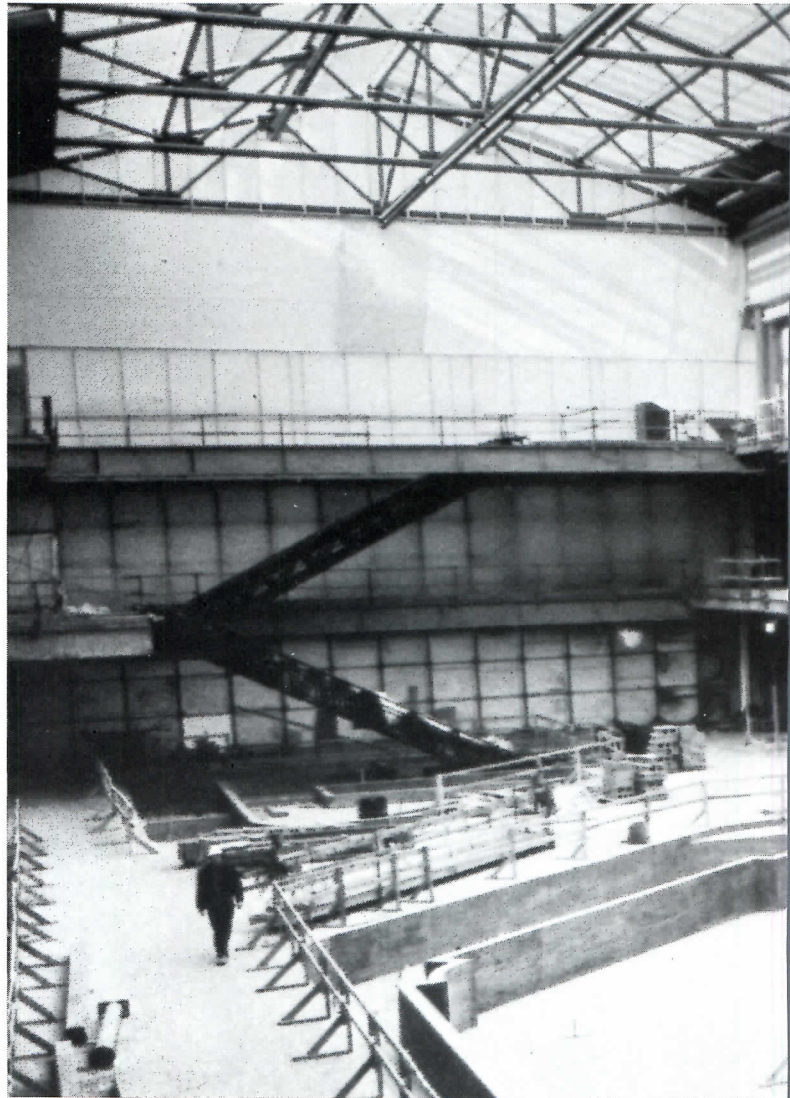


From the very beginning, the company stressed its commitment to quality. Stated CIGNA's program: "Standards of excellence and quality are fully compatible with cost-effective design and construction."

Building finishes are a prominent example. The outside wall is faced with pink granite, as are fascia panels for the atrium (right). Within the office space the dropped-beam system for light-tube anchorage and space modulation (left) has no ordinary gypsum-board covering, but thin-coat plaster (up to  $\frac{3}{32}$  in.) on a veneer-plaster base that avoids any hint of taped joints. Different paint finishes were tried, and finally an egg-shell type was chosen for its rich effect.

Aside from testing the lighting and partition concepts, the mock-up proved useful in a number of other ways, according to Philip Lovell, project manager for Turner, in the development of: sill details for the curtain wall, plastic laminate column covers and core walls, details for the partitions, and, particularly, details for support and attachment of the light tubes (see series of photos, left). The allowable tolerance over the 22-ft length of the light tube is an astonishingly small  $\pm\frac{1}{4}$  in. Support for these tubes is a miscellaneous iron frame with pretapped holes to take spin castings on both sides (left, top). Because of tight tolerances, field forces had to take special care to mount these frames accurately. One refinement added as a result of experience in the mock-up is a

CIGNA photos this spread



## New products

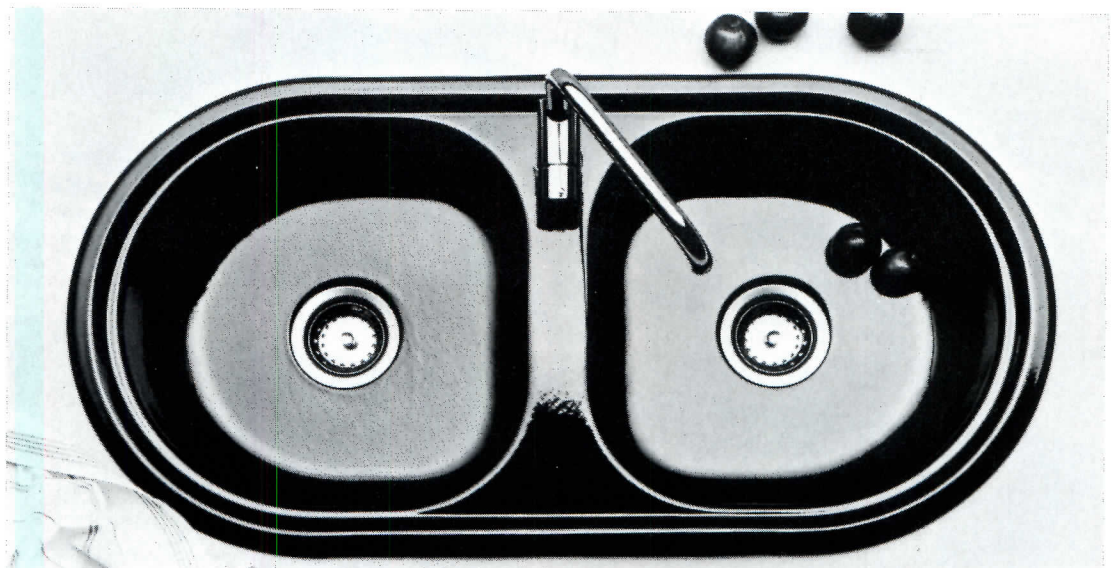
For more information, circle item numbers on Reader Service Card, pages 251-252

### Kitchen sink

The *Model 122* sink has deep double basins and a raised rim that reduces splashing. It is made of seamless formed steel with a porcelain enamel finish that comes in 32 colors.

Accessories include a vinyl-coated steel basket and a teak cutting board. Kroin Architectural Complements, Cambridge, Mass.

Circle 300 on reader service card

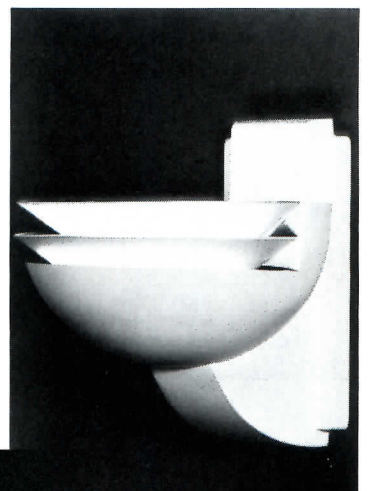
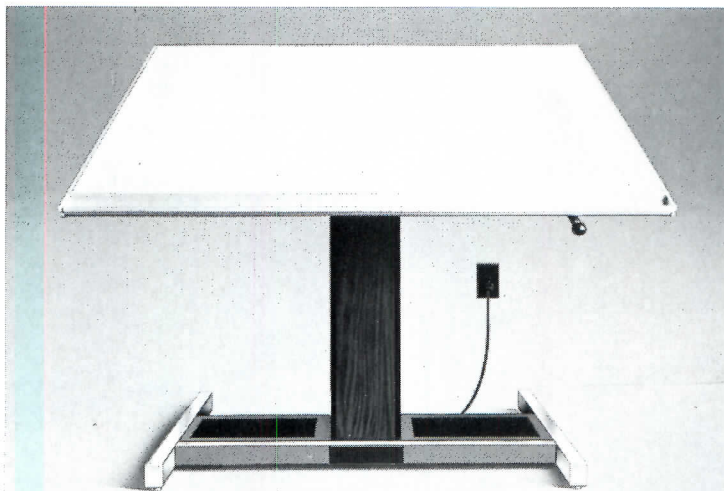


### Back-lighted drafting tables

*Dial-A-Light* tables use intensity-controlled light surfaces in place of standard drawing surfaces.

Transistorized control permits adjustments up to 350 footcandles without "hot spots" or flickering. The shatterproof, non-reflective glass surface is available in two sizes: 30- by 35-in. illumination area with 37½- by 50-in. over-all work surface, and 30- by 47-in. illumination area with 37½- by 60-in. over-all work surface. Hamilton Industries, Two Rivers, Wis.

Circle 301 on reader service card



### Art Deco wall light

A streamlined uplighting unit popular in the 1930s is now being reintroduced. The *Model TF-360* is 10¼ in. high with a total projection of 10½ in. Its bowl and concentric louvers are made of spun aluminum; the bracket is cast aluminum. The fixture takes a 150- or 300-W RD40 flood or RD40 spot. It is available in a brushed aluminum finish, matte white, or any match color.

Rambusch, New York City  
Circle 302 on reader service card

*CIGNA Office Building  
Bloomfield, Connecticut*

**Owner:**  
*CIGNA Corporation*

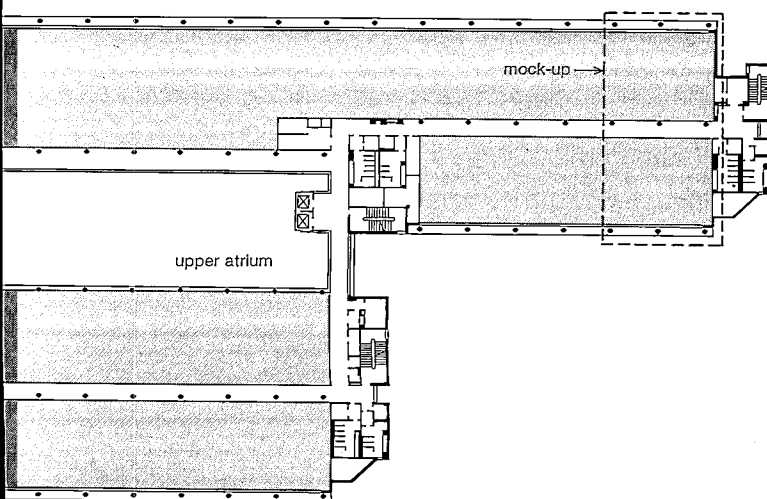
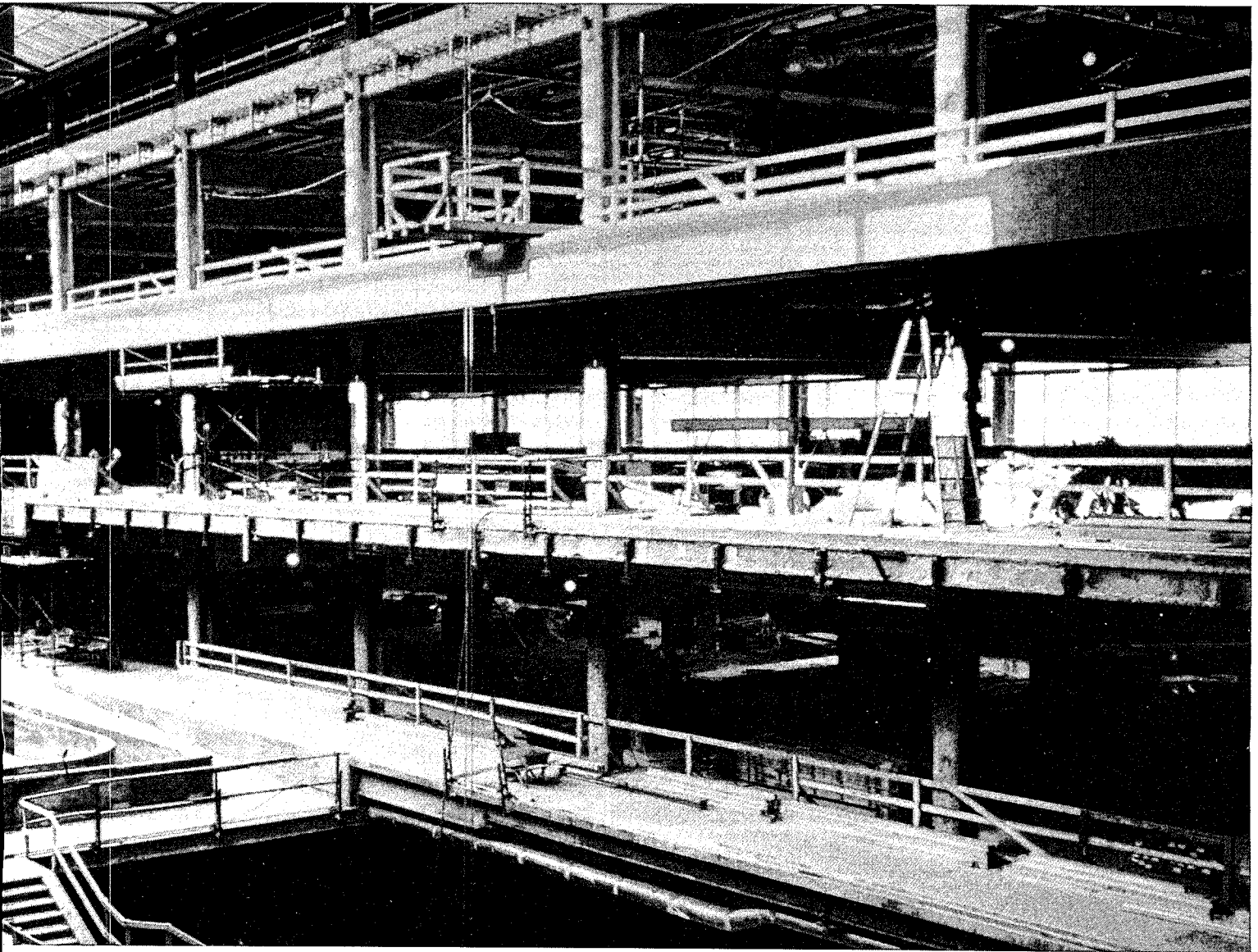
**Architects:**  
*The Architects Collaborative—John  
C. Harkness, principal-in-charge;  
Richard A. Sabin, Stephen  
Dauphiné, project architects*

**Interior designers:**  
*Interspace Incorporated—Barbara  
F. Graf, principal-in-charge; Victor*

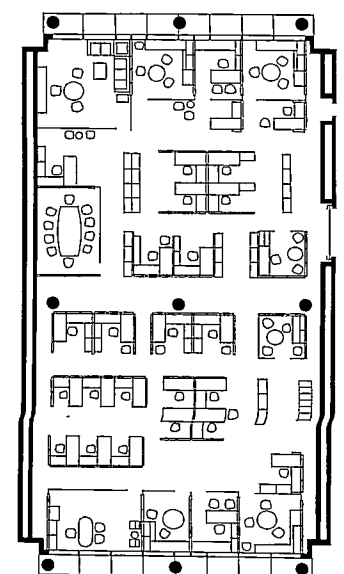
*Antes, Rinaldo Veseliza, interior  
systems design*  
**Lighting consultants:**  
*Raymond Grenald Associates—Lee  
Waldron, project manager*

**Engineers:**  
*LeMessurier Associates/SCI  
(structural)—William J.  
LeMessurier, principal-in-charge;  
Kenneth B. Wiesner, engineer-in-  
charge; Syska & Hennessy  
(mechanical/electrical)—K. S.*

*Rasiej, principal-in-charge*  
**Consultants:**  
*Robert Hansen Associates  
(acoustical); Van der Ryn,  
Calthorpe & Partners (energy)*  
**Construction manager:**  
*Turner Construction Company—  
Philip B. Lovell, project manager*  
**Manufacturers:**  
*Peerless Electric Company (lighting  
system); The E. F. Hauserman  
Company (partition system)*



*The plan developed from the need for linearity on an east-west axis for best utilization of daylight, and from the need to accommodate functioning employee groups within 20,000 to 30,000 sq-ft pieces of space. The result is a mirror-image clustering of these areas around a two-stepped atrium that provides building orientation and an attractive and varied space for employees and visitors alike. Further, the atrium admits daylight for offices on the inboard sides. The skylight will be shaded by fiberglass-mesh roller shades, light-colored facing the sky, and darker inside to reduce glare. The structure permits column-free space of 48- and 66-ft spans. Corridors are down the center of the double 48-ft-span areas, and along the atrium for the 66-ft area. Plan of the mock-up is shown at right.*

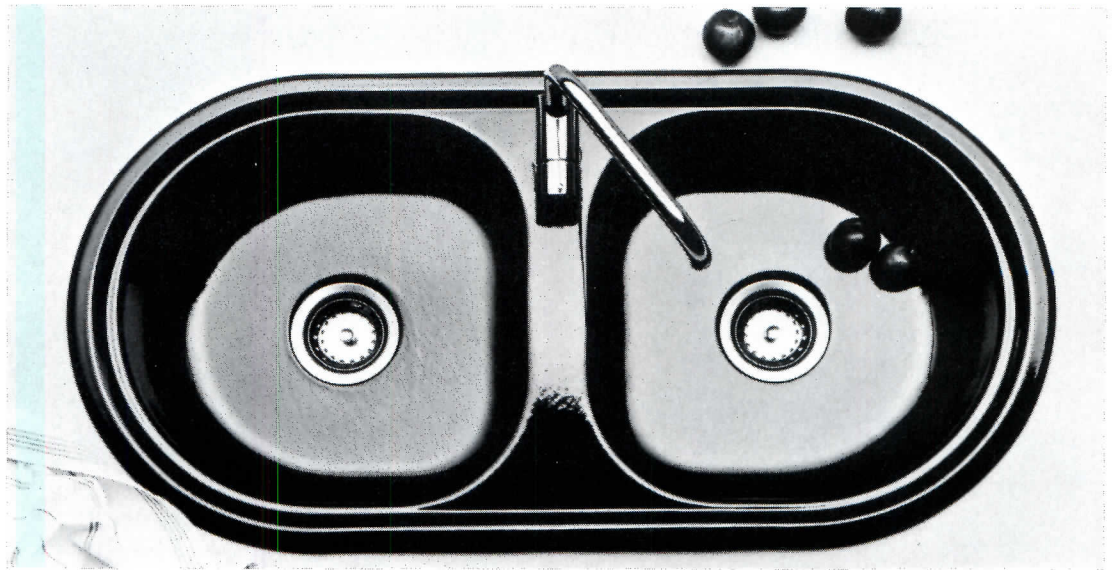


## Kitchen sink

The *Model 122* sink has deep double basins and a raised rim that reduces splashing. It is made of seamless formed steel with a porcelain enamel finish that comes in 32 colors.

Accessories include a vinyl-coated steel basket and a teak cutting board. Kroin Architectural Complements, Cambridge, Mass.

Circle 300 on reader service card

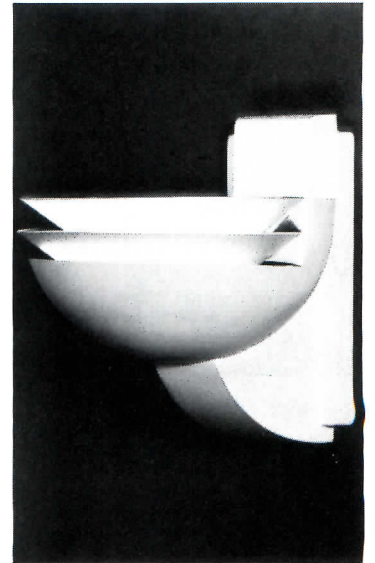
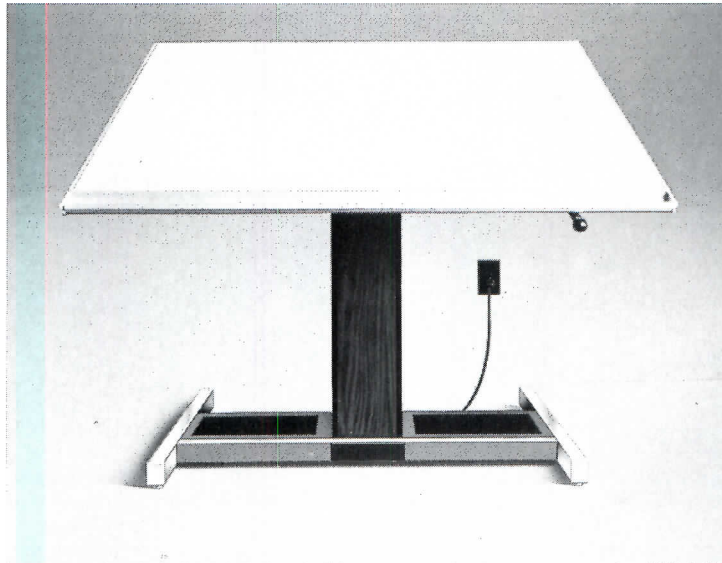


## Back-lighted drafting tables

*Dial-A-Light* tables use intensity-controlled light surfaces in place of standard drawing surfaces.

Transistorized control permits adjustments up to 350 footcandles without "hot spots" or flickering. The shatterproof, non-reflective glass surface is available in two sizes: 30- by 35-in. illumination area with 37½- by 50-in. over-all work surface, and 30- by 47-in. illumination area with 37½- by 60-in. over-all work surface. Hamilton Industries, Two Rivers, Wis.

Circle 301 on reader service card



## Art Deco wall light

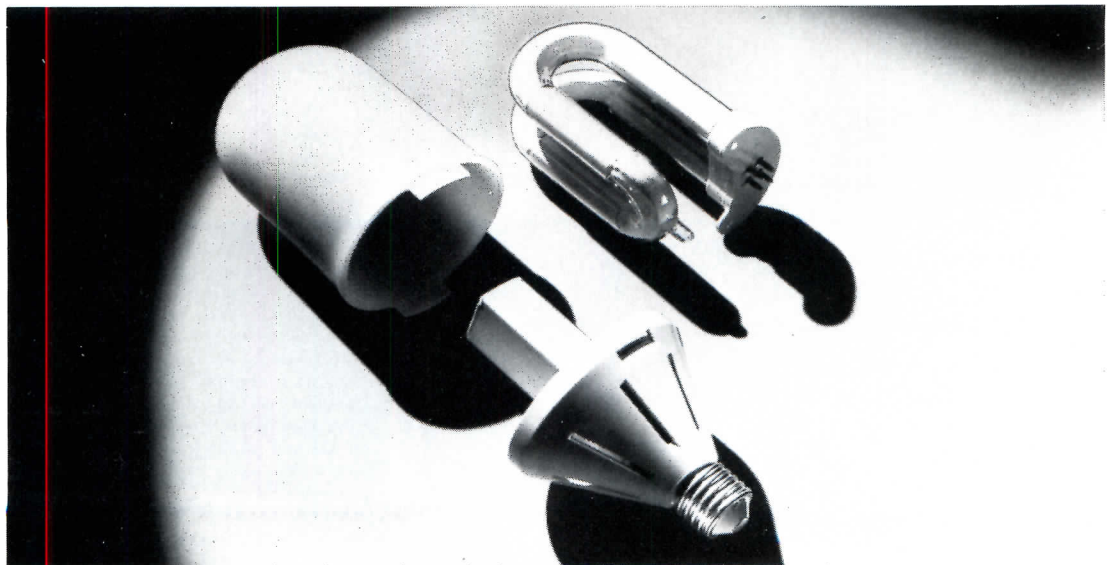
A streamlined uplighting unit popular in the 1930s is now being reintroduced. The *Model TF-360* is 10¾ in. high with a total projection of 10½ in. Its bowl and concentric louvres are made of spun aluminum; the bracket is cast aluminum. The fixture takes a 150- or 300-W RD40 flood or RD40 spot. It is available in a brushed aluminum finish, matte white, or any match color. Rambusch, New York City

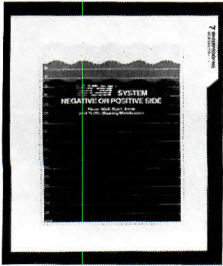
Circle 302 on reader service card

## Fluorescent lighting

The 25-W *ECON-NOVA* compact fluorescent lighting system for incandescent sockets is said to be more efficient and durable than incandescent lighting. The 3-part system, similar in size and shape to a standard incandescent lamp, consists of a miniaturized ballast in a base that fits an Edison socket, a replaceable, double-folded fluorescent lamp, and a removable translucent diffuser. Westinghouse Electric Corp., Bloomfield, N.J.

Circle 303 on reader service card  
More products on page 177





**Waterproofing**

The advantages and disadvantages of negative- and positive-side waterproofing are discussed in a packet of literature. Included are product data sheets, properties charts, specifications and architectural details on uses of rigid membranes. U.S. Waterproofing, Inc., Fairfield, Conn.  
Circle 400 on reader service card



**Supplies**

A 1983 catalog features over 170 products, including calculators, audio-visual and diazo equipment, films, templates and plotter points. Prices and ordering information are included. Price is \$3.50; available from Charrette, 31 Olympia Ave., P.O. Box 4010, Woburn, Mass. 01888



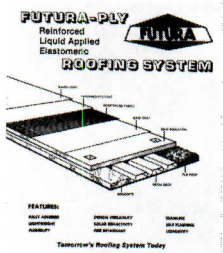
**Hardwood paneling**

Native Appalachian hardwoods are available in the solid wood, tongue-and-grooved paneling described and illustrated in a 6-page color brochure. Among the species available are walnut, cherry and maple. Leslie Brothers Lumber Co., Cowen, W.Va.  
Circle 401 on reader service card



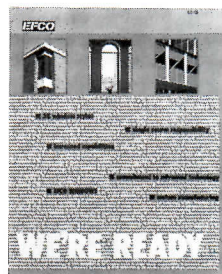
**Exterior wall panels**

A 4-page color brochure on the Outsulation wall panel insulation and finish system includes construction details, photographs and section drawings. Panels can be fabricated on-site or delivered. Dryvit Systems, Inc., West Warwick, R.I.  
Circle 405 on reader service card



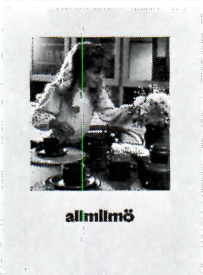
**Roofing system**

Designed as an alternative to single-ply membranes, a liquid-applied reinforced urethane membrane offers a continuous seamless surface fully adhered to the substrate. A 4-page brochure gives product data and details installation. Futura Coatings, Inc., Hazelwood, Mo.  
Circle 402 on reader service card



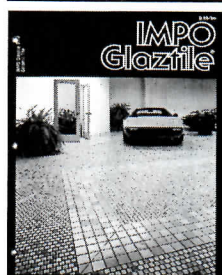
**Windows**

A 22-page color booklet features 38 different window styles with materials descriptions, dimensions and performance data. Photographs illustrate this manufacturer's line of hardware and show a number of product installations throughout the country. EFCO Corp., Monett, Mo.  
Circle 406 on reader service card



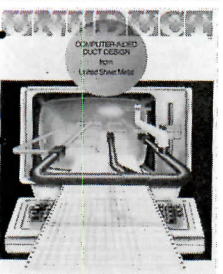
**Kitchens**

One-hundred pages of color photographs illustrate Catalogue 21, a collection of kitchens—many of them with family-room or dining areas—by Allmilmo. Beside every picture is a paragraph on the design and a list of components. Price is \$6.00; available from Allmilmo Corp., 70 Clinton Rd., Fairfield, N.J. 07006



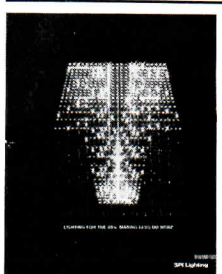
**Ceramic tile**

A 16-page catalog features a dozen tile styles. Typical applications, colors and available shapes are illustrated. A list of distributors throughout the U.S. is also included. IMPO Glaztile, Markham, Ill.  
Circle 407 on reader service card



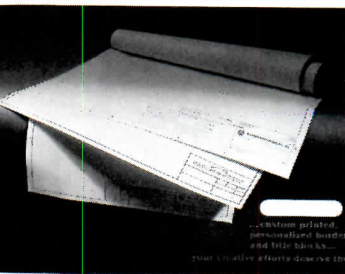
**CAD for ducting**

A 4-page color brochure describes Uni-Duct, a computer-aided engineering service that designs energy-efficient duct systems, and also analyzes predesigned or existing systems. United McGill Corp., Westerville, Ohio.  
Circle 403 on reader service card



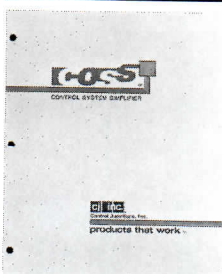
**Lighting**

Portable, task and fixed lighting fixtures are illustrated in a 32-page booklet from SPI lighting. Optics and construction are discussed while a table indicates available finishes. Ordering information is also included. McGraw Edison Co., Racine, Wis.  
Circle 408 on reader service card



**Custom-printed sheets**

Custom-printed personalized borders and title blocks on film or vellum are shown in an 8-page color brochure. Tables list line weights and type styles and show a complete line of grids in a choice of 4 colors. Bruning, Itasca, Ill.  
Circle 404 on reader service card



**Single cable remote control**

A method of transferring control data where sensing and operating devices are more than 75 ft from the controller/computer is described in a 76-page booklet. Typical applications of the Coss system include energy management and security systems. Control Junctions, Inc., Schaumburg, Ill.  
Circle 409 on reader service card

# Ful-O-Mite IDF\* The exterior insulation system from H.B. Fuller that sets new performance standards.

**Ful-O-Mite IDF is the most beautiful way we know to beat the heat of summer and the chill of winter.**

Ful-O-Mite IDF has the strength to withstand impact, while having the flexibility to accommodate building movement without cracking. Ful-O-Mite IDF meets fire code requirements. The system stands up to airborne pollutants and salt spray. Tested by independent laboratories, under the most rigorous conditions, Ful-O-Mite IDF surpassed the leading competitive exterior insulation decorative finishes for strength and durability.



Ful-O-Mite IDF gives a building a beautiful appearance while providing long-lasting durability. This exterior insulation system forms a solid barrier against weather's worst: keeping winter's freezing temperatures and summer's scorching heat outside, where they belong. A difference made obvious in occupant comfort and reduced utility bills.

## How does H.B. Fuller do it?

We are the only company to develop a latex polymer raw material specifically designed for our own product. In our finish coat, this latex promotes a tougher, harder cure, increasing its resistance to weather.

At H.B. Fuller, developing our own resins is just part of our commitment to providing our customers quality, consistency and compatibility within the bonding system.

The primer coat of Ful-O-Mite IDF by H.B. Fuller has extremely *fast grab power*. You can eliminate the need for a baseboard when installing the foam. Embedding the reinforcing fiberglass mesh is a lot easier too! The finish coat has a longer open time, and offers freeze/thaw stability in the pail and in its cured state. You're assured a quality product at the job site.

**If you'd like to get the facts on Ful-O-Mite IDF**, write to: H.B. Fuller, Attn: Ful-O-Mite IDF, Department M, 315 South Hicks Road, Palatine, IL 60067 or call (800) 323-7407 or if in Illinois, call (312) 358-9500 and request a free copy of the test results.

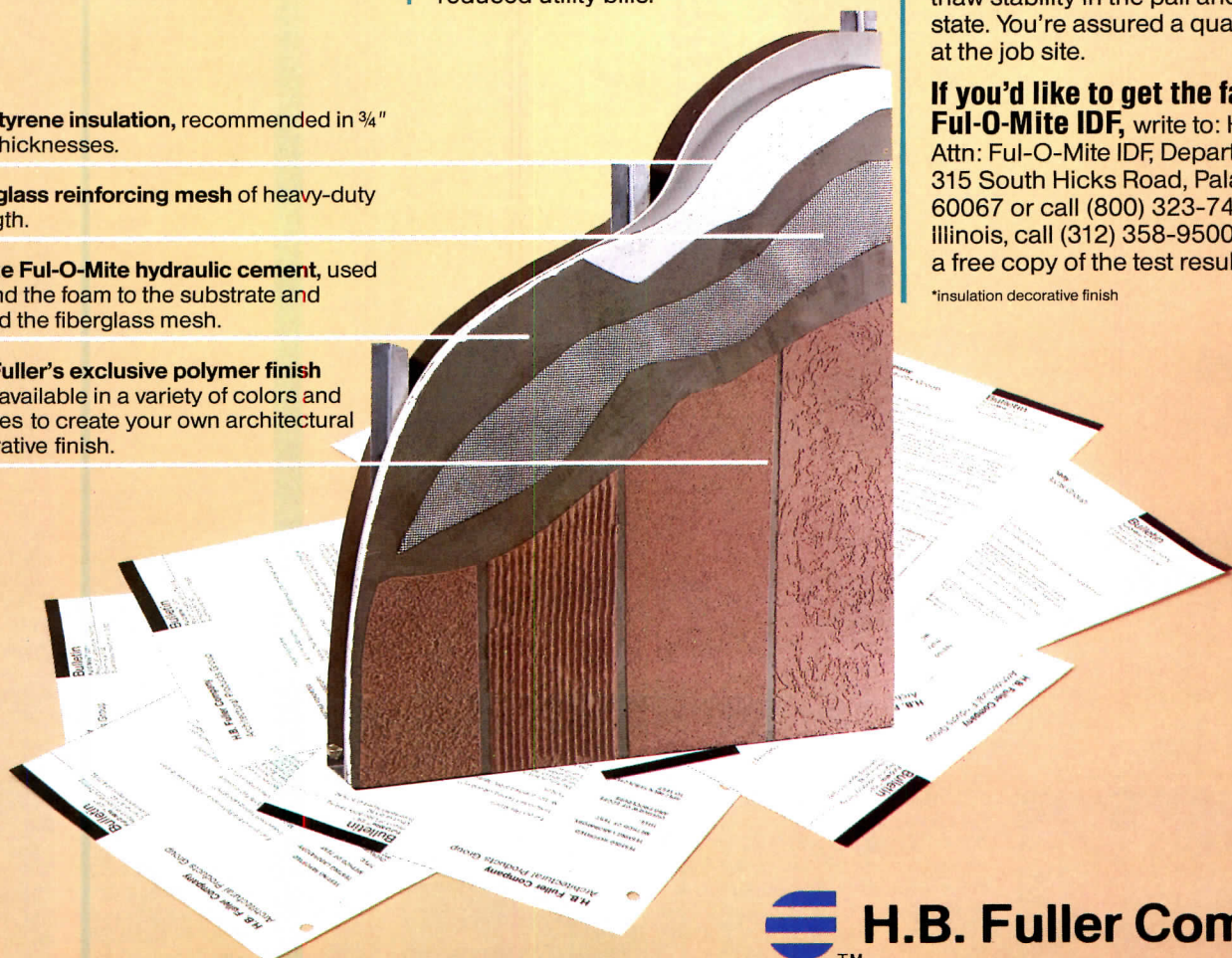
\*insulation decorative finish

**Polystyrene insulation**, recommended in ¾" to 4" thicknesses.

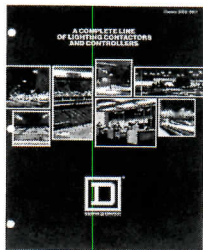
**Fiberglass reinforcing mesh** of heavy-duty strength.

**Unique Ful-O-Mite hydraulic cement**, used to bond the foam to the substrate and embed the fiberglass mesh.

**H.B. Fuller's exclusive polymer finish coat**, available in a variety of colors and textures to create your own architectural decorative finish.



 **H.B. Fuller Company**  
TM



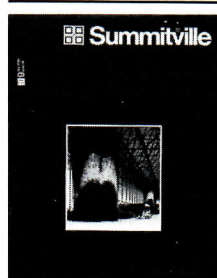
**Lighting system control**  
Information on electrically and mechanically held contactors and systems of contactor panels controlled by an energy management system or programmable controller is featured in a 20-page booklet. Application information and rating tables are also included. Square D Co., Palatine, Ill.  
*Circle 410 on reader service card*



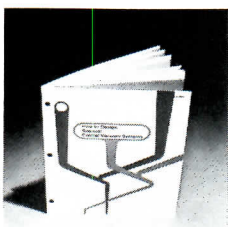
**Expansion joint system**  
As described in a 4-page brochure, the *WABO Thermobarr* is a fire-resistant expansion joint system that incorporates a sealing component used for buildings, roads and bridges. Included are a time-temperature fire test chart and specifications. Watson-Bowman Assoc., Inc., Getzville, N.Y.  
*Circle 415 on reader service card*



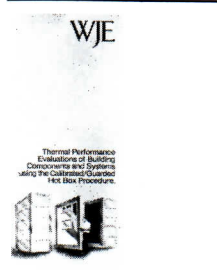
**Photovoltaic connectors**  
A foldout color brochure illustrates the mechanics of the *Solarlok* connector system designed for contract and residential series and parallel photovoltaic modules. Performance and application data are included. AMP Inc., Harrisburg, Pa.  
*Circle 411 on reader service card*



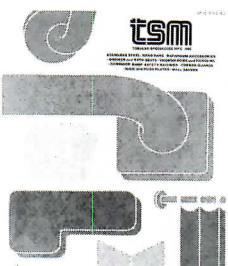
**Tile and grouting**  
A 1983 catalog of tiles for contract and residential installation also features an insert on setting and grouting products. Photographs of installations, color charts and trim shapes are included with a list of distributors. Summitville Tiles, Inc., Summitville, Ohio.  
*Circle 416 on reader service card*



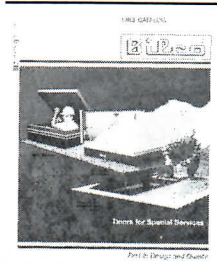
**Central vacuum systems**  
Schematic diagrams, rating charts and diagrams of hypothetical applications to aid in design make up a 24-page booklet that covers dry, wet and combination dry/wet systems. The Spencer Turbine Co., Windsor, Conn.  
*Circle 412 on reader service card*



**Thermal performance**  
The calibrated/guarded hot-box system described in this brochure can be contracted out and operated by the manufacturer, or shipped for operation by the client. It measures heat flow through components subjected to simulated temperatures. Wiss, Janney, Elstner & Assoc., Inc., Northbrook, Ill.  
*Circle 417 on reader service card*



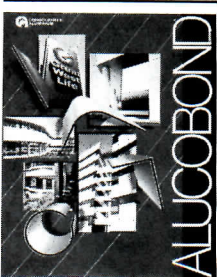
**Bathroom accessories**  
New colors and finishes for grab bars, shower seats, rods and curtains are featured in a 32-page color catalog. Several new products are also shown. Colors are shown in separate selection guides for each product line. Tubular Specialties Mfg., Inc., Los Angeles, Calif.  
*Circle 413 on reader service card*



**Special service doors**  
A 1983 catalog includes details and specifications for a line of roof scuttles, automatic fire vents, floor and pit doors, ceiling access doors and basement doors. Diagrams with dimensions illustrate every model while photographs show sample installations. The Bilco Co., New Haven, Conn.  
*Circle 418 on reader service card*



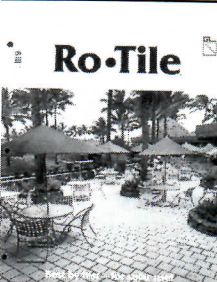
**Fiberglass furniture**  
A 4-page color brochure illustrates fiberglass furniture for interior and exterior uses. Photographs show installations of seating, tables, planters and receptacles in a variety of colors. A list of representatives is included. Krueger, Green Bay, Wis.  
*Circle 414 on reader service card*



**Aluminum cladding**  
As shown in a 20-page brochure, *Alucobond* material is made of 2 thin sheets of aluminum with a thermoplastic core and can be molded or shaped to exact specifications. Color photographs of installations, product data, finishes and specifications are included. Consolidated Aluminum, St. Louis, Mo.  
*Circle 419 on reader service card*



**Window and door glossary**  
The *Glossary of Architectural Window and DorWal Terms* defines over 300 terms, measurements and abbreviations relating to the manufacture, specification and installation of windows, *DorWals* and entrance ways. Price is \$1.50; available from Acorn Building Components, Inc., 12620 Westwood, Detroit, Mich. 48223



**Concrete floor tile**  
Design guides, product information and application photos are included in a 1983 color catalog. Solar-heat-retaining characteristics are described in detail. Information on a line of brick veneer is also included. Ro-Tile, Inc., Lodi, Calif.  
*Circle 420 on reader service card*  
*More literature on page 191*

*Circle 306 on reader service card*

SAN FRANCISCO: Galleria-Design Center, 101 Henry Adams Street, HAYWARD: 25029 Viking Street, Hayward, CA 94545/(415)887-2050  
For full color catalog, send \$2.50 to Amsterdam Corporation, 950 Third Avenue, New York, NY 10022

**Circle 95 on inquiry card**

Architectural Record April 1983 175  
SAN FRANCISCO, CA 94103/(415)601-3004



## Control the fire monster!

When Sargent introduced the 60 series exit device, it offered a full line of smooth operating, contemporary devices in true hardware finishes. And now Sargent adds an equally full line of Fire Exit Hardware for use on all fire rated doors up to and including 3-hour. As true today as it has been since 1864, it makes good sense to specify Sargent!

# SARGENT

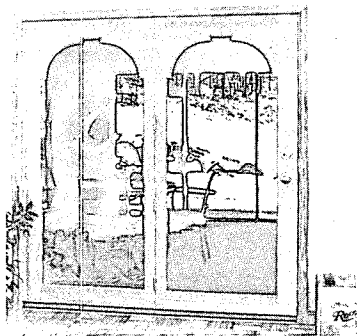
Division of Kidde Inc.

**KIDDE**

Sargent, New Haven, Connecticut 06511  
Sargent (Canada)

Circle 96 on inquiry card

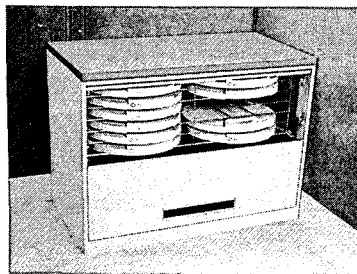




**Patio doors**

Swinging patio doors, which give an arched appearance, are available in standard retro sizes as well as in 8-ft heights. Doors are made of Ponderosa pine and feature *Lexan* sills, 3/4-in. insulated glass and foam-filled weatherstripping. Marvin Windows, Warroad, Minn.

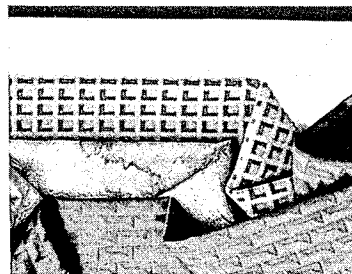
Circle 310 on reader service card



**Computer disk rack**

A computer hard-disk storage rack made of welded steel rods slides into this manufacturer's lateral files and stores up to 12 disks. Invincible Metal Furniture Co., Manitowoc, Wis.

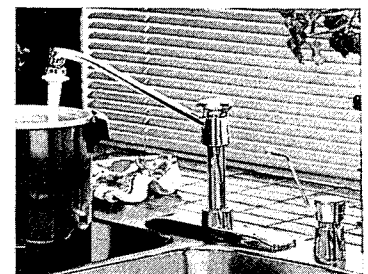
Circle 313 on reader service card



**Fabrics and carpets**

The *H-Collection* features a line of *trompe l'oeil* prints for contract and residential applications. Woven jacquard designs which complement the prints are suitable for upholstery or walls. MIRA-X International Furnishings Co., Inc., New York City.

Circle 314 on reader service card



**Adjustable faucet**

The *Riser* can lock into a position more than 10 in. above the sink deck for filling coffee urns and buckets and cleaning large pots. The faucet fits 3- and 4-hole sinks and features a washerless cartridge system and a spray aerator. It is made of solid brass.

Stanadyne, Inc., Elyria, Ohio.

Circle 315 on reader service card

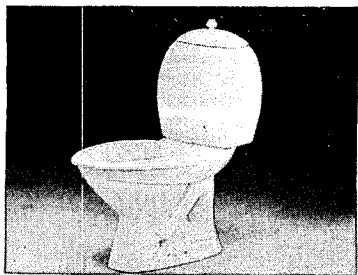
More products on page 181



**Low-voltage remote control**

A line of pilot-lighted switches and pilot relays has been added to the Sierra system. The model 1092 switch and 1071 relay shown enable an operator to control lighting in remote locations. The switch mounts in a standard despard strap and plate. Pass & Seymour, Inc., Gardena, Calif.

Circle 311 on reader service card



**Water-conserving toilet**

Made of polished vitreous china, the *I/O Cascade Toilet* features a 1-gal flush and needs no mechanical, compressed air or chemical assistance. Compatible with 12-in. rough-in plumbing, it uses a wash-down/siphon action to eliminate wastes. Water Conservation Systems, Concord, Mass.

Circle 312 on reader service card

# Granite.

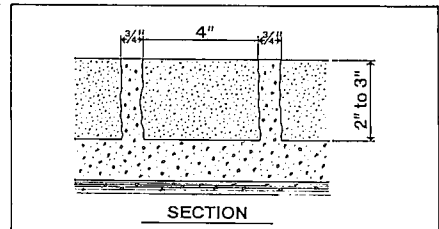
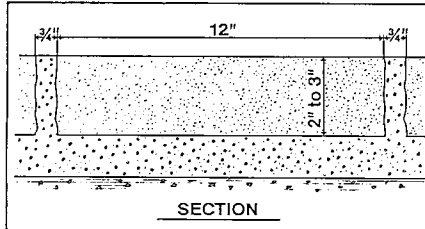
## Not-so-pedestrian plazas for pedestrians.



Oak Park Mall, Oak Park, IL  
Architect: Joe Karr & Associates, Chicago, IL  
Sturr Young, Associate Architect, Oak Park, IL



ERC Corporate Headquarters, Overland Park, KS  
Architect: Howard Needles Tammen & Bergendoff  
Architects Engineers Planners



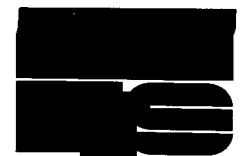
Granite is the elite paving material for plazas, walkways and mall areas where a combination of beauty, durability and ease of maintenance is required.

Granite is a natural building material and it naturally complements the landscaping portions of your architectural design. A wide selection of features including fountains and seating areas are available to enhance the overall appearance of your project.

For more information, plus a packet of full color literature illustrating our products in use, call toll free 800-328-7038. In Minnesota, call (612) 685-3621 or write to the address below.

**Cold Spring Granite Company**, Dept. AR-4 202 South 3rd Avenue, Cold Spring, MN 56320

Circle 97 on inquiry card

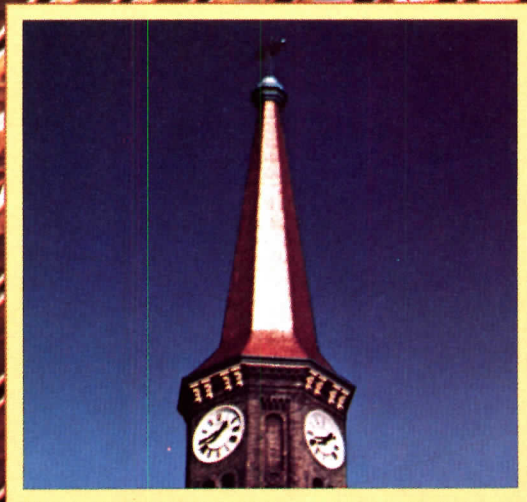


## patented Design

Veral roofing and flashing is different. It has a patented design incorporating a fiberglass reinforced modified asphalt base and a factory laminated foil shield that work together against the elements.

## proven performance

Veral, time-proven for over two decades in the world's climatic extremes, provides a tough, lightweight, weather-tight seal appropriate for a variety of roof designs and substrates.



## Dramatic Results

As handsome as it is durable, Veral is available in copper, aluminum or chemical resistant stainless steel foil finishes. All are guaranteed against leaks for 10 full years.

## Call Today

For more information on the engineered excellence of Veral or any of SIPLAST's time-proven roofing systems call:

**1-800-643-1591**

In Arkansas, Call Collect:

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**SIPLAST**

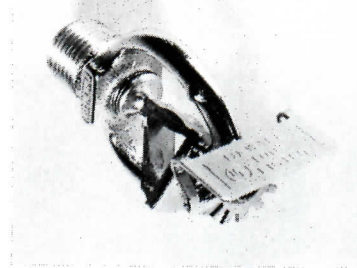
Hwy 67S, Arkadelphia, AR 71923

**Circle 100 on inquiry card**



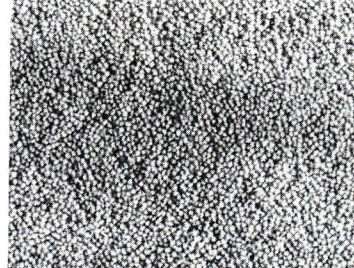
**Computer furniture**

The *Security Workstation* protects computer terminals from unauthorized use. It has a workstation platform large enough for a microcomputer, disk drives or cassette recorders, and is fitted with a lockable cover that can be completely removed. It is available with either an open pedestal or a pentastar base. The Maine Manufacturing Co., Nashua, N.H.  
 Circle 322 on reader service card



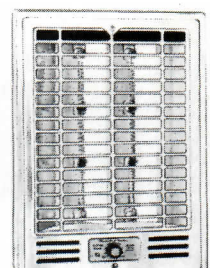
**Automatic sprinkler**

Available in 135-deg or 160-deg ratings, the *Firematic* automatic sprinkler features immediate water spray of up to 20 ft upon reaching its temperature rating. Operating at water pressures as low as 18 PSI, the device is claimed to be ideal for high-rise installations. Firematic Sprinkler Devices, Inc., Shrewsbury, Mass.  
 Circle 325 on reader service card



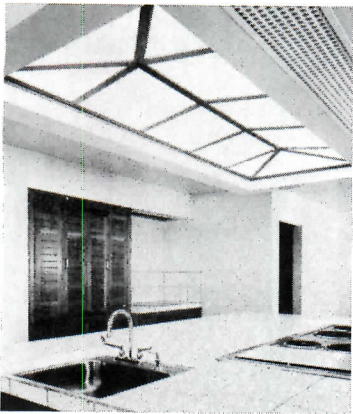
**Carpet**

A 40-oz saxony comes in 50 shades. Its cut pile staple, *Ambria*, is tufted of *Anso IV* nylon with soil, stain and static resistance plus antimicrobial protection against odor-causing bacteria and fungi. Allied Fibers & Plastics Co., New York City.  
 Circle 326 on reader service card



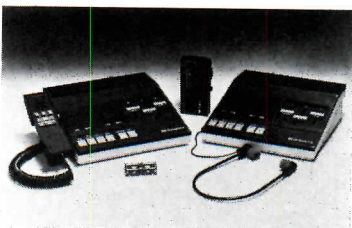
**Radiant wall heaters**

The *NuTone* radiant heaters' aluminum grille is 12 1/8- by 18 1/8-in. It also has a polished aluminum multiray deflector, a bimetal, snap-action automatic thermostat, and a nickel-chrome heating element. Scovill, Inc., Cincinnati, Ohio.  
 Circle 327 on reader service card  
 More products on page 185



**Luminous ceiling**

The *Big Sky* artificial skylight is available in solid woods with standard diffusers in milk-white acrylic. Sizes range from 4 ft by 4 ft to 8 ft by 8 ft in 2-ft increments. Designed for residential application, skylights have a shallow rise of 1 in. per ft. United Lighting and Ceiling Corp., Oakland, Calif.  
 Circle 323 on reader service card



**Microcassette dictating system**

The *Dictamite 3240* portable recorder and *DictaMate 3350* dictation/transcription system is smaller than previous models by this manufacturer. The recorder weighs only 6 oz and features a built-in microphone and jacks for an AC adaptor and external microphone. Dictaphone Corp., Rye, N.Y.  
 Circle 324 on reader service card

## CIRCULAR FLOOR PLAN

Your blueprint for beauty in high traffic areas, Roppe RCD radial tile is solid rubber throughout for years of wear. Reduces noise; resists scuffing, gouging, burns and most chemicals; and cleans up with soap and water. In ten beautiful colors. Matching stair treads, cove base and accessories available. For your nearest distributor, write Roppe Rubber Corporation, 1602 N. Union Street, Box X, Fostoria, Ohio 44830. Or call toll-free.

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For an experienced manufacturer with a full line of products and services, it's Gates Engineering. For quality, single-ply roofing systems, it's Gates Engineering. For dependable, high-performance, time-tested single-ply sheet materials, it's Gates Engineering. □ And what better criteria are there for a building dedicated to the performing arts than the selection of a roofing system unequalled in performance. Our single-ply Neoprene roofing system crowns the impressive architectural centerpiece of the Empire State Plaza in Albany, New York. □ A pioneer in elastomers since 1939, Gates first single-ply roofing project was completed in 1961... that's over twenty years of successful performance. Our outstanding total systems concept, unsurpassed warranties and superior technical service back-up are second to none. There is no equal to Gates Engineering in

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**Architect:** Harrison & Abramovitz, New York City **Gates Engineering Registered Roofing Contractor:** Martin E. Keller Roofing Co., Schenectady, New York

## Gates Engineering Company, Inc.



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(302) 656 9951

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Circle 102 on inquiry card

AN **RPM** COMPANY  
INC.



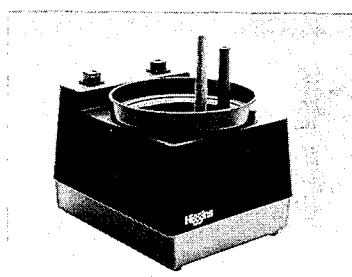
**Traditional seating**

Designed by Ernst Dettinger, the *Klassik* chair is a Roscoe award winner. Suggested for dining and conference room applications, the solid Beech chair features a hand-rubbed finish. Jack Lenor Larsen, Inc., New York City.  
Circle 328 on reader service card



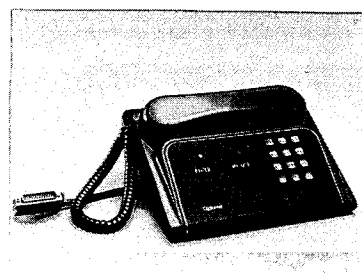
**Park bench**

The *Charleston Series* bench features cast-iron pedestals and 2- by 3-in. slats of Philippine Mahogany, Red Oak, or Redwood. Pedestals are predrilled to accept anchoring hardware. This series is suitable for both indoor and outdoor use. Woodcrafters of Florida, Inc., Jacksonville, Fla.  
Circle 331 on reader service card



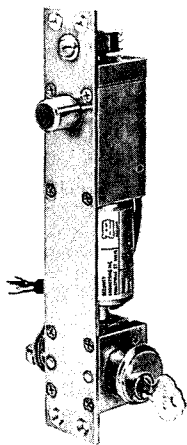
**Pen cleaner**

The #999 pen cleaner generates ultrasonic waves to dissolve ink deposits from technical pens. It features a stainless-steel reservoir and a tray with slots for holding pens. It may be used for cleaning other drawing instruments as well. Faber-Castell Corp., Newark, N.J.  
Circle 332 on reader service card



**Remote control access**

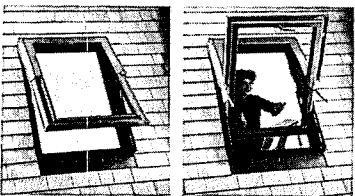
The *REP-561 Desk* unit allows a doorman to dial 3 digits to call an occupant of his building. A visitor may use the unit to dial the tenant's code and the tenant may use his phone to unlock the lobby door. Marlee Electronics Corp., Culver City, Calif.  
Circle 333 on reader service card  
More products on page 187



**Electric lock**

The #1316 S is a fail secure electric lock with a 3/4-in.-by-3/4-in. throw automatic deadbolt. It comes with a manual override release option that accepts any standard mortise cylinder or thumb turn. The lock can fit into a 1 1/4-in.-square tube. Security Engineering, Inc., Forestville, Conn.

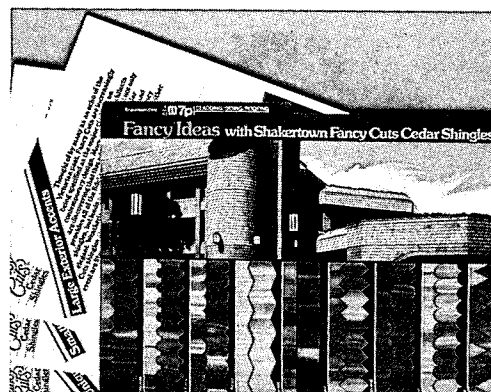
Circle 329 on reader service card



**Roof window**

High-performance insulating glazing with a 1/2-in. air space gives Andersen's roof window a U value of .33 (based on a 45° slope). It features a low-maintenance, baked acrylic finish on a metal-clad wood sash and frame. The window comes in 6 sizes from 21 in. by 33 in. to 41 in. by 57 in. Andersen Corp., Bayport, Minn.

Circle 330 on reader service card



# FANCY IDEAS.

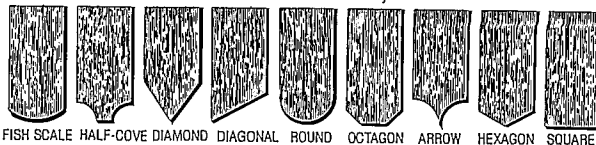
With Shakertown Fancy Cuts Cedar Shingles.

Create your own unique patterns and textural effects for walls, ceilings and roofs. Interior and exterior.

Ideal for accents and combining with other materials for special surface treatments.

For a design kit full of Fancy Cuts fancy ideas call Joe Hendrickson 1-800-426-8970 or write to Shakertown Corp., Dept. AR, Winlock, WA 98596. For general information use reader service number.

Available in 9 styles.



FISH SCALE HALF-COVE DIAMOND DIAGONAL ROUND OCTAGON ARROW HEXAGON SQUARE

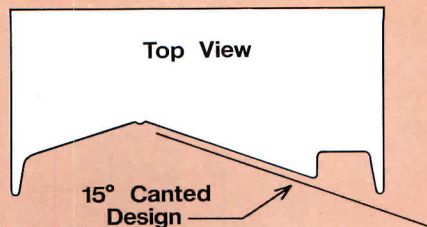
Circle 103 on inquiry card

# Omni-Lav™ makes the public washroom a lot less public.



Most people don't feel very comfortable using the wash-up facilities in a public washroom. The undivided series of sinks normally found does not give any sense of privacy to users. Stress is also caused by the lack of a safe place to put belongings while washing. Parker's Omni-Lav was designed to answer the needs for privacy and security of personal property in a public washroom. It incorporates all components necessary for

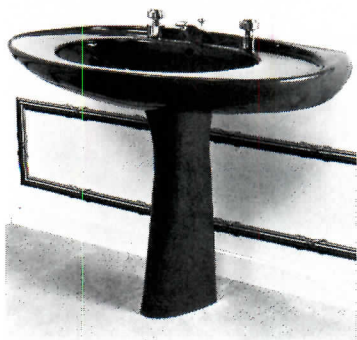
wash-up convenience, including storage space for coats, purses and other personal belongings. The Omni-Lav features a canted design which provides a well-defined space, giving the user an increased sense of privacy. When the Parker Omni-Lav is installed in a public washroom, that washroom becomes the stress-free, comfortable area that it should be.



The Charles Parker Company, 290 Pratt St., P.O. Box 916, Meriden, CT 06450

Tel: (203) 235-6365

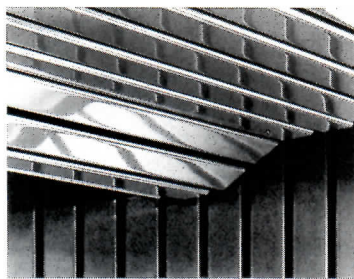
Circle 104 on inquiry card



**Lavatory**

The 100 pedestal lavatory, one of the fixtures in this manufacturer's *Lumiere* collection, measures 39 3/8 in. wide with an oval basin measuring 23 in. It stands 32 1/2 in. high. The lavatory is made of vitreous china and is available in a variety of coordinated colors. Jacuzzi Whirlpool Bath, Walnut Creek, Calif.

Circle 334 on reader service card



**Metallic finish ceilings**

*Luxalon Ceiling Systems* are now available in copper, aluminum, gold and other tones in either polished or brushed finishes. Panels are made of prefinished aluminum strip and are said to be resistant to corrosion. Hunter Douglas, Inc., Maywood, N.J.

Circle 337 on reader service card



**One-piece toilet**

The 4100 Series elongated toilet meets commercial specifications for an elongated design. The units are offered in 5 colors and include a PVC housing said to resist chipping, cracking and shattering. It is also available with an open-front seat. Masco Corp. of Indiana, Indianapolis, Ind.

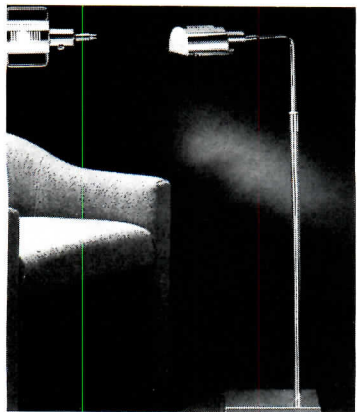
Circle 338 on reader service card



**Acoustical panels**

*Versipanel* systems stand on their own with no posts or hardware. Weighing only 10 oz per sq ft, with an NRC rating of .90, panels come in a wide range of sizes and colors, control noise and divide space. Magna Design, Lynnwood, Wash.

Circle 339 on reader service card  
More products on page 189



**Floor lamp**

The *Pogo*, made of solid brass with either a polished brass or polished chrome finish, has a shade with cool handles for easy adjustability. Slits on top allow streaks of light to shine through and heat to dissipate. The lamp accommodates a 100-W bulb, adjusts up and down from 36 to 46 in. and rotates 360° on a universal swivel. Koch + Lowy, Long Island City, N.Y.

Circle 335 on reader service card



**Hardwood drawing table**

A pedestal table features adjustments for heights from 32- to 42-in., and tilts from horizontal to 90 deg. The solid core board has a basswood surface and is available with plain or metal edges. The base is made of a clear-lacquered, natural blond hardwood. The table is available in 8 sizes from 23 by 31 in. to 44 by 72 in. Stacor Corp., Newark, N.J.

Circle 336 on reader service card

# Sarnafil® Single-Ply Roofing

## NO SHRINKAGE NO EMBRITTLEMENT

# NO PROBLEMS

Outside of accidental damage and improper design or installation, there are only about three things that can happen to single-ply roofing membranes • They can shrink and as a result tear or pull away, causing leakage • They can become brittle or deteriorate with age • They can fail at the seams due to inadequate seam bonding. Sarnafil PVC roofing membrane is the best protection you can get against any of these potential problems.

Enlarged section of Sarnafil shows reinforcing fibers.



**It Won't Shrink . . . Ever.**

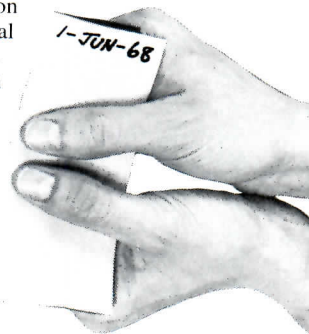
Manufactured by a special process that flows the PVC completely around a non-woven fiberglass or polyester reinforcement, Sarnafil has exceptional dimensional stability. Unlike extruded or calendered products, Sarnafil is free from manufacturing stresses and is reinforced to prevent shrinkage.

Get complete details on Sarnafil Single-Ply Roofing. Circle the readers' service number or write today for our illustrated brochure. Sarnafil (U.S.) Inc., Canton Commerce Center, P.O. Box 380, Canton, MA 02021.



**It Won't Get Brittle or Deteriorate with Age.** The only way any manufacturer can make this claim is to have actual installations in place for many years in all climatic conditions. Sarnafil PVC membranes retain their plasticizer even after years of service. Samples taken from early installations retain their original pliability and can be folded or even creased without surface cracking. The excellent aging properties of Sarnafil membranes allow the fusion of new material to membranes that have been in service for many years.

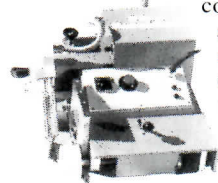
Unretouched photo of 14 year old Sarnafil.



**Its Seams Don't Depend on Adhesives, Chemicals or Sealants.**

Hot-air-welding fuses overlapping sheets of Sarnafil into a continuous leakproof roof. There are no adhesive or chemically bonded seams to fail and no additional costs for chemical or adhesive seam bonding materials. Manufacturers of other roofing membranes recommend hot-air-welding as a means of correcting gaps in adhesive and solvent-

welded seams. Sarnafil gets it right the first time!



# Sarnafil® Reinforced Membranes

"Living up to the promise of single-ply roofing"

# Free natural light brightens merchandise, cuts energy costs for Skydomed<sup>®</sup> supermarket

Architects and building owners are beginning to see the light — that FREE sunlight can replace or supplement expensive electric lighting, reducing overall operating costs dramatically.

What could make more sense? The fastest way to cut energy costs is to reduce the monthly bill for electricity. And the easiest and most efficient way to do that is to light up the entire area with sunshine, using Wasco Solar Energy Skydomes<sup>®</sup>.

Moreover, merchandise displayed in natural daylight sells better. Products bathed in sunshine simply have more sales appeal.

The daylighting concept made sense to Safeway management when they built a 48,000 sq. ft. super store in Tempe, Arizona. Wasco Skydomes provide the primary lighting for this installation, allowing the sun itself to control auxiliary fluorescent lighting, as needed.

Wasco Solar Energy Skydomes offer lighting and thermal performance so significant that they can now be factored — with computer accuracy — into a total environmental control

system for any commercial, industrial or institutional building. Wasco systems prove cost effective in any geographical area of the country both in new construction and in retrofit applications.

Write or call Wasco for a **free computer analysis** of the building you have in mind.



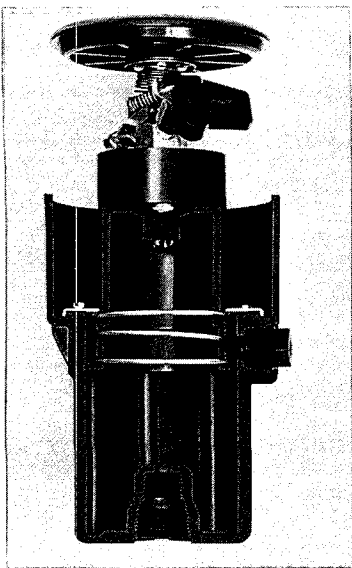
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(207) 324-8060 or P.O. Box 734  
Ennis, Texas 75119 (214) 875-2691

Circle 106 on inquiry card







**Exit signs**

*Warrior* exit lights are housed in 20-gauge steel and have two 15-W T6½ energy-efficient candelabra-base lamps rated at 145-V but operated at 120 V. They meet all NFPA, UL and OSHA requirements. Single- or double-faced units are available. McGraw-Edison Co., Elk Grove Village, Ill.

Circle 440 on reader service card



**Conference chair**

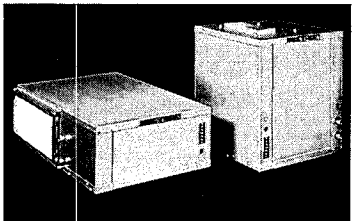
A chair designed for installation in conference halls and auditoriums that require facilities for simultaneous language translation has a multiple-channel interpreter system (S.I.S.) housed inside the armrest. The armrest also conceals a folding writing surface. The wiring for the S.I.S. is routed through the horizontal support beam of the system. Up to 5 chairs may be attached to the beam, which features aisle lights on either side. Options include ashtrays and letter and number plates. Massey Seating Co., Nashville, Tenn.

Circle 441 on reader service card

**Sprinklers**

The *PK41 Series* of rotary sprinklers, with 3- and 4-in. pop-up heights, is suitable for light-duty application to large residential, medium commercial and other similar turf areas. Impact drive is actuated by the nozzle stream and a recoil torsion spring, while a specially designed drive arm minimizes back splash. Sprinklers are available in full- or part-circle. Two-piece construction allows removal of the upper piston and the sprinkler for flushing or servicing without special tools. Other features include a single high-performance brass nozzle, side and bottom inlets and a cover which minimizes breakage and pedestrian hazard. Weather-matic, Dallas, Tex.

Circle 340 on reader service card



**Water-source heat pumps**

*EnerCon II* heat pumps have energy-efficiency ratios as high as 11.6 and coefficients of performance up to 4.1. Lower pressure drops reduce circulating pump horsepower and associated costs. The design includes an isolated compressor compartment that minimizes compressor and reversing valve noise, a leakproof die-formed drain pan, and a precise means of sensing low water temperature in the unit's water coil. Horizontal sizes through 49,000 Btus per hour cooling capacity are available with either a straight-through or a 90 deg discharge that can be repositioned in the field. American Air Filter Co., Louisville, Ky.

Circle 341 on reader service card

# How many gallons do you waste per flush ...



## On your next project... specify 0.375 gals.!



vitreous china water flush toilet

**Total water consumption reduced.** ENVIROVAC's toilet uses only 3 pints per flush . . . that's more than a 90% reduction in water normally required for flushing. Additional benefits include:

- smaller diameter water supply piping
- smaller water treatment plants
- reduced water acquisition costs

**Reduced sewage volumes** of up to 90% offer these important benefits:

- less hydraulic loading on sewers and treatment plants
- smaller diameter sewer mains
- increased sewage disposal options

**Save with small diameter piping.** In most installations, low cost 1½" pipe connects the ENVIROVAC toilet with a 2" or 3" sewer main resulting in substantially lower material and labor costs for sewer piping installation.

**Upward flushing capability** allows placement of sewer mains in ceilings with other utilities. Penetration of floor is not required.

Learn more about the advantages and applications of ENVIROVAC's toilet and sewage collection systems . . . call or write today.

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It's the first high rise in the Rio Grande Valley—the seventeen story McAllen State Bank Building in McAllen, Texas. Its concrete floors and beams were formed by Ceko concrete forming services.

"For McAllen's first high-rise project," says Allan M. Bond, vice president, Linbeck Construction Corp., "we wanted forming service that had high-rise experience. Ceko filled the bill. We didn't have to buy or rent any pan forming equipment, or train crews in how to use it. Ceko provided it all. Ceko also quoted a firm price and overcame early scheduling problems to meet our floor to floor cycle time. When it comes to performing, they are professionals."

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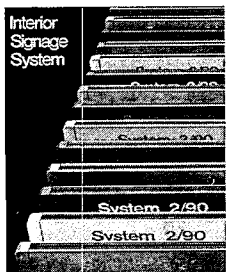
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concrete  
forming  
services

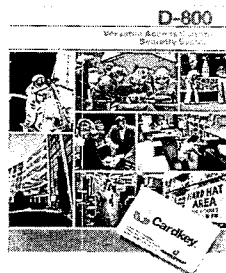
The Ceko Corporation • General Offices  
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McAllen State Bank Building  
Architects/Planning Consultants:  
3D/International  
Associate Architects:  
Zeb Rike, Dan Ogden  
General Contractor:  
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Structural Engineers:  
Colaco Engineers, Inc.



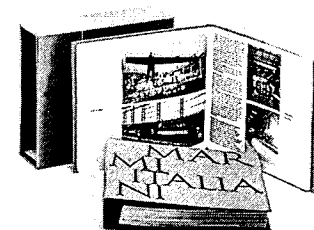
**Interior signage**

A 12-page color brochure on the *System 2/90* highlights its rounded corner, frameless design, the flexibility of its signs' size and configuration and its manufacturer's maintenance program. Color charts and specifications are included. Open Plan Accessories, Grand Rapids, Mich.  
 Circle 425 on reader service card



**Security system**

Security needs of small businesses such as labs and computer facilities are the focus of a 4-page brochure featuring the *D-800* access control system. Components of the system include a microprocessor and ID cards coded by facility and individual. Cardkey Systems, Chatsworth, Calif.  
 Circle 426 on reader service card



**Marble guidebook**

A set of guidebooks on Italian marble contains a volume on the specification of building stone and another with color photos of almost 150 types of Italian marble. Italian Trade Center, New York City  
 Circle 427 on reader service card  
 More literature on page 193

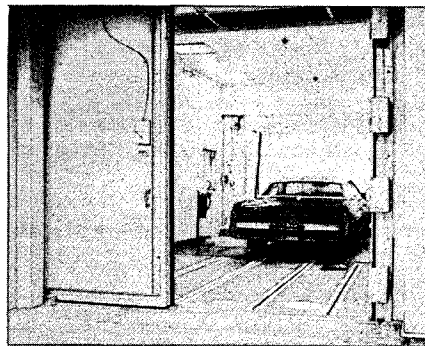
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## CLIMATE

To control an atmosphere at a testing facility is difficult enough. To control a variable atmosphere – and preserve the integrity of shifting interrelationships of temperature and humidity, is infinitely more so. That's why the specialized door of choice is so often a Jamison.

With forty years experience in the design and manufacturing of such doors, we bring the same high-level technological and manufacturing expertise to single-swinging personnel doors as we do to large/multi-leaf doors for highly complex experimental testing facilities. For sound, temperature, chemical reaction and atmospheric control, when you can't just allow nature to take its course, we can help you control it.

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*Any other door is second best*

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# THE MOST UNEXPECTED MARRIAGE IN THE SALEM COURTHOUSE.



## Natural Textures and Endura Rubber Studded Tile.

The Courthouse, Salem, Massachusetts. A fascinating mix of architectural materials: rough brick, polished wood, glass, trees, light. And Endura rubber studded floor tiles. Endura. Chosen by architects Whitman & Howard, Inc., of Wellesley, Massachusetts to replace the existing ceramic floor.

Endura's beautiful of course. But not at the cost of safety. Endura's studded profile helps prevent slipping—even when the floor is sloppy with Salem's winter slush.

And Endura comes clean quickly, releasing courthouse grime, cigarette debris—everything but stained reputations—with a minimum of effort. So this Endura floor will keep on looking great through years of trials.

Endura rubber studded floor tile. Available in a full range of standard and custom colors. Priced to reflect American needs. The only 3 dimensional rubber tile made in America that's engineered to meet or exceed the specifications of any similar European product. Endura rubber studded floor tile comes with a 5 year limited warranty backed



by The Biltrite Corporation—since 1908, a leader in the development of molded rubber products.

Find out more. Write for our free brochure or call the Sweets Buyline (800-447-1980; in Illinois, 800-332-4410).

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# ICE RINK

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## GUIDE & CHECK LIST

PUBLISHED BY AMERICA'S LARGEST MANUFACTURER AND INSTALLER OF ICE RINKS, DASHER BOARDS AND ACCESSORIES

# FREE FROM AMERICA'S LARGEST MANUFACTURER AND INSTALLER OF ICE RINKS, DASHER BOARDS AND ACCESSORIES

For your free copy, just write or call. This 28 page guide contains essential information for the architect on the following:

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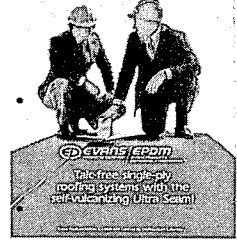
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**TOMORROW'S WINDOW TODAY**

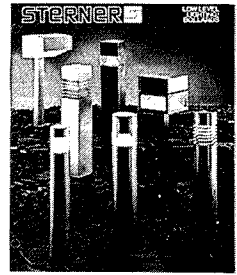
**THE AIR CURTAIN WINDOW**

**Thermal windows**  
A foldout brochure explains the concept behind the *Air Curtain Window*, said to provide the effect of R-17 insulation. Diagrams illustrate air movement and the distribution of solar heat. Ekono Windo Co., Bellevue, Wash.  
*Circle 428 on reader service card*

**A great joint product.**



**Roofing systems**  
Talc-free, single-ply roofing systems with self-vulcanizing seams are described in an 8-page brochure. Section diagrams illustrate the components of each of 6 systems and are accompanied by suggested applications. Evans Products Co., Corvallis, Ore.  
*Circle 429 on reader service card*



**Low-level lighting**  
Photographs illustrate installations of 7 bollard-type, low-level lighting fixtures in a 14-page color brochure. Product descriptions include size, wattage and special features of each of the units. All units meet UL and NEC requirements. Sterner Lighting Systems, Inc., Winsted, Minn.  
*Circle 430 on reader service card*  
*More literature on page 195*

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Telex 951650

14 Story Street  
Cambridge, Massachusetts 02138

Kroin Architectural Complements

# Kroin

They don't know that this series includes overhead showers, handshowers, fast-fill tub spouts and accessories. Most important, few are aware that the complete collection is available in 10 bright epoxy colors, polished brass or chrome.

So, now you know what you've been missing, don't miss the entire system of Kroin Sanitary Fittings.

*Circle 7 on information card.*

What a lot of people don't know is that Kroin offers an entire system of counter and wall-mounted fixtures for the kitchen, lavatory and bath.

washerless mixing valve was developed by Bradley Corporation.

A lot of people recognize this kitchen faucet designed by Danish architect Arne Jacobsen. Most know that it was selected for The Design Collection, MoMA. Some even know that its brass, washerless mixing valve was developed by Bradley Corporation.

# Provide positive protection against fire and smoke with LCN Sentronic®

Containing fire and smoke within a limited area is one of the most effective ways of minimizing danger to life and property. The capability to do this is absolutely essential in hospitals, nursing homes, schools and other public buildings.

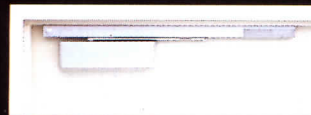
The LCN line of Sentronic Closer/Holder for fire and smoke barrier doors provides a key part of this containment capability. Sentronics are designed to control doors and to close them automatically when and if fire strikes.

For technical details, write for our Sentronic brochure, or see LCN Sentronics in Sweets section 8.

LCN Closers,  
Princeton, IL 61356.  
LCN Canada,  
Mississauga, Ontario,  
L5G 4L5.



MED series closer/holder has unlimited hold-open positions and a built-in detector. Modular design for ease of maintenance and field modification.



SED series closer-holder has adjustable single point hold-open and a built-in detector. SED models mount on the hinge face or stop face.

## **LCN CLOSERS**

Part of worldwide Ingersoll-Rand

Circle 112 on inquiry card



# Get the concrete finish you want by sending for the concrete advice you need.

Getting the kind of concrete finish you want depends, in part, on choosing the right concrete forming materials. And no-one gives you more concrete forming choices than Simpson. Find out how to choose the right material for the right finish by sending away for Simpson's free guide to architectural concrete forming. Just use the coupon below.

Yes. Please send me your FREE guide to architectural concrete forming materials.

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Simpson Timber Company  
900 Fourth Avenue  
Seattle, WA 98164

FormGuard

# Simpson

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### Fabric structures

A 4-page brochure describes the components of this manufacturer's air-supported structures, including the inflation system, hvac, access equipment and lighting. A new membrane-covered frame structure is described as well. Air-Tech Industries, Inc., East Rutherford, N.J.

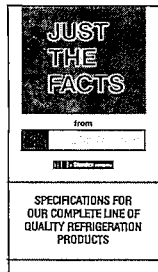
Circle 431 on reader service card



### Restored moldings

A packet of literature describes this company's method of replacing missing or damaged moldings and ornamentation. The finished product is claimed to be weatherproof and maintenance free with a projected life exceeding that of the original. Sirmos, Inc., Long Island City, N.Y.

Circle 432 on reader service card



### Storage and display coolers

A 24-page, pocket-sized brochure illustrates and describes a wide variety of coolers and freezers ranging from ice-cream freezers to floral-display coolers. Specifications are included. Master-Bilt Products, New Albany, Miss.

Circle 433 on reader service card  
More literature on page 197

Telephone 617 492-4000  
Telex 951650

14 Story Street  
Cambridge, Massachusetts 02138

Kroin Architectural Complements

Indeed, the MoMA was so impressed with our attention to innovation and quality, they selected our wall-mounted lavatory fixtures for The Design Collection.

So, if you're tired of the same old things, take a look at Kroin Sanitary Fittings. You'll see why people are calling us the new American standard.

Circle 8 on information card

There's a big difference between a faucet that you turn on and one that turns you on. It's the difference between Kroin Sanitary Fittings and every other fixture on the market.

Kroin offers a selection of mixing valves, outlets, plates and coordinated accessories so complete that the possible combinations and mounting options are virtually unlimited.

The old American standard is all washed up.

# Kroin

©1988 Kroin, Inc.

Hitchcock Office Park,  
Aiken, S.C.

## SUREWALL<sup>®</sup> SBC Insulation System

When you choose the SUREWALL<sup>®</sup> SBC Insulation System, we want to be sure that everything is done right. After all, we've designed every element of this complete exterior insulation, weather-proofing and finish system to assure that nothing is left to chance. So we thoroughly train applicators from selected plastering contractors to install the system. And, frankly, we don't want an applicator installing our system unless he's certified by the SUREWALL Producers Council.

Our Certified Applicators are skilled at installing the economical SUREWALL SBC Insulation System either on new construction or over almost any kind of surface on a building that's to be renovated and modernized.



They're experts in the use of every part of our system: SUREWALL<sup>®</sup> Surface Bonding Cement, Expanded Polystyrene Insulation Board, and the special SUREWALL<sup>®</sup> Adhesives, Fastening Clip, Joint Reinforcement Tape and Trim Accessories.

In fact, our Certified Applicators are an important reason why we can give you a four-year warranty.

For a brochure explaining the SUREWALL SBC Insulation System, see Sweet's 9.10/Bon or write to the SUREWALL<sup>®</sup> Producers Council, P.O. Box 241148, Charlotte, N.C. 28224. Or call 704/525-1621.

We'll give you the inside story on outside insulation.

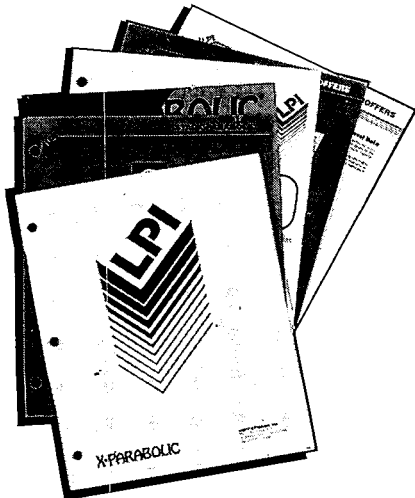
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# OUR CERTIFIED APPLICATORS GIVE YOU THE INSIDE TRACK ON OUTSIDE INSULATION.

Architect: Alexander & Moorman. General Contractor: Morton Construction. Surewall Applicator: Purseley, Inc.  
SUREWALL<sup>®</sup> is a registered trademark of the W. R. Bonsal Company, Charlotte, N.C., and Best Concrete Products Company, Atlanta, Ga.



**FREE LITERATURE:  
LPI's ENERGY-EFFICIENT FLUORESCENT LIGHTING**



**X-PARABOLIC for WIDE AREAS**  
86.3% efficient; energy-saving luminaires. Provides optimum ESI values with no lenses, louvers, or baffles to waste light. Allows 2 to 1 spacing to mounting height...fewer fixtures needed. Recessed, surface, or pendant.

**STACK-PARABOLIC for NARROW AREAS**  
83.6% efficient. Provides uniform lighting of vertical surfaces in high, narrow areas such as library stacks, halls, file rooms. Sharp vertical cut-off—ideal for computer terminal rooms.


**ASYMETRIC PARABOLIC for HALLWAYS**  
Unique reflector design allows installation at any point across ceiling, yet provides uniform lighting across entire hallway width.

**HAZARDOUS LOCATIONS (HZ)**  
Recessed troffers, gasketed and sealed. UL listed for Class I, Div. 2, and for wet or damp locations.

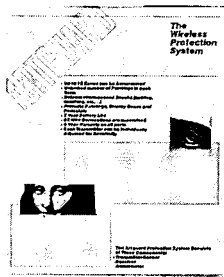
**HAZARDOUS LOCATIONS (SS)**  
Stainless Steel troffers provide maximum resistance to corrosive atmospheres in addition to gasketed, sealed construction for Class I, Div. 2, and wet or damp locations.

**CLEAN ROOMS (CR)**  
Gasketed, hole-free fluorescent recessed troffers, also suitable for wet locations.

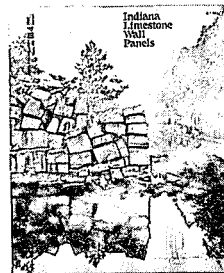
PLEASE SEND LITERATURE (Check Product Bulletins desired, and return with your letterhead). 82211

 **LIGHTING PRODUCTS INC.**  
P.O. Box 1370  
Highland Park, IL 60035  
(312) 831-2500 Telex: 25-6164

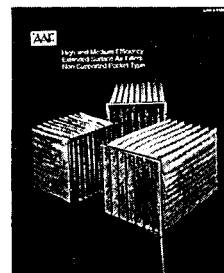
Circle 115 on inquiry card



**Wireless protection of art**  
The *Artguard Protection System* as described in a 4-page brochure, uses transmitters mounted behind paintings and a receiver mounted within 150 ft of the farthest transmitter. Wires connect the receiver to an annunciator located anywhere in a building. Andra Systems, Inc., New York City.  
Circle 434 on reader service card



**Limestone wall panels**  
A 16-page color brochure features photographs of installations, and wall and spandrel details of Indiana limestone wall panels. Specifications are given and available finishes are shown with charts of costs per sq ft. Harding and Cogswell, Corp., Bedford, Ind.  
Circle 435 on reader service card



**Air filters**  
An 8-page color brochure describes *DRI-Pak* extended surface pocket filters, which are claimed to have a higher dust-holding capacity and subsequent longer life at lower operating costs. Information on rated filter face velocity and air-flow capacity is included. American Air Filter Co., Louisville, Ky.  
Circle 436 on reader service card  
More literature on page 235

Telephone 617 492-4000  
Telex 951650

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Cambridge, Massachusetts 02138

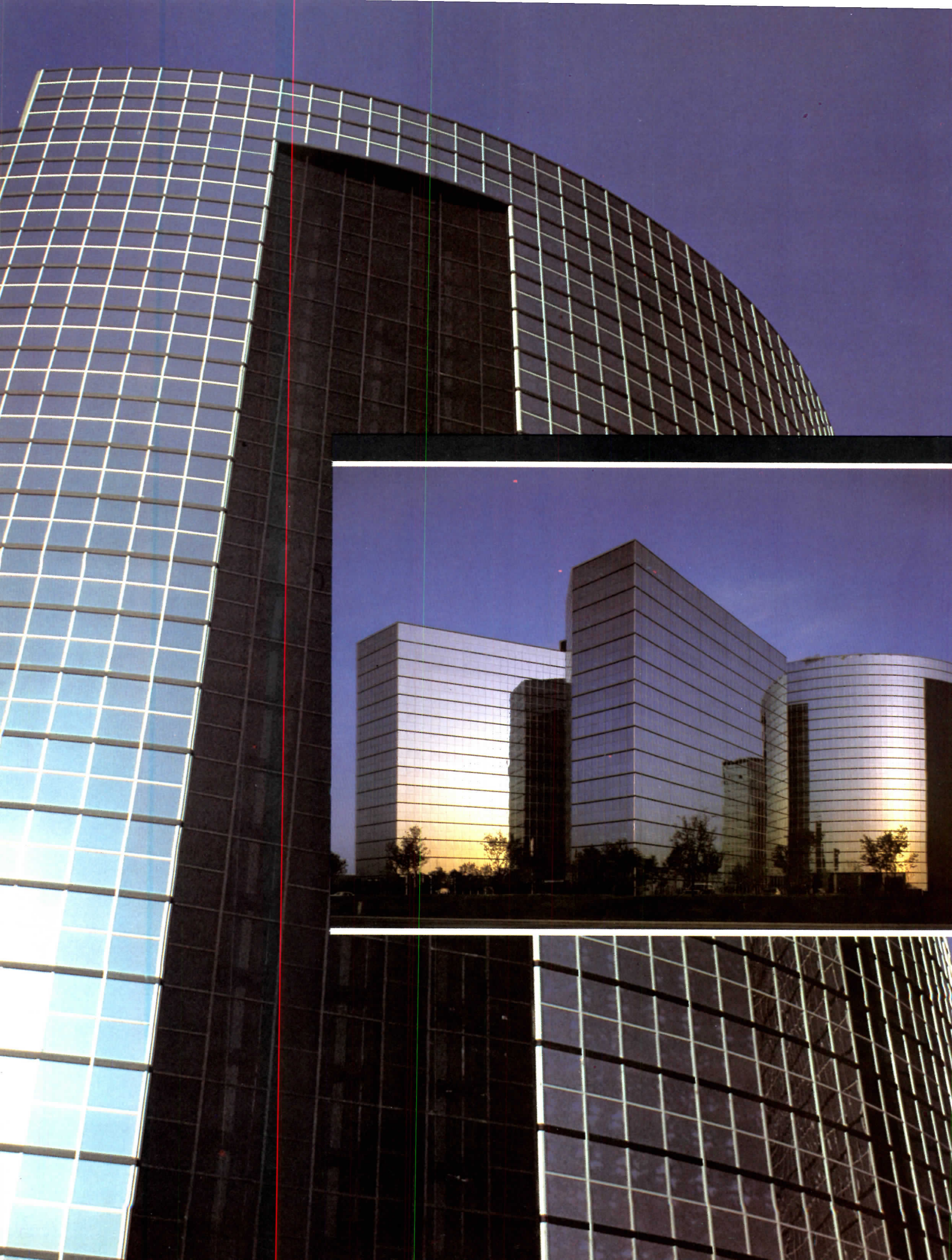
Kroin Architectural Complements

The world's most comprehensive system of wall-mounted kitchen and lavatory accessories is available exclusively from Kroin.

Circle 9 on information card

**Kroin**

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Fifteen years of foam panel experience have resulted in the development of Therm-U-Wall — the most advanced factory insulated system on the market today. From conception to production, MOLENCO engineered T-U-W to combine more of the design features architects and owners require:

**2½" Panel Thickness.** An extra half inch of foamed-in-place insulation provides greater energy efficiency when compared to conventional systems. The increased thickness also allows greater structural spanning capability.

**Clipless Side Joint.** T-U-W's channel side joint supplies optimum strength without the use of clips for panel to girt attachment.

**Standard 30" Panel Widths.** T-U-W's flush, modular look combines clean aesthetics with the added benefit of superior insulating value.

**Kynar® Finish.** The recognized coating for long life application is MOLENCO's stock finish.

**Complete line of Accessories.** Extrusions with matching Kynar coatings are available for all trim conditions.

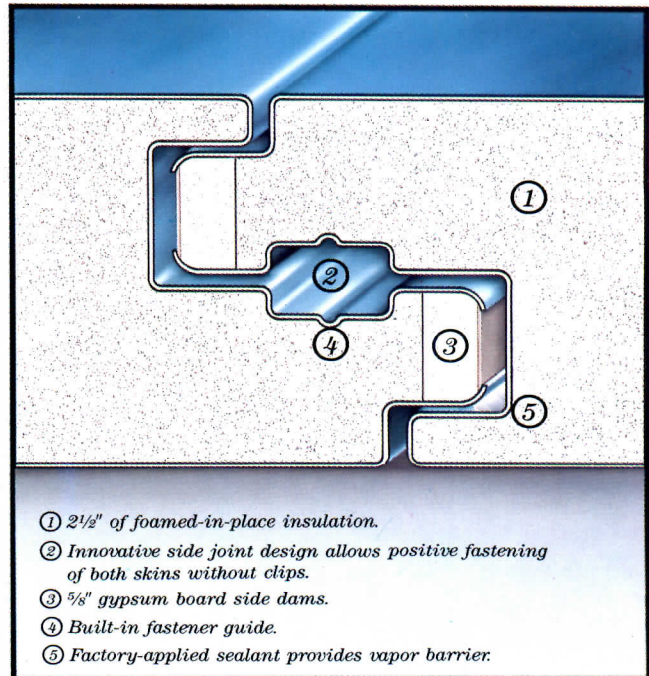
With over 65 years of experience in the metal panel industry, who better than MOLENCO to introduce Therm-U-Wall — the latest in flat, foamed-in-place metal panel technology.

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**MOLENCO**

# MOLENCO Presents THERM-U-WALL.

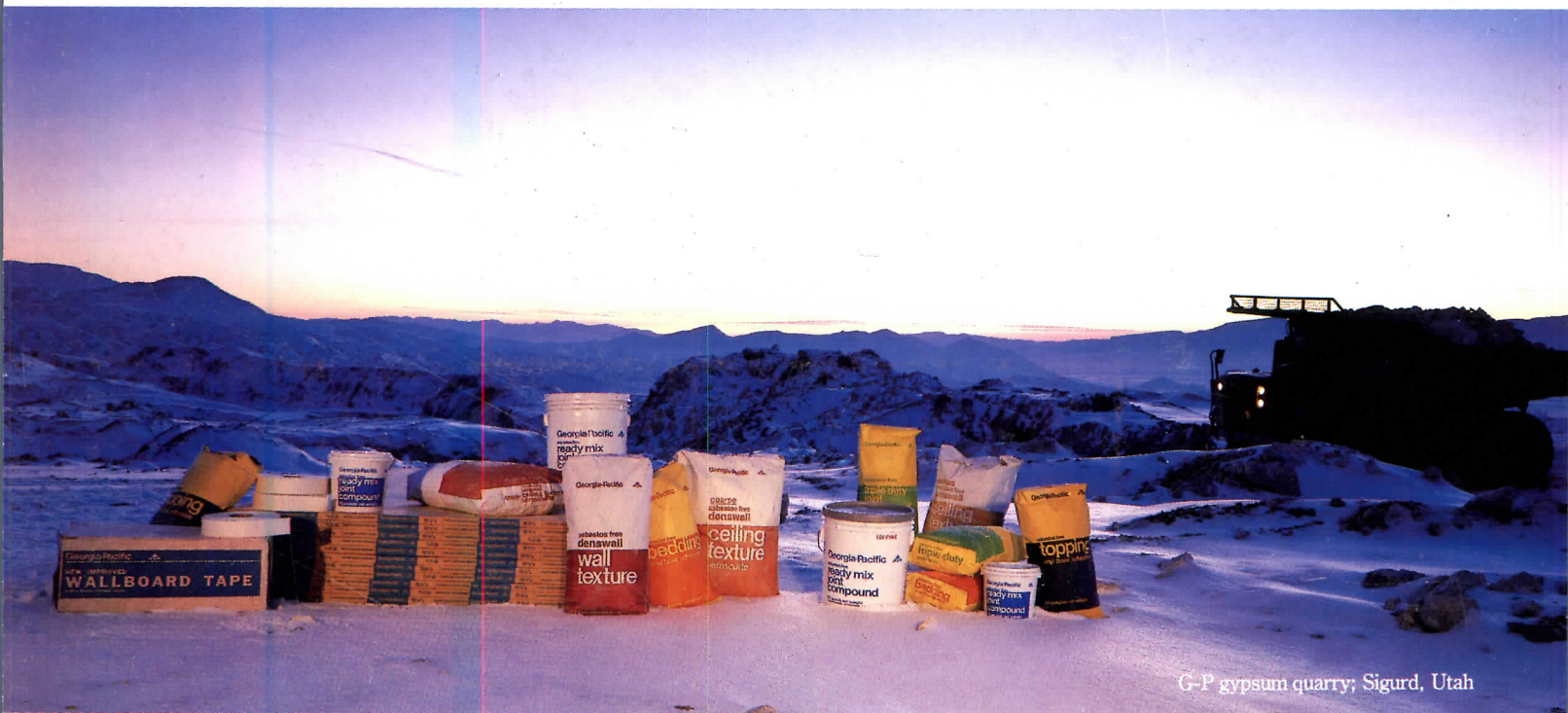
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system  
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We develop our building materials from the ground up. From our own resources. And Georgia-Pacific commercial gypsum products are a prime example.

Our gypsum mines and quarries throughout the U.S. provide us with the raw material it takes to produce a wide variety of products.

Georgia-Pacific manufactures products like wallboard, Firestop<sup>®</sup> products, tile backer, joint system products, tapes and textures. And specialty products like Shaft Liner II<sup>™</sup> elevator shaft partitions. Eternawall<sup>®</sup> vinyl surfaced gypsum board. And Castleford<sup>™</sup> paper overlay gypsum board.

From beginning to end. From start to finish. We've got what it takes, at Georgia-Pacific.

**We've got what it takes to lead the way.**

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