

ARCHITECTURAL
RECORD

Business Design Engineering
A McGraw-Hill Publication, Seven Dollars
July 1989





The image shows a close-up of several stacked ceiling tiles. The tiles have a textured, fibrous surface. The top edge of the topmost tile is stepped, while the edges of the tiles below it show different profiles, including chamfered and beaded edges. The tiles are stacked in a way that shows their thickness and how they interlock.

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Architects, engineers, and the “practice overlap”

The AIA spends a lot of time these days defining and redefining the role of the architect, as it relates to the functions of allied professions, particularly interior design and engineering. The struggle with interior designers over the licensing issue came nearer to being resolved when the AIA reached substantial agreement with the American Society of Interior Designers (ASID) and the Institute of Business Designers (IBD) on a coordinated approach to title registration. However, the AIA has voted to reserve “practice regulation” to architects and engineers. (Practice regulation means that only those individuals who meet the legislated criteria may perform the services of the given profession. With title registration, use of the title, not the practice, is controlled.) As could be expected, not all interior designers are willing to settle for that, so there may be continuing discussions.

Even more controversial than the stance the AIA is taking with interior designers is its gentle treatment of the engineering professions. Some reasons for this are not hard to find. Architectural firms, even those that limit their practice to small jobs, *need* consulting engineers. Interior design, on the other hand, is seen by architects to be a high-fee business, with lots of repeat work, that they as architects are well equipped to handle, whatever the size of their offices, and with or without trained interior designers on staff.

Attorney Carl Sapers, in the legal column that regularly appears in RECORD, has argued that licensing the interior-design profession is without legal justification [June 1988, pages 37-41] and supports those in the AIA who have led the fight against it. With regard to the engineering professions, moreover, Sapers contends that unfortunately the AIA is far too cooperative, and implies that its leadership hardly senses the danger to architectural practice deriving from the desire of engineers to play an increasing role in the design of buildings for human habitation. In last month's issue [June 1989, pages 41-43] in the preface of a debate held between himself and Milton Lunch, former counsel to the National Society of Professional Engineers, Sapers provides substantial evidence that the AIA is deliberately allowing engineers to make increasing inroads on architectural practice. In this month's sequel (pages 41-42), Sapers discusses with Lunch various legal distinctions between architects and engineers to determine which profession under what circumstances should be the client's “prime professional,” both lawyers finally agreeing that the design of buildings for human habitation should be the responsibility of architects.

The AIA has just announced that it will begin work with the NSPE toward a joint policy regarding architect/engineer relationships and the overlap of practice under state licensing laws. The following quotations from the letter of agreement reveal clearly the AIA's present, perhaps too docile stance. “In limited situations, the areas of qualifications and practice of the two disciplines overlap. Under those specific conditions, the incidental practice of one profession by the other may be justified.” According to the agreement, state laws should not be used “to artificially inhibit the practice of either profession in areas in which they are both technically and professionally qualified by virtue of educational preparation, experience, and professional registration.” The agreement states further: “It is not in the interest of the general public or potential clients for there to be real or apparent conflicts between the national associations of engineering and architects over areas of practice, especially as reflected in provisions for state registration laws.” Sounds reasonable enough, unless you've read Sapers. *Mildred F. Schmertz*

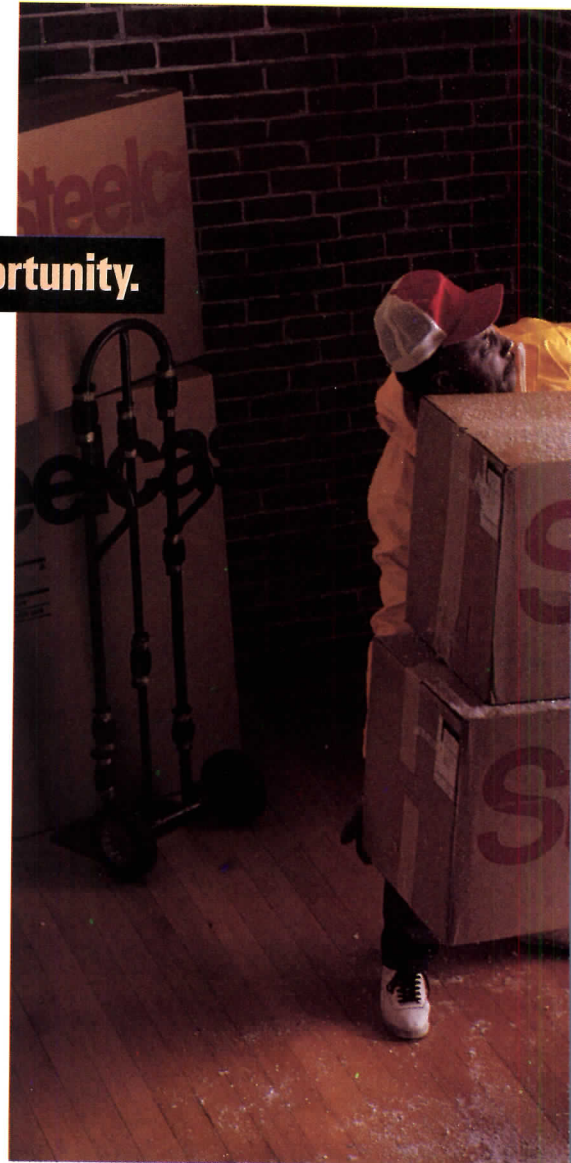
About three years ago, to preserve a local landmark, Eastman Kodak Company bought an empty, 107-year-old seminary, just a stone's throw from their largest manufacturing site in Rochester, New York.

Window of opportunity.

Soon afterward, they decided to put a research and development unit into the top floor. The problem was, there was no effective way to get anything bigger than a seminary student into the building. No loading docks. No elevators. And three-story stairwells too twisty to hike any furniture up.

So, Kodak called on John Donohue of Merkel-Donohue, their full-service Steelcase[®] dealer in Rochester, with 70 employees and 25-years' experience. Donohue and the Kodak people put their heads together.

“John, it's going to be a challenge.”



A/E/C Systems '89: The changing face of computer use for architects and engineers

Integration they promised and integration we got. The promotion for this year's A/E/C Systems show and conference (held in Anaheim early last month) quoted show principals George S. Borkovich and Michael Hough on maturing developments about to be unveiled: computers' abilities to relate their varied graphic and alphanumeric functions—working drawings automatically reflecting changes in a model, specifications changing with the drawings, cost estimates changing with the specifications, etc.—and on systems' increasing abilities to talk to one another. In fact two companies had decided that their systems could talk to each other so well that they announced their merger at the show (see "Growing markets, growing companies"). The real talk this year was about the networked workstations that are by far the fastest-growing segment of the automation spectrum. There was a growing number of major suppliers grouped into communities with third-party supplementaries to furnish expanded capabilities. And there was even some fun—such as Xerox's "amazing disappearing act" (describing the ability of a new copier to eliminate unwanted parts of a document) and most especially Calcomp's Imagination Machine (photo), designed to show there's room for whimsy even in a conservative market. (For a detailed account of the products shown, see the show preview, RECORD, May 1989, pages 158-163 and a roundup in the July issue.)

Hough claims that some 29,000 architects, engineers, and contractors showed up this year—only 2,000 more than last year and hardly the doubling of attendance figures routinely posted in the earlier years of the show. Does this mean the market is reaching a saturation point? Not quite. An independent survey conducted in 1988 by

Exhibit Surveys Inc., which rated trade shows for such diverse groups as fire chiefs and cardiologists, gave A/E/C Systems high marks for attracting serious buyers of new equipment—some 74 percent of all those who attend. And with all the new advances in capabilities and cost-effectiveness each year, it is clear that computers are hardly a stagnant market even for those architects who already own them.

The conferences, too, focused on integration

"Integrating CAD and specifications": Architect Mark Kalin talked about the advantages of linking drawings and procedural and product descriptions through such new proprietary systems as SweetSpec. Primary among the advantages was assuring that your building does what it is supposed to do—"particularly



Architect Mark Kalin on integrating CAD and specs.

important if you're designing, for instance, a nuclear plant," he said. Integration allows you to keep track of the implications of your actions, such as when an engineer wants to run a pipe through a fire-rated wall. "Capabilities of machines are now way ahead of architects' capabilities to use them," he said, "but, at least, the machines can help them to ask the right questions." And the myriad of questions the machine will ask will result in a simpler spec.

Computer suppliers and seminars reveal that—in many cases—the future is here. Talk in previous years about systems integration, expert systems, and greater user accessibility seems to be coming a lot closer to fruition.

Carolyn Koenig photos



The imagination machine: rolling balls on 250 feet of raceway and 34 gears moving 68 pulleys add some fun to Calcomp's booth.

He pointed to the advantages of packaged proprietary systems: "We spec writers overstep our bounds when we think we know more about manufacturers' products than they do." And, he added: "Word processors are great tools for word processing, but they won't do the job alone on specs."

"Automating the marketing function for maximum effectiveness": This panel focused on integrating information retrieval, scheduling, and desk-top publishing. Gerry Ramsey, Austin-Ramsey Architects: "Eighty percent of your work comes from 20 percent of your clients and 80 percent of your time is spent capturing 20 percent of your work. Computers can get you out of this." For instance, they can track the crucial times to contact client leads. And they can tell you how much effort contacting them is worth by giving a priority of desirability and probability of success. What other types of information does

he enter? "Who gave you the lead so you don't pass it along to his competitor."

Randy Mason of Cash & Associates Engineers thought computers overcome engineers' natural reluctance to pursue marketing. "They would rather design than market. But they *do* like to use computers." Keep the marketing functions simple, he said. "The more time it takes to enter data, the less likely the system is to be used." One of the functions his company uses computers for is to turn out professional-looking proposals, complete with high-resolution graphics. Another is to feed information into those proposals.

Is just having computers a good sales tool in itself? Said Ramsey: "They make some clients afraid." Added moderator David Dretzka of the Catalyst Marketing Group: "Feel clients out. If they don't show interest, don't push it."

"Developing knowledge-based systems for design problem-

Continued on page 35

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solving”: Jung/Brannen Research & Development Corporation president Bruce Forbes talked about the fast-changing knowledge and interconnectivity capabilities of systems and urged conference attendees not to waste time trying to perfect a system for long-term use. “Don’t try to go from points A to B; aim in between.”

He talked about the problems a packager of systems such as himself has in knowing what users want. For instance, in perfecting a system for facility managers, he found that what they wanted first was not graphics capabilities, as he had thought, but “hybrids” that would tell, e. g., the thickness of a particular wall. And he talked about the advantages of relational databases that no longer must go back to the primary steps in information input, but can answer questions directly through “the



Architect David Jordani points to the future.

partitioning of knowledge.” Of course, he added, the use of such expert systems must include verification that the data you receive is the data you wanted. Other uses for the verification process? “You can show a client that the building he wants for X dollars will wind up costing Y dollars down the road.”

In a further pitch for prepackaged systems, he maintained that the optimum system should be 80 percent off-the-shelf, 15 percent modified by



The view from the top of McGraw-Hill’s double-height booth shows one of three halls in Anaheim filling fast and early.

the user, and 5 percent created new (preferably by an outside hack, he advised). “If you buy a prepackaged system, you can see if it is what you wanted.” When you do develop your own system, “the more people you have working on it, the better your efficiency because of the ability of people to bounce ideas off one another.” Some new services architects will be able to offer with the use of new systems: real-estate-acquisition feasibility studies and maintenance and operations management.

“Training and staffing for CAD—The human resources factor”: “Why do we want to have CAD?” asked Kristine Fallon, president of Computer Technology Management Inc. “To attract the best staff” was one answer that was certainly a turnaround from sessions at previous years’ seminars that dealt with how to get people to use CAD. “It gives people power,” she added. Well, perhaps more to the point was her observation that “it allows the more knowledgeable people to do more of the work.” In a recognition that the motivation problem was not entirely licked, she advised on how to select the

people who would use CAD. “Talk to them. Don’t try to second-guess their interest.” The special problems of CAD operators in offices where not everyone uses it: isolation, limited professional growth, and stress-induced illness.

“Computer-aided practice: Automating the small office”: Architect Frank Mascia of the Collaborative Design Group said that there is no magic-bullet solution to automation in small offices—that systems for them are made up of small pieces tailored to fit individual needs. To make the problem more difficult, he pointed out that such offices have a difficult time finding consultants to fulfill their needs and that the majority have no standard methods for doing things. Still, he said, standardized methods do not have to mean standardized products. What the small office should concentrate on, he advised, is automating repeating functions—many of them nongraphic, such as specifications, transmittal letters, memos, change orders, and pay checks. “Pick on those functions for which your existing strengths can be improved.”

And, he concluded, leave the big expensive systems to the big offices that can afford them.

Growing markets, growing companies

Sponsors Borkovich and Hough claim that half again as much exhibition space as this year’s has already been sold for Systems ’90 (in Atlanta)—to half as many exhibitors. What does this mean? Companies are getting larger. Faced with increasing research and development costs, some are pooling their resources. The company you buy from today may not be the same one you buy from tomorrow. At the show, the acquisition of Microtecture (the makers of DataCAD) by CADKEY was announced. Said CADKEY representative, Edward Heywood, “The two companies’ products are complementary, augment each other, and operated similarly enough that we were able to have the systems talking to each other in 20 minutes.” Other companies have recently announced similar mergers. And a takeover war for Prime by MAI Basic Four Inc. is currently raging. Even IBM, which has long had a reputation for being ahead in its own product development, seems to have realized that it can no longer hope to keep up with the costs of being all things to all people and has assembled unto itself a family of third-party suppliers and outside developers—such as Jung/Brannen in the facility-management area and SOM for its new basic architectural CAD system. Says IBM marketing manager Michael L. Davies, “We would rather sell our hardware even if it means using other companies’ programs running on it than not sell it at all.” It should be an interesting year ahead and Systems ’90 should show some interesting results.

*Charles K. Hoyt
More business news on page 37*

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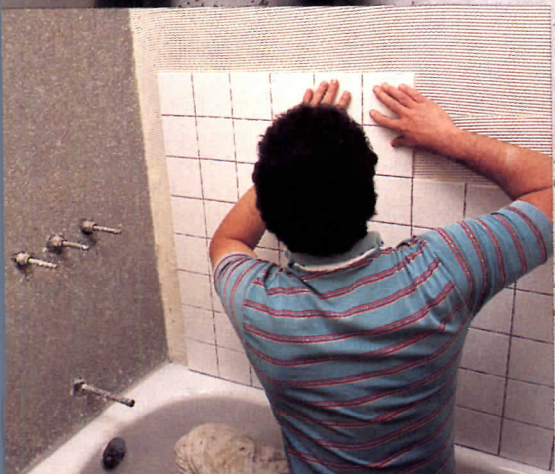
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A/E/C tutorial reveals high interest by architects in facility management

At the tutorial on CAFM implementation, "I had to throw my prepared text away," said consultant Eric Teicholz of Graphic Systems Inc. Of the 100 people turning up for his tutorial designed for facility managers, 90 turned out to be architects. Herewith his account:

"As the cost of space and energy rises, the cost of computer technology declines. Managing space efficiently has become a major preoccupation for American corporations."

He told of a recent survey of some 4,000 facility managers: "Of the three major CAFM applications found, two (space



Graphic Systems president Eric Teicholz on micros.

planning/allocation and architecture/interior planning) are graphic in nature. Most corporations' facility departments are treated as overhead. Thus, they tend to be overworked and understaffed. But corporations have up to 25 percent of their assets tied up in real estate and are used to spending large amounts of money for consulting designers. And their in-house departments are not trained in CAFM. It is therefore natural for them to turn to their designers.

"Before implementing a CAFM system, analyze its potential. The next stage in the implementation process is to assess in-house hardware, software, and long-term needs. Third-party solutions for applications software should be used whenever possible."

A/E/C speakers and panels cover the future of computing—and more

RECORD software consultant Steven Ross chaired a session on the future of the computer in architecture. Repeating an often-heard theme at this show, his panelists saw the future as one of networked systems sharing files, and of entire projects being done on CAD. This, in turn, would allow drawings to be only one view into the overall project database.

"But the overall idea is still a long way off for most firms," said Ross. He insisted, however, that the fault does not lie with architects, but instead with the limitations of the technology: "Only in the past year or so has the power of inexpensive desktop systems improved enough to consider handling all the components of a construction project. Until recently, no one vendor in software or hardware had anything approaching a complete solution—or a true understanding of the problems architects face. But today, I doubt you will find a vendor on the floor who doesn't understand your business."

He reports on the other panelists' views: "Hugh Hempel, marketing manager for design and modeling for Apple, insisted that the Apple Macintosh has everything users need now. He then focused on systems and software integration, noting that the Macintosh-standard file structure allows the passing of data back and forth between different applications, such as CAD and databases. In the future, he said, architects will move beyond using the computer as only a drafting tool.

"Engineer Douglas Burnside with Data General said the trend is clearly to networks that pass information back and forth between different types of computers, as well as different applications on the same computer. Data General's own operating system, AOS/VS, is being supplemented and replaced with UNIX to make this easier.

"Trey Brady, marketing manager for printers and plotters at Hewlett-Packard, said that output, particularly to a plotter, is still a bottleneck. But he predicted a continuation of steady price decreases seen over the past few years. Electrostatic printers, he pointed out, which can produce a black-and-white plot far faster than a pen plotter, can be purchased for \$20,000 to \$30,000. Because they work so fast, they can work economically

relegate CAD implementation only to the computer-literate staff members, rather than the production-literate." Jordani found that fewer than a half-dozen attendees among the 150 present used CAD systems for anything other than 2-D drafting. "He talked about the use of parametric design for details," says Ross. Typical parametric systems present the designer with an on-screen fill-in-the-blank menu for



A panel chaired by RECORD contributing editor Steven Ross included (left to right) Douglas Burnside of Data General at

the podium, Ross, Hugh Hempel of Apple, Dr. Irwin Reps of IBM, and Trey Brady of Hewlett-Packard.

when more than 20 plots a day are required. Economic color capability will come to electrostatics, but pen plotters are still cheaper for color.

"Dr. Irwin Reps, described by many as the father of architectural and engineering systems at IBM, said his company could produce an integrated system today for everything from CAD to billing, accounting, project management, and facilities planning. "But you couldn't afford to buy it, or to take the time to learn how to use it."

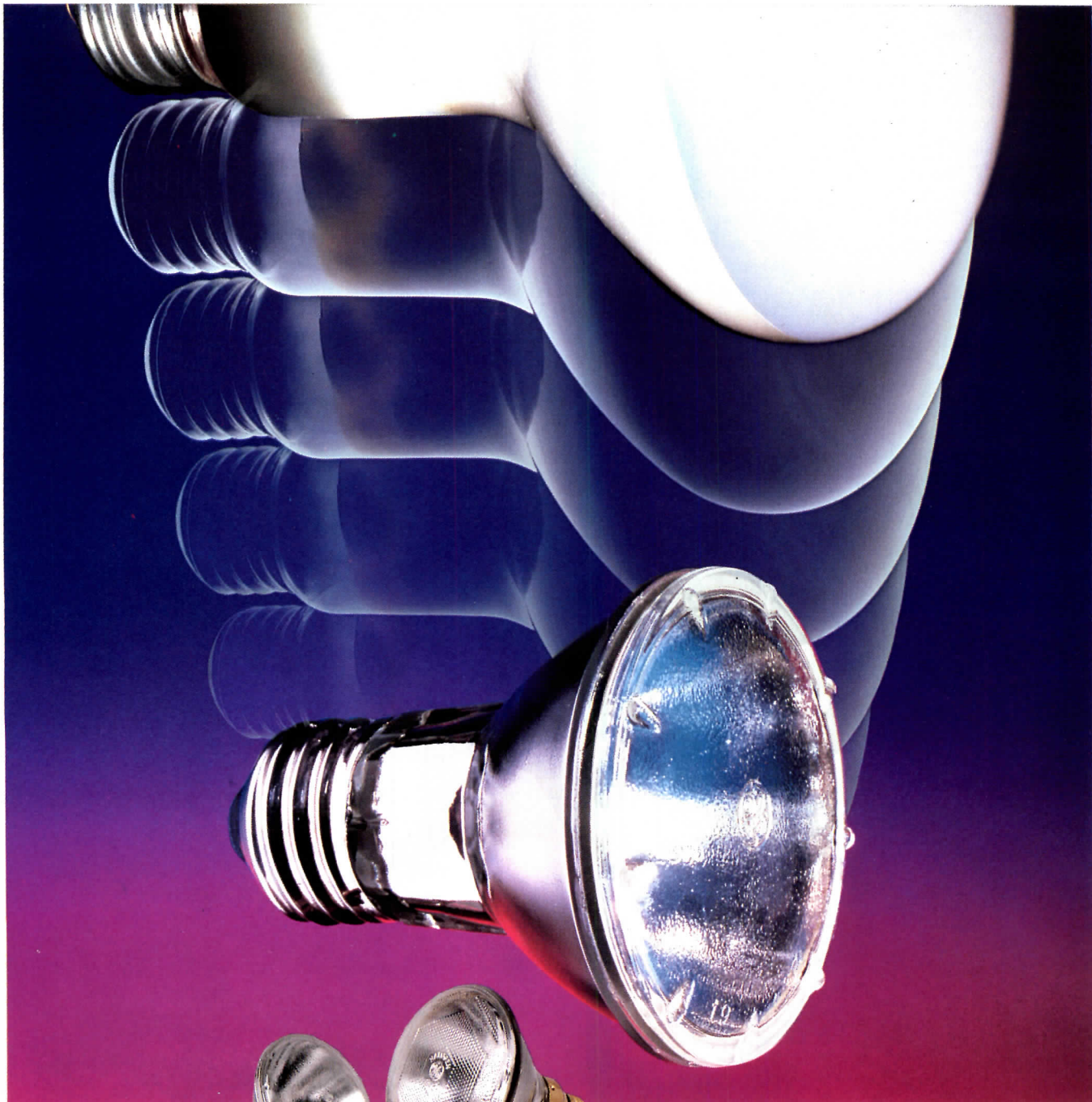
Ross also covered a session entitled "Implementing architectural CAD," and quotes speaker David Jordani, a consultant on automating large firms: "The biggest mistake is to

specifying, e. g., lengths, widths, materials, beam depths, and loads. The system then draws the detail.

"Jordani sees a clear trend toward UNIX-based systems because they are easier to network and to set up to do multiple tasks at once, such as file management and drafting. Networking allows several people to use the same project files with little danger that one is changing a wall as another is adding to it. Nevertheless, at least 80 percent of the audience said their systems were MS-DOS or PC-DOS only, and not UNIX."

More business news on page 39

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Construction makes a sharp rebound

What had been gloomily billed to be, at best, a gentle letdown in the entire economy has produced instead continued growth—including in construction. After a slow year's start with business indicators and construction taking the predicted downward course, both signals are now

green. Building construction in April, even in the face of high interest rates, rose by some 11 percent, leaving 1989's first four-month total up over last year's everywhere but in the South. For details, see *Construction costs*, page 44. *C. K. H.*

Opportunities for architects in those tax laws

A worry architects face is coping with changes created by The Tax Reform Act of 1986 that are just now being felt. A good example of the confusion generated is the Uniform Capitalization Rules, requiring large firms to capitalize expenses, such as supplies, equipment, and even the personnel to care for them, formerly deducted from income in the year they were made. Now, these costs must be deducted over periods of time according to depreciation schedules. Accordingly, this year's top tax-planning strategy, says financial and tax consultant Mark E. Battersby (photo), is changing your accounting system to comply.

On the plus side, he points out that a recent court decision that may provide architects a significant immediate tax deduction. Every firm has intangible assets less clearly defined than the standard ones, such as copyrights. Today, it is no longer necessary that an entire practice be discontinued before any tax deduction may be taken for their abandonment.

Battersby singles out another new benefit: The IRS noticed the burden of keeping capital accounts placed on partnerships that had never bothered with them before, and it created a

safe harbor, permitting any partnership that began operating before May 1, 1986, and which did not maintain capital accounts in the past as required, to now safely restate the capital account in such a way that partners may be able to carry more of any firm loss over to their personal tax returns.

Other important changes:

- New nondiscrimination rules. They are to ensure consistent and uniform distribution of all major fringe benefits.
- Interest capitalization. Architects have only until the 15th of this month to change their accounting methods to reflect the required capitalization of interest expenses.
- Tax rates. Both the personal tax rates paid by sole practitioners, partners, and corporate shareholders in architectural practices and the corporate tax rates have reached new, lower levels this year and tax strategy must be adjusted accordingly. *Charles K. Hoyt*



Housing bills, yes, but what are the chances of turning them into one good one?

Last month RECORD reported on two federal housing bills that, at long last, promise to get some badly needed action on housing for low and moderate-income people [June 1989, page 39]: a Senate bill, sponsored by Alan Cranston and Alphonse D'Amato and a House bill, HR 1180, sponsored by Henry Gonzalez. Certainly the climate for some form of housing bill seems right with a very visible HUD Secretary, Jack Kemp, being vocal about housing needs and possible cures [RECORD, February, 1989, page 23].

A Senate subcommittee aide says: "We are pushing to have the [Senate] bill reported out of committee by the August recess and have it on the floor this fall." He says the chances for passage are "reasonably good" this year.

A House staffer says [its] bill will certainly be taken up in the House; in past years, similar Gonzalez efforts were typically never even considered by the then-Republican Senate. But now the Senate is in the hands of the Democrats and the staffer is cautiously optimistic about passage.

But what would either bill, if passed, cost? The ballpark figure for the two-year Gonzalez package is \$23 billion for fiscal 1990. For fiscal 1991, the authorization calls for \$33 billion. Of this, a total of \$746 million is devoted to refurbishing Section 8 contracts, assistance to low-income housing, which is scheduled to increase dramatically to \$9.7 billion the following year.

The Cranston/D'Amato package in fiscal year 1990 calls for \$15.1 billion total spending, which is roughly 50 percent more than the baseline of \$10.1 billion established by the Congressional Budget Office. In fiscal 1991, Cranston/D'Amato call for authorization of \$15.7 billion, compared to the baseline of \$11.3 billion.

Aside from the obvious budget problems, there are also the problems of getting the two bills together and to make one final bill address all of the pressing needs.

The National Association of Housing and Redevelopment Officials represents virtually all the local housing agencies (some 3,000) and all community development agencies (some 700). Marion Morris, NAHRO's director of legislative services, fears that "quite frankly, we don't think that we will have an authorization bill this year," mostly because she thinks that Cranston/D'Amato and Gonzalez are so far apart that no agreement will be possible. She expects that the current authorization legislation simply will be rolled over into another Continuing Resolution, the pattern of previous years—especially, she says, "given the pace at which Congress is moving along and the long history of disagreement over housing policies between the two chambers." *Peter Hoffmann, Washington, D. C.*

Will the Congressional bills of Gonzalez and Cranston/D'Amato ever get together?

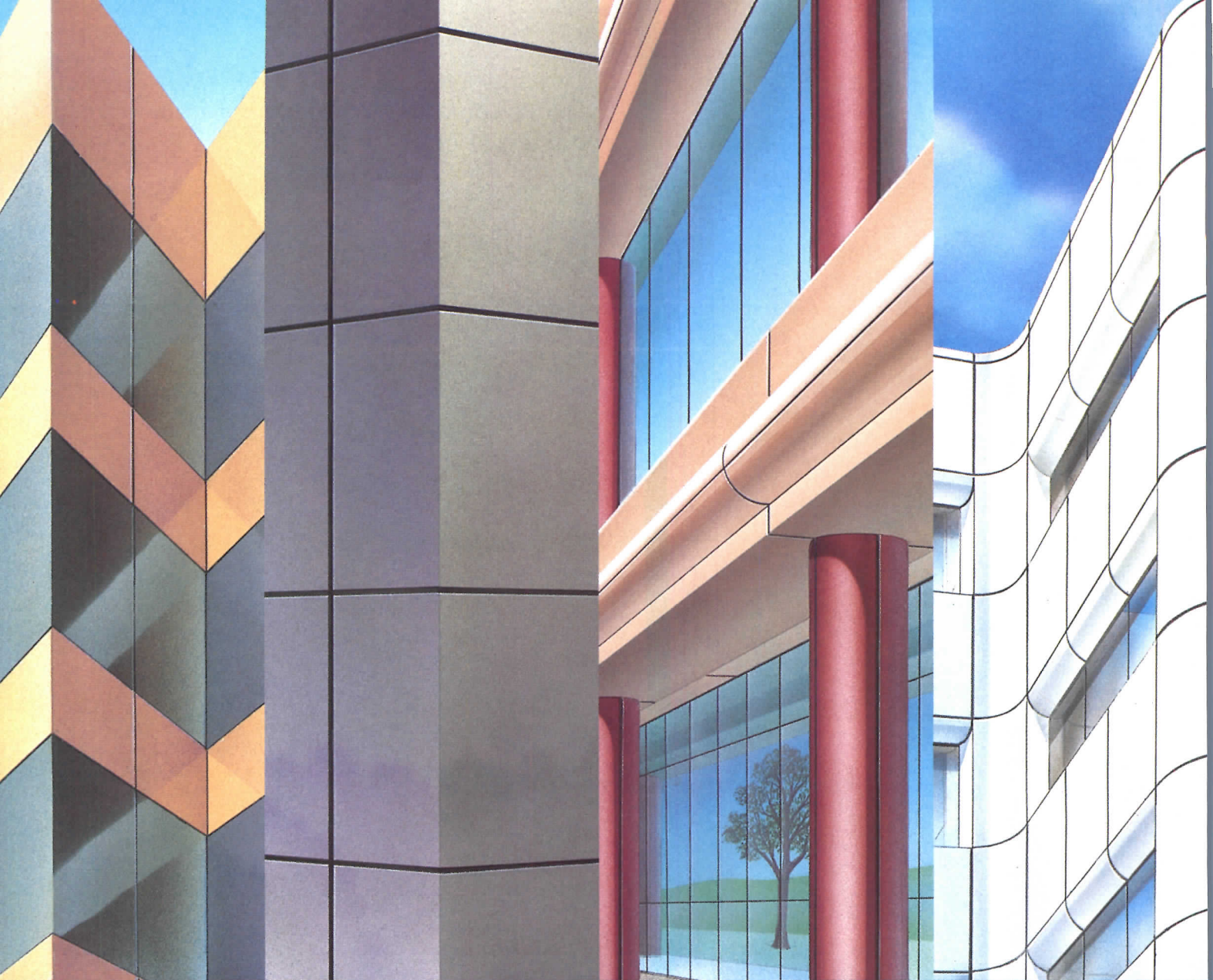


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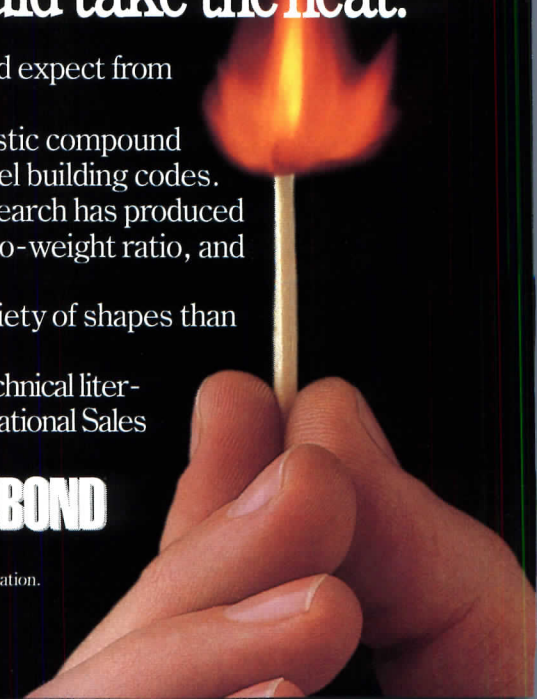
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Practice: Who will design buildings for human habitation? Part two

By Carl M. Sapers

In part one of his report, Sapers cited recent efforts by engineers to enter the field of building design—efforts, he contends, that are aided by the AIA. This is particularly disturbing to Sapers because the majority of engineers have no training in even the technical aspects of building design. Lunch, the former counsel to the National Society of Professional Engineers, does not, however, foresee a serious problem, pointing out that engineers with no knowledge of building design would be foolish to try it because, among other reasons, of their resulting liability.

But Lunch's definition of architecture may lie at the crux of the problem. Architect's work, he asserts, can be simply defined as the allocation of spaces, the direction of people through those spaces, and decoration of those spaces—along with facades. In part two of the report, Sapers presses Lunch to explicate further, in the belief that Lunch's own writings and past performance contradicted this position—as well as his earlier contention to Sapers that engineering, if not indistinguishable from architecture, is substantially overlapping.

Charles K. Hoyt

Sapers: Some of the state statutes don't recognize distinctions [between architects and engineers]. They are imprecisely drawn and can be read as describing architecture

Mr. Sapers is a partner in the Boston law firm of Hill & Barlow. His clients include architects around the world. He is adjunct professor at the Harvard Graduate School of Design, where he teaches legal problems in design. In 1975, he received the AIA Allied Professions Medal and, in 1988, was elected Honorary AIA.

and engineering in such similar terms that it might be hard for a judge to distinguish them. But you agree, notwithstanding that, that there are certain training, education, and examination requirements of an architect for those areas described as architectural, and there are



To interview Lunch (left), Sapers traveled to Washington and visited him in his current offices at Victor O. Schinnerer.

certain training, education, and examination requirements of a structural engineer for those areas described as structural engineering. Then, why do NSPE state organizations still claim there are no differences?

Lunch: I am not aware that they ever made that claim.

Sapers: Wasn't it made in the North case in New Jersey?

Lunch: No. The North case was about a simple residential structure over water supported by piles to keep it there, a minor project. Mr. North, as I understand it, is a registered engineer whom no one questioned on his qualifications in structural engineering. The architects are the ones who raised the issue and claimed he practiced architecture.

Sapers: But isn't it true that the briefs that were filed for the state NSPE chapters all said

Last month in RECORD, [June, 1989, pages 41-43], Sapers reported on the first part of his conversation with Milton Lunch, former counsel to the NSPE, concerning the increasing inroads engineers are making on architecture. This month, the two experts reach their conclusions.

essentially that an engineer can do anything an architect can do?

Lunch: I would rephrase it: I think they argued about overlap.

Sapers: The argument was that you cannot draw a line of demarcation and that argument meant that, if there was not complete overlap, the overlap

Lunch: Right.

Sapers: And we also agree ordinary mechanical engineers may know a great deal about environmental systems, but don't know anything about the fire rating of gypsum wallboard.

Lunch: Let's assume that. Though, they may have picked up knowledge along the way.

It boils down to who has the greatest breadth of knowledge to best control design

As Professor Salvadori, the famous structural engineer, once observed: [The architect] must know about so many specialties that he is sometimes said to know nothing about everything, while the engineer is more narrow in his focus and is sometimes said to know everything about nothing. Thus, the architect has taken academic courses in structures and mechanical systems and his registration examination tests his capacity in both areas. He is not qualified to design complex mechanical and structural systems, but he must understand when a system is complex and when specialized consultants must be called in. It is precisely the lack of such knowledge on the part of an engineer about areas outside his specialty that gives rise to serious public-safety issues when a mechanical engineer designs structural systems or architecture. As we both agree, it is important to know when a problem arises that requires a kind of plenary knowledge of the situation, which leads to the question of the prime professional.

The prime-professional question could also be seen to boil down to money

Lunch: You know, as I have observed, the real issue behind all this is money, which the prime professional controls. It's an old, old argument, which you and I are not going to solve, that

Continued on page 42

the architect squeezes the engineers. Of course, my answer is, don't take the job. I say that the real issue motivating the architects, without casting aspersions on them, is money. Who is going to control the money? Now, if the owner decides that he wants the project to be designed by an engineer, that's the owner's choice.

Sapers: But we don't have a system in the United States in which an owner is allowed to do whatever he wants with his building; we have at least two restrictions on him. One is that he is required to hire a licensed professional designer. The second is that he is required to submit plans and specifications for a building permit. We restrict what an owner can do in order to produce a safer building for the use of the public. Isn't that true?

Lunch: Yes, I think it's the same principle involved in restricting people from going out and buying medical services from whomever they want.

Sapers: In focusing on the prime-professional role, I have been arguing that our whole system presupposes that, when the public safety is implicated, the state has to protect the interests of the public. You agree with that as a basic proposition. Then I submit that the public interest requires that there be somebody coordinating all the parts of a building design who understands the implications of all the parts and how they fit into the whole.

Lunch: I think that's a little too broad. Philosophically, I agree that's desirable, but the real process to protect public safety is the building permit.

Do building permits safeguard against lack of overall control?

Sapers: If you believe that the building permit is the only protection for the public safety, why do you support an extensive professional licensing system?

Lunch: A lot of people are under the misapprehension that the building department of Washington, D. C., or Boston checks out massive blueprints and specifications. That's not the case. What they look at is whose name and seal are on them.

Sapers: Absolutely right, and that's why we need licensing.

Says Sapers: "I submit that the public interest requires that there be somebody coordinating all the parts of a building design who understands the implications of all the parts and how they fit into the whole."

Lunch: Exactly, and the law says, okay, Mr. Building Department, you can rely, subject to human frailty, that these plans and specifications are structurally safe because we have previously determined that Mr. X has qualified as a registered architect.

Sapers: Right. The system presupposes that the person who signed and sealed the drawings understands the implications of all their elements.

Lunch: That's basic.

Sapers: Therefore, I say that the person who is in that role must be a person who has been trained for that role, not simply that anybody in the design process can fulfill the role. The coordinator must be the person who understands all the elements the drawings contain.

Lunch: I think we are at odds here, Coordination has nothing to do with technical safety. I think of coordination as being the construction-management process.

Sapers: I am only talking about coordinating the design process. That is, taking all the elements of the design and making them work together. The design-process coordination must ensure that the public safety is protected. It must be undertaken by somebody who understands the implications of the various elements.

Lunch: The engineering groups—and I reflect mainly on my years of work with the Engineers Joint Contract Documents Committee—would basically agree that, under normal circumstances, when you have a major building, the architect is the logical guy to coordinate.

Sapers: When you built your own building in Alexandria, didn't you hire an architect?

Lunch: The NSPE hired Randy Vosbeck, past president of the AIA, because our guys are not fools. They know his firm, like any good one, has in-house or would secure qualified

specialists for the air conditioning, structure, and soils. In fact, there is currently an effort to separate the design services into separate professional contracts. I go to meetings and ask, who is going to coordinate? Everybody agrees it will have to be the architect. I don't know why owners would want to be bothered with negotiating and administering five different design contracts.

Engineers want prime contracts because they believe they get the short end of the stick

Sapers: Isn't it true that the consulting engineers have been in a difficult position? They've had trouble getting paid and in reaching owners directly. But their customers are architects and they don't want to take jobs away from them. Now they are saying, if the owner will hire us all separately, that will give us direct contracts. But, the NSPE, representing civil engineers in large number, pushed for the prime-professional notion.

Lunch: Let's examine that. If the builder of a major building, a new Empire State Building, says 65 percent of his money goes into engineering—structural, mechanical, elevators, etc. (and 65 percent is a commonly used figure), he could conclude that he'd rather have an engineer as the prime professional and have the engineers coordinate with the architect. He needs the architect for the facade, for space allocation, for pedestrian traffic, but he might rather have an engineer be the prime professional. Now, if an owner concludes that, I want to know what's wrong with it?

Sapers: First, the owner doesn't have the freedom to make that choice if the public safety is implicated. Second, the mechanical engineer that he's chosen as his prime is, after all, a person who doesn't know anything about a great number of elements in the building. He does know

environmental systems, but . . .

Lunch: In my hypothetical case, the owner actually hires a multidiscipline engineering firm.

Sapers: It still wouldn't know anything about circulation, fire safety . . .

Lunch: It would hire people to design circulation.

Sapers: But then we get back to the issue we discussed before. Your mechanical engineer prime cuts a hole through a gypsum-board wall and changes the fire rating. Does he understand the implications of what he's done?

Lunch: Don't you think a big, multidiscipline engineering firm would have people with sense enough not to do that?

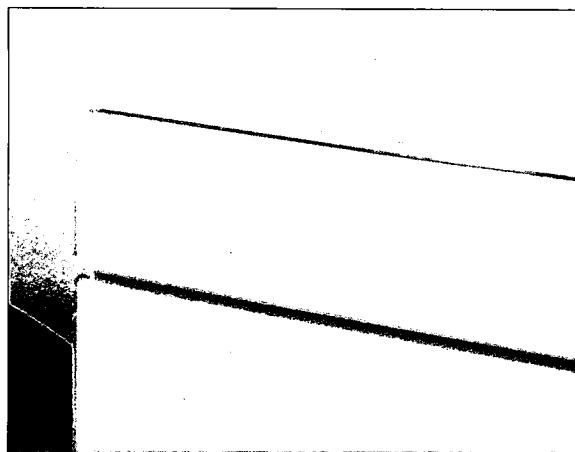
Sapers: Well, if it was a firm that had architects, I suppose.

We then discussed an important historic building used as a museum that needed a new environmental system. The federal government, as owner, engaged a mechanical engineer who suspended new duct work obscuring the 19th-century vaulted ceiling and generally destroyed much of the building's architectural distinction. Lunch argued that good engineers would have known better and would have retained an architect to assist them. I pointed out that, in addition to his coordination role, the architect is trained to help the client to program the client's needs. When the mechanical engineer is the one with direct access to the owner—in this case, the federal government—the architect doesn't have the opportunity to develop the program, and the result is the botched museum.

Lunch: Let me clarify something here. There never was a time when any part of the engineering community said: "We want to mount an effort to become the prime professional on an office building or a theater or a library or a museum." That was never the case.

In the end, I think the extent of our agreement on the respective roles of architects and engineers was more remarkable than our disagreements. While Lunch saw more possibilities for exceptions from the general rule, I think it fair to say that both of us see the design of buildings for human habitation as the responsibility of architects.

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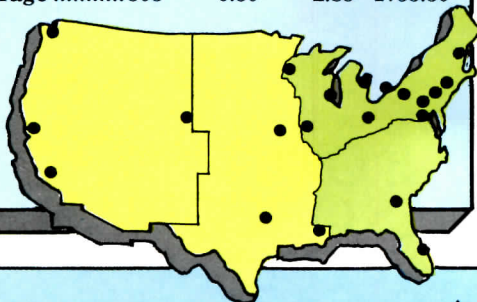


Construction costs: The best of both worlds?

Summary of Building Construction Costs

	Number of metro areas	1/89 to 4/89	4/88 to 4/89	1977* to 4/89
Eastern U. S.				
Metro NY-NJ	18	1.06	3.35	1957.45
New England States	33	0.66	1.53	1841.83
Northeastern and				
North Central States	120	0.73	2.00	1743.65
Southeastern States	106	0.88	3.85	1812.31
Average Eastern U. S.	277	0.80	2.74	1795.51
Western U. S.				
Mississippi River and				
West Central States	122	0.40	0.20	1704.54
Pacific Coast and Rocky				
Mountain States	106	-0.18	2.37	1804.87
Average Western U. S.	228	0.13	1.21	1751.18
United States Average	505	0.50	2.85	1755.50

*Using only cities
with base year of 1977



Can it be that we are about to enter a stable period for prices even while the pace of building stays brisk? After several quarters in 1988 during which it appeared that inflation was indeed taking hold—culminating in a 0.81-percent nationwide rise in costs in the third quarter, outdistancing any since 1984—costs took a welcome, if modest, dip of 0.04 percent in the last quarter. What did this mean? Was the much-heralded decline in the volume of construction finally being reflected in the law of supply and demand? Not exactly. The volume of construction was still rising in the Northeast (where indeed regional costs, despite the declining national average, continued to rise), but the Southeast, where volume was falling, also showed some increase in costs.

In the first quarter of this year, on which this report is based, construction volume fell broadly across the nation and this was reflected in a relatively modest 0.50-percent national cost gain—or 2 percent on an annual basis—well below predictions

from such authorities as Turner Construction Company, which had predicted 0.70 percent for the same period.

If this rate can be held, it will be good news because April saw us enter an unexpected revival in building (up 11 percent), leaving us only 2 percent behind where we were for the first four months of last year—or well ahead, if the South were taken out of the statistics.

Commented George Christie, vice president and chief economist for F. W. Dodge: "It shows the construction sector, so far, is taking this year's higher interest rates in stride instead of collapsing into a downward spiral." Residential building of all types, which is almost a third of all building, took the lead with a 16 percent showing. Even the formerly waning multifamily and hotel sectors went up. The next round of statistics on both costs and construction should be interesting ones to anticipate. For all this volatility bears watching. *Charles K. Hoyt*

Data supplied by Dodge Cost Systems, Marshall + Swift

Historical Building Costs Indexes

Average of all Nonresidential Building Types, 21 Cities

1977 average for each city = 1000.0

Metropolitan area	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
													1st
Atlanta	1171.5	1712.6	1925.6	2098.6	2078.0	2360.6	2456.7	2448.7	2518.3	2561.9	2580.9	2697.3	2729.1
Baltimore	1018.4	1107.7	1304.5	1446.5	1544.9	1639.5	1689.7	1703.7	1743.8	1765.2	1780.2	1849.1	1891.4
Birmingham	1029.7	1142.4	1329.9	1407.2	1469.9	1468.1	1535.7	1594.7	1565.7	1587.4	1542.6	1612.5	1629.0
Boston	1028.4	0998.6	1236.0	1283.7	1432.5	1502.0	1569.9	1646.0	1721.0	1773.6	1883.0	1921.6	1944.1
Chicago	1007.7	1032.8	1199.7	1323.6	1344.7	1425.8	1439.5	1476.7	1528.0	1599.9	1591.4	1636.5	1654.3
Cincinnati	0848.9	0991.0	1323.9	1385.2	1350.4	1362.6	1430.8	1484.5	1486.6	1499.4	1510.9	1526.8	1544.6
Cleveland	1034.4	1040.8	1287.5	1388.2	1459.5	1511.4	1475.9	1464.0	1474.1	1525.7	1541.8	1550.7	1536.1
Dallas	1042.4	1130.6	1431.9	1481.9	1750.6	1834.3	1925.9	1958.0	1963.3	1973.9	1947.2	1927.2	1930.0
Denver	1038.8	1100.4	1495.6	1487.4	1632.2	1679.1	1800.1	1824.3	1821.8	1795.8	1732.7	1725.3	1725.1
Detroit	1018.1	1087.3	1275.3	1447.4	1580.3	1638.0	1672.1	1697.9	1692.6	1696.6	1689.3	1734.4	1740.9
Kansas City	1023.5	0951.5	1125.8	1233.2	1323.4	1381.8	1407.5	1447.1	1472.5	1484.7	1493.7	1505.6	1511.7
Los Angeles	1022.5	1111.0	1255.3	1387.5	1474.3	1503.3	1523.9	1555.1	1571.0	1609.7	1675.1	1789.5	1784.8
Miami	1004.5	1080.9	1330.1	1380.6	1369.1	1392.1	1467.6	1522.2	1540.6	1566.2	1589.2	1625.2	1654.5
Minneapolis	1060.2	1196.8	1286.9	1327.7	1442.6	1576.8	1624.6	1640.4	1661.0	1674.0	1677.0	1690.6	1700.5
New Orleans	1001.3	1138.8	1291.9	1505.7	1572.7	1616.9	1650.5	1691.4	1762.5	1760.2	1699.8	1707.3	1706.9
New York	1005.4	1043.0	1247.1	1319.4	1419.2	1491.8	1672.5	1747.2	1806.7	1899.9	1980.9	2065.3	2091.3
Philadelphia	1013.8	1074.2	1487.5	1539.5	1660.7	1769.4	1819.5	1922.1	1967.9	1992.7	2023.5	2171.4	2216.4
Pittsburgh	1016.1	1015.0	1227.0	1341.7	1493.2	1479.5	1497.2	1576.1	1611.0	1665.8	1647.3	1700.3	1708.1
St. Louis	1039.1	1198.8	1275.9	1320.0	1397.3	1451.2	1524.9	1625.5	1641.8	1647.4	1653.5	1705.7	1727.7
San Francisco	1083.2	1326.8	1473.4	1644.8	1776.4	1810.1	1856.8	1935.3	1961.8	1995.5	1992.0	2090.9	2079.2
Seattle	1142.5	1137.9	1373.4	1616.8	1814.9	1962.7	1979.0	1948.9	1937.9	1925.3	1874.7	1968.0	1962.7

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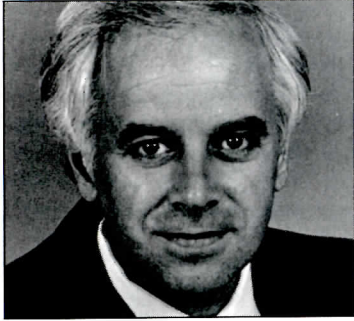
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Architectural education: Bridging the teaching/practice gap

By Anthony James Catanese



A major communications problem between the profession and architecture schools appears to be getting worse. Our college is developing an active program to try to improve that situation.

Much of the problem is based on familiar and continuing perceptions that are often out-of-date. (Some faculty fear loss of academic freedom. Administrators are leery of the sometimes opposing forces of accreditation and registration—in Florida, the registration board sets educational requirements for exam eligibility. Practitioners want a steady stream of talented new grads who can hit the boards running.) All of these concerns contribute to the teaching/practice gap. At its best, there is a misunderstanding of theory versus practice. At its worst, excessive criticism is destructive to all.

Like most communication problems, resolution can be found through interaction and *constructive* criticism. Educators and practitioners must get together in an environment of mutual trust and confidence. Professionals should experience what architectural education is like today and make suggestions to help provide a margin for excellence. Educators should listen to the advice and try to

Anthony James Catanese, Ph. D., is Dean of the College of Architecture of the University of Florida. He is the author of 11 books, including Introduction to Architecture, and Urban Planning (both, McGraw-Hill).

respond to mutual problems. There should be flexibility in the curriculum to allow change, and that may require improvements in accreditation and registration standards. Educators must combine academic freedom with innovation and improvements in teaching.

The College of Architecture at the University of Florida has been trying to implement these ideas. About half of its 1,800 students study architecture; the rest study building construction, landscape architecture, interior design, or urban and regional planning, in that order of magnitude. Thus, dealing with five accrediting boards, three state licensing boards, and two national certification boards for the different specialties complicates curriculum matters.

Advisory roles are important

We open all of our school councils, meetings, classes, and juries to interested professionals and encourage them to participate. Five advisory councils, one for each of the programs, have been formed for advice, review, and interaction—and also to help in fund-raising. The councils, of 25 to 100 professionals each, participated in a recent development of strategic plans to set the directions for teaching, research, and service; they are used by the administration to establish priorities and allocate resources. In a sense, this planning allows professionals to help chart the future course of education.

Virtually all of the juries for student work are composed of professionals as well as faculty. These jurors pay their own expenses and volunteer one or two days away from their firms in order to view the quality of students' work. Almost all academic leadership positions are filled through national searches, and every search committee includes practitioners.

While concerned debate on current disputes about education is vital, it is heartening that at least one architectural school—at the University of Florida—is taking the positive steps outlined here to work with practitioners. The ideas are not new, but summed up, they are impressive.

What amazes me is the willingness, indeed eagerness, that professionals show for these voluntary activities.

Practitioners should teach

In addition to the advisory and developmental roles, we have also sought to include practitioners directly in teaching programs as adjunct professors—architects, planners, designers, and constructors who teach on a part-time basis. This may range from a few lectures to a design studio. Similarly, we have an active program of visiting lecturers for one or more presentations each. While big names get much attention, there are dozens of others who can fill the lecture hall. We endeavor to include work of these part-timers in our publishing efforts.

Organizations should cooperate

During this period of establishing closer relations with practitioners, I was asked by the Board of Regents staff to form an architectural leadership group of the deans and other top administrators of Florida's architectural schools—the University of Florida; University of Miami; Florida A&M University; University of South Florida; and Florida International University. We have been meeting regularly with the Florida Association of the AIA and the Florida Board of Architects to find ways to improve architectural education. We are attempting to communicate better and resolve our mutual interests and concerns. This most often involves the match between accreditation requirements and Florida's education requirements for licensure. In addition, we have been developing a continuing education program which would be voluntary for registered architects. We are also working on similar programs for landscape architects and contractors. There

is much interest in continuing education for professionals in the Florida legislature, and we all want to be ahead of this trend.

Research should benefit all

Research and public service play major roles in universities today, and ours is no exception. Our research programs often involve matters that come to us from practitioners. Whether it be the development of processes for measuring radon leakage, or architectural amenities, or computer applications, we attempt to interrelate our research with practice. The contractors licensing board earmarks a percentage of its license fees for research on materials, methods, and processes of construction that is conducted by our college. Many of our public-service projects are "pre-professional" studies to chart actions that communities should take to improve their futures. We always recommend hiring a competent professional to implement the recommendations. Finally, our Caribbean Basin programs attempt to forge better relationships with neighboring professionals and U.S. firms.

Have we been successful? I think so. We have created a channel of communications that is clear and effective to help bridge the gap between teachers and practitioners. Now, do not get me wrong; we often disagree on matters and get into intense and long debates. In my opinion, that is exactly what is needed for better understanding. In a system based on mutual respect and understanding, debate and constructive criticism are signs of healthy conditions.

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Seattle CAPs downtown growth

By Douglas Gantenbein



The slow-growth genie that first popped out of a bottle in San Francisco in 1985 has spread north to Seattle. There, voters in May approved a measure that will limit the heights and densities of downtown buildings and slam a lid on the amount of office space that can be built in a given year. The measure, known as CAP (for Citizens Alternative Plan), passed with a whopping 62 percent "yes" vote.

Under CAP, buildings will be restricted to 450 feet in the downtown office core, 150 feet in the retail area. A downtown plan approved in 1985 has no height guidelines in the office core, although taller buildings were required to "earn" extra floors through a complex bonus system that swapped more height for amenities like sculptured building tops, day-care centers, and payments for low-income housing. Under that same plan, buildings in the retail core could reach heights of 400 feet if they included a department store or theater. CAP also cuts allowable floor-area ratios and restricts new construction to 500,000 square feet per year for the next five years, 1 million square feet a year for five years thereafter.

During the past five years, the city has been cloaked in concrete dust and snarled with maddening traffic jams due to construction on a half-dozen 50-story-plus office towers, a downtown convention center, an office/

retail center developed by The Rouse Company, and an underground bus tunnel.

Last spring a group of citizens unhappy with the rush of downtown development circulated a petition calling for growth limits. The petition struck a nerve in residents concerned about the rising price of housing, traffic problems, and a wave of apartment construction. Whether or not those problems were linked to downtown, the big new towers there were a visible target. To the astonishment of the city council, which with the development community had ignored calls to review the 1985 plan, the group produced 13,000 signatures, forcing the May vote.

The fight over CAP was bitter. CAP was painted by its foes as the work of an elitist group bent on keeping their piece of paradise intact while pushing a measure that would stunt the Seattle economy, raise taxes, and encourage suburban spread. CAP backers countered that their goal was to wrest control of Seattle from a tiny group of powerful developers and politicians. "This is an issue of their profits versus our city," said Peter Steinbrueck, a Seattle architect who suggested CAP. The majority of local architects, however, weighed in against CAP. Seattle AIA Chapter President Thomas Emrich wrote a letter to members pleading

that planning not be exercised by popular initiative.

Despite its success, CAP leaves a number of questions unanswered. Among them are how development rights will be awarded under CAP. One suggestion is that a design review process be linked to a project's environmental impact.

Perhaps the biggest question about CAP is whether it will have any real impact. Nearly a dozen major projects either unaffected by CAP or vested under the old plan are in the works, which should keep construction crews in Seattle busy through 1991, when CAP permits the city council to review the plan. Some hope that by then an alternative to CAP can be written.

In any event, CAP already has sent a clear signal to others who are dissatisfied with the pace of growth in the booming Puget Sound region. Suburban areas north and south of Seattle are home to nascent slow-growth movements. And in June the city of Bellevue, which since 1980 has developed a substantial office and retail core to the east of Seattle, passed a traffic ordinance linking building permits to the pace of road improvements. "It's the temper of the times," said Emrich.

Douglas Gantenbein is a free-lance writer who works in Seattle.



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News briefs

Containing the Pacific Basin

Richard Rogers has received the 1989 Arnold W. Brunner Memorial Prize in Architecture, presented by the American Academy and Institute of Arts and Letters. The citation praised the British architect's development of "an inherently dynamic compositional/collage esthetic . . ."

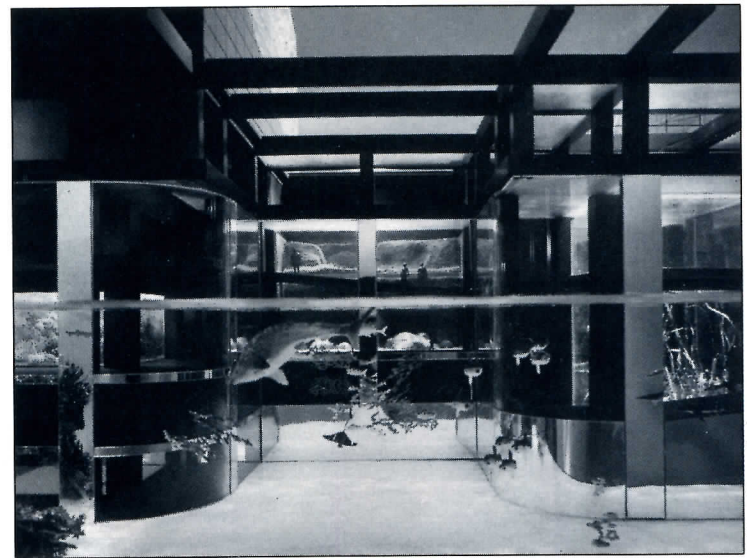
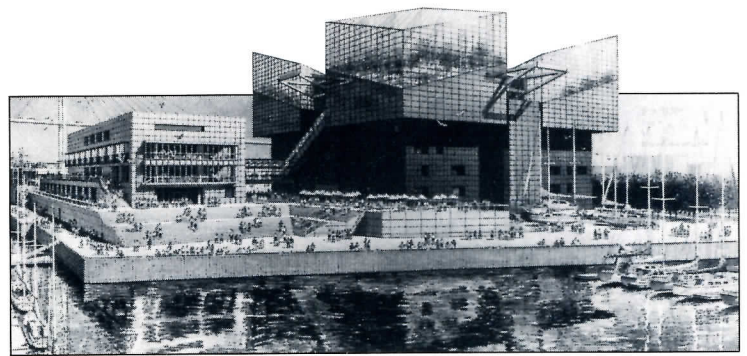
Learning by doing: as part of the required First Year Building Project and under the auspices of the nonprofit organization Habitat for Humanity, a group of graduate architectural students at Yale University has designed an affordable two-family house for New Haven, and, with the assistance of the future homeowners, will also build it.

The Design Council of the Bay Area will unify regional design disciplines, including architecture and interior design, in the newly formed organization. Though a nonprofit corporation, the group was created with an eye to future profit for its members: it will endeavor to convince businessmen of "the crucial difference that design plays in business performance, profitability, and prestige."

Architectural commissions: Lane, Frenchman & Associates of Boston were retained by Johnstown, Pennsylvania, to develop a plan for preserving and revitalizing the city for the centennial of the Johnstown Flood; Marmon/Simpson/HOK Design Team will design a new multipurpose domed stadium for San Antonio; the Santa Monica firm Morphosis has been commissioned to design an addition to the School of Philosophy at Princeton University; Paolo Soleri of Scottsdale, Arizona, will design a building at the University of Rome (Italy), on a site not yet determined, as a result of winning the Utopus Award in Architecture at the Third International Convention of Utopias.

A 1.2-million-gallon fish tank will lie at the core of the Osaka Aquarium, now under construction. The ceramic-tile building, designed by the Massachusetts architect Cambridge Seven, will lead visitors to the top of the building, where they will circumambulate four glass pavilions housing displays of coastal environments around the Pacific Basin—Japan, the United States, Central and South America, Antarctica, the Antipodes. Descending a sloping footpath, visitors will pass behind glass walls beneath the water and will see from there schools of small fish, as well as sharks and other large fish.

Designer Peter Chermayeff thinks of the volcanic perimeter surrounding the Pacific, the so-called Ring of Fire, as the building's binding metaphor. Gantries projecting from each of the building's faces will support real fires after dark.



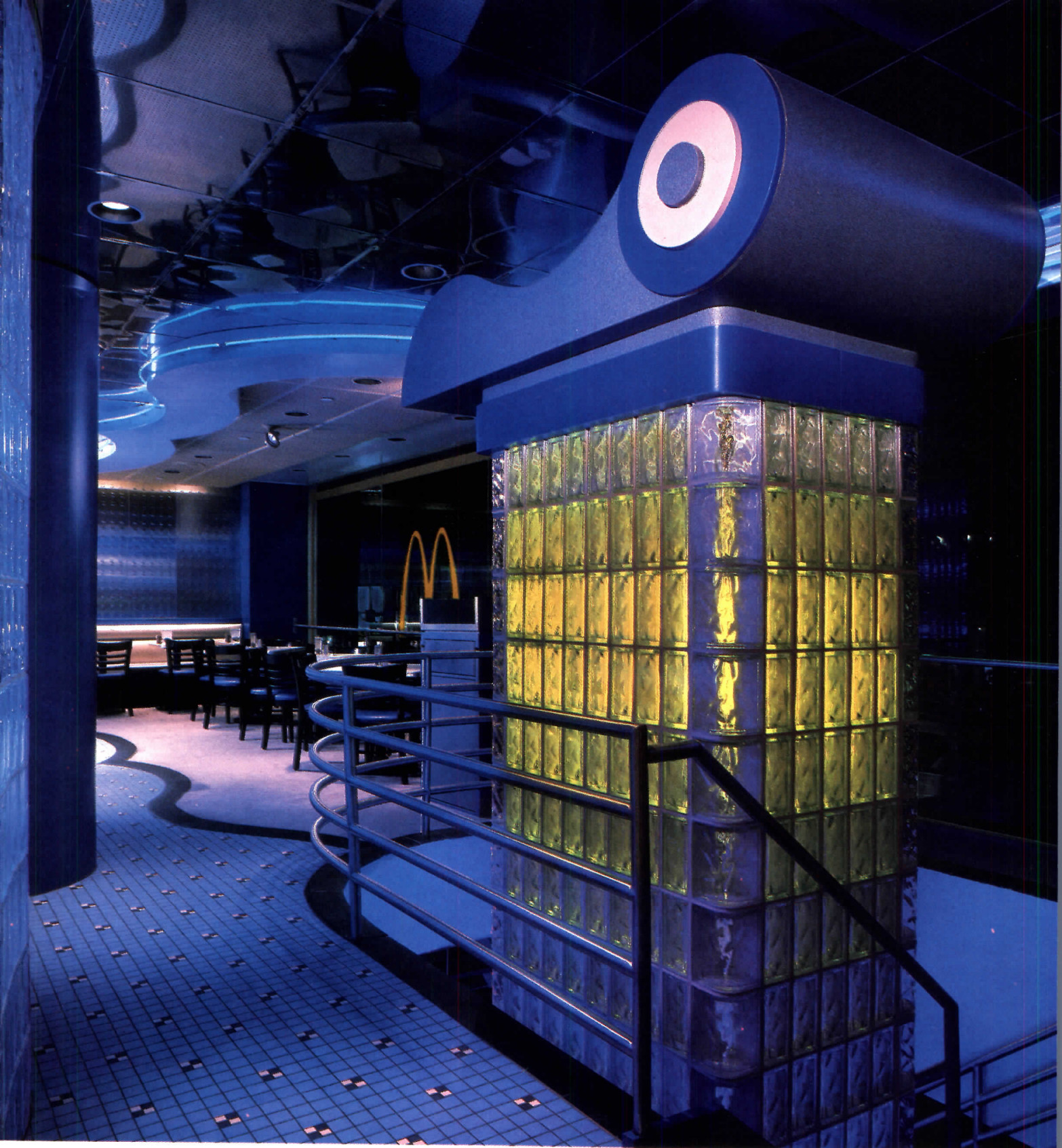
© Steve Rosenthal

Police officers in memoriam

Since 1794, approximately 30,000 federal, state, and local police officers have died in the line of duty. Fifteen national associations of police, along with organizations of survivors and other family members, have formed the National Law Enforcement Memorial Fund and have commissioned a design for a national monument in Washington, D. C.

Designed by Washington architect Davis Buckley, the memorial will be sited, fittingly enough, in Judiciary Square, with courthouses on three sides and the National Building Museum on the fourth. Though the design will include bronze statuary, a fountain, and a subway exit, the memorial will consist essentially of a quiet urban plantation and a granite oval "pathway of remembrance" containing the engraved names of each of the 30,000. The names, arranged randomly, will be located by computer.





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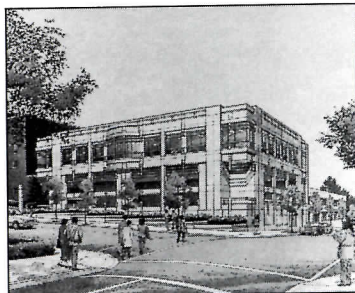


News briefs

A transparent canyon



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2



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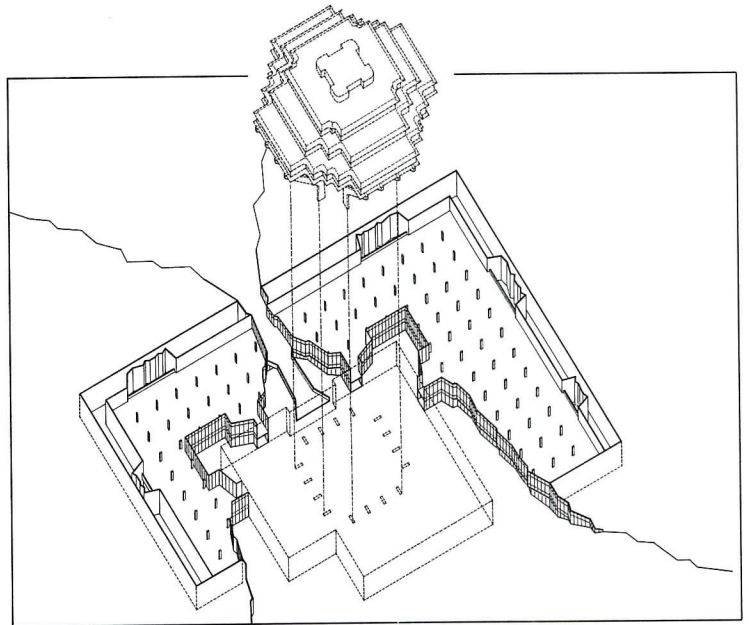
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The UCSD Satellite Medical Facility (1) on the La Jolla campus of the University of California at San Diego was designed by Stone Marraccini Patterson, of San Francisco, and Delawie/Bretton/Wilkes & Associates, of San Diego. Comprising a 120-bed hospital and a center for ambulatory patients, the \$74.4-million center will be the first project in a 40-acre medical campus master-planned by the architects.

The Women's Pavilion at Deaconess Medical Center in Spokane (2) will provide a birthing center and neonatal intensive care. The \$16-million, 372-bed facility, which will need both new construction and renovation of a 1911 hospital, was designed by Kaplan/McLaughlin/Diaz Architects, of San Francisco, with two firms as associates—Brooks, Hensley and Creager, and Deeble, D. E. Neff, Barton Architects, both practicing in Spokane.

The James J. Howard Marine Laboratory (3) will occupy an exceptionally sensitive site in New Jersey's Fort Hancock Historic District at the tip of the Gateway National Recreation Area. The new building, designed by Beyer Blinder Belle of New York City, calls for the rehabilitation of a historic barracks as well as a new lab. The buff brick walls and gabled roof are meant to evoke the characteristic historical forms of the 300-building complex.

A mixed-use building in Cambridge, Massachusetts (4), though not itself a medical building, will occupy a site in the Longwood Medical Area. Arrowstreet Inc., the Cambridge-based architect, was obliged to mediate the high-density scale of hospitals on one side of the site and the two-story scale of a school on the other. The \$23-million building, developed by the Medical Area Service Corporation, will include a child-care center, offices, and parking.



In the process of designing the Central Library addition underground at the University of California, San Diego, Gunnar Birkerts confronted two preconditions—one architectural, the other natural, neither of them allowing an overt design statement. William Pereira designed the original library in the 1960s, and the UCSD's student body holds dear its ziggurat tower, which has become a visual symbol of the university. There thus could be no question of replacing the outgrown facility.

A two-story pedestal beneath the ziggurat sits at the narrow

end of a canyon. To maintain the site's natural conformation and at the same time to open up the space blocked by the older building, Birkerts followed the canyon's sides with glass walls "like transparent fault lines in the rock." A 20-foot service corridor at the edge will provide five skylit atriums with glass sides for backlighting—a necessity, Birkerts holds, for effective subterranean daylight.

The building, for which Birkerts's office in Birmingham, Michigan, is the design architect and BSHA, Inc., of San Diego the architect of record, will cost about \$31 million.

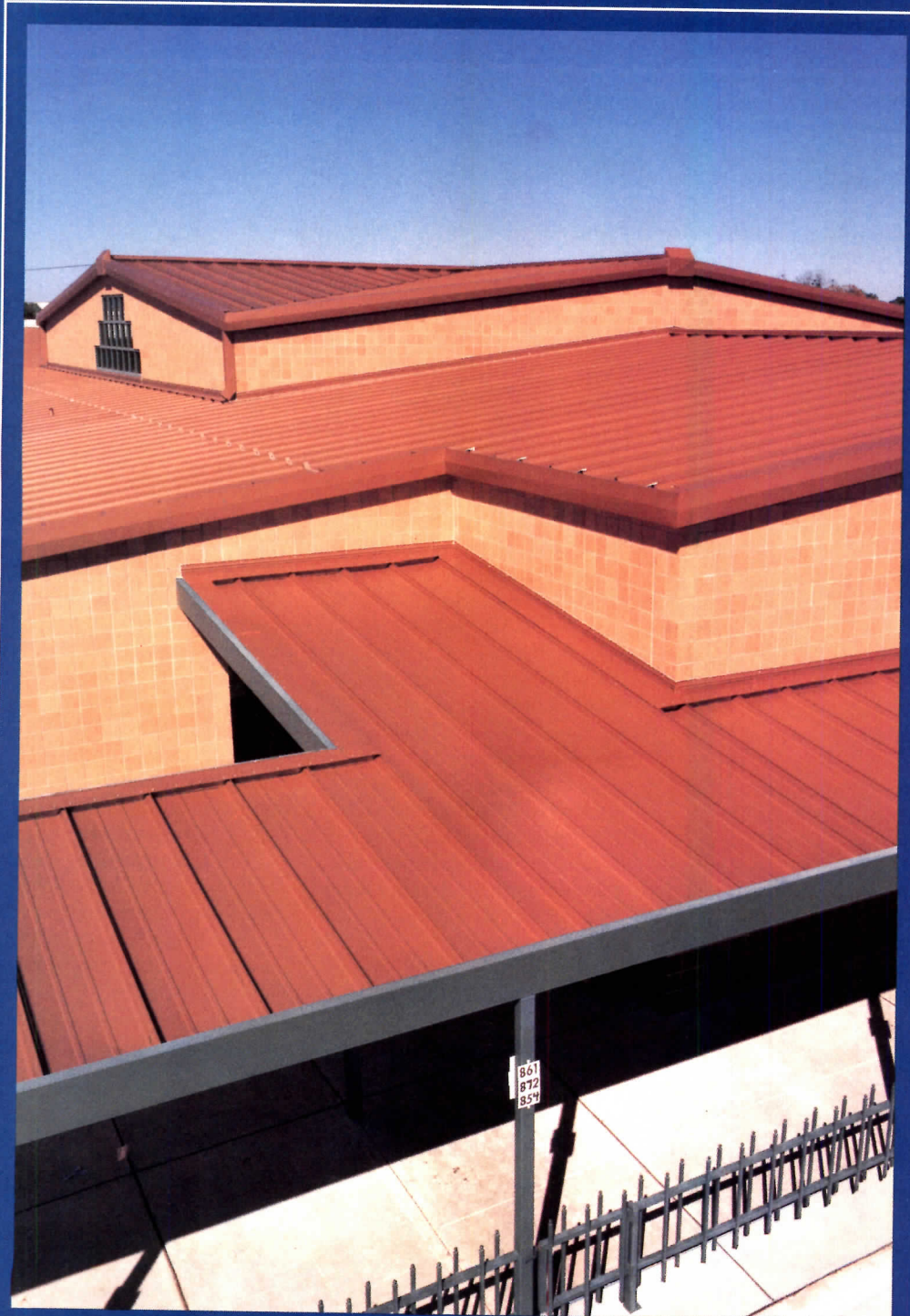
Competition calendar

•The Precast/Prestressed Concrete Institute invites entries for its 1989 Design Awards. Due July 31, entries may be either American or Canadian structures using plant-manufactured precast/prestressed concrete or architectural precast concrete. For forms and information:

Precast/Prestressed Concrete Institute, 175 West Jackson Boulevard, Chicago, Illinois 60604 (312/786-0300).

•For a future exhibit and for use in its quarterly publication, *Blueprints*, the National Building Museum seeks photographic images of construction workers in action. Up to six images, three each in color and black-and-white, are allowed to each entrant, and material is due by August 15. For rules and entry forms: Photography Contest, National Building Museum, Judiciary Square, N. W., Washington, D. C. 20001.

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Architect: Cavitt McKnight Weymouth Inc.

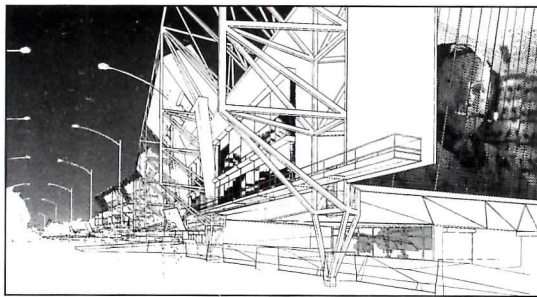
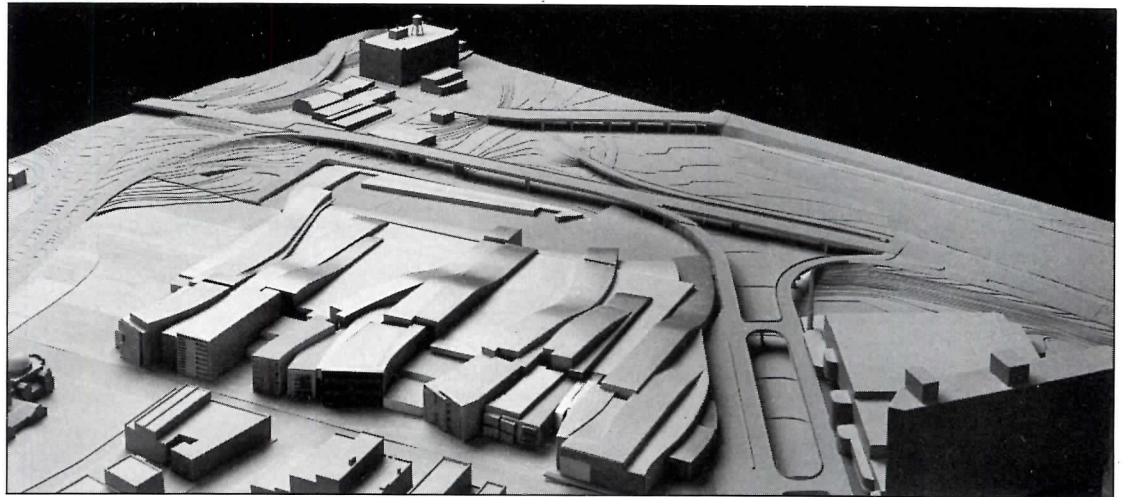
Project: Brenham Intermediate School
Brenham, Texas

Buckeye competitions: One for Columbus . . .

Columbus, Ohio's, invitational competition for its projected convention center attracted three designs that differ as markedly from one another as each of them does from conventional architecture elsewhere in the city.

The winning entry (top right) was submitted by Trott/Eisenman, a joint venture of Richard Trott & Partners of Columbus and Eisenman Architects of New York City. Peter Eisenman says that his design deliberately contradicts the typical image of "large and neutral convention centers" with their "homogeneous concourses." The building of necessity has its lateral and transverse concourses. From the exterior, however, its parts are broken up into sinuous sections of comprehensible size. The sections gain further individuality along the High Street front, where staggered end walls, finished with different colors and different materials, offer entry to multistory atriums around which meeting rooms cluster.

Runners-up in the competition were each awarded \$45,000. They included the entry of Holt Hinshaw Pfau Jones of San Francisco, in association with John B. Foster and Associates,



Artlog/D. G. Olshtansky

Inc., of Columbus (lower left) — a high-tech Brobdingnagian structure that called for 24-foot-deep steel trusses spanning 270 feet and set on 120-foot centers.

The design offered by Acock Schlegel Architects, Inc., of Columbus, in association with Michael Graves, Architect, of Princeton, New Jersey, would

have interposed a public garden between a large exposition hall and a ballroom pavilion across the site (lower right).

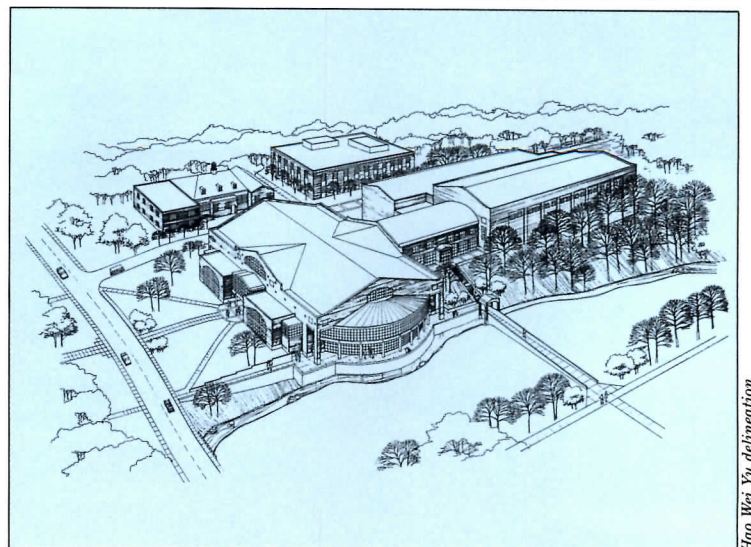
The entries were publicly exhibited and discussed, but the final decision was made by a nine-member jury: architects Robert S. Livesy, John Burgee, and Paul A. Kennon; Martha E.

Huestic, Joseph P. Jester, and Claire Sawaya Hazucha, of the Franklin County Convention Facilities Authority; Ronda Evans, of the Italian Village Commission; Frank Por, manager of the Dallas Convention Center; and Merribell Parsons, director of the Columbus Museum of Art.

. . . one for Marietta

Marietta College in Marietta, Ohio, selected Jones Architects and Engineers, Inc., of Indianapolis to design a \$7-million brick and limestone recreation center as the result of a small invitational competition. In addition to a 25-meter swimming pool on its lower level,

a 160-meter track upstairs, and several racquetball courts, the building will contain offices and classrooms for the school's sports medicine and athletic programs. Each end of the building will have a bowed wall with mullioned windows. At one end, a terrace will allow views into and out of the swimming pool (right), and at the other end, a similar wall will face the student center. The swimming-pool terrace will overlook Goose Run, a creek that students will cross by a small covered bridge. A barrel-vaulted gallery will join the center with an existing fieldhouse.



Hao Wei Yu delineation

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Design awards/competitions: 1989 CCAIA Design Awards

In its 1989 Design Awards program, the California Council, American Institute of Architects, gave 10 Honor Awards and 10 Merit Awards. Four buildings were further distinguished by the People in Architecture Awards, described by a spokesman as "a sort of gold star" signifying especial sensitivity to user needs. Members of the awards jury included Hugh Hardy, of the New York City firm Hardy Holzman Pfeiffer Associates; George Hoover, of the Denver firm Hoover Berg Desmond; and



1 Tom Rider



2 Balthazar Korab



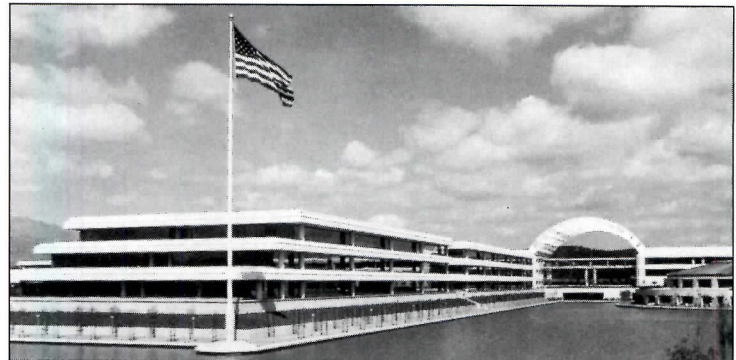
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1. St. Francis Square Cooperative Apartments, San Francisco; Marquis and Stoller Architects (25-Year Award). Designed as moderate-income housing for a competition sponsored by the International Longshoremen and Warehousemen's Union and the Pacific Maritime Association, the project was part of the city's Western Addition redevelopment. "It is a living piece of architecture," the honors jury said, "not just a drive-by artifact."

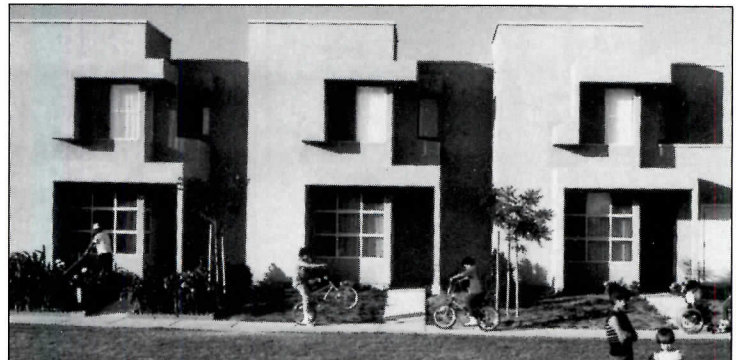
2. Columbus City Hall, Columbus, Indiana; Skidmore, Owings & Merrill/San Francisco,

architect (Honor Award). The limestone building presents a two-story monumental facade to the town's main street and the county courthouse. "This building summarizes a great sense of community pride," said the jury, "which is one of the most difficult and most important things architecture can do."

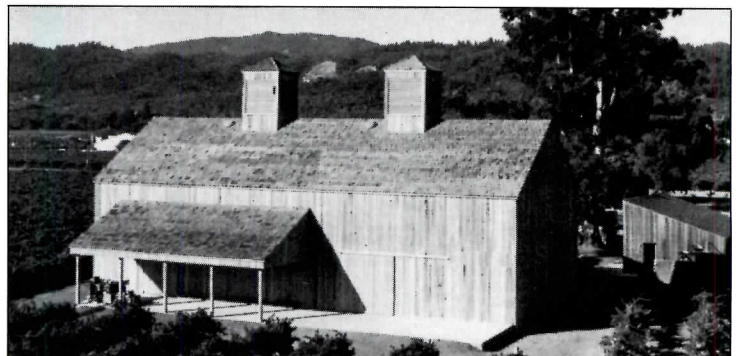
3. The Grand Floridian Beach Resort, Orlando, Florida; Wimberly Allison Tong & Goo, architect (Honor Award). Designed in Victorian style to agree with the fantasy of its location at Walt Disney World, the hotel had also to



4 Hedrich Blessing



5 Wayne Cable



6 Reverdy Johnson

accommodate an existing high-tech monorail. "Fantasy is a perfectly legitimate architectural problem," the jury declared.

4. Pacific Bell Administration Complex, San Ramon, California; Skidmore, Owings & Merrill/San Francisco, architect (Honor Award). The 2-million-square-foot building comprises four wings that define outdoor quadrants, one of them landscaped open space with an 1,800-seat dining facility. "This is a big building done in a way that is convincing . . . [it] creates a place of center and community gathering for all of those who inhabit the building."

5. Cabrillo Village Farm Workers Housing, Saticoy, California; John Vaughan Mutlow, architect (Honor Award and People in Architecture Award; RECORD, November 1988, pages 86-89). Housing and community facilities recall traditional Mexican architecture. "The grouping . . . makes it truly seem to be designed with the users' need for both privacy and community in mind."

6. Johnson Turnbull Winery, Oakville, California; William Turnbull Associates, architect (Honor Award). With regard to the expansion of a winery once housed in a barn, the architects

Paul Sachner, executive editor of ARCHITECTURAL RECORD.

A separate jury made two other awards. For the first time, CCAIA presented a 25-Year Award to "architecture of enduring significance." The honors jury selected San Francisco's St. Francis Square Cooperative Apartments, designed by Marquis and Stoller Architects, as the recipient (see photograph and caption below). The 1989 Firm Award went to Bull Volkmann Stockwell of San Francisco, a partnership

that the honors jury commended for its "dedication, seriousness, and consistency. . . . The architecture of the firm is not just fashion, but solid, strong stuff." Members of the honors jury were Walter Costa, of Skidmore, Owings & Merrill/San Francisco; Joseph Esherick, of Esherick Homsey Dodge and Davis, San Francisco; Elaine Sewell Jones, Los Angeles; Raymond Kappe, Pacific Palisades; and Chester A. Widom, of Widom Wein Cohen, Los Angeles, and 1989 CCAIA president.



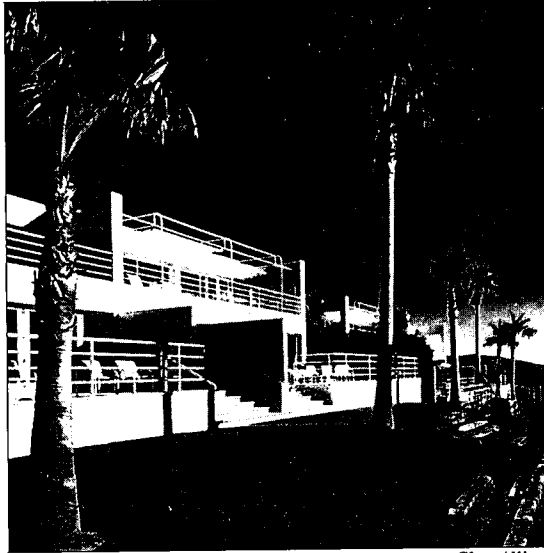
Ryan Roulette



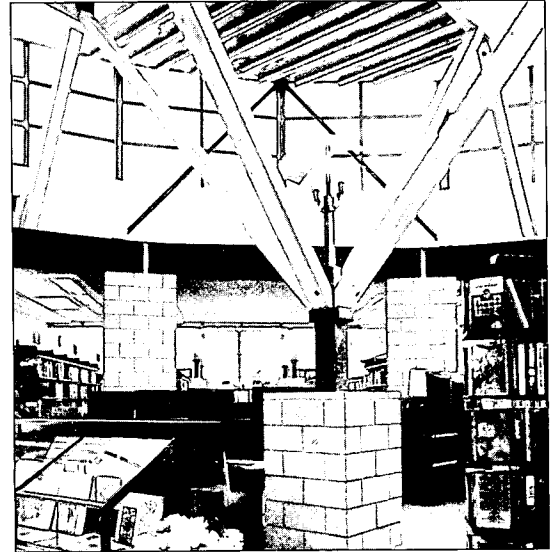
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Christopher Irion



Glen Allison



Frank Domin

cautioned, "The emphasis of a winery is on its wines, not billboard architecture." And the jury commented, "If a generation passed and you saw these buildings, they would still look fine."

7. Escondido City Hall, Escondido, California; Pacific Associates Planners Architects (Honor Award and People in Architecture Award; RECORD, January 1989, pages 104-107). For the start of a master plan, the focus is on Mediterranean Deco styling and outdoor space. "This building has given this growing, formerly agricultural town a real sense of place."

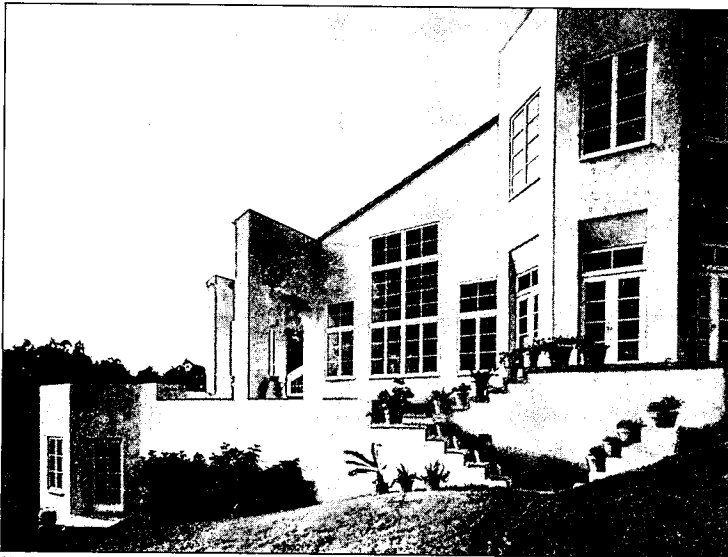
8. Marsh Studio/Residence, Hermosa Beach, California; Dean A. Nota Architect (Honor Award). Designed in memory of the owner's demolished painting studio on this site, the building had to fit a lot bounded on three sides by streets. The jury liked the building's "free-wheeling spirit" and thought, "It would be a great pleasure to move through and be in this house at various times of the day."

9. 14-16 Leroy Place, San Francisco; Hood Miller Associates, architect (Honor Award). The design incorporates two condominiums and five existing parking places on an

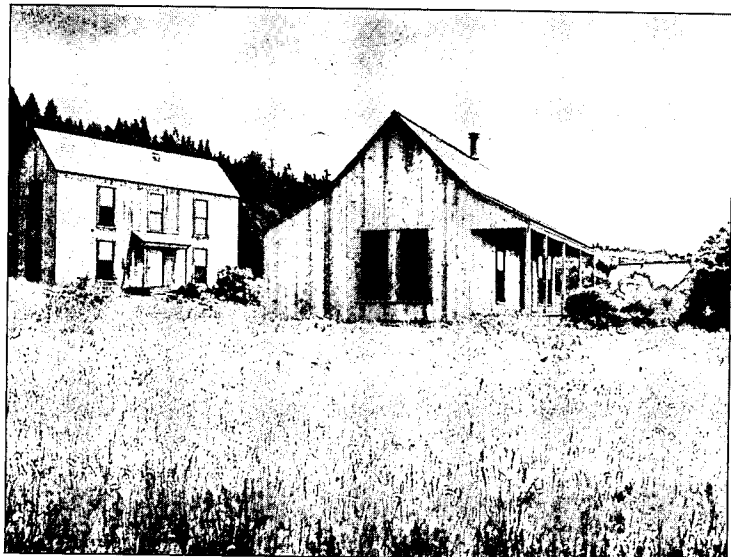
extremely constricted site. "It's a very elegant house, elegantly detailed," said the jury, which thought it "a sophisticated response to an urban setting and to the car."

10. Seacliff, Malibu, California; Kanner Associates (Honor Award). The residential complex, which includes two double houses, was designed to combine privacy and ocean views. "The idea of a shared and communal approach to making houses on the seacoast is very valuable, and this is an excellent solution to the single-family mentality that often pervades architecture along the coast."

11. Linda Vista Library, San Diego; Rob Wellington Quigley, architect (Honor Award). The entry rotunda, with its sandblasted concrete-block anchors, is meant to project a strong civic image. The building "is more than just a library or a place to read a book," in the jury's opinion. "It also has a symbolic power for the community as a whole."



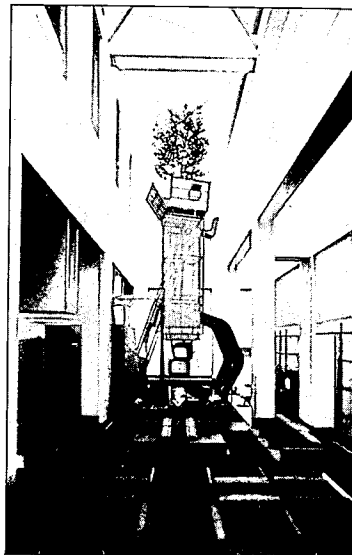
12 *Jane Lidz*



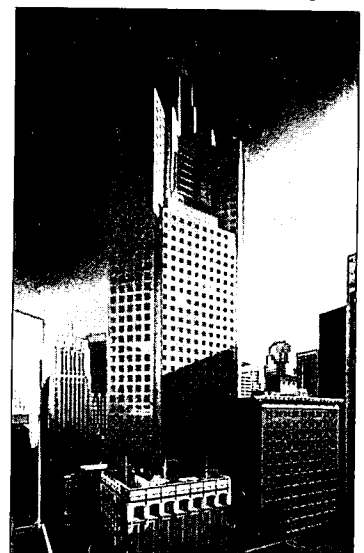
14 *Morley Baer*



13 *In Focus Productions*



15



16 *Wes Thompson*

12. House on Point Dune, Malibu, California; Moore Ruble Yudell, architect (Merit Award). The design of the large house evolved from the region's Spanish-inspired architecture and from the need to exploit views of a bay, a cove, and a canyon. The jury thought the design "a very powerful statement . . . The house allows you to know more about the site than you would without the house being there."

13. River Center, Tucson, Arizona; Leason Pomeroy Associates, Inc., architect (Merit Award). For this mixed-use complex of retail, commercial, and office space, the architects

said their inspiration was the historic vernacular of an old cavalry outpost nearby. Said the jury, "You get a sense that this is a powerful enough composition to control all the changes that will occur in its commercial life."

14. Sea Ranch Employees Housing, Sea Ranch, California; William Turnbull Associates, architect (Merit Award). The heavy timber frames of the 15 redwood cottages repeat the tradition of the original Sea Ranch condominiums. "This is workers' housing of the highest order," said the jury, and added, "The

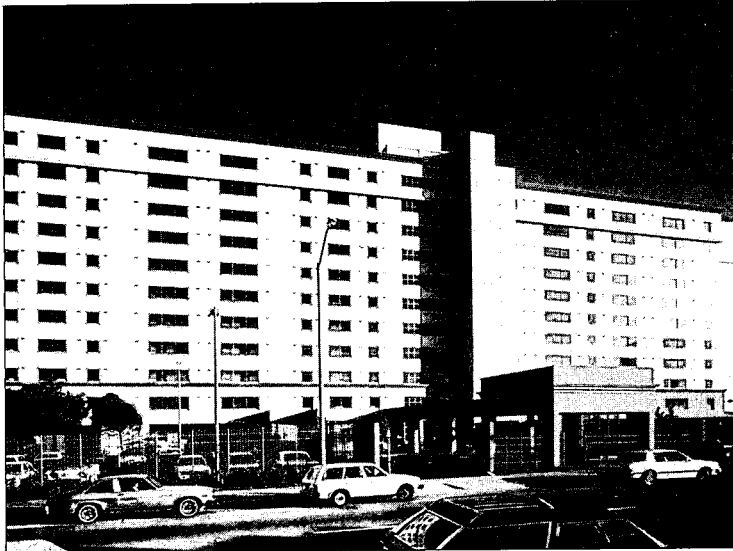
detailing . . . appears not only straightforward but quite elegant in its spare simplicity."

15. Comprehensive Cancer Clinic, West Los Angeles; Morphosis/Gruen Associates, architects (Merit Award and People in Architecture Award). An outpatient center for diagnosis, treatment, and counseling, the building needed connections with and independence from an adjacent medical center. "The whole purpose of the project is laudable, namely to make this a less formidable place for human beings who are going through great trauma. This proves that

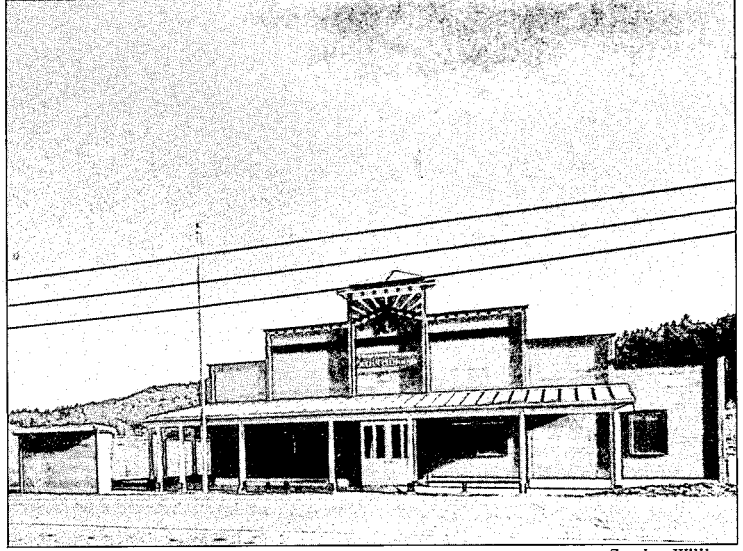
hospitals don't have to be antiseptic and cold," the jury observed.

16. 345 First Interstate Center, San Francisco; Skidmore, Owings & Merrill/San Francisco, architect (Merit Award). A mixed-use building with office space on the lower floors and hotel towers above, the building occupies a site surrounded by significant historic buildings in the city's financial district. The jury thought this "a very successful insertion of a large building into the city."

17. Rosa Parks Senior Apartments, San Francisco; Marquis Associates, architect



17



18

Sandra Williams



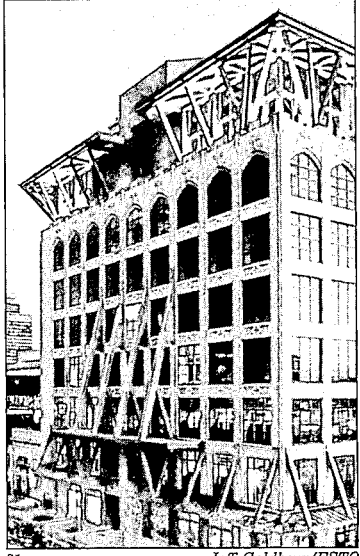
19

Paul Bielenberg



20

Mark Citret



21

Jeff Goldberg/ESTO

(Merit Award and People in Architecture Award). The architects' assignment was to refurbish a run-down, crime-ridden public-housing project that was slated for demolition. They refurbished apartments and turned corridors into closed "streets" with benches and plant shelves. "This project is about taking away alienation and making a community," said the jury.

18. **Julian Main Post Office, Julian, California;** Keniston & Mosher Partners, architect (Merit Award). The building had to accommodate both modern postal equipment and the

personality of a turn-of-the-century gold-mining town, a designated historic landmark. Said the jury, "What's remarkable is that, although it is responsive directly to its community, this is a very personal, individual building . . . The ingeniousness of this is enormously appealing."

19. **The Arnold O. and Mabel Beckman Conference Center, Irvine, California;** Skidmore, Owings & Merrill/San Francisco, architect (Merit Award). As the West Coast conference center for the National Academies of Science and Engineering, the complex houses an auditorium,

meeting rooms, and dining facilities. "The open circulation through the colonnades is somewhat Californian," the jury said of the center, "yet it uses forms that are in a truly Modernist tradition."

20. **University of California Press Headquarters, Berkeley;** ELS/Elbasani & Logan Architects (Merit Award). A reuse of a 1923 warehouse, the design uses a splayed stairway to link street-level entry and second-floor reception room. "This is a magical transformation. [The adaptation] is very appealing in its straightforward quality."

21. **360 Newbury Street, Boston;** Frank O. Gehry & Associates, design architect; Schwartz/Silver Architects, associated architect (Merit Award). The conversion of this old loft building to retail and office use required, among other things, the addition of an eighth floor, which was designed as an overhanging cornice clad with lead-coated copper. "The tension here between the existing structure and the new one seems just exactly correct," the jury thought.

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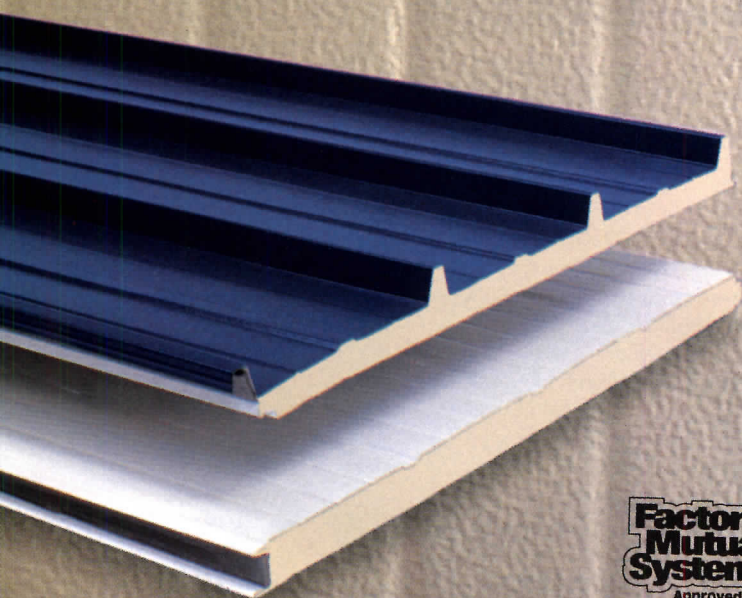
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Morphosis at the Walker Arts Center

An installation at the Walker Arts Center, by Thom Mayne and Michael Rotondi, keeps viewers in the dark about the actual architecture of the three houses in question, writes Douglas R. Suisman, "rendering the simple complicated and the legible obscure."

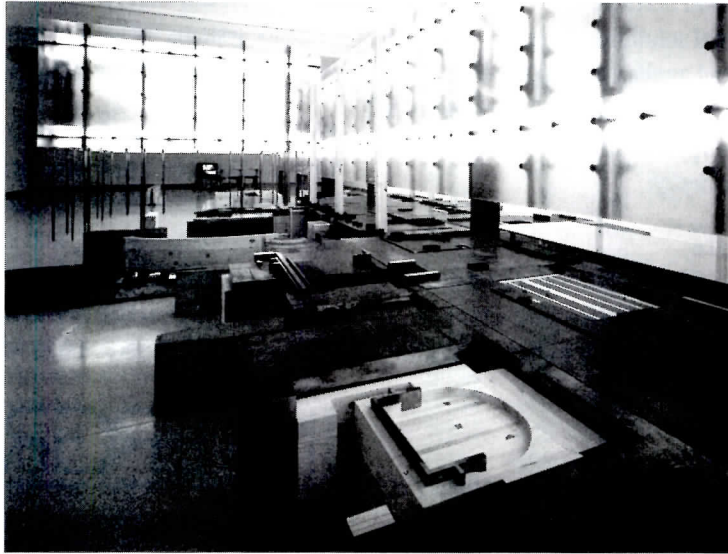
By Douglas R. Suisman

Visitors to "Three Houses," the new exhibition (through July 23) by the Los Angeles-based firm Morphosis, might be forgiven for thinking they had mistakenly stumbled into the baggage-claim area at the Minneapolis airport instead of the architecture gallery at the Walker Arts Center. There is no natural light (two glass doors have been temporarily boarded over); rows of fluorescent fixtures mounted on freestanding partitions glare harshly through fiberglass panels; and, most tellingly, the floor is strewn with what appears to be the checked luggage of a 40-piece heavy-metal band. Don't get me wrong: it's *interesting* luggage, but not exactly what you'd expect to find in the second of a six-part series called "Architecture Tomorrow."

What you *would* expect to find is a sampling of architectural projects by Morphosis, but design curator Mildred Friedman has encouraged the firms selected for the series to create some kind of new work for Gallery 7 [RECORD, February 1989, page 69; April 1989, pages 66-67]. Her approach was evidently welcomed by Morphosis principals Thom Mayne and Michael Rotondi, especially since most of the exhibition-quality models, drawings, and photographs of their built work were already committed to another show in Spokane, Wash. They decided to use three recent houses as conceptual points of departure for the creation of a single large "installation"—that art-world hybrid of sculpture, narrative, and space. The result is a kind of constructed manifesto of the firm's formal language and its particular process of design.

The actual spatial and visual experience of the installation

Douglas R. Suisman is a Los Angeles-based architect and teacher.



Installation view of "Architecture Tomorrow: Morphosis"

leaves much to be desired. Those high fiberglass partitions (which form, variously, a cubic enclosure, a spinal structure, and a row of suspended hoods) perform tolerably well as volumetric diagrams of the houses, but they're painfully bright to look at and stingily dimensioned for movement through and around. Any hope for a cutting-edge *promenade architecturale* fizzles into a couple of quick turns around these bulky objects, while the large remaining area of the gallery is basically abandoned to shadowy disuse.

But space often takes a back seat to surface in Morphosis's work anyway, and it's on the surface of those wood crates and steel cases that visitors will find a lot to engage their eyes, if not their hearts and minds. Some of the cases have been errantly strewn around the gallery (the show is a minefield for the nearsighted), but most have been carefully arranged to form a vast composite coffee table, a welded-steel palimpsest that overlays acid-etched circuitry—sgraffito derived from the conflated plans, sections, and elevations of all three houses—on a virtual landscape of

laminated-pine cubes and upward-projecting steel bars.

A lively collaborative spirit is much in evidence. A team of young designers gave specific form to the principals' concept and actually constructed much of the exhibition. One gazes on all of this abstract shape-making with a kind of fascination. But, what is it all supposed to mean? As both practitioners and teachers, Mayne and Rotondi strongly emphasize the expressive possibilities of materials, a point of view increasingly embraced by younger architects (whom Rotondi likes to call "our generation") as a rebuke to the lightweight stage sets and historicist indulgences of their Postmodern elders. But this revived Modernism goes only so far; Mayne and Rotondi prefer the handmade to the mass produced, and their monochromatic, mechanistic imagery avoids altogether the tools and materials of true high technology. Their coldly elegant solemnity is something like an Arts and Crafts sensibility armed with a welding torch.

This kind of hypermaterialism can bear exquisite results as evidenced in the detailing at the

Cedars-Sinai Cancer Center in Los Angeles, for example. But when unabashed formalism is harnessed to high-powered conceptual rhetoric, the results can be troubling indeed. The fragmenting and overlaying of multiple drawings to produce geometries of dizzying complexity is a fashionable compositional device which, like the literary deconstructivist techniques it emulates, revels in rendering the simple complicated and the legible obscure. Why else would visitors be kept in the dark about the actual architecture of the three houses in question (the only clues offered are three highly abstract images in the printed gallery handout) if not to mystify the process and purpose of design? In the long and gushing essay that accompanies the show, George Rand pounds heavily on the old architecture-as-music riff, defending this obfuscation as architectural "jazzification," but one of the team of designers was a lot closer to the mark when he confided, "We had over 15 layers going, and sometimes when you'd lose track for a moment... it all became noise."

Certainly you have to make some noise to make music, and architects have to abstract in order to explore. In this respect the Walker show is akin to a quick tour of the architect's studio, in which we get a blurry snapshot of work in progress and a vicarious charge of creative energy. But in the context of a series whose title is as broad as "Architecture Tomorrow," the focus on process and formal innovation avoids any serious discussion of what the process is supposed to be about, why it takes place, or whom it serves. The narrow range of the series participants—all top-notch but uniformly "high-art" young firms working in an abstract Modernist mode—suggests an agenda that is more the style than the substance of architecture tomorrow or today.



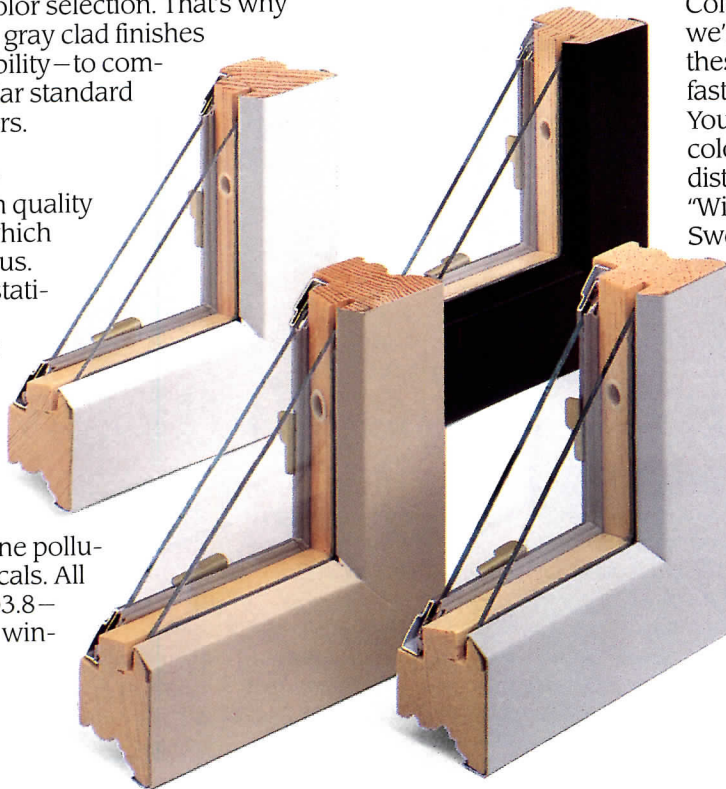
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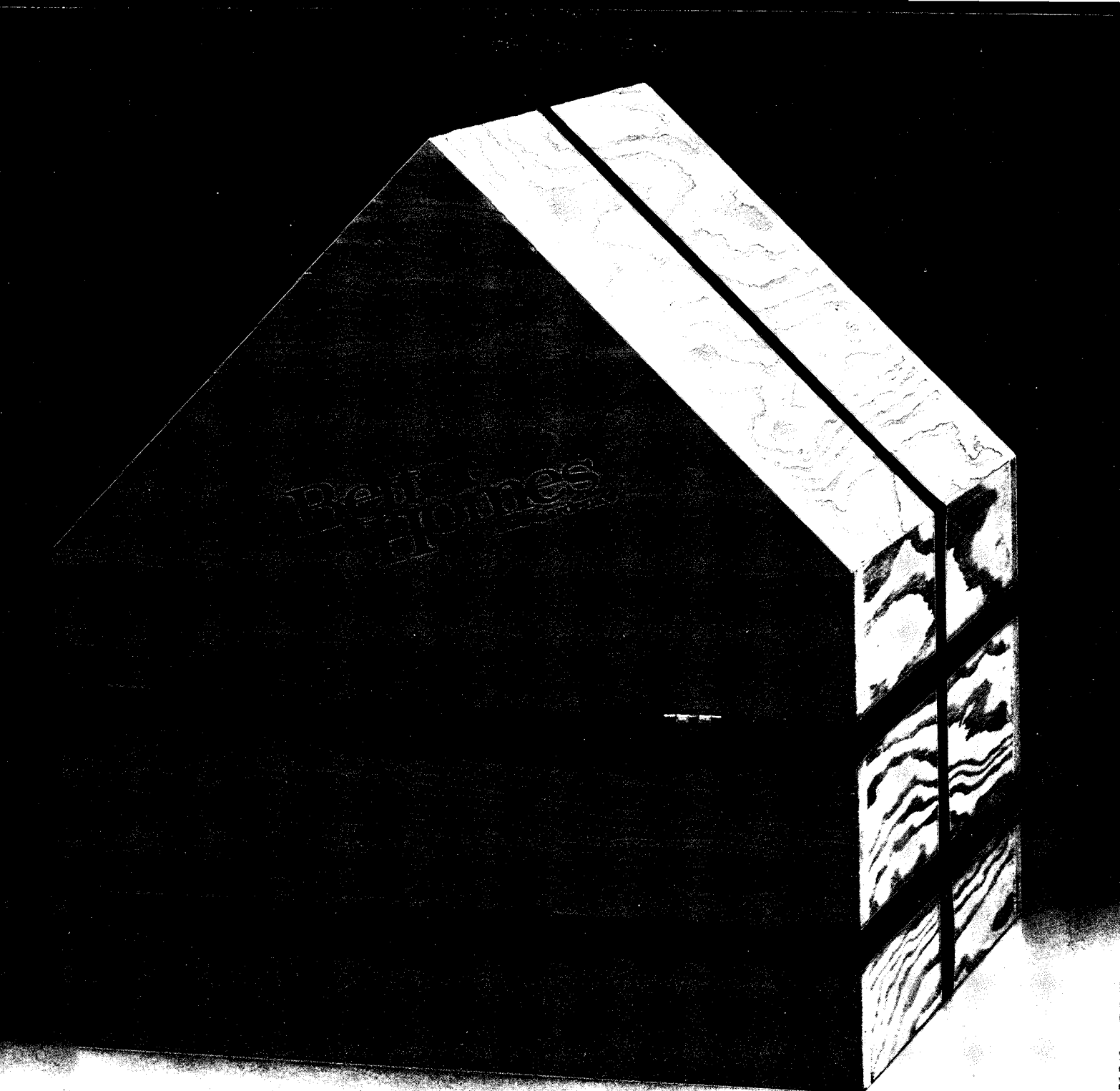
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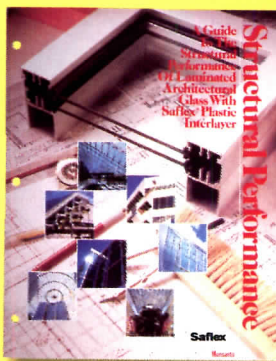
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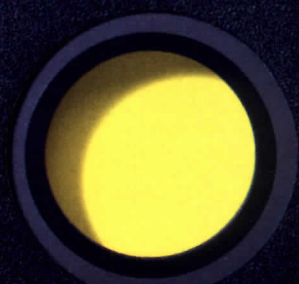
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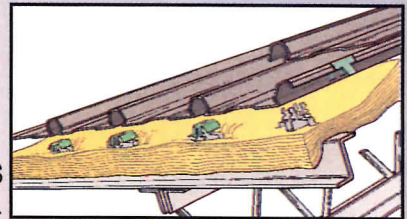
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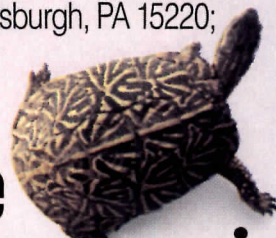
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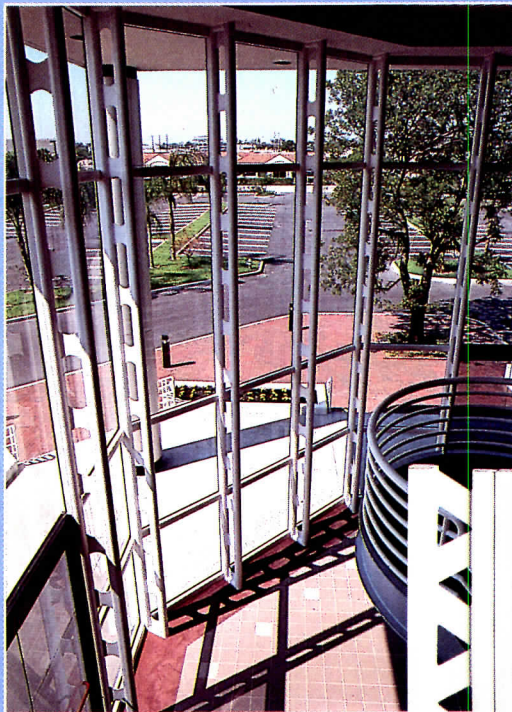
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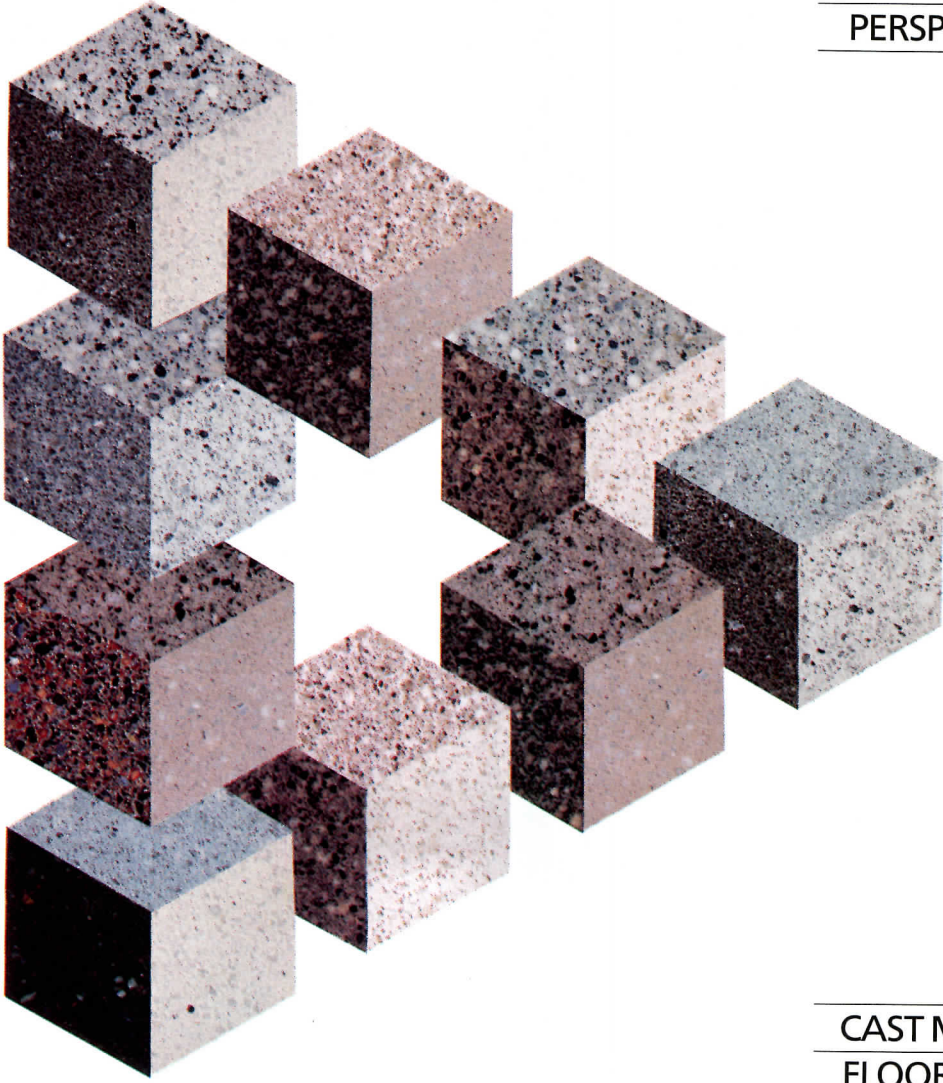
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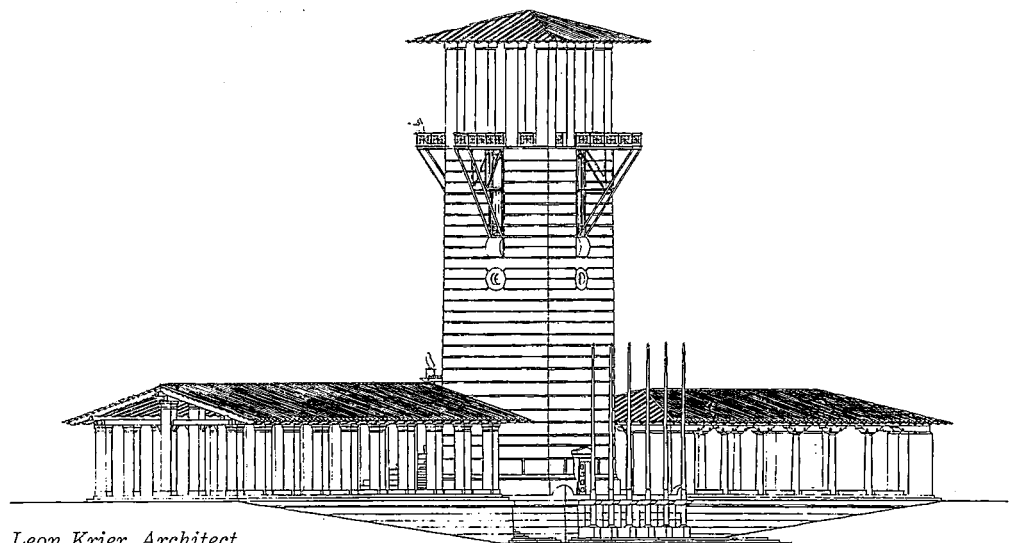
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In this issue

In June RECORD examined work by architects who unhesitatingly embrace Modernism as a way of solving programmatic and esthetic problems. By contrast, the limestone window surround that graces our current cover, a detail from Hartman-Cox Architects' renovation and expansion of the Chrysler Museum in Norfolk, suggests that despite Modernism's renewed vigor, the impulses of history, tradition, and romance are still powerful generators of contemporary built form. Nowhere is this fact more apparent than at the Chrysler (pages 114-119), where Hartman-Cox upgraded not only the museum's gallery space but also its image by encasing Modernist additions from the 1960s and '70s behind a stone veneer that harmonizes with the institution's original Renaissance Revival architecture.

The lessons of history also motivated the architects and planners involved in the International Building Exhibition (IBA), the vast urban-renewal project in West Berlin that is the subject of our Building Types Study on multifamily housing (pages 82-95). Our IBA coverage focuses on Tegel Harbor, a lakeside suburb within the city whose villagelike character owes to a Romantic master plan by Moore Ruble Yudell and to a variety of housing types, mostly by American architects, that combine picturesque and classical elements. For urbanism on a smaller scale, architecture critic Beth Dunlop reports on the progress at Seaside, the celebrated new town on Florida's Gulf Coast (pages 96-103 and below). Like the architects of Tegel Harbor, Seaside's creators selected from a palette of high-style and vernacular sources, in this case toward a goal of replicating the physical qualities, and traditional values, of a small Southern town. Frank Gehry had similar notions in mind when he assembled one of his signature architectural collages for Edgemar (pages 104-109), an adaptive-use project that reinforces the small-city character of Main Street, Santa Monica—not through stylistic allusions but by means of sympathetic scale and an integration of cultural and commercial uses.

In Brooklyn's Prospect Park, the City of New York has reconstructed the Oriental Pavilion (pages 110-113), a delightful monument to late 19th-century exoticism that was nearly destroyed by fire during the 1970s. North of the city, Beyer Blinder Belle has designed a stable complex as an elegant citadel that evokes the time-honored imagery of European and American farms (pages 120-123).



Proposal for a tower at Seaside, Leon Krier, Architect

Americans in Berlin

The most innovative housing of this century has been the result of international building “exhibitions” staged in German cities. The most famous of these living architectural demonstrations is the 1927 Weissenhofsiedlung in Stuttgart, a landmark of Modern housing that has recently been restored. Over the past decade, another architecturally significant exhibition has been held in Germany, devoted to displaying the best of Postmodernism. Called the Internationale Bauausstellung Berlin—IBA, for short—the ambitious program sought to weave together areas of West Berlin destroyed by war, insensitive urban renewal, and neglect. Although its goals focused more on esthetic experimentation than functional innovation, IBA achieved an impressive list of accomplishments: the construction of 3,000 new housing units, an office complex, and a water-treatment plant, and the renovation of 5,500 existing dwellings. Roughly 200 architects from all over the globe were commissioned to design these projects, which totaled \$1.5 billion in construction fees.

In selecting the architects for the new housing, IBA staged a series of competitions spearheaded by Josef Paul Kleihues, the organization’s head of new construction. Scores of internationally renowned practitioners were invited to compete for the 100 sites, a virtual who’s who of contemporary design. IBA’s aim in awarding the commissions to a star-studded roster was to diversify the infill stylistically within programmatic constraints. Although IBA encouraged the integration of local traditions such as inner courtyards and street-level shops, it did not promote functional nor technological experimentation. Instead, the organization adopted conventional construction methods and long-established social housing standards to expedite construction. This policy prompted complaints over the lack of accommodations for nontraditional households—group homes and single-parent families, for example—which account for 60 percent of West Berlin’s population.

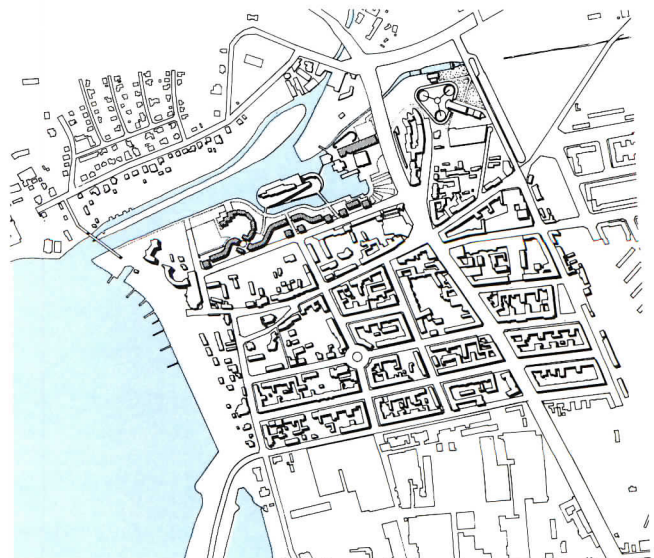
Despite the absence of alternative residential models, many of the IBA-sponsored projects reach beyond the housing’s programmatic limits to successfully solve problems of urban design. As an example, we offer a look at Tegel Harbor, the IBA development most influenced by American architects. Located at the western edge of the city, this lakeside suburb was developed according to a master plan created by the Santa Monica-based firm of Moore Ruble Yudell and includes blocks designed by three other prominent U. S. firms. Departing from the dense urban infill of the typical IBA project, Tegel’s festive ensemble nevertheless captures the Postmodern flavor of IBA better than any other of its numerous schemes.

We have also represented IBA’s decision to champion architects who have long been respected for their ideas, but who have built little. No one illustrates this better than John Hejduk, the dean of Cooper Union, whose poetic urban ensemble in the Southern Friedrichstadt area of the city represents one of IBA’s most timeless designs. *Deborah K. Dietsch*

Building Types Study 668: Multifamily housing



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Tegel Harbor

© Uwe Rau



Of the six Berlin neighborhoods rebuilt by IBA, Tegel Harbor best expresses the exhibition's Postmodern character. Its lakefront site in a northwestern suburb of the city contrasts with the densely woven infill that typifies IBA, allowing for both housing and public buildings to be constructed free of urban constraints. To commission a master plan for Tegel, the exhibition organizers held a design competition in 1980 that was awarded to the Santa Monica-based firm of Moore Ruble Yudell. The selection couldn't have been more appropriate. MRY reinforced the picturesque character of Tegel by giving the landscape a dominant role. "There were competition schemes more theoretically based than ours," explains John Ruble. "But we took into account the actual site, which opens to the water and forest."

Built on the northernmost of a chain of lakes bordering the city, Tegel has long served as a popular weekend resort for landlocked Berliners. MRY capitalized on its waterfront as an urban amenity by enlarging the harbor basin and forming an island to support a recreational facility for residents and tourists. The architects encouraged access to the lakefront and newly established

promenade by dispersing a mixture of housing and public buildings on the site and inserting tree-lined allées between blocks. At the northeast corner, they formed a cultural complex by grouping a library, theater, art gallery, music school, and community building next to a public plaza, which leads to an existing subway stop. To the south, MRY positioned the residential blocks between the street and lake, dividing them into two basic types: five-story serpentine rowhouses nearest the lake echoing its curved shoreline, and six freestanding urban villas that provide a regulated edge at the street and extend Tegel's urban grid. In developing the outlines for the cultural center and housing, the architects looked to local precedents, especially Karl Friedrich Schinkel's classically inspired Humboldt Villa, located within walking distance from Tegel Harbor.

To encourage esthetic diversity within the new development, IBA selected a roster of seven architects to design various portions of the housing. For the urban villas, the organization commissioned foreign practitioners: Robert Stern (left above), Stanley Tigerman (center above), and John Hejduk from the U. S.,



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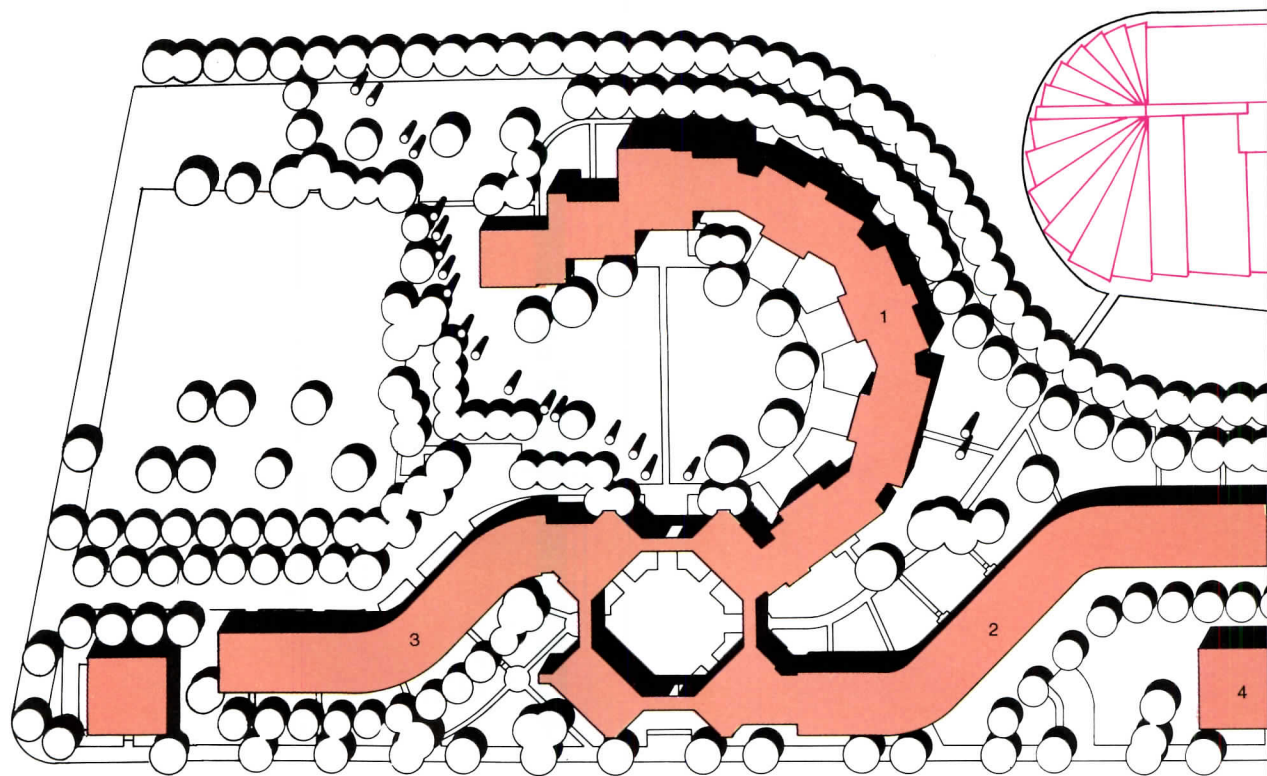


2



3

1. In addition to designing a master plan, Moore Ruble Yudell is responsible for Tegel's first phase of housing, which overlooks the newly expanded harbor basin. 2. Poly, Steinebach, and Weber extend MRY's classical vocabulary in a more muted expression. 3. Berlin architects Bangert, Jansen, Scholz, and Schultes punctuated their serpentine block with cylindrical stairtowers. 4. The drumlike form of Antoine Grumbach's urban villa deviates from its picturesque neighbors.



as well as Antoine Grumbach from France and Paolo Portoghesi from Italy. Two Berlin firms were awarded the curved rows of townhouses—Poly, Steinebach, and Weber (2), and Bangert, Jansen, Scholz, and Schultes (3). MRY was given the opportunity to design a cascading block of housing at the western edge of the lake (1) and a villa at the eastern end (7).

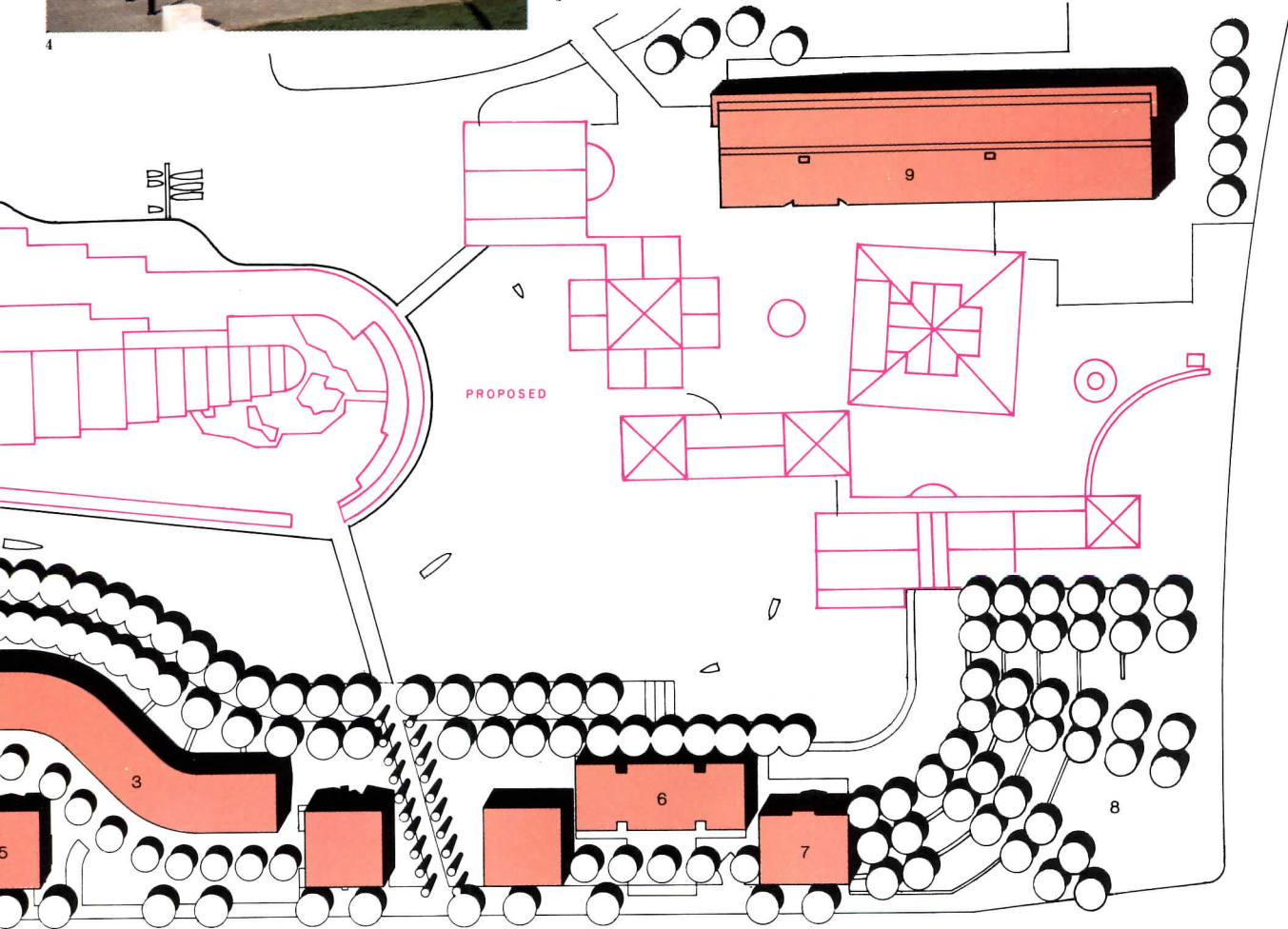
Working with local offices, each invited firm adhered to IBA's programmatic standards for the units and MRY's guidelines governing massing and materials, which the California architects left as liberal as possible to permit stylistic variation. While the resulting architecture exudes a historicist flavor sympathetic to Tegel's Romantic master plan, only the American-designed villas truly capture the fanciful spirit of MRY's design. They range from Stern's *gemütlich* manse and Tigerman's brightly rendered gabled forms to Hejduk's generic paired houses. MRY's 10-story tower also successfully embodies the character of Tegel. Stepped up to meet the scale of adjacent high-rises, its villagelike assembly, arranged around courtyards, blends classical elements with a picturesque profile. Less pleasing are the villas designed

by Grumbach (4), who shunned historicism in favor of granite-clad abstraction, and Portoghesi (5), whose thin appliqué halfheartedly complies with MRY's guidelines. The most disturbing building at Tegel, however, is the block designed by Poly, Steinebach, and Weber (6), located between the villas by Stern and MRY. Flanked by massive porticos, the stark, marble-clad box is scaled neither to the villas nor to the townhouses beyond, overwhelming the more refined articulation of its neighbors.

Despite these flaws, the housing at Tegel has proved the most popular IBA project, attracting scores of residents who formed long waiting lists for accommodation even before the villas were finished last year. Meanwhile, the only public components of the complex to be completed thus far are the library (9) and island infrastructure for the recreational facility. Since IBA was officially disbanded two years ago, the fate of the remaining buildings is dependent on current political support. But even without these proposed civic structures, Tegel achieves the small-scale cohesiveness of a village, offering lessons that are as relevant to market-rate condominiums as public housing. *D. K. D.*



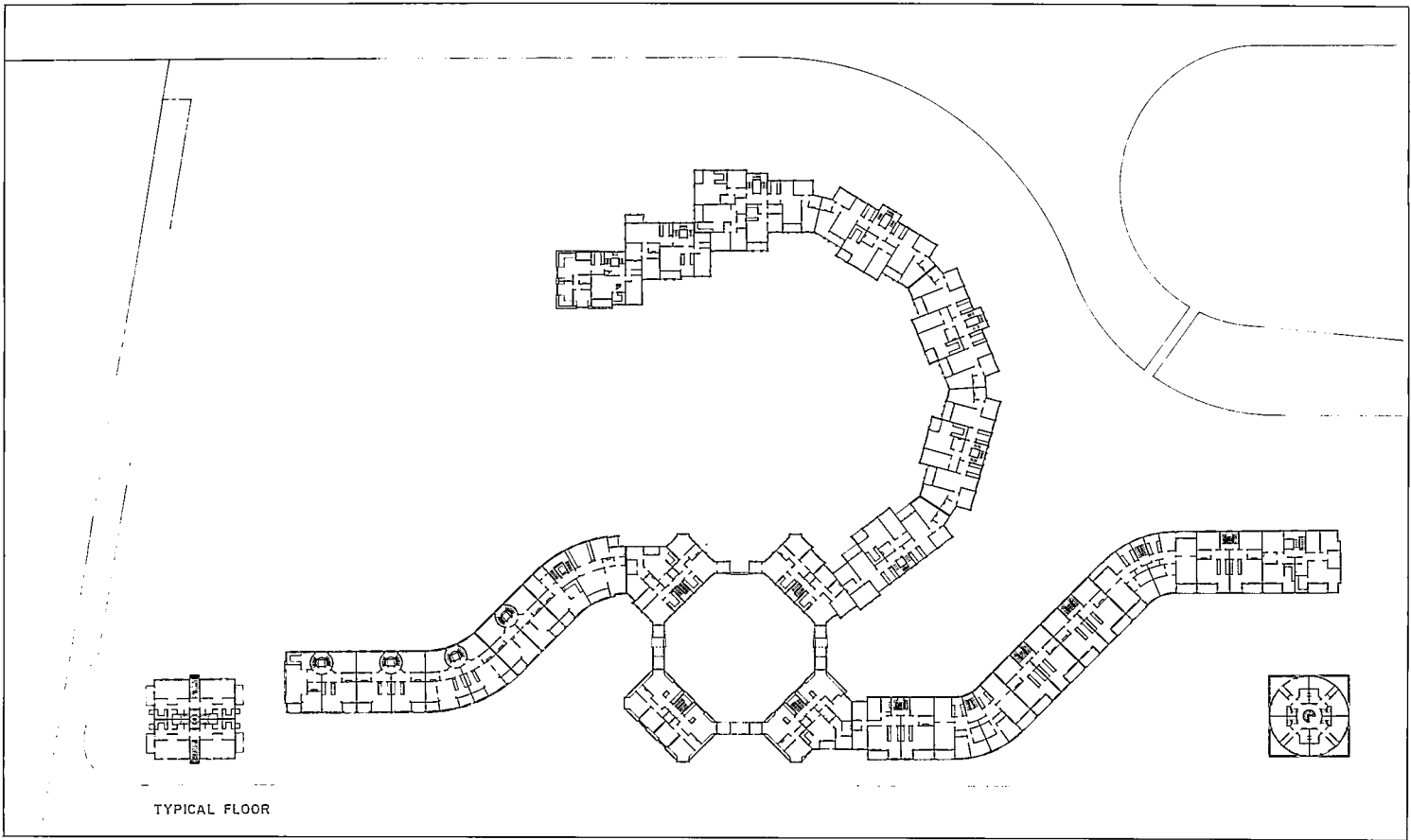
5. Italian architect Paolo Portoghesi split his villa, echoing the configuration of Hejduk's and Tigerman's designs. 6. The block designed by Poly, Steinebach, and Weber unsuccessfully combines villa and townhouse types. 7. MRY's villa complements the firm's townhouses. 8. A plaza separates the housing from proposed cultural center. 9. The library is the only completed public building of MRY's plan.



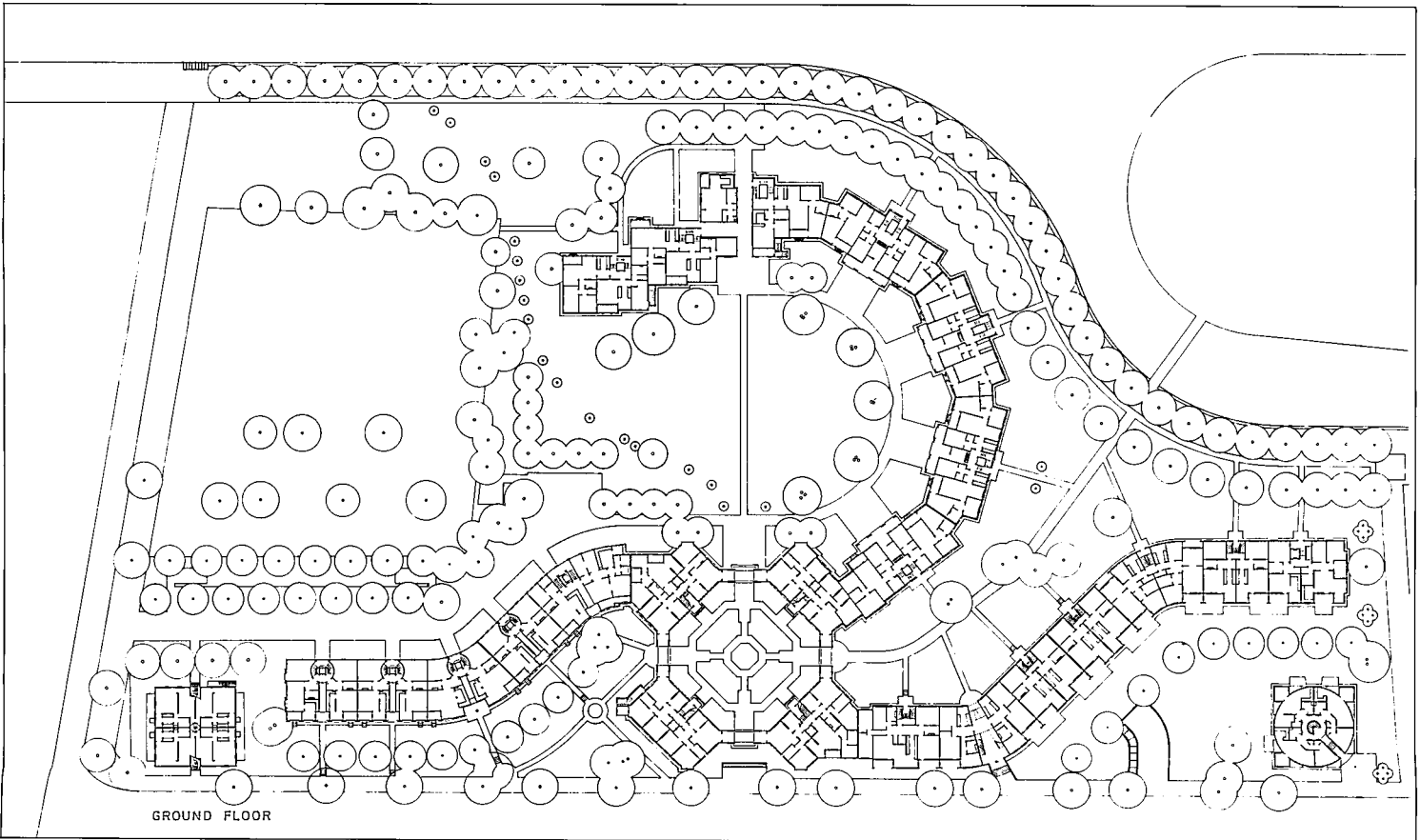
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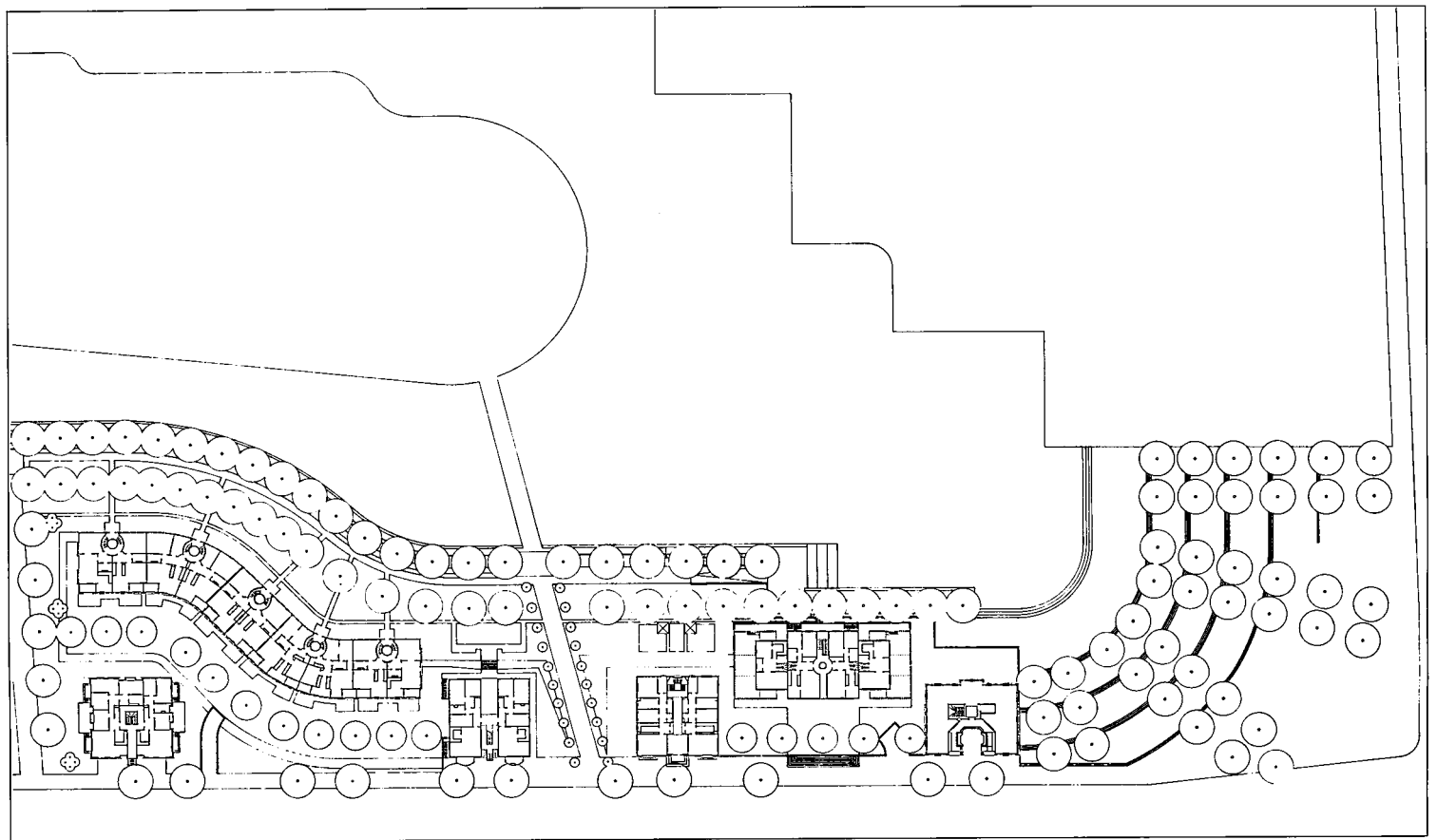
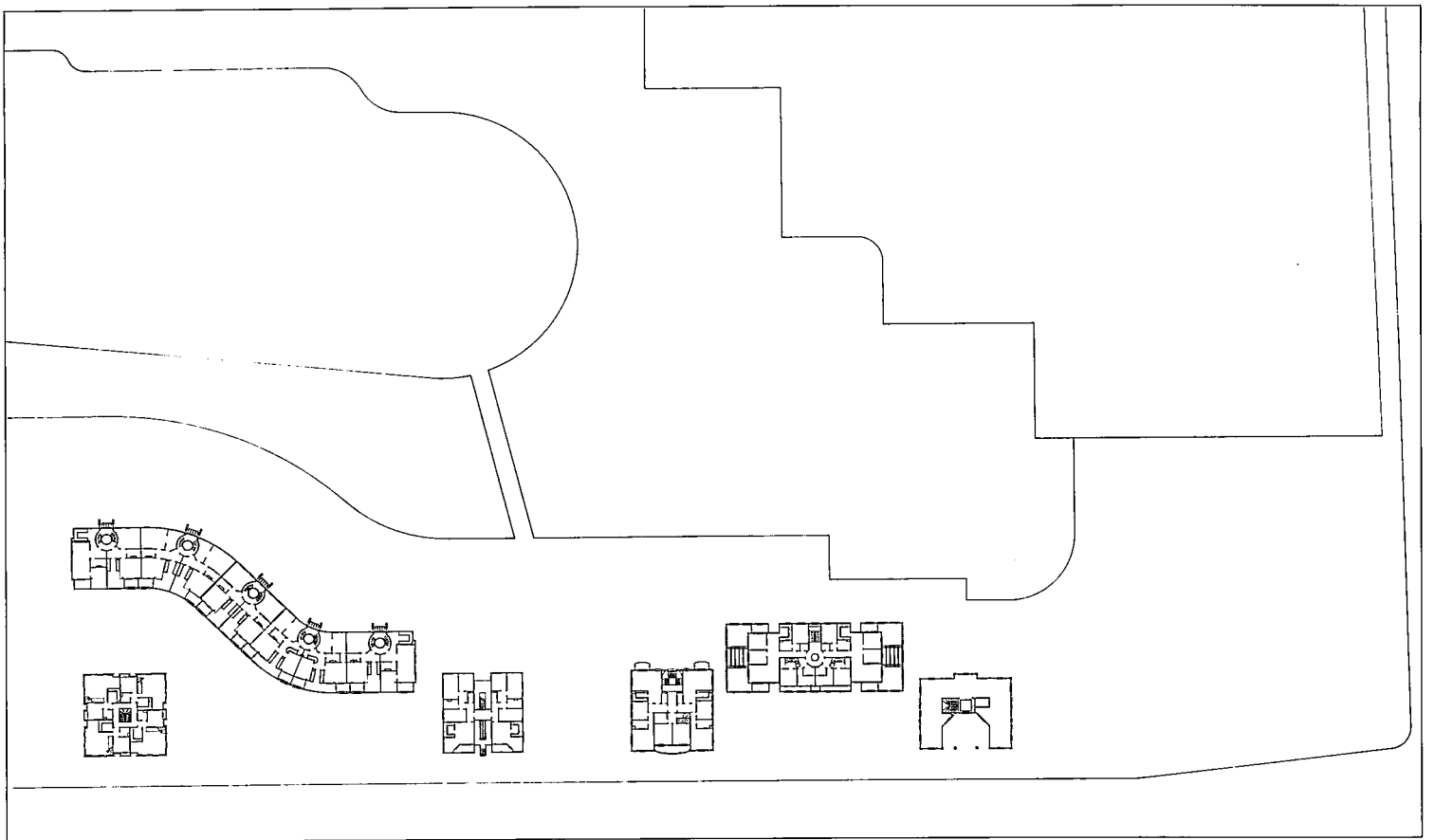


TYPICAL FLOOR

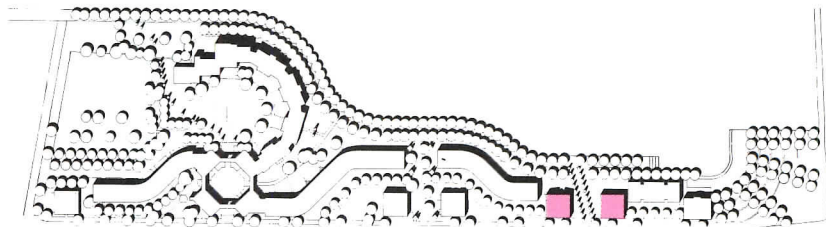


GROUND FLOOR





A house divided



Chicagoan Stanley Tigerman began the design of his Tegel villa (left in site plan) by visiting the Perls House in Berlin, designed by his architectural hero, Mies van der Rohe. In adapting Mies's 1911 precedent, Tigerman cleaved a gabled house form into two parts to symbolize Berlin's division into East and West, and its destruction and rebuilding. In between the halves of the building, he inserted a peaked steel canopy (top right) to enclose an entrance lobby/winter garden with a staircase leading to the upper-story apartments (below). Tigerman explains that the gridded structure is intended to represent a scaffold, conveying an ambiguity between construction and demolition. He further underscored the building's Berlin associations by rendering its stucco, steel, and checkerboard tilework in the colors of the West German flag. *D. K. D.*



*Tegel Harbor villa
West Berlin*

Architect:
*Tigerman McCurry
Architects—Stanley Tigerman,
partner-in-charge*

Associate architect:
*Hähndel, Wolf and Zell
Architects*

Local contact architect:
Moritz Müller

Developer/general contractor:
Otremba GmbH.



Jurgen L. Wilhelm photos

Star turn

Of the six architects commissioned to design Tegel's villas, Robert Stern is the most sympathetic to the aims of MRY's picturesque master plan, having designed American housing based on the 19th-century garden suburb. His three-story villa (right in site plan opposite) is the most historically rooted of the Tegel designs, recalling local lakeside 19th-century mansions and the classicism of Berlin architect Bruno Paul in its flared gambrel roof, wrought-iron railings, and tile-decorated stucco walls. Inside the symmetrical building, the architect arranged two one-bedroom and four two-bedroom units around a shared, skylit staircase and furnished each with an outdoor terrace or balcony (right). Along the roof, he placed rows of stars, a Schinkel-inspired decorative pattern that is symbolic of the architect's name: the German for "star" is "stern." *D. K. D.*



*Tegel Harbor villa
West Berlin*

Architect:
*Robert A.M. Stern Architects—
Graham S. Wyatt, project
architect; Ellen Coxe, Paul
Williger, assistants*

Associate architect:
*Hähndel, Wolf and Zell
Architects*

Local contact architect:
Moritz Müller

Developer/general contractor:
Otremba GmbH.



House redux



©Jurgen L. Wilhelm

John Hejduk is renowned as an educator and a visionary. As dean of Cooper Union's school of architecture, Hejduk inspires students to pursue the poetic side of architecture in a building he renovated in 1974—his only built project until IBA. His reputation as a "paper" architect, however, is changing. Two of his designs have been recently constructed in Berlin—a villa at Tegel and a 55-unit housing complex in the Friedrichstadt district of the city near the Berlin Wall (following pages). A third Berlin project is slated for construction, as well as a 16-story residential tower for the Dutch town of Groningen and a house in Spain.

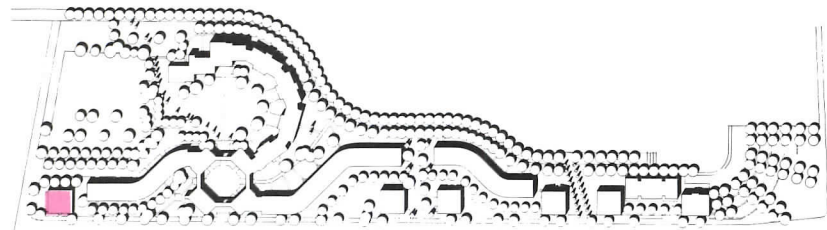
Hejduk's villa, located at the western edge of Tegel Harbor (site plan opposite), is distinguished from the other five by its boldly reductivist demeanor. Composed of simple geometric shapes, the eight-unit structure captures the essence of the generic house form in paired volumes that are punctuated by simple openings, porches, light scoops, and a staircase "chimney." "The building has a medieval, Germanic quality," explains Hejduk, who managed to evoke cultural references without a trace of historicist decoration. *D. K. D.*

*Tegel Harbor Villa
West Berlin*

Architect:
John Hejduk

Local contact architect:
*Moritz Müller Architect;
Diethard Engel, assistant*

Associate architect:
Ingenieurbüro Ruths GmbH



John Hejduk's parti for his Tegel villa is similar to Stanley Tigerman's: two multifamily residences joined by a vertical circulation spine (above). Hejduk, however, refrained from historicist detail, preferring to articulate his simple forms with light scoops

and ornamental stars projecting from zinc-coated roofs. On the side elevations (opposite), he extended porches and balconies to meet German housing standards for light and air. The building contains four one-bedroom apartments and four two-bedroom units.

Residential blocks and tower Southern Friedrichstadt area



In 1981, John Hejduk was invited by IBA to propose a scheme for four blocks of the Southern Friedrichstadt district of Berlin, an area heavily bombed during World War II. His solution was to devise what he calls the "Berlin Masque," a hedge-enclosed compound of ritualistic structures, including a theater, a bell and clock tower, an arbitration hall, and a "house for the eldest inhabitant." From the results of this competition, Hejduk was commissioned to design 55 units of housing on a vacant lot east of his proposed complex. Located near Checkpoint Charlie, the site is

"Watchtowers of Cannaregio."

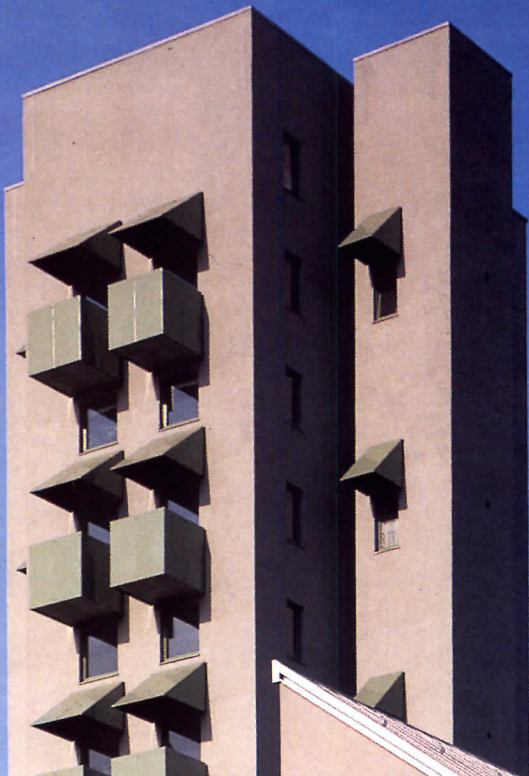
Assisted by Berlin architect and Cooper Union graduate Moritz Müller (who also helped the American architects meet mandatory housing standards for the Tegel villas), Hejduk arranged a variety of one-, two-, and three-bedroom units within the low-rise blocks, carving butterfly roofs, balconies, and top-floor courtyards into their simple volumes. Having efficiently organized the programmatic requirements in the wings, he departed from the IBA norm in the tower, vertically dividing it into seven duplexes and treating the service elements—elevator, stair, kitchen, bathroom—as sculptural objects attached to the mass. Each floor is designed as a generic loft, intended to be used as a living or work space, with views in every direction.

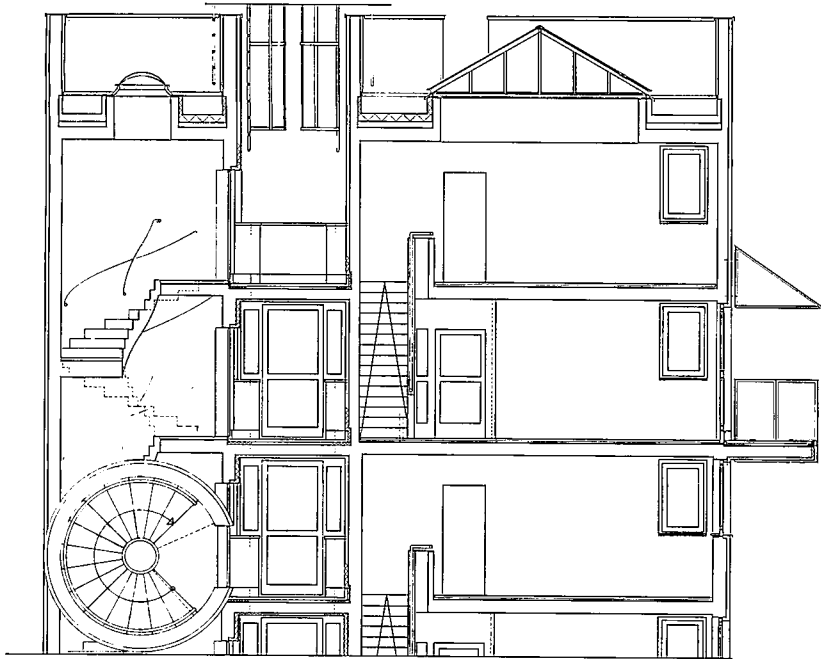
Although the tower measures only 21 feet on each side, and the service elements 9 feet, Hejduk manipulated the proportions of the slender building to create the illusion of a larger scale (opposite). On the southern elevations, the architect rhythmically demarcated the buildings with metal-clad window awnings and balconies that he says are derived from the apartment buildings in his native Bronx. Rendered in a Braque-inspired Cubist palette of gray, green, and black, the elemental forms convey a mixture of melancholy and playful anthropomorphism.

Unlike many foreign architects working in Berlin, Hejduk has managed to subordinate the functional requirements of his housing to a strong urban presence rooted to the city. Subtly suggesting the image of a guardtower, skyscraper, or campanile, the project offers wry historical and typological commentary with a simplicity of means. Among the heavy-handed Postmodernism of so many IBA projects, it stands out. *D. K. D.*

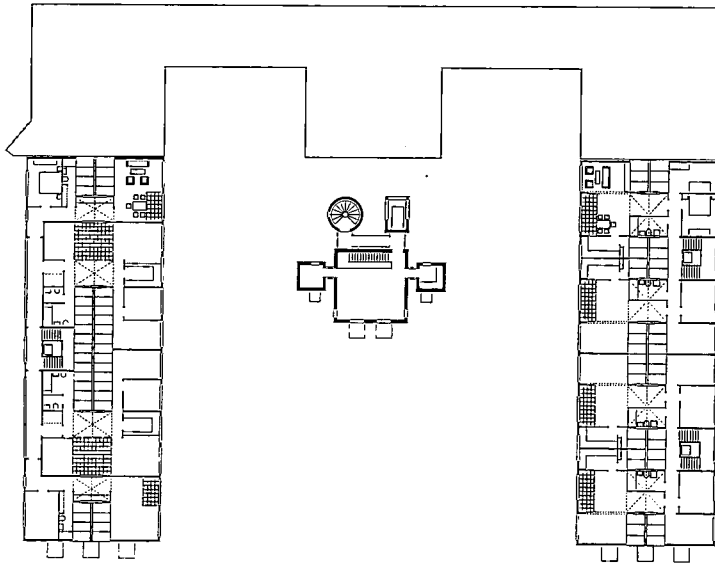


bordered by a flower market to the south (left) and an E-shaped 19th-century apartment building to the north (left in top photo, right in bottom photo). Hejduk took advantage of the site by extending two five-story structures from the outer wings of the existing building and erecting a freestanding 14-story tower in the remaining central space. In forming an open square off the street, the ensemble departs from the typical IBA perimeter block and embodies many of the architect's ideas for the Berlin Masque, as well as elements of his earlier explorations, such as the 1979





John Hejduk organized 48 units of housing in Berlin's Southern Friedrichstadt area into two wings that extend from an existing apartment building on the northern edge of the site. At the center of the resulting courtyard, he placed a freestanding tower (plans), which was intended to be flanked at the entrance by two Hejduk-designed constructions (bottom plan). Divided into seven duplex apartments (section), the 14-story structure is assembled from a core of studios connected by an internal staircase and extended service towers—an elevator and circular staircase attached to the north elevation and kitchen/bathroom on the east and west. Hejduk articulated the stuccoed mass of his high- and low-rise elements with recessed gridded windows (opposite top left), metal awnings and balconies (opposite middle left and bottom right), and bronze stars, which are configured to represent eight planets with Mother Earth at the center (opposite top right).



UPPER FLOOR



*Residential blocks and tower
West Berlin*

Architect:

John Hejduk

Local contact architect:

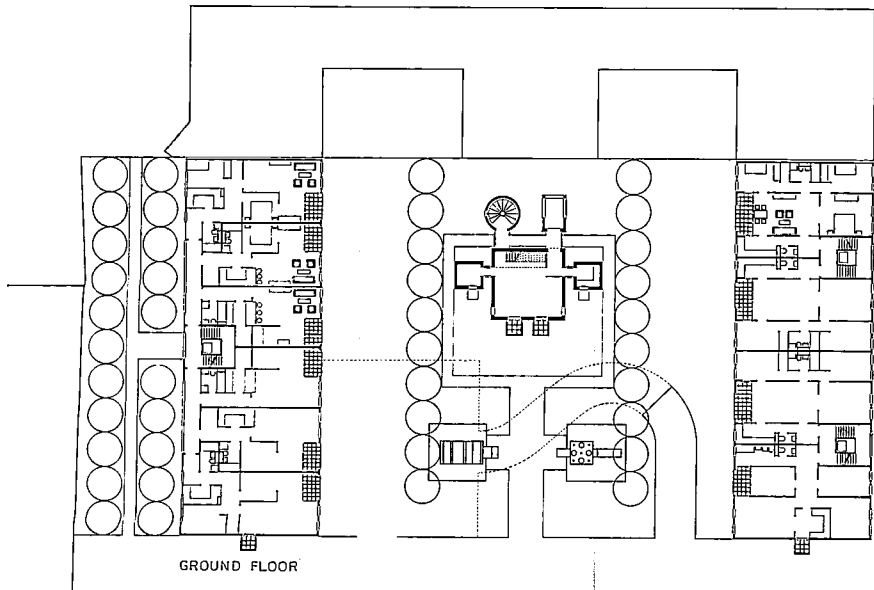
*Moritz Müller Architect,
Diethard Engel, assistant*

Associate architect:

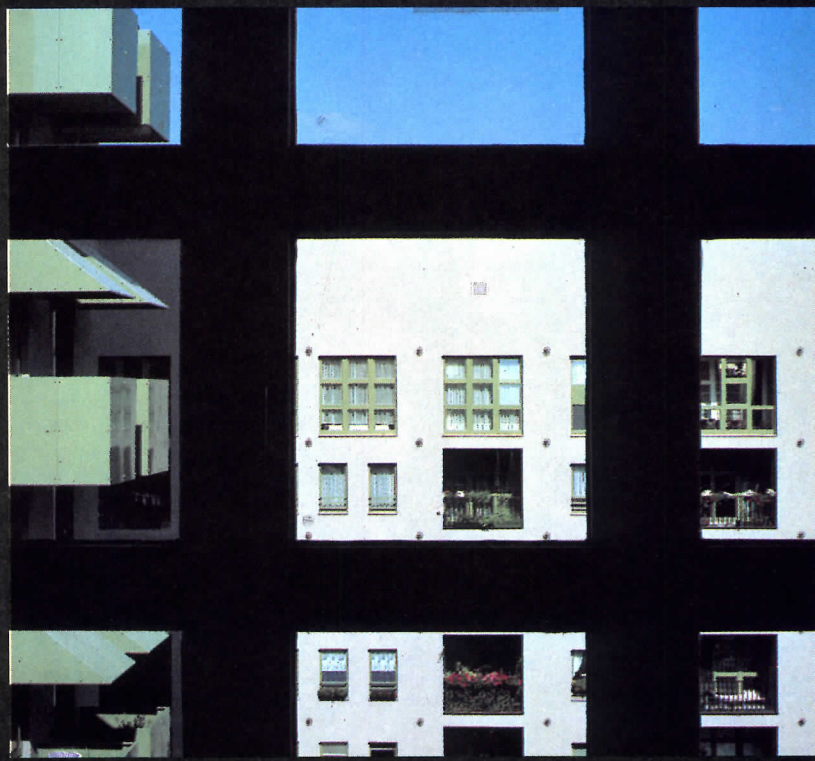
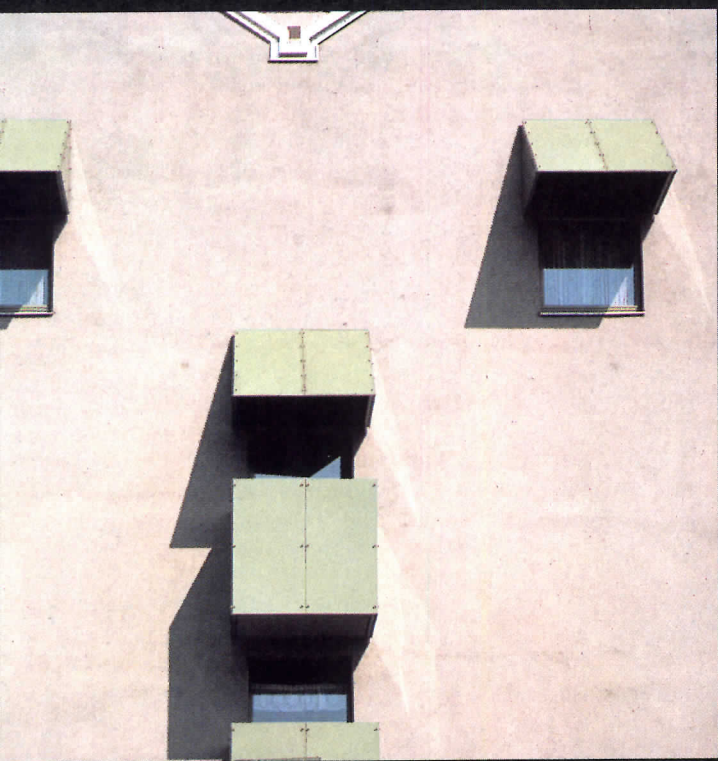
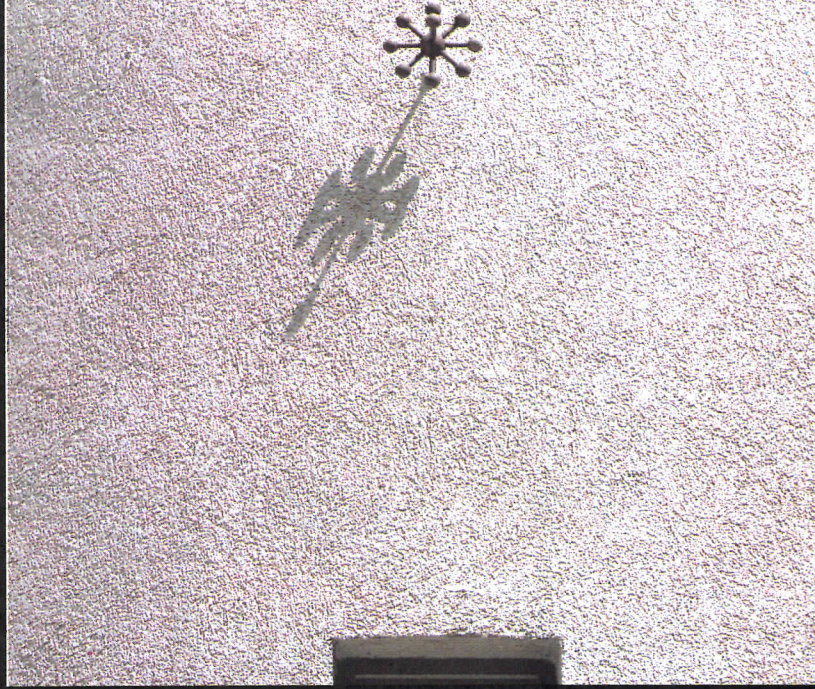
Hähndel, Wolf and Zell

Landscape consultant:

Hannelore Kossel

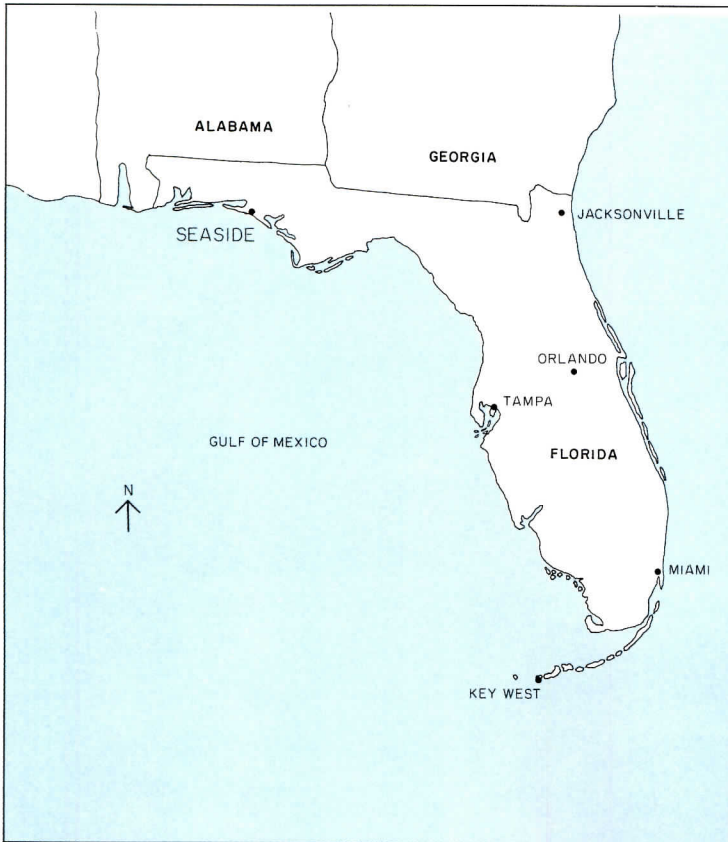


GROUND FLOOR



Coming of age

By Beth Dunlop



In its first flush of fame, Seaside was little more than a handful of pastel-painted cottages and white picket fences. Its renown was in the theoretical realm: an ingenious plan that would test timeless and too-seldom-applied notions of small-town design. Now, 10 years after developer Robert Davis enlisted Miami architects Andres Duany and Elizabeth Plater-Zyberk to translate his vision of a Florida Gulf Coast town into a workable plan, Seaside is coming of age. It has a new depth and breadth—enough so that on first glimpse it is the metal roofs that dominate, not the sugary sweet facades of the resort's collection of stick-Victorian-cracker-vernacular cottages. With more than 100 buildings completed, Seaside has turned into a real place.

Seaside is far from finished, to be sure, but in the last year, the resort has emphatically turned the corner from tinsel to town. At the heart of Seaside's most recent building activity are two new public buildings in the town center: Steven Holl's administration building and, attached to it like a shed, Deborah Berke's Modica Market (top photo page 100). They are spare, rough buildings, yet somehow elegant and strong enough to impart an uncanny feeling of instant permanence, if that isn't too much of an anomaly.

Leon Krier's tower house (page 101) is also nearly complete. This exquisite structure—detailed, disciplined, and evocative—seems almost a sentinel for the community, a temple-topped landmark within the town's tightly drawn lot lines. All around it, on Seaside's east side (aerial photo left), virtually every lot is filled in, and the paint on some of the older cottages is even beginning to peel, an aging process encouraged by salt-laden winds off the Gulf. Along the beach, architect Scott Merrill's six tiny "honeymoon cottages," one room wide and two stories high, sit in a row, pristinely placed behind the sand dunes like gentle, almost subdued punctuation points (bottom photo page 100). And throughout Seaside, abstract has turned to concrete—or, in most cases, clapboard siding and corrugated metal—as the town-planning visions that created the place are becoming built reality.

To look at Seaside today is to scrutinize the power of an idea, to evaluate what might be characterized as the town's sociability. The intent of Seaside's plan was to experiment with old-town architectural values and see if they could, in turn, produce different human values. In translation, that means a grocery where people linger to chat with the cashier and front porches that beckon passersby to conversation. Walking is a key pastime for residents, filling the hours between morning tennis, afternoon swim, and the ritual evening ice-cream cone at the beach. Young children scamper freely down sandy midblock paths. Vacation days pass at a leisurely pace. Small-town neighborly conventions—dropping by unannounced, for example—take hold even of first-time visitors. The experiment clearly works.

It works, of course, under optimum ecological and sociological conditions. Situated behind the dunes of one of America's loveliest beaches, Seaside draws primarily from affluent Southern cities like Atlanta and Birmingham. Yet, despite its relatively obscure location on the Florida panhandle, homeowners have migrated from more distant points, and they come with a thirst for the old conventions of small-town life, lost to them in their cities or their suburbs. Although Seaside is for now a summer resort with few full-time residents, some families have moved in year-round and others talk of it, so drawn are they to its geniality and

Beth Dunlop is the architecture critic of the Miami Herald.

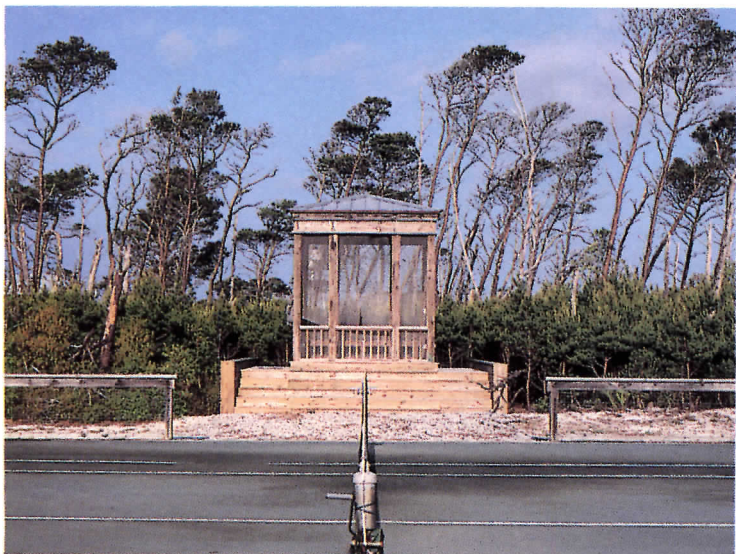
It's one thing to replicate the physical features of a small Southern town, quite another to recapture a vanishing way of life. Developer Robert Davis has tried to do both at Seaside, the celebrated new town on Florida's Gulf Coast. Beth Dunlop revisits Davis's ambitious experiment and reports on its success.

Michael Moran photos



Much of Seaside's nonresidential architecture exhibits some variation on a classical theme—witness the multicolored pool house that terminates the vista down Seaside Avenue (top) or the rustic temple-fronted gazebo that presides over the

community's tennis courts (middle). For Seaside's new meeting hall (bottom), architect Deborah Berke followed more vernacular instincts. Walls are sheathed in a combination of sealed plywood and batten, and corrugated metal over fiberglass batt insulation.



civility. “We started out with some values—my recollections of what family vacations at the beach were 40 years ago—and with a sense that these traditions could be carried forward to the next generation,” says Davis. Founded on idealism, Seaside is in no way a utopian venture. A better model might be Chautauqua, the 19th-century summer resort in upstate New York where culture and education were intertwined inextricably with daily life. (Interestingly, a second, but failed Chautauqua was begun in DeFuniak Springs, Florida, just 30 miles inland from Seaside; all that remains of that venture is a single building, now home to the Walton County Chamber of Commerce.)

Although Davis is a dreamer, he is also a canny developer who knew well what he would need to attract all those doctors and lawyers who sought both a delightful summer community and a shrewd real-estate investment. The greater the economic success of Seaside, the more persuasive the ideas become to those who would be skeptical of its philosophy. And yet, the kinds of people who were first drawn to Seaside—schoolteachers or artists or writers—now ironically find themselves priced out of the market there, so saleable has been the idea.

Davis is both developer and patriarch at Seaside. A graduate of Antioch College and Harvard Business School with a passion for architecture, he has shaped Seaside diligently, even fervently, with a conviction that starts with overall ideology and continues right down to the smallest detail, from the furniture in the cottages to the menu at the restaurant. Even the stock on the shelves of the Modica Market bears Davis’s imprint: there are dozens of bottles of virgin olive oil and imported vinegar but only a handful of bottled salad dressings.

Davis was building Modernist townhouse complexes in the Coconut Grove neighborhood of Miami when he inherited Seaside’s 80 beachfront acres from his grandfather, a Birmingham department-store magnate. After some fits and starts, he hired Duany and Plater-Zyberk to create a town plan. That was in 1980, and Duany and Plater-Zyberk were at the beginning of what was to evolve into a remarkable mission: to reintroduce the notion of town planning as the essential ingredient in returning American suburbs to their roots.

Seaside was their first effort. The plan they produced is both stunningly simple and urbanistically profound. It is a modified grid intersected by three diagonal streets that flow out of a focused civic and commercial space. Everything is scaled down to let smaller seem grander: thus Seaside Avenue, which leads from the post office to the swimming pool, takes on an imposing presence it might lack in another context. Though it is a strong plan armed with an equally strong companion code, it is not so rigid that it can’t be modified. Along the way, Leon Krier looked at the plan and suggested adding the pedestrian paths that now form a second network through the town (page 97). Homeowners chose to pave the streets in red brick; they originally were of crushed shell, more pleasing to the eye but less so to bare feet.

Duany notes that in the plan were certain inadvertent “errors of alignment and misinterpretations,” which today he views as fortuitous. “We’ve found that it added vitality. Now we’re less concerned about perfection. Urbanism thrives on a certain amount of irregularity.” There is a tricky balance to all this, allowing personal freedom on one hand without getting houses antithetical to the Seaside idea or esthetic. Some new houses, like Walter Chatham’s stripped-down two-pavilion residence (RECORD, mid-

Seaside is dense enough now that the whole dominates its parts. Standing-seam and corrugated metal roofs emerge as Seaside's most significant architectural feature in a panorama of the town from the rooftop aerie of Leon Krier's tower house (top). A view down

Savannah Street (bottom) reveals how the Seaside Code has shaped the town. The regulations allow property owners to select from eight housing types, and mandate such architectural features as porches, gable roofs, wood windows, and picket fences.



Seaside's largest structure to date is a mixed-use stucco-clad building designed by Steven Holl, which, together with a one-story concrete-block and corrugated-metal market and meeting hall designed by Deborah Berke, is the first major building in the town's

commercial core (below). Across county route 30A, six diminutive "honeymoon cottages" designed by Seaside town architect Scott Merrill (bottom) are based on the design of Thomas Jefferson's honeymoon cottage in Virginia.



April 1989, pages 100-105), stretch the code with subtlety and sophistication; others, like a tropical house designed by Victoria Casasco that features a second-floor "shutter room," do so with regional ebullience.

Krier's house is an utter jewel in its proportions, its finishes (all the windows, for example, are handmade), its tranquil traditionalism. "A pretty amazing tour de force," says Davis admiringly, adding that the house provides a gateway from the neighboring town of Seagrove Beach, just a block away. Elsewhere in Seaside, especially in the town's western half now being built up, the concoctions have become more elaborate, even excessive, as if a dozen or more Victorian ship captains had landed there at once. "The code," says Duany, "does not actually generate cute Victorian houses. That just happens to be the taste of America today." The code does call for a variety of housing types, ranging from the Charleston side-yard house to the ante-bellum manse, and mandates what goes where. The revival styles are abundant enough that the single authentic old house—transported by truck from the north Florida town of Chattahoochee—doesn't stand out.

That is not to say that Seaside has become a neatly patterned patchwork quilt. It still retains small elements of surprise and serendipity: a bath house painted, at Davis suggestion, vivid "Etruscan" colors of rich blues, pinks, and yellow-oranges (top photo page 98), or the Per-spi-cas-ity market, a kind of Moroccan bazaar on the beach. Most unexpected are the two new "downtown" structures, especially Holl's administration building. "It's aroused a certain amount of controversy," admits Davis, "because it's not the usual wood-frame building." Indeed, it is concrete, with a barrel roof, a two-story arcade, and an oddly evocative profile, its silhouette an oblique reference to buildings remembered from other places. It houses shops, offices, and, at the roof, six tower apartment suites, and throughout, formal finishes are juxtaposed with rough ones. Walls are dappled, rather than sleekly painted as is the Seaside norm. It is so compelling a work that many residents have unofficially dubbed it "The Holl Building," and for now, at least until the other large civic buildings come along, it is the visual focus of the town.

It is not, however, the pivotal element in the town's maturation. That role falls to the the Modica Market, which Davis terms "the most important step in developing the fabric of the town." Until the market opened, getting groceries involved a drive out of town to Destin, thus defeating the whole purpose of Duany/Plater-Zyberk's pedestrian-oriented plan. Deborah Berke, who has designed some of Seaside's most eloquent houses, strayed here to work in concrete block and corrugated metal. The market has the air of a European food hall, with items stacked on high shelves and produce and meat in the center. It is a wonderful space, enough so that vacationers buy less so they can return often.

In the end, Seaside will always have its detractors—traditionalists who despair over the new buildings by Holl, Berke, and Chatham as stark intrusions, modernists who see the whole thing as an architectural pastry tray. Indeed Seaside is not a sight—or indeed a site—for cynics. And the town does have a certain blush to it, even as paint begins to chip a bit and the dust begins to settle. Seaside may get more sophisticated over time, with more of an edge to its architecture, but it will never cease to be buoyed by the optimism about the possibilities, and felicities, of small-town life that went into creating it in the first place.

Though not large in terms of square footage, the house that Leon Krier has designed for his own use at Seaside seems more imposing than its neighbors—a result of its three-story height and dignified temple-fronted architecture. Located on Seaside's eastern border, the

tower house faces the Tupelo Street Pavilion and functions visually as a residential gateway into the town from the adjacent community of Seagrave Beach.



Seaside: The next generation

Seaside has always been a place for emerging young architects to try new ideas or test out the validity of old ones. And as it has grown from a handful of gingerbread-trimmed cottages tucked neatly behind picket fences into a multidimensional town, it has also become more diversified than anyone ever anticipated.

The first three pavilions that were erected to link town and beach are almost diaphanous, enough so that without the sight of high-rise condominiums in the distance, Seaside might seem a wrinkle in time—a Brigadoon on the beach and a winsome reminder of another, easier era.

But Seaside is of our times, and its message is for today, even if it is intended as an interpretation of history. Thus, Seaside's future buildings bear a considerable burden: they must strike a balance between past and present. This is not to say that the town's new structures need to be executed without wit, or whimsy. After all, Seaside is a place where people wear bikinis and go barefoot, and most of the new-building proposals shown on these pages to some extent combine classical dignity with the vernacular charm of a modest beachfront community.

The most frankly classical of the group is a recently completed beach pavilion, designed by Tony Atkin & Associates (Sam Olshin, project architect), that rises like some latter-day Temple of Vesta on the town's western end (1). Michael McDonough, by contrast, has designed a virtual gingerbread house of a beach pavilion (2) that is a blend of off-the-shelf trusses, tin roofing, wood decking, and "the bright colors and bold patterns of American folk art," according to the architect. For the Odessa Street pavilion (3), Roger Ferri has created a "capriccio"—a latticework structure with allusions to both Chippendale

furniture and palm fronds that is meant as a threshold leading down to the Gulf of Mexico.

In new buildings by Alex Gorlin and Charles Barrett, the references are, once again, more obviously classical. Gorlin's Seaside Town Center (4) draws on venerable sources, if only in abstraction, that hint at early 20th-century commercial architecture. Lying somewhere "in between rational and romantic" (Gorlin's words), the mixed-use facility will be a stucco-clad building at the foot of Seaside Avenue. It features an arcade passing ground-floor shops, a porch off second-story apartments, and octagonal towers that will serve as a gateway into residential Seaside. Barrett's serene bath house (5), an Ionic temple presiding over a long narrow lap pool, draws on Viollet-le-Duc and Vitruvius, but, he says, "it is all very intuitive" as well.

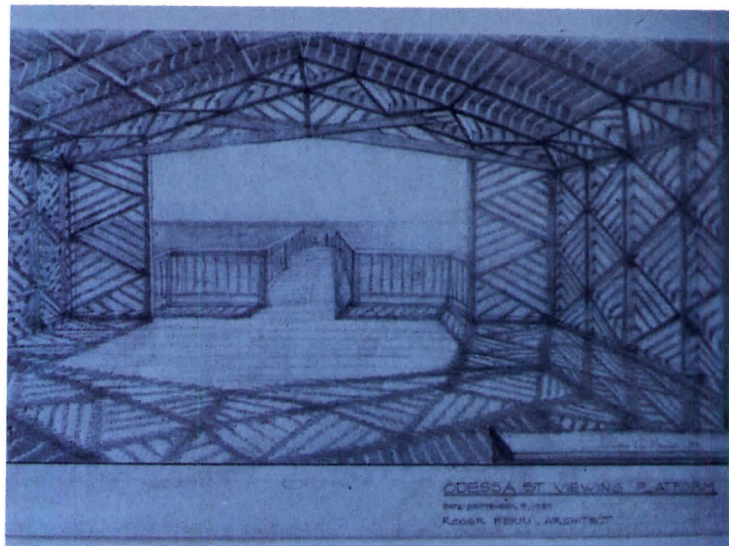
The most rational of Seaside's new-building proposals is Walter Chatham's proposed Town Hall (6)—a symmetrical, rhythmic exercise exhibiting a sober monumentality that befits its role as a public building. More romantic, perhaps, is the wooden tower (page 81) that Leon Krier has proposed to overlook an outdoor amphitheater, directly behind the town's current post office. *B. D.*



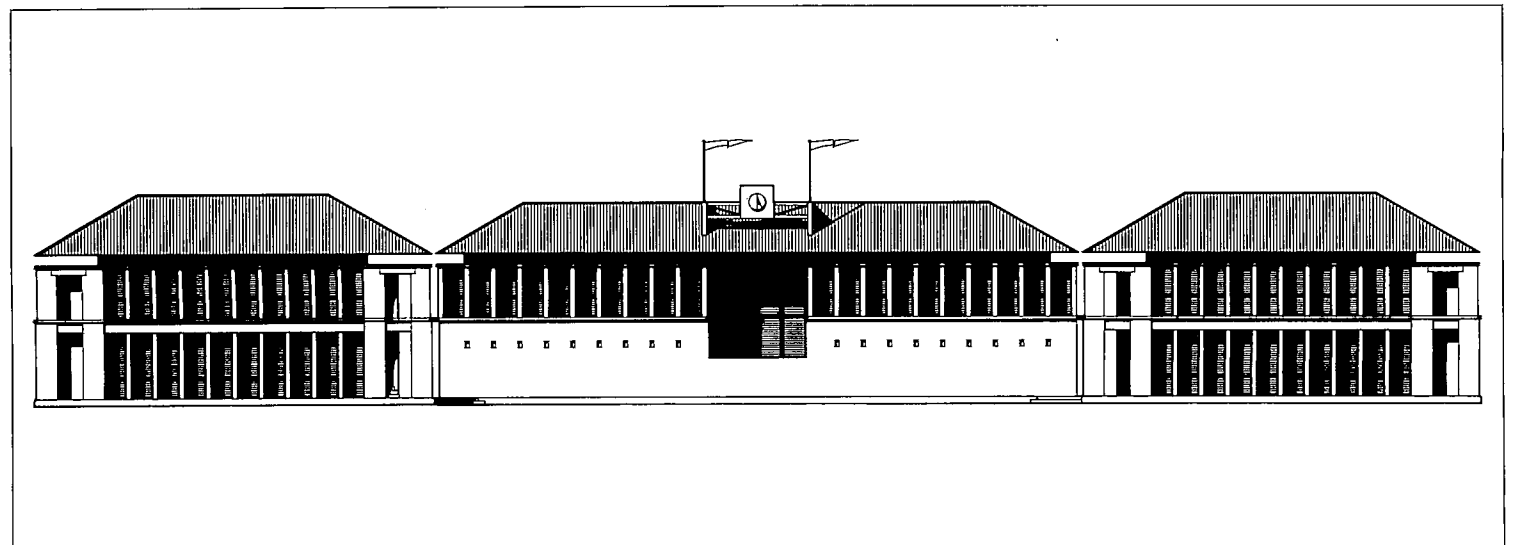
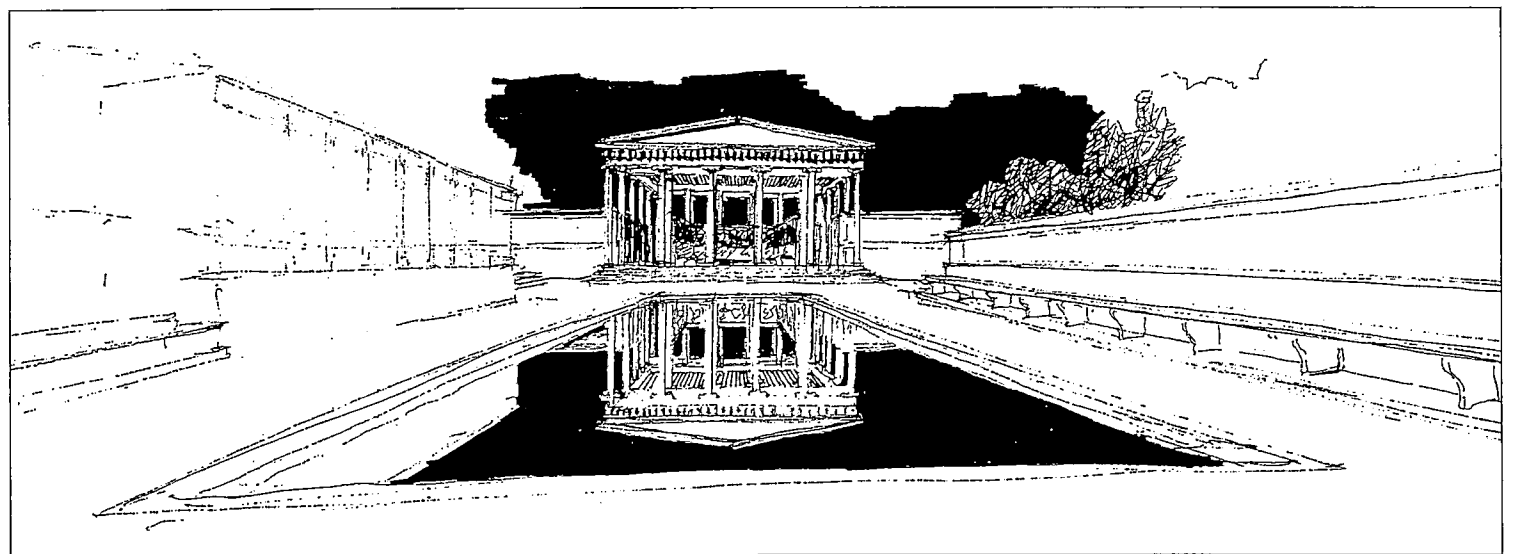
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STREET
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LOS ANGELES
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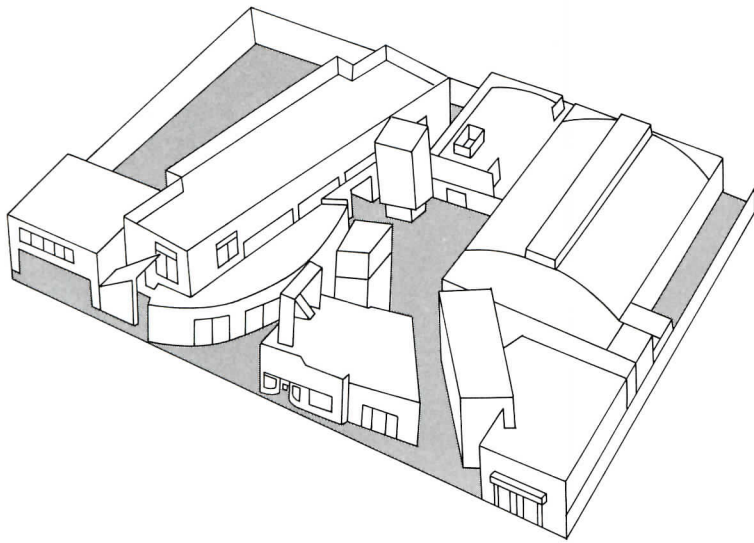
Main Street



Edgemar Development
Santa Monica, California
Frank O. Gehry & Associates,
Architects

Frank Gehry's design for Edgemar reflects his collage approach to architecture, which won him this year's Pritzker Prize. In honoring Gehry, the jury commended the "restless spirit [that makes his] buildings a unique expression of contemporary society and its ambivalent values."

©Tom Bonner photos



Located on Main Street, Santa Monica, two blocks from the Pacific Ocean, the Edgemar Development consists of the 10,000-square-foot Santa Monica Museum of Art, a 2,700-square-foot restaurant, 14,000 square feet of retail space, 8,000 square feet of office space, and a parking garage for 100 vehicles. One of the complex's first tenants is the Gallery of Functional Art (left in photo opposite), which occupies a streetfront stucco structure that curves toward an inner courtyard.

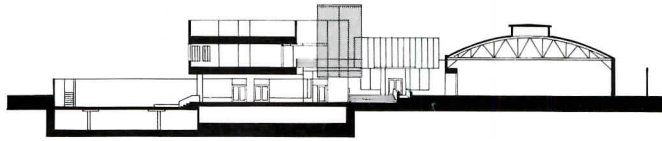
When Abby Sher embarked on her plan to transform Santa Monica's derelict Edgemar Farms dairy into a mixed-use cultural and retail complex, she did not boast a typical developer's portfolio. Sher's previous occupation as a documentary filmmaker and her selection of Frank O. Gehry as architect served her well among members of the art world whom she hoped would support the project's museum, but she quickly discovered that what was needed most for her first major foray into the real-estate market was a proficiency in the often arcane art of local politics. Experiencing a period of unprecedented commercial development, the once sleepy Los Angeles suburb remains, according to Sher, "a two-issue town of rent control and slow growth." A longtime Santa Monica resident, the director-turned-developer considers the latter issue to be a legitimate concern for a community established as a seaside retreat for well-to-do Angelenos. Nevertheless, she contends that the local powers-that-be impeded the progress of her proposal by interpreting town ordinances in the most restrictive manner possible in an attention-getting ploy intended to mollify protesting Santa Monicans who claim that *all* new construction endangers their "quality of life."

That Edgemar should have been targeted by the town's slow-growth advocates is ironic, given the undistinguished row of highrises approved in recent years along Ocean Avenue and Sher's admirable mission to integrate cultural facilities typical of cities in a villagelike enclave of such Main Street staples as a bakery, bookshop, restaurant, and ice-cream parlor. Although the project's detractors have accused the developer of demeaning the nonprofit Santa Monica Museum of Art by surrounding it with shops, Edgemar's commercial component not only indirectly finances the fledgling institution (Sher gave museum director Thomas Rhoads a five-year, rent-free lease on a 10,000-square-foot building, with an open-ended option to purchase it at one-half market value), but is also intended as a draw to the museum.

Santa Monica-based Gehry, having just completed the Temporary Contemporary museum in a converted downtown L. A. warehouse when the project began some five years ago, was the obvious choice as creative mastermind. The architect's ability to break down a complex program into distinct volumes proved to be ideally suited to the diverse nature of Sher's enterprise. Through an artful combination of renovation and new construction, Gehry achieved a deliberate, though seemingly casual hodgepodge of shapes and materials. By propping up the roof of a bow-truss-topped structure to replace its dilapidated masonry walls, for example, Gehry remade the former egg-processing plant into the open-span museum space (upper right in axonometric). Along Main Street, Gehry respected the scale of the mostly two-story thoroughfare by subdividing Edgemar's retail space into separate buildings, including a rebuilt version of an existing Art Deco structure (top left), which he clad in sea-foam green tile and copper. Three open-framed "towers" were built to give the complex an appropriately urban presence without obstructing ocean views of the hillside residents behind. One tower, draped in signature Gehry chain-link mesh, contains an elevator to the second-story offices (bottom page 108). Sher's insistence on signing "quality" tenants and a particularly vigilant neighbor's last-ditch efforts to block occupancy permits have considerably delayed leasing of individual spaces. Even after months of standing virtually empty, Edgemar is not expected to be fully occupied until next spring. *Karen D. Stein*



A combination of renovated existing buildings and new construction, Frank Gehry's seemingly casual arrangement of volumes and materials is focused on a central courtyard, which recalls an outdoor shopping mall. A chain-link-covered elevator shaft is one of three campanilelike elements that symbolically mark the complex (below), while a sculptural galvanized-metal colonnade screens a staircase to second-floor offices (opposite).



Edgemar Development
Santa Monica, California

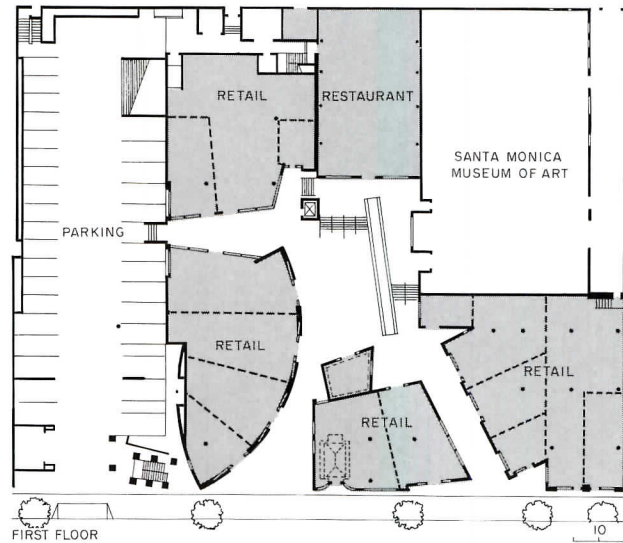
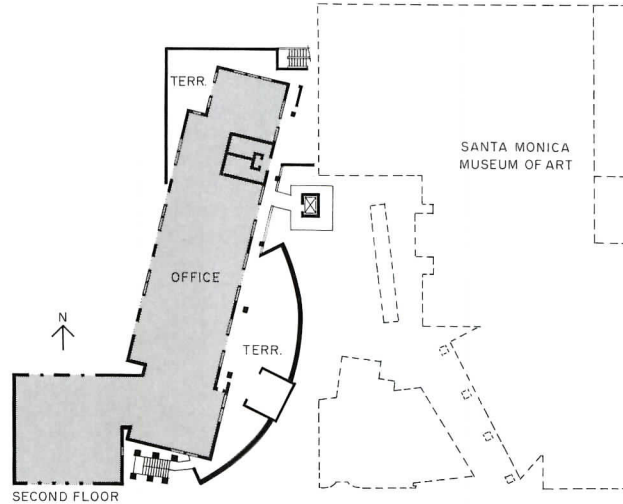
Owners:
Sher Development/Santa
Monica Museum of Art

Architect:
Frank O. Gehry & Associates—
Frank O. Gehry, principal-in-
charge; David Denton, project
manager; Greg Walsh, Sergio
Zeballos, Adolph Ortega,
Carroll Stockard, Rene Ilustre,
Bob Hale, Anne Greenwald,
Sharon Williams, Bobbie
Weiser, David Pakshong,
Randy Leffler, Susan Narduli,
project team

Engineer:
Kurily & Szymanski

Consultant:
Emmet Wemple Associates
(landscape)

General contractor:
Tyler & Cobleigh





Return to splendor



Prospect Park Administrator's Office



When it was completed in 1874, the Oriental Pavilion was one of several buildings in Prospect Park designed by Calvert Vaux; by the time it was nearly destroyed by fire 100 years later, however, it was the last Vaux building left standing in the park. Located in an area known as the Concert Grove, this piece of Moghul-inspired Victoriana served as the colorful focal point of a picturesque ensemble of architecture and gardens overlooking Prospect Lake. Over time the pavilion deteriorated (its playful finials are missing in a circa 1940 view, left), and the only elements not completely ruined in the fire were eight cast-iron pillars that had supported the structure's massive roof.

Determined not to let the building disappear into history, Joseph and Adrienne Bresnan, architects then on the staff of the New York City Department of Parks and Recreation, initiated an effort to reconstruct the pavilion according to Vaux's original scheme. The city commissioned James Lamantia, a New Orleans architect who had worked with the Bresnans on restoring Vaux's Bethesda Fountain in Central Park, to execute a set of drawings based on historic photographs (no original plans remained).

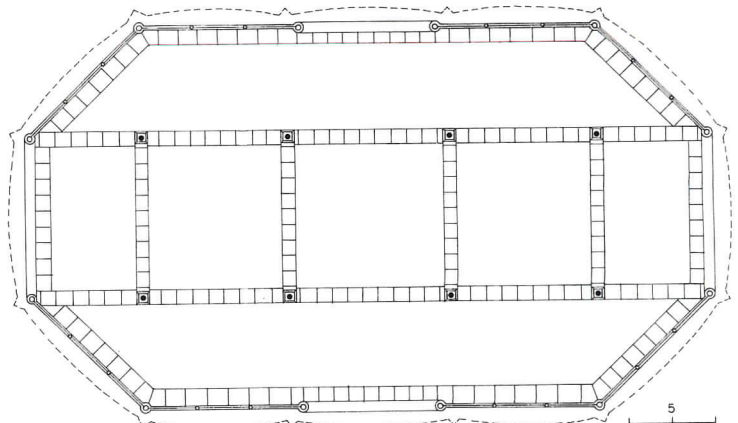
Oriental Pavilion
Prospect Park
Brooklyn, New York
James Lamantia/
Russo & Sonder Architects



Stephen Senigo photos, except as noted

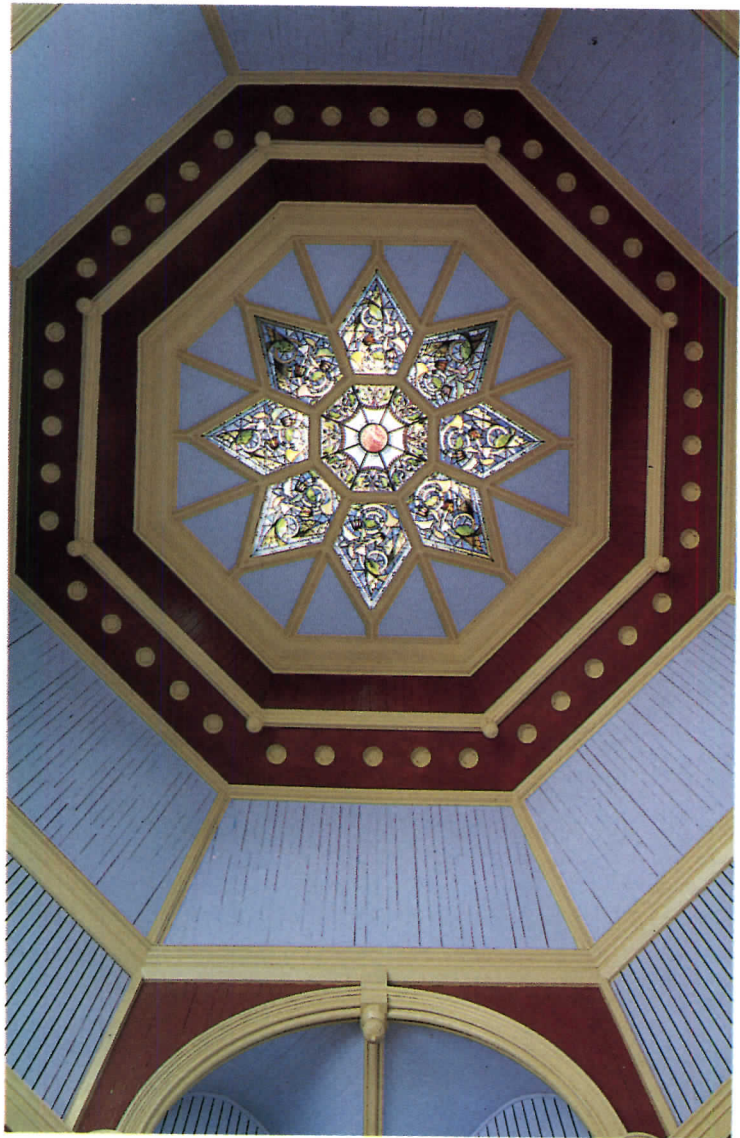
In reconstructing the pavilion, Lamantia, working in joint venture with William Rogan of the New York firm Russo & Sonder, faced two significant challenges: reproducing the precise curves of the structure's enormous roof, which Lamantia characterizes as "a great sculptural object," and determining the building's proper late-Victorian color scheme. The new roof is clad in terne-coated stainless-steel shingles and supported on a truss comprising wood members and steel tube (section page 113). Lamantia turned to another Vaux building of similar vintage—the National Arts Club in Gramercy Park—in order to arrive at a working palette of grays, greens, and mauves. The pavilion's stained-glass skylight exhibits a similar color scheme.

In the end, the architects could not replicate every detail of the original structure. "The brio and elegance of some of the carving just can't be bought today," notes Lamantia. Still, although the veracity of color and quality of detail on the rebuilt pavilion does not in all cases match the original, Lamantia is satisfied with the project. "I think we got more than the carcass of it," he observes. "We got the soul of the design." *Scott Gutterman*

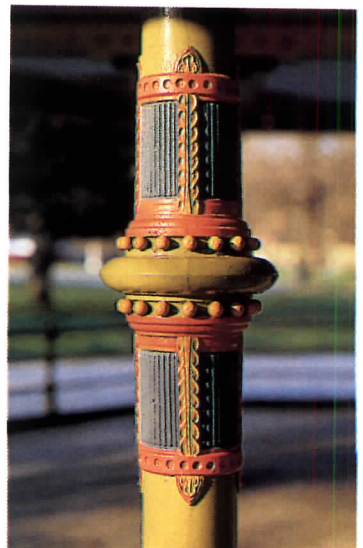


Although the joinery for the Oriental Pavilion's cast-iron columns and roof was extremely complex, "we were able to chain-saw off a section of the old roof to see how it was put together," reports William Rogan. The building's stained-glass skylight (below right) was

reproduced with fewer "jewels" than the original, and its color scheme was "largely guessed at," notes James Lamantia. Since no drawings remained, stained-glass specialist Charles Barone copied the skylight's design cartoon from photographs. The architects'

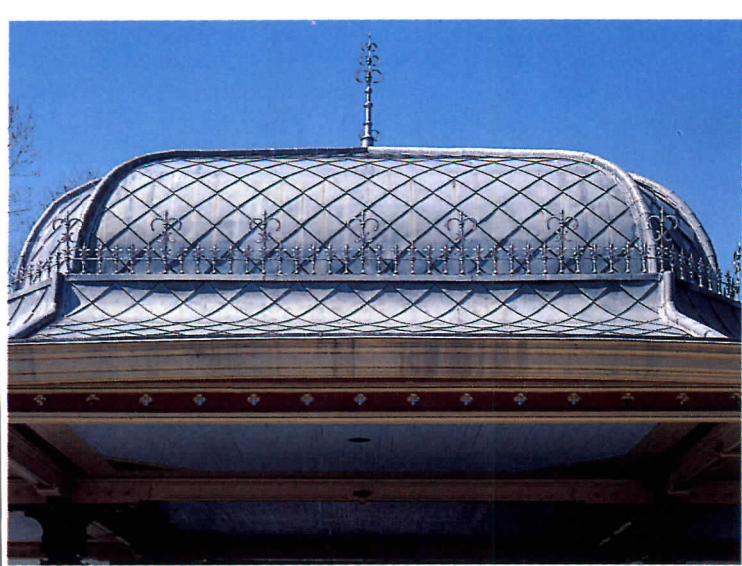
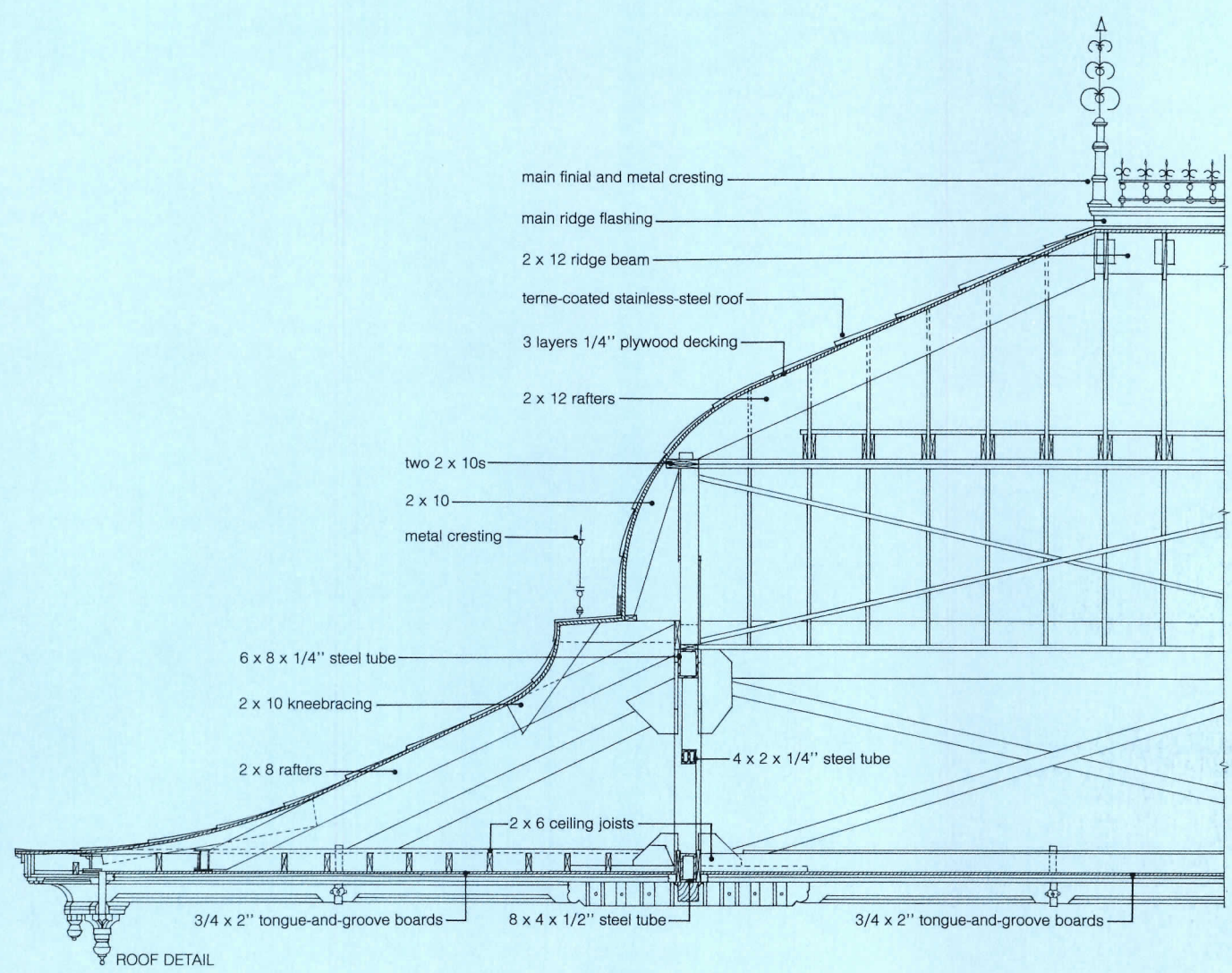


Oriental Pavilion
Prospect Park
Brooklyn, New York
Owner:
New York City Department of Parks and Recreation
Architect:
James Lamantia/Russo & Sonder, joint-venture architects—James Lamantia, principal-in-charge; William Rogan, project architect; Vonée Reneau, project team
Consultants:
Charles Barone (stained glass); Historic Arts and Casting (cast iron)
General contractor:
Trocom Construction Corp.



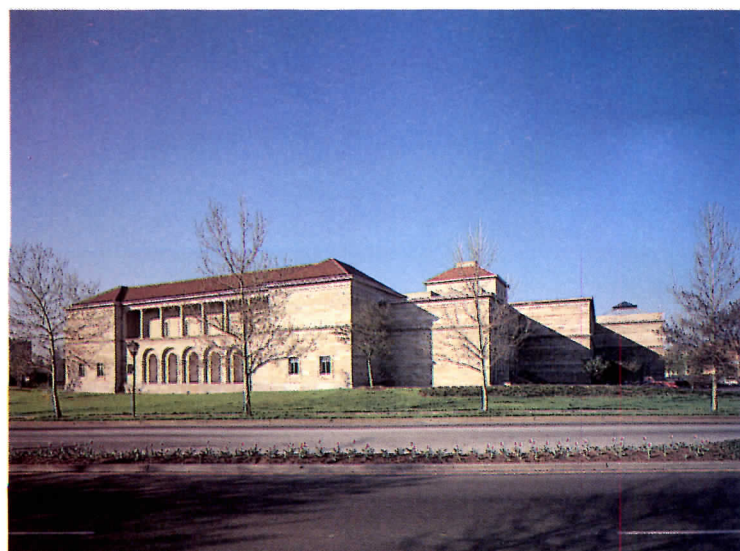
biggest challenge was rebuilding the pavilion's awesome roof (section below). From the cast-iron cresting that tops the structure to what Rogan refers to as its enormous "bow between two bays," the roof has an Asiatic grandeur that Lamantia

partly attributes to the influence of Jacob Wrey Mould, an architect who frequently worked with Calvert Vaux. "There is a sophistication to detail that reveals an almost Eastern complexity," notes Lamantia. "The whole thing just breathes exoticism."



Order out of chaos

©Peter Aaron/ESTO photos



When George Hartman gives a slide presentation of his firm's expansion and renovation of the Chrysler Museum, he ends the show with a shot of a sign at the Unitarian Church of Norfolk not far from the museum. The sign captures the essence of Hartman-Cox's work at the Chrysler in one simple quotation: "One of the attributes of love . . . is to bring harmony and order out of chaos."

A visit to the Chrysler indeed shows Hartman-Cox's work to be a labor of love. The museum today is a stately assemblage of Florentine Renaissance-inspired elements organized around a covered central courtyard. It was not always this way. In fact, ever since The Great Depression wreaked havoc with the museum's original master plan, the Chrysler, like many similar institutions in other cities, had grown in fits and starts, until it had become a collection of seemingly unrelated additions housing an excellent but poorly organized art collection ranging in scope from 2700 B. C. to the present.

The Chrysler, which began as the Norfolk Museum of Arts and Sciences, opened in 1933 with one wing of what was to be a U-shaped palazzo fronting on The Hague, an inlet of the Elizabeth

By sympathetically combining new construction with the renovation of existing galleries, Hartman-Cox Architects have given Norfolk's Chrysler Museum a unified building complex worthy of the institution's splendid collections.



River. It was a bad time for big plans, however, and the grand designs drawn up by architects Peebles & Ferguson were seriously compromised from the very outset. Although two other wings were completed by 1938, the arched entrance loggia and the open arcade surrounding the central courtyard were bricked up in order to add more interior square footage. As a result, the museum lost the services of the courtyard as an orienting feature and found itself without a grand entrance.

Two later additions—one in 1965, a second in 1974—went off on their own architectural tangents, applying further layers of confusion to an already muddled plan. The 1965 work, done in a stripped-down Classical style by William and Geoffrey Platt, pin-wheeled two new wings around an asymmetrically placed tower. Nine years later Williams & Tazewell placed a Brutalist concrete block on the eastern side of the site (facing the city, instead of The Hague) and moved the entrance to the museum along with it.

"The building suffered from a lack of clarity and a lack of identity," says William Grater, project architect for Hartman-Cox. In other words, the museum had developed a schizophrenic

personality that was at odds with itself, its site, and its role in the city. "The real challenge was to make it as simple as we could," explains Grater. "We didn't want to play with shifted grids or anything like that. The plan was too mixed up already."

Hartman-Cox's solution to the museum's problems involved a five-step approach. First, the architects moved the main entrance back to The Hague facade and opened up the loggia so it could finally serve as the grand welcoming feature it was originally intended to be (above). Second, they balanced the front elevation with a new wing of galleries (small photo opposite) and a second tower. To create a unified composition, the architects wrapped the new buildings, as well as the 1965 addition, in the same limestone as the original 1930s structure. Third, they covered the central courtyard with a glass roof and opened it to the arcades that surround it on three sides (page 117). Fourth, they established a strong cross-axis through the courtyard to the new galleries on the north and the renovated galleries on the south. Finally, Hartman-Cox surrounded (and thus concealed) the 1974 addition with a new library wing.

(continued)



The result is a museum that reads as a unified building instead of a hodgepodge of additions. It is a museum that welcomes visitors inside, then directs them to major galleries. Some may question the ethics of resurfacing, and hence obliterating, one era's architecture with a new material, but in this particular case, it is hard to argue with the final product.

The centerpiece of the project is clearly the covered courtyard (opposite), an impressive space topped with wooden trusses inspired by 15th-century Florentine roofs. At the far end of the courtyard is a new staircase that is monumental enough to hold its own in such a grand room, yet carefully proportioned so it doesn't steal the scene. The courtyard does more than just impress visitors at the start of their stay at the museum; it also provides a host of directional cues throughout their tour of the galleries. Its arcade offers entry to the museum's highly regarded collections of glass and Art Nouveau furniture on one side and temporary shows in a new changing-exhibitions gallery on the other. Its grand staircase leads up to a series of painting and sculpture galleries, which have been rearranged in chronological order around the skylit space. Its second-story windows, long bricked up, once again offer views of galleries yet to be explored and those already visited.

Equally impressive are the Chrysler's new and renovated galleries (pages 118-119). The project added 43,000 square feet of new galleries and renovated about a third—40,800 square feet—of the exhibition space. Most of the galleries received new cove lighting tucked inside racks about three feet from walls. The cove lighting evenly washes art hanging on the walls, while spots hit freestanding pieces of sculpture. Two second-story galleries, one new and one renovated, now receive natural illumination through roof skylights (bottom photos page 119). The galleries work because they are properly detailed, in addition to being well lit. Baseboards, crown molding, and cornices add the right sense of scale to these rooms, and some of them also help camouflage air ducts and returns. The result is a series of spaces that serve the museum's art collections without calling attention to themselves.

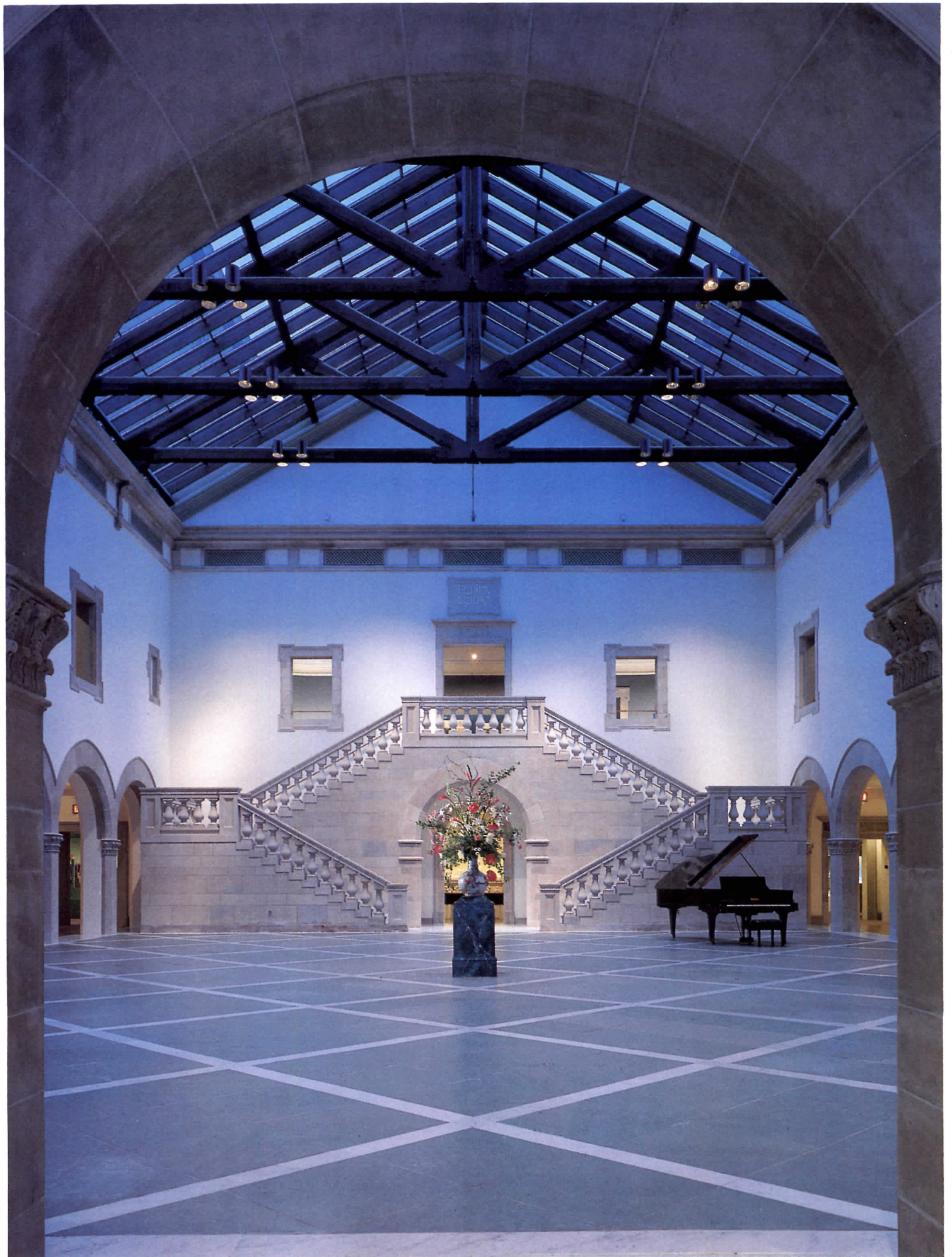
For many years the Chrysler fought its site, turning its back on its dramatic waterfront and presenting strikingly different personalities with each facade. Now it sits comfortably on its property, facing the right direction and reaching out with twin porches on either side of the grand entrance. The porches, one new and the other a result of the 1965 addition, help define lovely gardens that securely tie this building to the land around it.

While reorienting the museum to The Hague, Hartman-Cox did not forsake the building's eastern facade, which for 15 years served as its front and has always faced the city of Norfolk. What the architects did was to echo—but not copy—the elevation of the entrance loggia on The Hague, creating a new composition of five large sculpture niches on the first level and a columned portico above (small photo page 114). The sculptures have yet to arrive, but the facade is still a neat bit of late 20th-century Classicism that sets the tone for the rest of the building.

The quality of the recent work at the Chrysler is remarkable considering the tight budget constraints within which the architects worked. The entire project weighed in at \$13.5 million, with new construction costing about \$100 a square foot and renovation costing about \$60 a square foot. As George Hartman explains, "We tore down nothing and wasted nothing—not even the squeal." *Clifford Pearson*



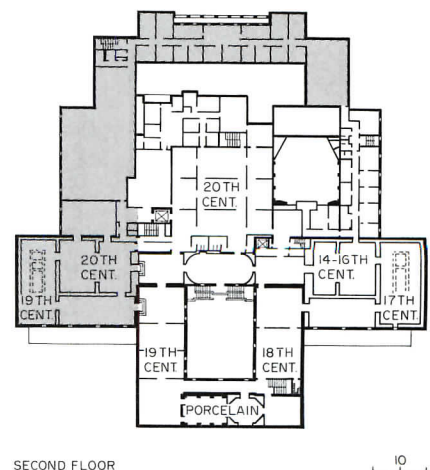
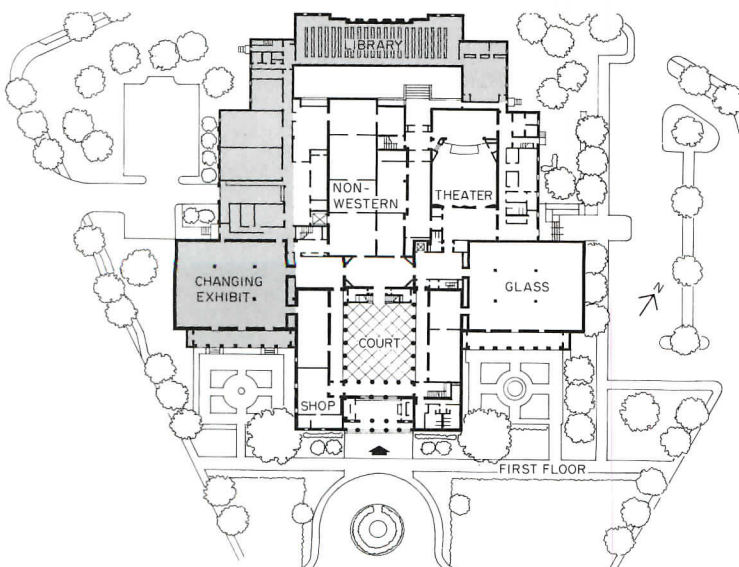
Arches on the entrance loggia (top) and around the central courtyard (above) were once bricked up, but now welcome visitors inside the museum and into the most prominent room of the building. The architects resheathed the courtyard floor with slate and marble, stuccoed its walls, and roofed it with glass supported by great wooden trusses.



Hartman-Cox added 43,000 square feet of new galleries and renovated 40,800 square feet of existing galleries. Architectural details such as molding, cornices, and baseboards create a suitably dignified setting for the art and help scale the rooms for comfortable viewing.

Molding was also used to emphasize doorways to the most important galleries. New cove lighting was installed on ceilings about three feet from walls—the same distance visitors usually stand when viewing paintings. Plans reveal how new construction (shaded

areas) created a more symmetrical layout. Twin galleries—one new (opposite bottom left) and the other renovated (opposite bottom right)—were opened up with skylights. Cross beams in the renovated gallery were retained for structural reasons.



*The Chrysler Museum
Norfolk, Virginia*

Owner:
The Chrysler Museum

Architect:
*Hartman-Cox Architects—
George Hartman, partner-in-
charge; William A. Grater,
Robert Shutler, Mary Griffin*

*Turnbull, project
architects*

Associated architect:
Shriver & Holland Architects

Engineers:
*James Madison Cutts
(structural); Nash M. Love &
Associates (mechanical/
electrical)*

Consultants:

*Peter G. Rolland and
Associates (landscape
architects); Claude R. Engle
(lighting); ElRoy Quenroe
(Glass Institute design)*

General contractor:

John W. Daniel Company, Inc.



Horse show



Despite its imposing size, Cellular Farm's combined stable for Grand Prix horses and lodge for human attendants settles comfortably into a bucolic countryside, abetted by forms and materials that suggest such rural icons as barns, silos, and farmhouses.

A little more than an hour's drive north from Manhattan brings you to horse country—a timeless landscape of forest-crowned hills and grassy fields into which Beyer Blinder Belle has introduced an equally timeless “manor” to house Grand Prix show horses and their human equerries. Though overlaid with a manmade crazy quilt of narrow lanes, stone walls, and white-fenced paddocks, the far-reaching panorama from the hilltop site discloses few buildings. The settled quality of the stable complex owes less to the immediate built context than to kinship with the enduring archetypes of agrarian architecture. The parti harks back to the close-clustered barns and dwellings of old European farmsteads; its components are rendered in a New England vernacular simple enough to suit their use, formal enough to wear classical flourishes with dignity.

The complex (plan overleaf) consists of the stable proper, with stalls on either side of a central corridor and an attached ell for support facilities, and, opposite it across a U-shaped courtyard, a lodge containing living quarters for the stable manager and grooms. At the south end of the lodge, a silolike turret encloses an apartment for the estate's owners, which features a third-story lounge taking in 360-degree views.

The homely vocabulary of fieldstone bases, high wood-shingled roofs, and walls of gray shingles or clapboard with white trim is enriched by meticulous “carpenter” detailing as well as by decorative embellishments that also make practical contributions. Dormer-transoms (with pediments alternating triangle and arc) that top 10-foot-high Dutch doors at each stall, for example, punctuate the stable's long facades, but more importantly admit light and air—as do the central lantern-topped clock tower, large sliding doors and arched mow doors at either end, and even the little ocular grilles that vent the hayloft above. At the lodge, entries to the grooms' apartments are similarly signaled by “sentry boxes,” while the manager's quarters sport a shed dormer and chimney that help to balance the turret at the far end of the building. A lower-level garage/basement doubles as a retaining wall to negotiate the drop from courtyard to roadway. The most telling (if subtle) summation, though, is expressed not in detail but proportion: the lodge for human members of the community is two-thirds the scale of the stable. *Margaret Gaskie*



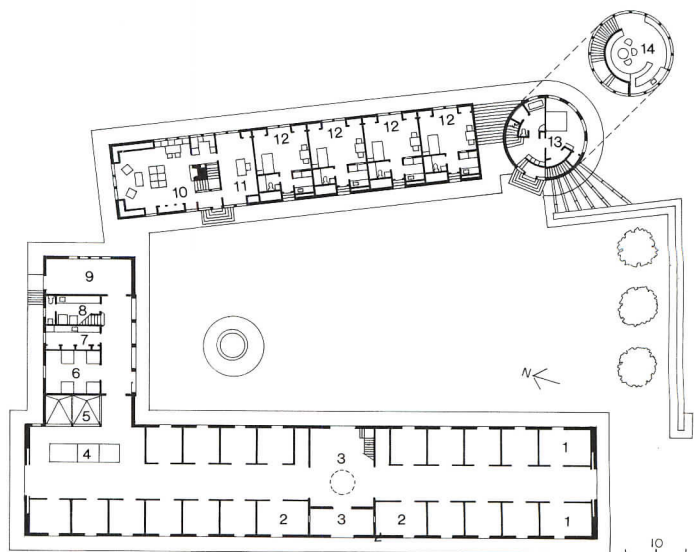


Both the forthrightness and the elegance of the stable complex's exteriors carry through to its interiors. A hybrid stable plan, providing both a central corridor and direct access from stalls to the outside, joins with doors and dormers to admit plentiful light and ventilation.

At the center of the stable, a rather grand stair and 10-foot-diameter lantern open to the upper hay loft, flanked by rows of stalls on either side. Round structural-steel columns are integrated with stalls custom-fabricated of steel top railings and wood-paneled wainscots.



1. Stallion
2. Foaling
3. Tack
4. Whirlpool
5. Wash
6. Feed
7. Pharmacy
8. Laundry
9. Storage
10. Manager's apartment
11. Manager's office
12. Groom
13. Bedroom
14. Lounge



*Cellular Farm
North Castle, New York*

Owner:
George L. Lindemann, Jr.

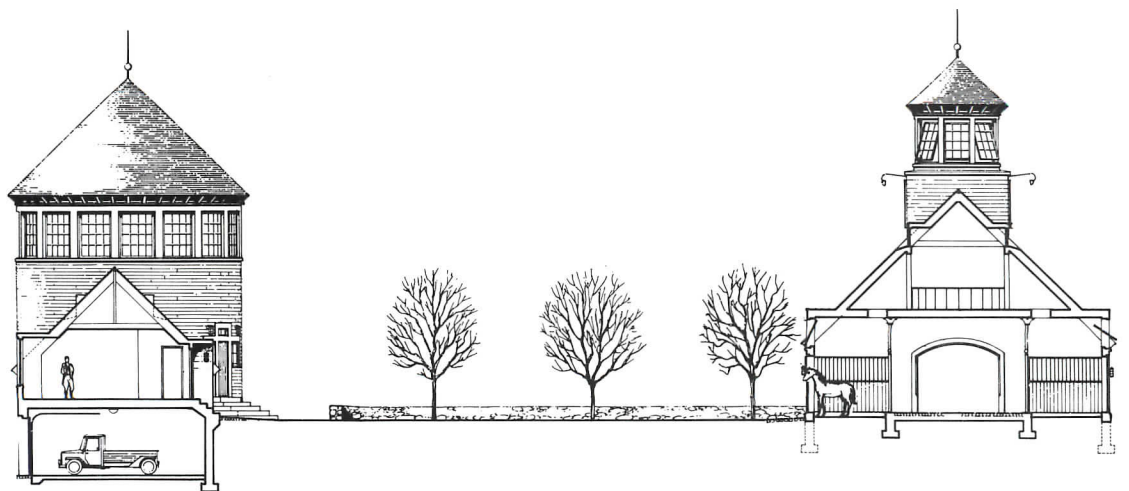
Architect:
*Beyer Blinder Belle—Richard
Blinder, partner-in-charge;
Peter DeWitt, design partner;
Charles Kramer, project*

*manager; Richard Levitz,
project architect*

Engineer:
*Robert Silman Associates, P. C.
(structural)*

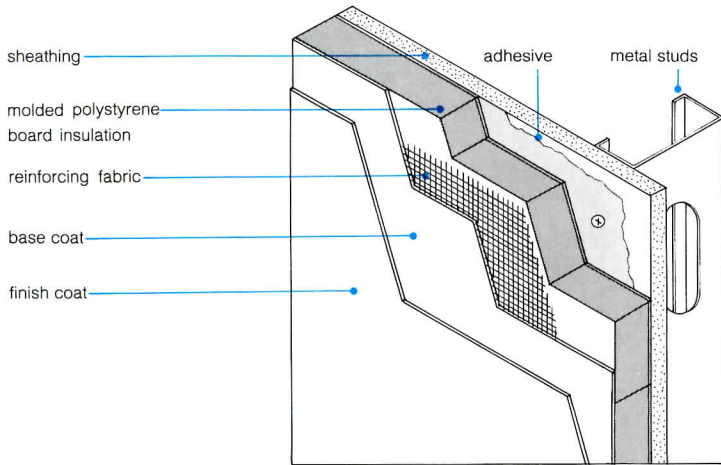
Consultant:
Susan Cohen (landscape)

General contractor:
Wadia Associates, Inc.

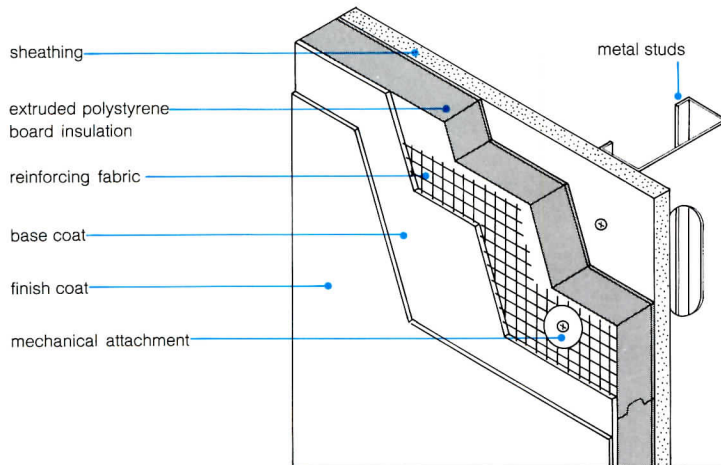


Exterior insulation and finish systems are lightweight, economical, and versatile, but close attention must be paid to details during design and quality control during installation.

EIF systems: quality lost in the translation?



POLYMER-BASED SYSTEM (PB)



POLYMER-MODIFIED SYSTEM (PM)

Offering a low installed cost, an efficient location for insulation, a variety of finish textures and colors, and considerable decorative versatility, Exterior Insulation and Finish Systems (EIFSs) have become a widely specified wall-cladding system. Yet they have been implicated in a high number of problem buildings, primarily because poorly detailed or improperly installed walls have failed to prevent water intrusion. Since the system (unlike most traditional claddings) lacks redundancy in its resistance to water penetration, impact damage, or attachment failure, it requires unusually specific understanding of its limitations as well as its advantages.

An EIFS typically comprises a two-coat protective coating over a layer of polystyrene insulation, which is, in turn, attached to the building structure. Two generic types are now available: polymer-based (PB) systems and polymer-modified (PM) systems. They differ in finish-coat components and types of reinforcement, insulating board, and attachment (left), but under a textured and colored finish coat they typically share a base coat that combines portland cement and acrylic polymers applied in sufficient thickness to fully embed a reinforcing mesh, attaching the finish coat to the insulation.

Mark Williams, a building diagnostic consultant who has done considerable research on EIF systems, has found that "many problems are due to installing the system in ways it shouldn't be used," but a task group of the American Society of Testing and Materials (ASTM) is also investigating the differences in various American coating formulations and the ways they differ from those used in Europe (where EIFS originated), as well as the implications of differing substrates to which the product is typically applied (masonry in Europe, adhesive attachment to

exterior gypsum sheathing over metal studs in the U. S.). After all, the most common failure of EIFS walls occurs when the paper facing of the underlying sheathing delaminates from the gypsum core due to wetness during construction or later leakage (page 126). EIF systems must be detailed as a waterproof barrier, since there is no secondary means (such as a wall cavity) to remove accumulated water. "Manufacturers' details don't show flashings or vapor barriers because they don't want to take responsibility for them," says Thomas Schwartz, of Simpson Gumpertz & Heger, engineers who have analyzed problem-plagued EIFS-clad structures. It is up to the architect to integrate such devices correctly, and to be aware of areas where particular attention is needed (page 127). Further, Schwartz has seen enough installations that did not meet specifications to advise the use of only manufacturer-certified installers backed up by close on-site supervision, perhaps by an independent agency.

Choosing between PB and PM systems can be complicated because each has distinct qualities requiring careful analysis of the job at hand. For example, standard PB assemblies are less resistant to puncture-type impacts than PMs, but with additional layers of reinforcing fabric, PBs can nearly match the performance of PMs, according to Mark Williams. Properly applied coatings are highly resistant to water penetration, but many products are not significantly vapor permeable, an important factor should environmental conditions permit condensation of damaging moisture within the wall. Responding to concern over gypsum sheathing as the weak link in the cladding, EIFS manufacturers are now offering mechanical fastening of the cladding directly to supporting

EIF systems compared

System attributes ¹	PB	PB high impact	PM	Portland Cement Stucco
flexibility	3	2	1	1
vapor permeability	1-3	2	1-2	3
number of control joints	1	1	3	3
conforms to surface decoration	3	2	2	1
Options:¹				
sand finish	y	y	y	y
troweled finish	y	y	y	y
aggregate finish	y	y	y	y
adhesive attachment	y	y	n	na
mechanical attachment	y	y	r	na
number of fabric layers	1	2-3	1	na

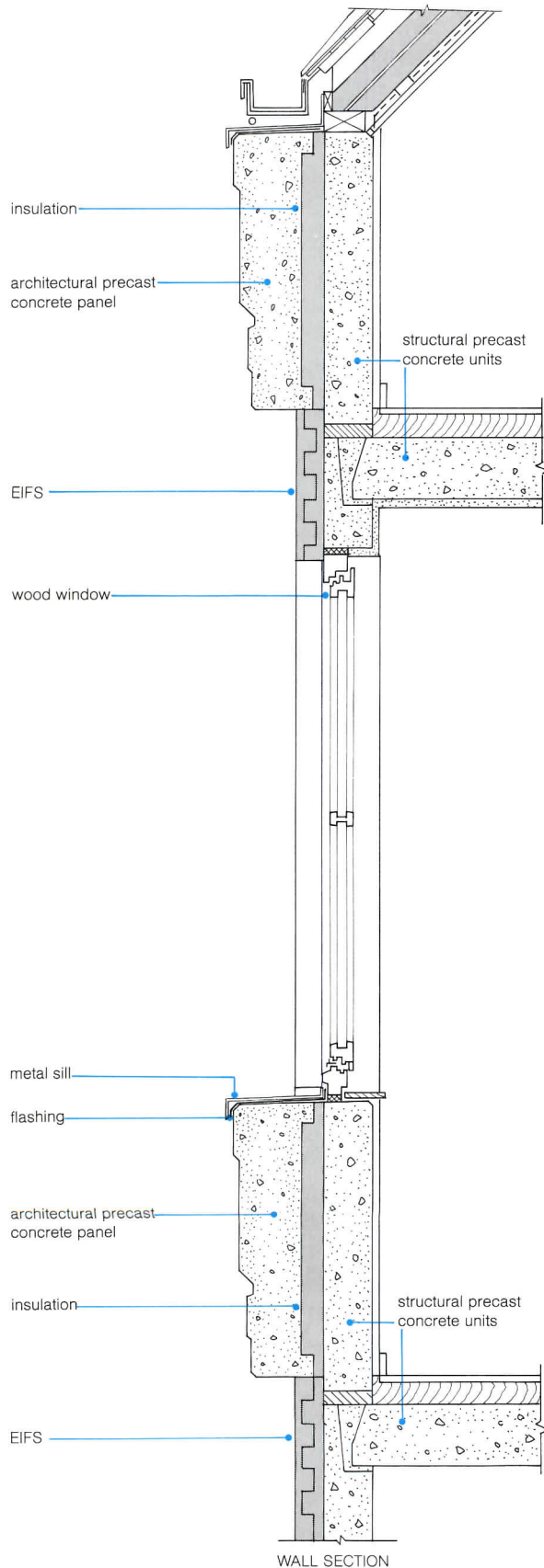
1 = least, 3 = most, y = yes, n = no, r = required, na = not applicable

1. Typical systems; manufacturers should be consulted for other combinations and specific data. Judgments are qualitative for initial comparison. Sources: EIMA, Kenney/Williams/Williams.

Synthetic stucco's European roots

First developed in Germany as a crack-filler for portland-cement stucco, synthetic protective coatings are now offered as complete cladding systems in which precise reveals, moldings, and other decorative effects can be

formed. In contrast to U.S. usage, the system is usually applied in Europe over masonry, hollow tile, or in the case of Tegel Harbor, in Berlin (Moore Ruble Yudell, Architect), over precast-concrete panels.



©Richard Bryant/ARCAID photos

Water damage in EIFS walls can be severe behind visibly unaffected cladding. The paper facing of the gypsum sheathing has delaminated (top). Corrosion has consumed the full depth of a metal stud (bottom).



studs for both PM and PB systems. Mechanical attachment is not itself an unmixed blessing, however. A dense pattern of fasteners may be needed to resist high wind loads, and even corrosion-resistant screws are subject to moisture-caused deterioration.

Though polystyrene is flammable, insulating boards approved by building officials are made with fire retardant additives. The fire-resistivity of the otherwise noncombustible system is controversial, however. Jack Crowder, a code consultant active in testing wall systems and components, has uncovered what he theorizes is behavior under certain conditions that may have catastrophic results. In trying to duplicate conditions of a fire in Manchester, New Hampshire (left), he found that repeated radiant heating of EIFS samples to well above the insulation's self-ignition temperature (which is about 850 degrees) apparently caused the polystyrene board to change its chemical makeup so that it burned fiercely rather than extinguishing itself, as it does in other high-temperature tests. EIFS manufacturers have vehemently disputed Crowder's conclusions (and even Crowder says that additional research is needed), noting that many assemblies have passed tests that involve exposure to direct flames as well as simulated fires within multistory structures. But the systems do not act like noncombustible materials. Because of polystyrene's low mass, it shrinks away from flames as it melts, and so removes fuel from within the area of the heat source. Crowder and others are concerned that a large flame front, such as that from an adjacent building that had been burning for some time (as was the case in Manchester), could cause enough melted polystyrene to accumulate within a "bag" of finish coat to fuel a

sudden and unexpected conflagration. This eventuality is not accounted for by current tests that have been developed for materials whose behavior is better known.

Committees of ASTM and the International Conference of Building Officials (ICBO) have been formed to promulgate standards for installation of EIF systems, but such rules may take years to adopt. In the meantime, more specific information on EIFS will be found in the article "Stucco, Synthetic," by Mark Williams in a forthcoming volume of the *Encyclopedia of Architecture, Design, Engineering & Construction* published by John Wiley & Sons. The Exterior Insulation Manufacturers Association (EIMA, P. O. Box 75037, Washington, D. C. 20013; 202/783-6582) can provide information and guideline specifications for both PM and PB systems, which are useful in selecting among individual manufacturer's offerings. Crowder's concerns are described in "A Fire in New England Exposes an Exterior Insulation and Finish System," *Building Standards*, July-August and September-October, 1988. *James S. Russell*

©David Burroughs photos



New Hampshire fire provokes controversy

A fire had raged for several hours in the right-hand building when an EIFS wall across an alley suddenly burst into flames, apparently from radiant heat alone (it was rapidly put out by firefighters). Research suggests that the insulating board's self-extinguishing characteristics had changed.

Both metal studs and gypsum sheathing are vulnerable to water damage in the adhesively attached system (generic details below). One manufacturer now offers a sheathing wrapped in glass fibers for greater water resistance.

1. Finish coat
2. Base coat with reinforcing fabric
3. Insulation board
4. Adhesive

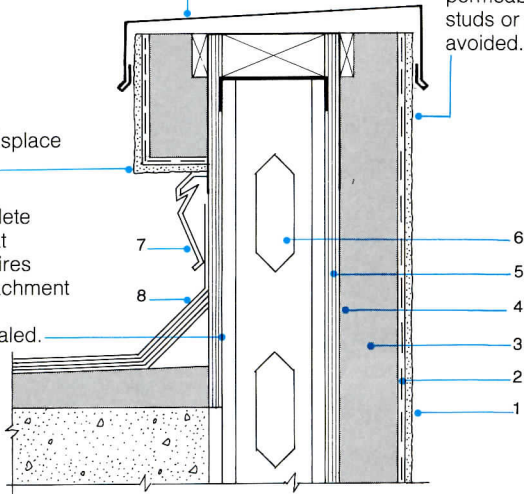
5. Sheathing
6. Metal studs
7. Counterflashing
8. Roof system
9. Sealant and backer rod
10. Window unit

Metal cap offers better protection than EIFS detail shown by some manufacturers. Maintenance equipment could damage.

Will ice dams displace EIFS here?

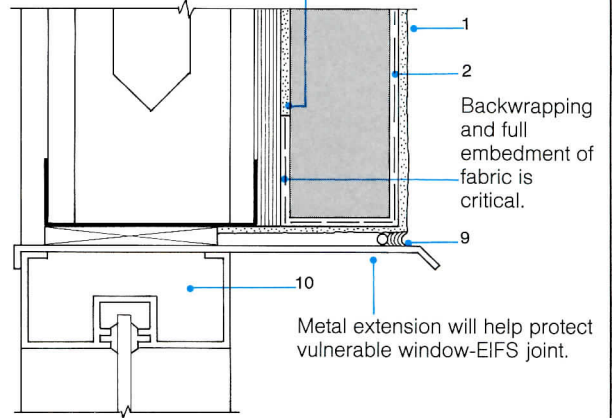
Consider complete waterproofing at parapets. Requires mechanical attachment of EIFS with penetrations sealed.

Wall should be analyzed to be sure dew point falls within insulation if coating is vapor-permeable. Condensation within studs or sheathing must be avoided.



PARAPET

Dab-in method of adhesive attachment can cause water to dam at these locations. Continuous application is called for.



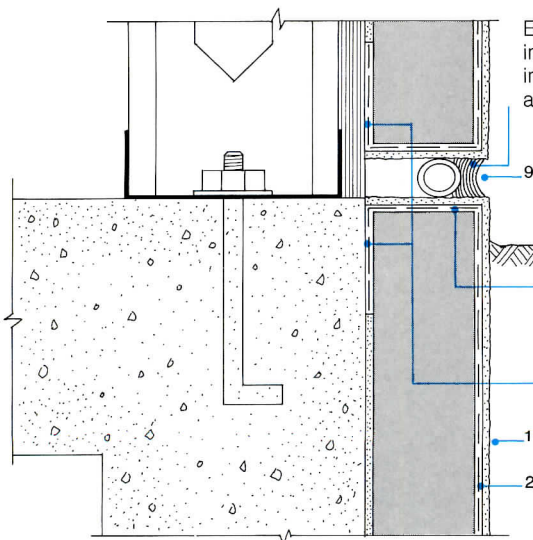
WINDOW HEAD

Extension of finish coat into joint requires delay in installation of adjacent panel.

Quality of sealant installation is critical.

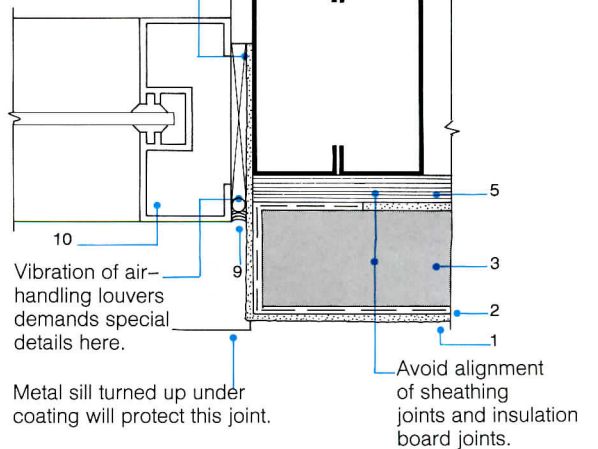
Priming of joint surfaces may be required.

Backwrap both panels.



EXPANSION JOINT

Some manufacturers require extension of base coat to here. Frame installation must be coordinated.



Vibration of air-handling louvers demands special details here.

Metal sill turned up under coating will protect this joint.

Avoid alignment of sheathing joints and insulation board joints.

WINDOW JAMB

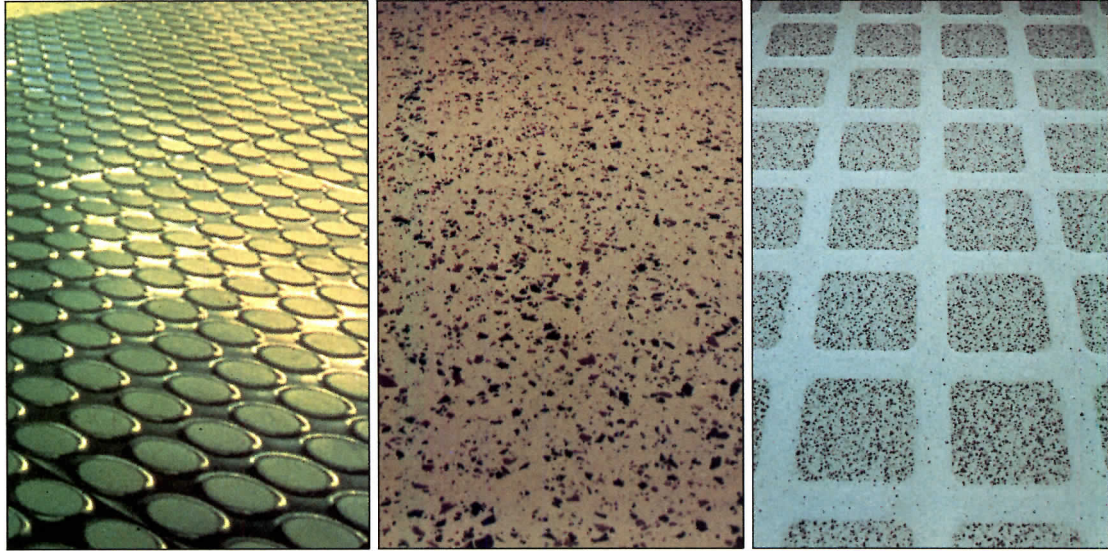
New products: rubber flooring

For more information,
circle item numbers on
Reader Service Card

Up from the cafeteria

Spurred by brighter, livelier colors and enhanced performance characteristics, hard-wearing rubber flooring has moved beyond the factory and institution into the design-sensitive areas of airports, malls, restaurants, and homes. Some new colors, patterns, and manufacturers are shown here.

1. A Norament two-tone pastille pattern, Duo has raised discs in a lighter shade of the ground color. Noraplan smooth flooring, center, now comes in a terrazzo pattern for heavy traffic areas. Another Norament design, right, has raised stone-look squares set on a lighter-colored background.



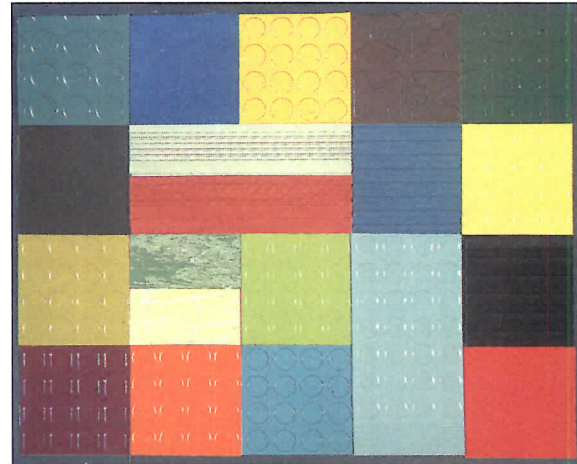
Circle 300 on reader service card

2. New "deep pastel" colors from Endura include Night Blue, Burgundy, and Nutmeg, available in several slip-resistant profiles. Endura Flooring Div., Biltrite Corp., Waltham, Mass.



Circle 301 on reader service card

3. A collage of some of the 32 colors and distinctive tread patterns offered by this Italian manufacturer. Jason/Pirelli, Fairfield, N. J.



Circle 302 on reader service card

4. Crowne Disc is Armstrong's first rubber flooring line. From a palette designed to coordinate with other contract finishes, Gallic blue and taupe are shown installed in a pattern. Armstrong World Industries, Inc., Lancaster, Pa.



Circle 303 on reader service card

5. One of a full line of tiles, risers, stair tread, and cove bases introduced in June, Rubbercraft 700 flooring has a pattern of 1 1/4-in.-dia beveled discs. Azrock Industries, Inc., San Antonio.



Circle 304 on reader service card
More products on page 139

Quality Craftsmanship

A Award for Design and Manufacturing Excellence

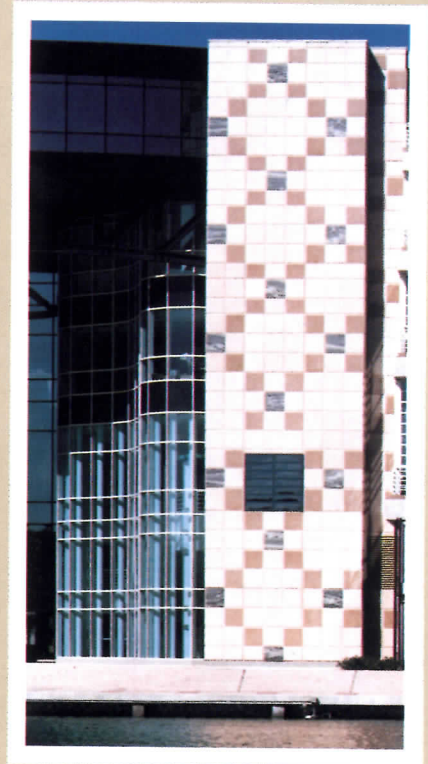
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For design could join these winning buildings. The APA Awards for Design and Manufacturing Excellence" are open to all design professionals submitting designs for buildings produced by an APA member and completed since January 1, 1988. Entries must be received by January 31,

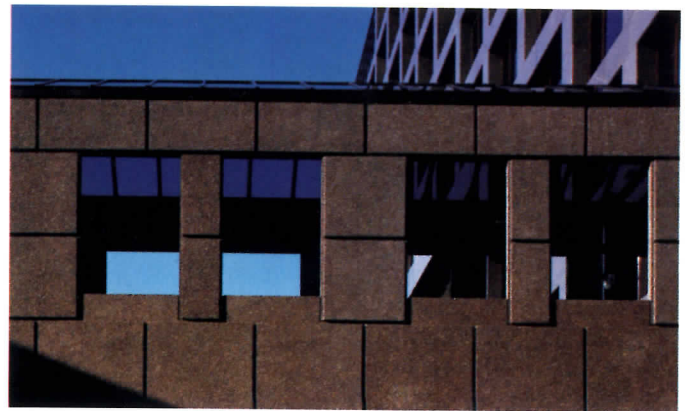
For more information, call or write APA, or circle number on the reader service card.



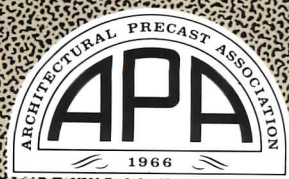
Don Savage

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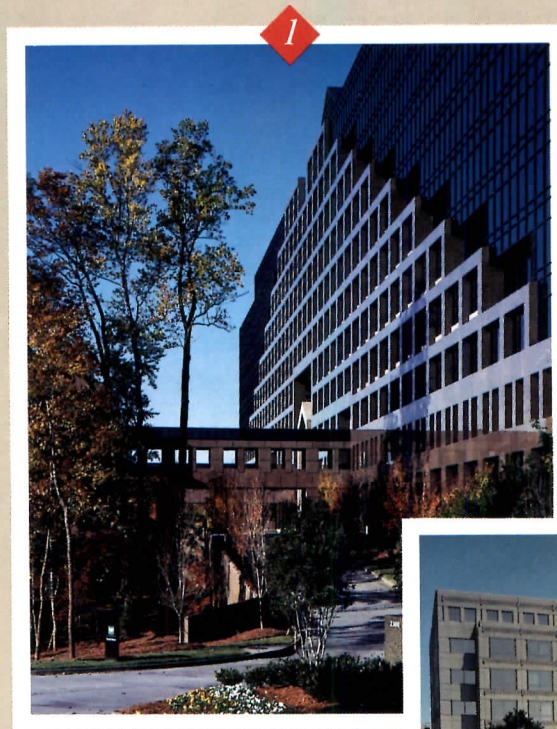
1. 2300 Windy Ridge
Marietta, GA
Cooper Carry & Associates, Inc.
2. Rockcreek North Office Building
Rockcreek, MD
House Reh Associates
3. Burger King World Headquarters
Miami, FL
Hellmuth, Obata & Kassabaum

Special Mention:

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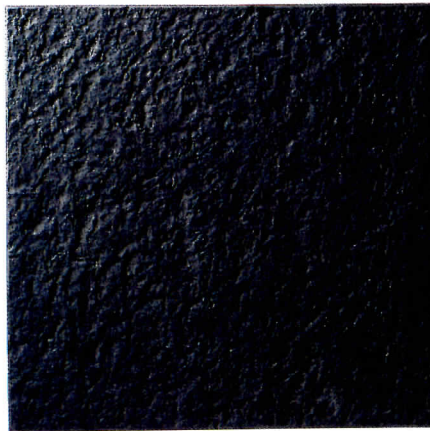
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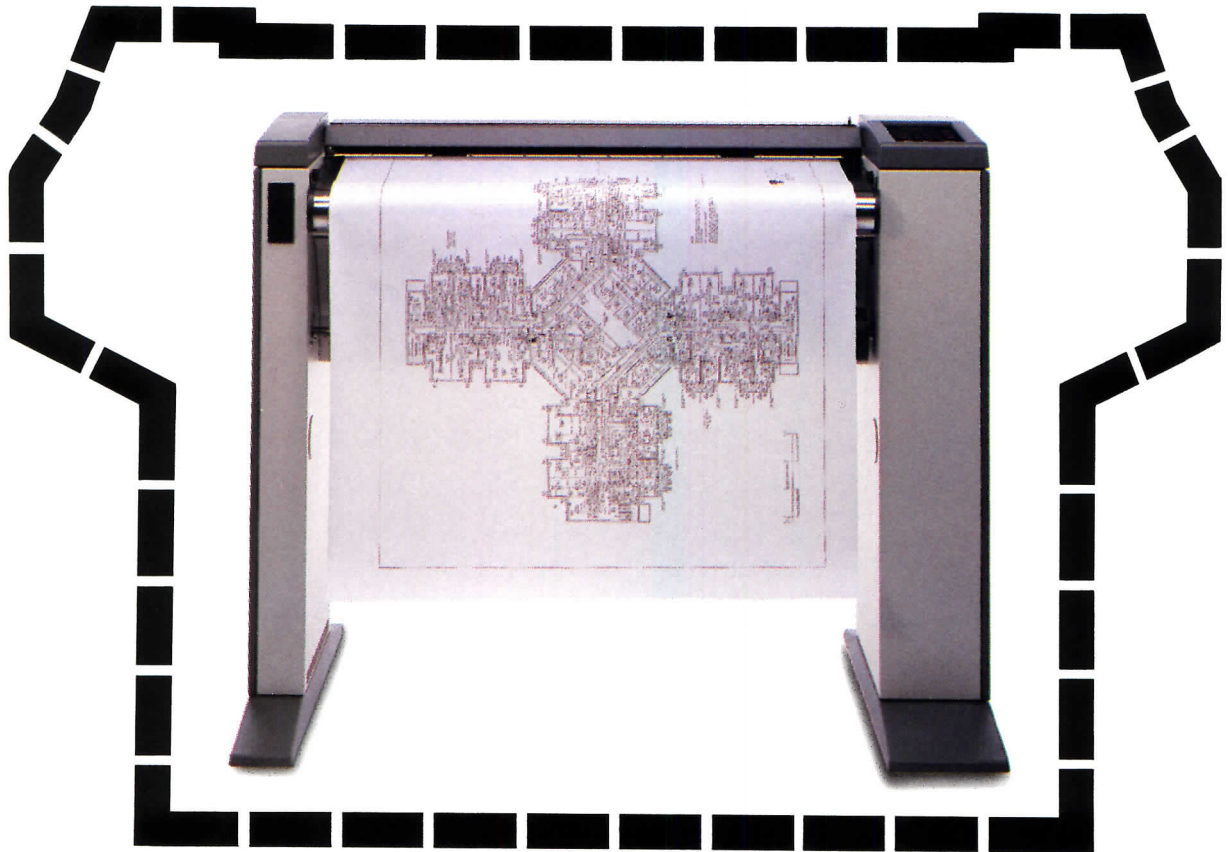
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Software reviews for architects

By Steven S. Ross

MacProject II, version 2.0

A project-planning and resource-allocation package that makes excellent use of the Macintosh interface to schedule small and medium-size projects. It can calculate critical path, level resources, late dates, and costs. Numerous small subprojects (and subprojects of subprojects) can be consolidated into an overall project for producing master schedules and cost reports. MacProject handles up to eight resources per task, and (with severe speed penalties) almost unlimited tasks per project. Each resource can have its own calendar of project availability. MacProject II can import data from other text or spreadsheet applications.

Equipment required: Macintosh Plus, SE, II, IIx or IIcx (SE or larger recommended), two 800K disk drives or at least one 800K disk drive with one hard drive (recommended). System 6.0 or later. HyperCard 1.2.1 or later to view on-screen description of features.

Vendor: Claris Corp., 5201 Patrick Henry Drive, Box 58168, Santa Clara, Calif. 95052-8168. (408/987-7000). \$499.

Manuals: First-rate. Even novice Macintosh users (and novice project schedulers) should have little trouble. As is common with scheduling software, the manual includes a discussion of proper scheduling techniques.

Ease-of-use: Excellent for a project-planning program as flexible as this one. There's a good mix of "fill in the blank" forms and on-screen pointing. For instance, tasks are linked simply by pointing to an existing task and dragging the mouse to set up a box for a new task. On an MS-DOS or PC-DOS

Mr. Ross is a prominent computer consultant and a regular contributor to RECORD.

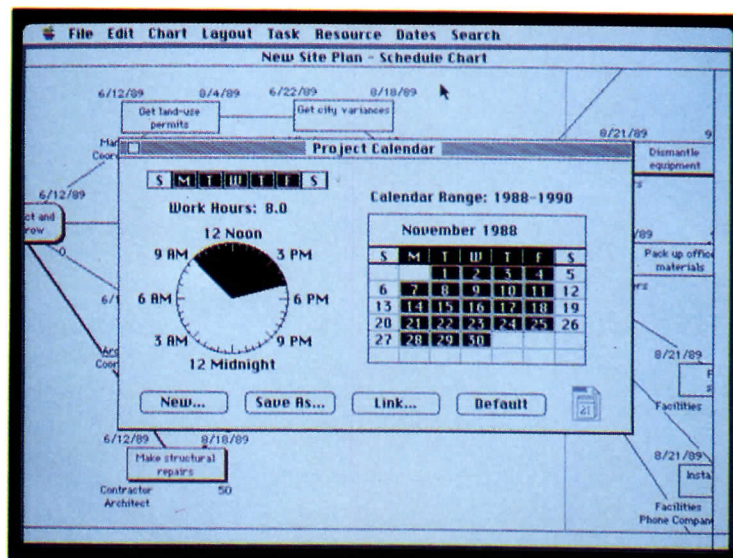
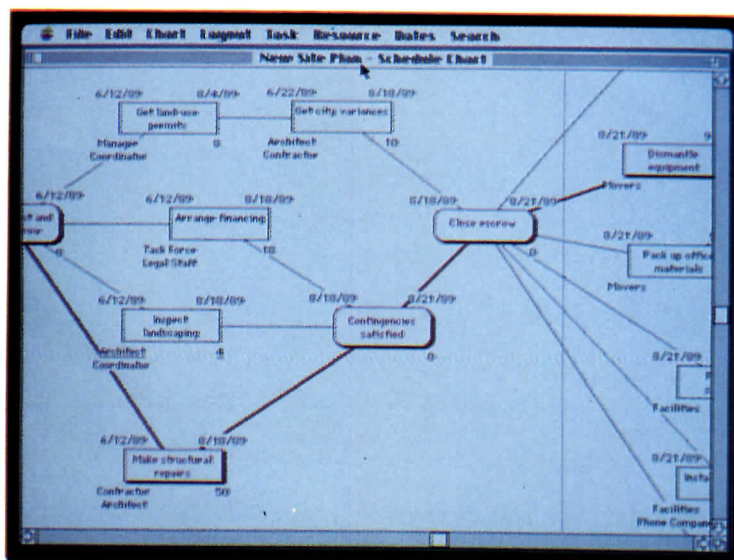
computer, this usually requires specifying the two tasks by filling in an on-screen form. **Error-trapping:** Very good. Users will probably have the most trouble with dialog boxes' defaults. For instance, if you do not fill in the blank labeled "workdays" for a specific task, MacProject uses the task's overall scheduled duration. If you do not specify the number of people on a task, the software defaults to "1.00." As is common on all but the most sophisticated project-planning packages, resources are allocated in terms of workdays unless you specify otherwise. That's fine for labor. But the cost of an equipment resource that is rented by the day and used on a number of tasks, but with some downtime, is thus under-valued in the final project report unless a separate calendar has been set up for it. There's no clear warning on-screen if such a calendar is not established.

As with a spreadsheet, it is possible to add a task or change a date without recalculating the entire schedule (AutoCalc can be set to "off"), and then print or plot the project tables and charts.

Review

Architects usually face a cruel choice when using project-scheduling software. The flexible packages require a great deal of data to chew on. Thus they are time-consuming to set up and use. The simple packages can be used to set up projects more easily, but they lack the sophistication necessary to provide detailed reports. MacProject II uses the Macintosh interface to bridge the gap. It is not as flexible as packages designed originally for mainframes, such as Primavera and Plantrac. But it can handle most small and medium-size projects easily, with remarkably little data entry.

There's even a spelling



checker built in for use while creating task descriptions.

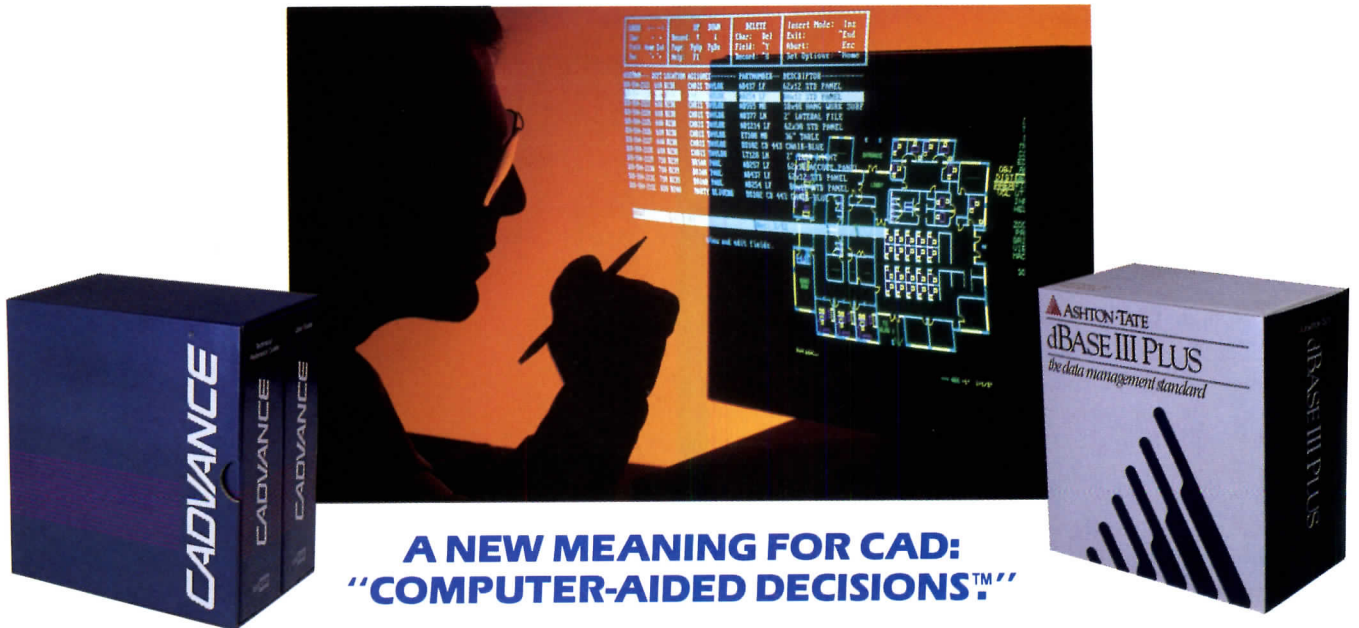
Linking two tasks is as easy as clicking the mouse on one, then dragging to a new location until a task box emerges on screen. Specifying a lag time (that is, allowing a new task to begin within some specified period after the earlier task is completed) is easy, too. And the lag appears right on the line linking the two tasks. Finish-to-start lags appear as a number only. Start-to-start lags display an asterisk as well.

MacProject displays critical tasks (tasks that must be

Continued on page 135

On-screen views take full advantage of Macintosh graphics (top). Tasks, each in its own box, are entered on the screen rather than from separate fill-in-the-blank forms. The critical path, connecting critical tasks, is in red. A separate calendar (above) can be set for each resource. The interface is graphical and intuitive.

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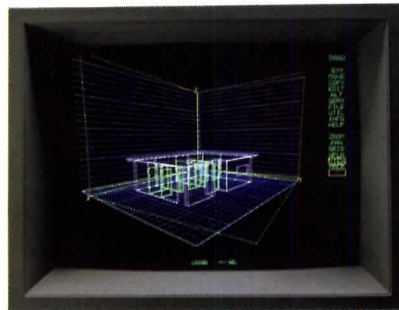
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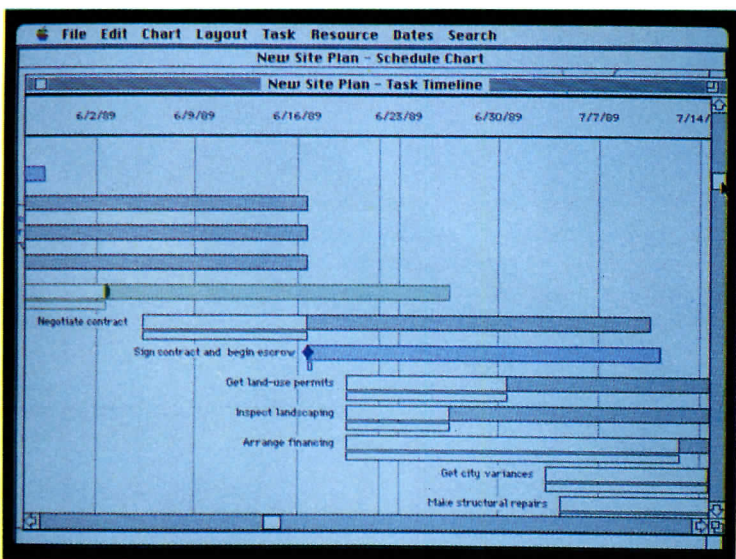
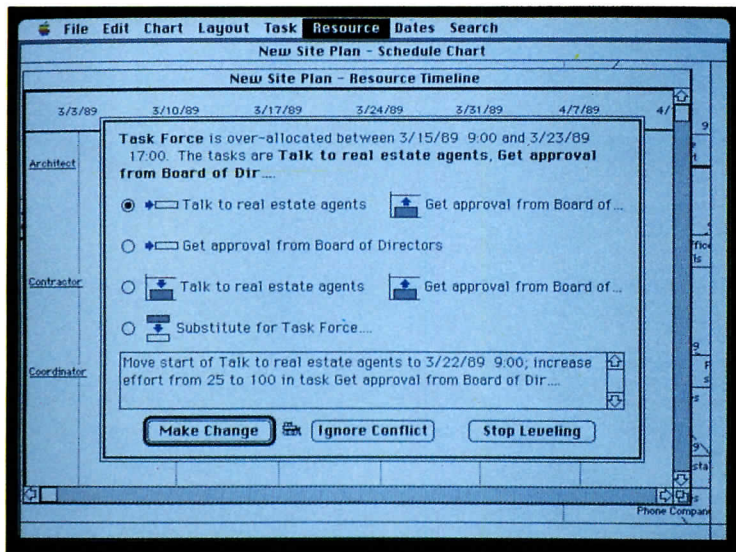
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Project-completion times can be calculated using earliest planned finish for each task, actual finish, or latest finish, more than enough for projects in the 50-to-100 task range.



Interactive leveling of resources (top) can be used easily on smaller projects; for larger ones, let the software level automatically where it can. Task timelines (Gantt charts) plot nicely (above), but are too large to view easily on-screen at once.

completed on time to finish the overall project within schedule) in red (with shadows for display on a monochromatic monitor). The software draws the critical path (the path connecting the critical tasks) automatically, unless the user sets start dates for many tasks. Then the critical tasks will be displayed, but with no particular path between them. Thus, users will find it advantageous to set as few firm task start dates as possible, and let the software do the calculations for scheduling.

Aside from time-associated costs, MacProject allows one-time costs associated with any

activity to be totaled and entered as well. A good example would be fees associated with a task—for a building-permit application or perhaps a credit check.

Actual costs, as well as planned costs, can be tracked. Resource costs shared between more than one task can be split between them, or assigned to the task beginning first.

There's no way to automatically do the standard PERT scheduling calculation (of the odds on an on-time finish). But the project-completion time can be calculated using earliest planned finish for each task, actual finish, or latest finish. This is more than enough for projects in the 50-to-100 task range. But more complex projects would require that every task have an earliest and latest finish to be predicted by the user.

The schedules for subprojects are rolled up into the overall project schedule. Starting and ending dates for tasks ripple through the entire family of projects automatically. That is, a delay in one subproject will be picked up by another subproject and passed to the overall project calculations. The changes are stored only in the master project, however (actually, in whatever project is open when the calculation is made). To make the changes in the subproject that's affected, you open it, and recalculate.

MacProject produces eight charts:

- The Schedule Chart, a PERT chart, appears on-screen and can be printed or plotted. It shows tasks, milestones, and the dependencies (usually a time dependency) among them. Supertasks are used to link subprojects to the master project. The maximum chart size is 94 by 48 inches when printed out.
- The Resource Timeline, or Gantt Chart, groups elapsed time for tasks by resource used

in the task. Resources used in more than one task therefore are shown in more than one place on the chart. Users can print the chart with planned, actual, and slack times.

- The Task Timeline plots elapsed time for tasks instead of resources.
 - The Task Cost Entry Table is used to track fixed costs (fees, for instance) and fixed income for each task.
 - The Resource Table does the same for variable costs associated with resource use (labor costs, for example, per hour or day).
 - The Cash Flow Table summarizes all costs and income over time. The time period between calculations is picked up from whatever time scale is chosen for the overall project PERT chart. Thus, if you have a project that is convenient to schedule by month, but you want to calculate cash flow weekly, you will have to schedule by week instead. The interval can be one minute, 30 minutes, an hour, day, week, two weeks, four weeks, a calendar month, fiscal quarter, or calendar quarter. In each project, as many as 364 time intervals can be scheduled.
 - The Project Table lists task and milestone names, planned and actual start and finish dates, durations, slack time (if any), subprojects, income, and costs. Tasks and milestones on the critical path are boldfaced in the table (or shown in red on color monitors). You can add a task to the project table, then make it show on the PERT chart by assigning a dependency (that is, by linking the task to other tasks).
 - The Resource Histogram plots the levels of use of a given resource or group of resources (cranes, bricklayers, whatever). MacProject can be asked to automatically level resource use.
- Tables and charts can be customized to display only the

Continued on page 137

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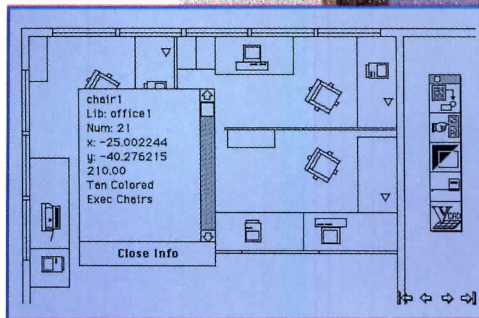
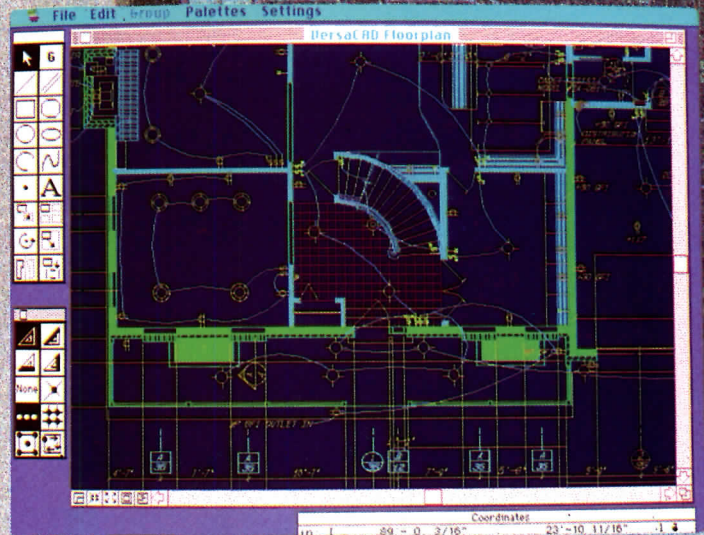
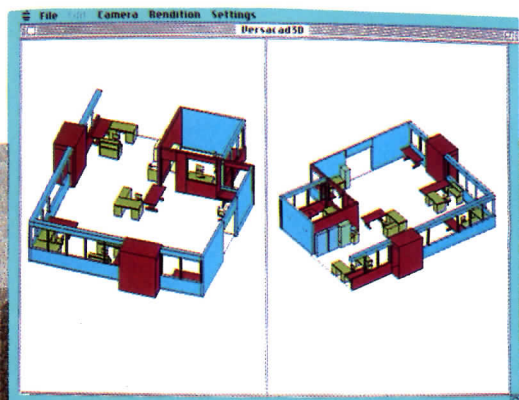
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information you want to show. You can also choose specific fonts to display and print information in.

Likewise, you can search for specific data in the project (earliest start less than a certain date, for instance), using a menu-driven query with up to 10 lines to specify what you are looking for.

In theory, very large projects can be created out of subprojects with perhaps 50 to 100 tasks each. Larger subprojects are awkward to handle, because they are hard to print out or view on-screen. But as layers of subprojects are added, it is easy to forget where you are in the system, and thus link tasks to projects above, rather than below, the one you are setting up. This creates a "circular reference" in which one part of the project must be completed before a task can be done, but the task must be completed to finish that part in the first place.

Data can be imported into MacProject II project tables, resource tables, or task cost tables in tab limited, comma separated (CSV), Macintosh merge, DIF, or SYLK format.

Claris recommends that users assign no more than 500 tasks per project, 800 resources per project, and 600 allocations per resource to keep program-calculation speed at acceptable limits. As faster Macintoshes become available, however, these limits can be exceeded safely.

GEOCAD version 3.3

An add-on that adapts AutoCAD 9 or 10 for easier use by architects. It offers fewer features than AEC 2.0, which has been marketed by AutoCAD's developer, AutoDesk. But it is much faster and offers much better control of drawing layers. And operators who are not yet used to AutoCAD's own digitizer tablet menu will probably find GEOCAD easier to use. GEOCAD comes with a small symbol library, and a blank menu book that can be used to create and access up to 200 more symbols. The optional GEOVUE module activates 3-D commands. *Equipment required:* GEOCAD runs with the PC-DOS/MS-DOS version of AutoCAD 9 or 10. It does not require extra memory for Extended AutoLISP in version 10. At least a megabyte of expanded memory is recommended.

The current version is meant to be used with a 12-by-12 tablet and a stylus rather than a puck. *Vendor:* Rudolph Horowitz Associates Architects, P. O. Box 186, Laurel Rd., Pound Ridge, N. Y. 10576. (914/764-4072). \$800. GEOVUE is an additional \$195, or \$395 if bought separately. *Manual:* Good. A concise explanation of features, one-by-one.

Ease-of-use: Good. The tablet menu, while not following AutoCAD's standard layout, is more logical in layout. Layers are displayed in the lower-left corner of the screen. Layers can be grouped. In general, users will find themselves entering text from the keyboard and numbers and commands from the tablet, not from the pull-down menus.

Installation is designed for Drive C. Some of the installation work, such as modifying the AUTOEXEC.BAT file to add a PATH command recognizing the

subdirectory where GEOCAD resides, must be handled with a word-processing program.

Error-trapping: No problem. As good as AutoCAD gets. The manual warns that if you load a drawing that was not created originally with GEOCAD, AutoCAD may not load the AutoLISP routines needed to run GEOCAD. The solution is to start a new drawing with GEOCAD, INSERT the old drawing into it, and save it with the GEOCAD END command. We couldn't test this, because we were able to load all test drawings.

Review

Rudy Horowitz is a practicing architect and an AutoCAD dealer who disliked the predecessors to AEC so much that he created his own substitute. The name has nothing to do with geology or mapping; he named the software after George, a junior draftsman in his office.

Perhaps the most common drawing element, walls in plan view, are delightfully easy in GEOCAD. For instance, to draw continuous walls, move in a clockwise direction and the second wall line will offset outward; move counterclockwise and the second line will offset inward. Lines trim at corners automatically, except for the very last line element drawn. There are also menu choices that allow offsets from predrawn lines. Doors and windows can be easily inserted into existing walls. Schedules are easily created for doors, windows, finishes, and so forth. Patterns (for lighting fixtures, floor tiles, or whatever) can be easily laid out for an entire plan at once, and easily undone if the result is not pleasing.

Stairs are very fast in GEOCAD. The standard "one tread plus two risers equals 25 inches" is built in; it can be changed, as can the number of

risers. Once the stairs are roughed in, the user can select the construction type (wood, metal, concrete, or schematic), and automatically add handrails. Once drawn as a straight run, a flight of stairs can be split and rotated to add between-floor landings. But stairs cannot be EXPLODED and individually edited. To tie a flight of stairs to a landing, you may have to add a final step manually.

GEOCAD is essentially a two-dimensional drawing tool. But AutoCAD's 3-D commands are accessible, and 3-D views can be built up by assembling elevations and plans using the GEOVUE option, much as sheets of a physical model are assembled. GEOVUE adds the capability of two- and three-point perspective. Lines that should be hidden can be removed with a single command; various elevations can be placed in separate layers and turned on and off as needed to simulate hidden-line removal. This is particularly useful with AutoCAD 10, which runs far more slowly than version 9. Inclined elements (those not in the same plane as the elevations, such as peaked roofs) must be redrawn especially for the 3-D view, however.

All in all, GEOCAD and GEOVUE, taken together, are a worthy substitute for AEC, especially if you are just buying AutoCAD now. But should existing users switch? One AEC user said he would not; he is too used to AEC. But another, complaining about the slowness of AutoCAD version 10, saw GEOCAD as a way to speed things up without buying a faster computer. AEC commands, while sometimes more sophisticated, often use longer AutoLISP routines. AEC drawings generally have more layers, too. To make switches easier, the vendor is planning a version that can be used more easily with a puck. An AutoCAD 10 Mac version is also planned.

DOVE

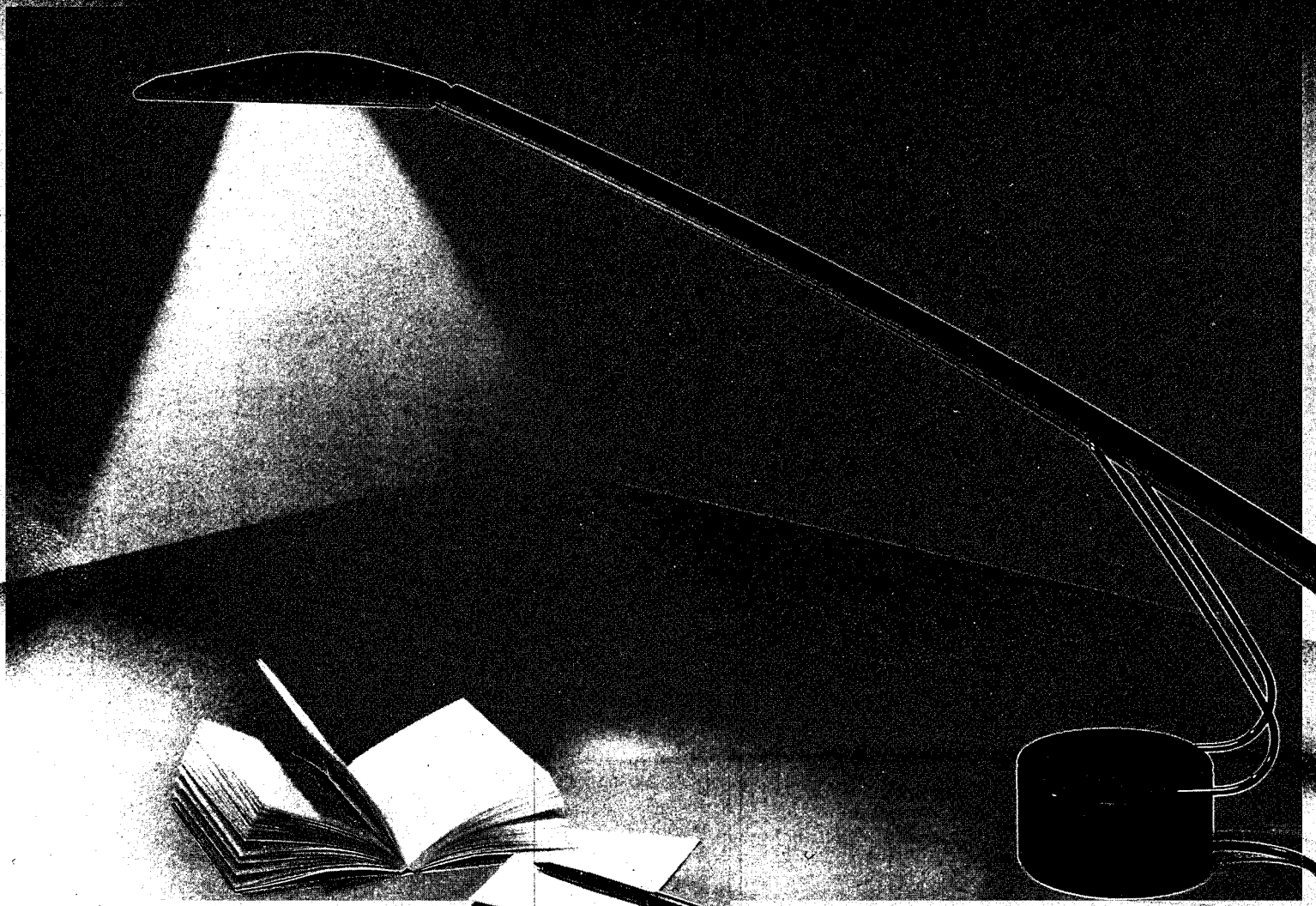


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Opaci-Coat, a pigmented silicone with elastomeric properties, produces opaque glass in any custom color. A water-based coating applied as the final fabrication step, it can be used on annealed, tempered, high-performance, and reflective glass. Guaranteed not to lose adhesion, flake, peel, chip, or fade, the Opaci-Coat treatment also provides fall-out protection and impact resistance to spandrel panels. Industrial Control Development, Inc., Vancouver, Wash.

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1

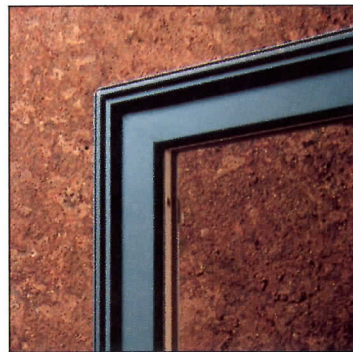
2. Color-coordinated sealant

Silpruf silicone weatherproofing and glazing sealants are available in an expanded range of standard colors to match metal, stone, concrete, and other cladding materials. Pictured is antique pink, applied to Stony Creek granite panels. Other new shades include tan, light and dark gray, earthtone, and a brick red. The sealant has an open time of about 45 minutes, described as long enough to permit glazing work to be done from the interior of the building. GE Silicones, Waterford, N. Y.

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2



4

3. Metallic finish

Metallic Demandit is a new finish option suggested for special or complex shapes created in Dryvit lightweight exterior insulation material, such as the Corinthian capital shown. The acrylic coating, also for use on standard concrete, stucco, and primed metal, is brushed or rolled on, and comes in three metallic colors: silver, gunmetal, and bronze. Dryvit Systems, Inc., West Warwick, R. I.

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3



5

4. Corrosion-resistant paint

A more durable finish is now offered on Pella aluminum-clad wood-framed commercial, residential, and custom windows. Designed to improve the long-term integrity and color of aluminum exposed to atmospheric acids, salt spray, and other corrosive elements, the Permacoat system includes chromate pretreatments, a heat-set resin primer, and an especially hard, modified-polyester top coat in over 80 custom colors. The finish substantially exceeds AAMA 605 fade, chalk, and salt-spray standards. Rolscreen Co., Pella, Iowa.

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5. Low-voltage spot

LSI's Spacebird is completely adjustable, and can direct light from a MR-16 bulb to any point in the room. Made of extruded aluminum in three colors (silver, black, and white) the cylindrical shape of the integral transformer counterbalances the winglike lamp housing. Shown here as a track fixture, Spacebird may also be ceiling- or wall-mounted. Accessories, including 60 permanent glass color filters, rotating spread lenses, and beam-shapers, are held in flexible clamps. Lighting Services, Inc., Stony Point, N. Y.

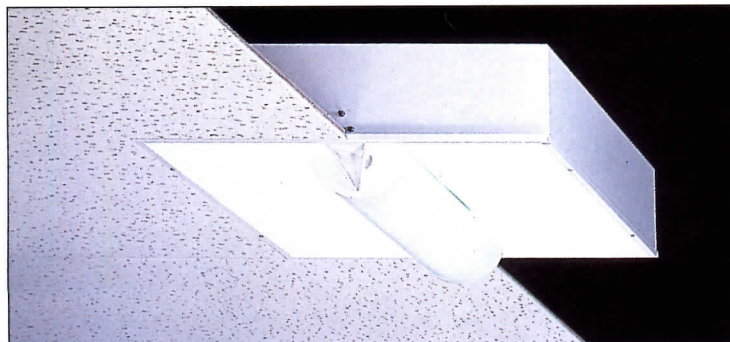
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6. Semirecessed office lighting

Described as a design-oriented alternative to parabolic lighting, the RC luminaire fits into a 2- by 2-ft grid, projecting slightly below the ceiling plane. Light from a single 39W compact fluorescent is diffused by a half-round opal shield, and bounced back into the space by white-lacquered reflectors and a refractor panel. Zumtobel Lighting, Inc., Garfield, N. J.

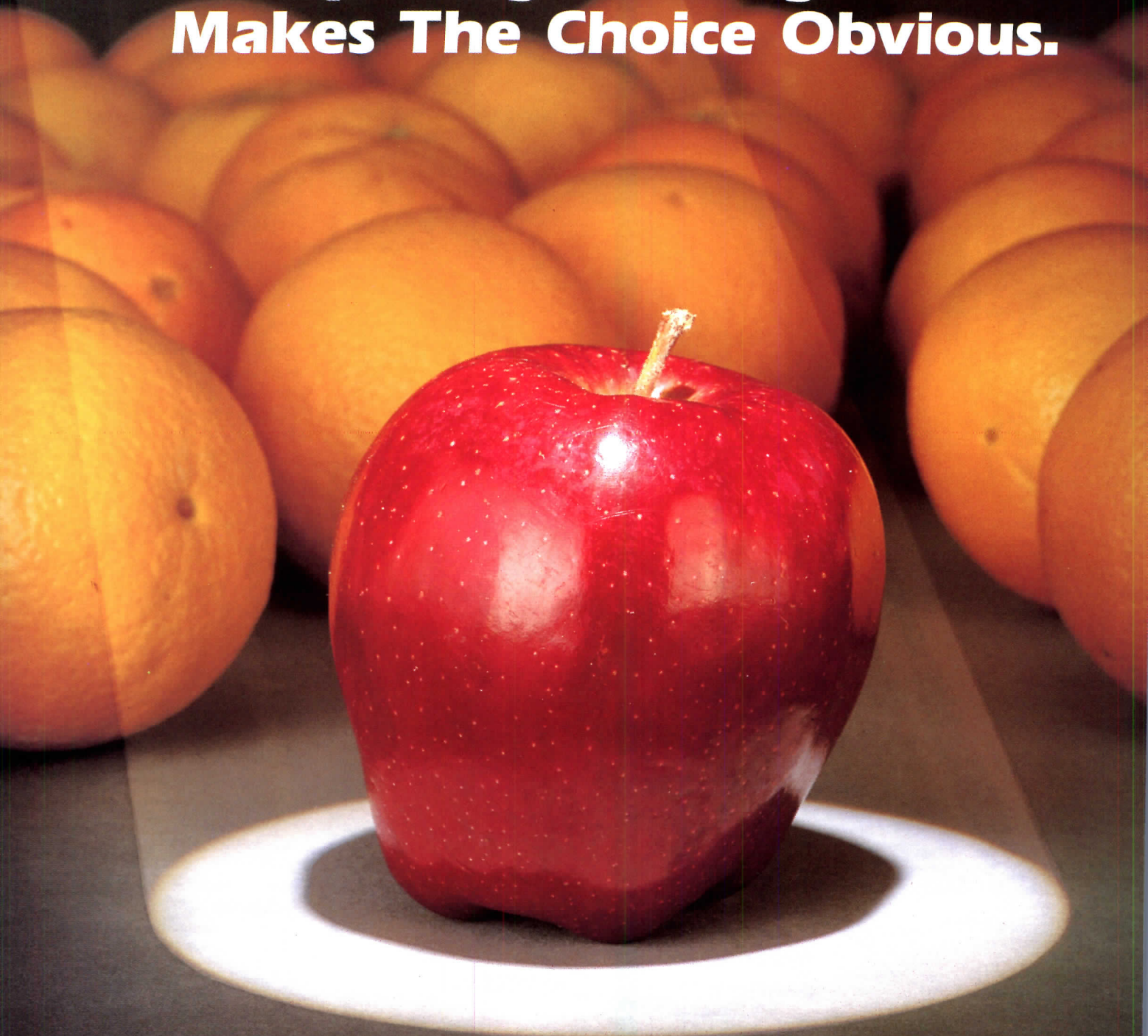
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More products on page 145



6

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Our reputation is built on the uncompromised quality and superior performance of our products. While others have substituted lighter materials, we believe that a rolling door built to last is a better value.

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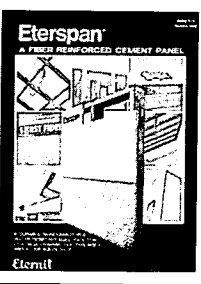
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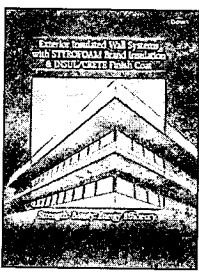
Product literature

Exterior insulation finish systems

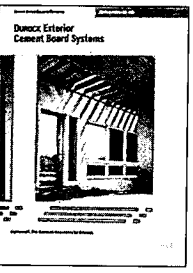
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Reinforced cement panels
An eight-page brochure covers the installation and detailing of noncombustible, moisture-resistant Eterspan panels up to 25 ft long, used as a substrate for EIFS and other surfacings. Eternit, Inc., Reading, Pa.
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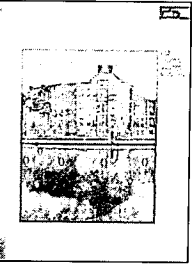
Extruded foam insulation
An eight-page booklet explains how the compressive strength, thermal values, and water resistance of Styrofoam insulation contribute to the durability of finish systems. Dow Chemical, Midland, Mich.
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Exterior cement board
A 20-page catalog provides full architectural information on the application and performance of Durock board, used as a base for tile, thin brick, stone aggregate, and EIFS finishes. U. S. Gypsum Co., Chicago.
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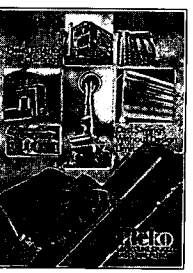
Exterior renovation
Remodeling case histories of buildings from Buffalo to Miami are included in a color brochure on the R-wall exterior insulation and finish system. Ispo, Inc., Mansfield, Mass.
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EIFS capabilities
Projects ranging from a restored Mies van der Rohe housing complex to Harvard's Sackler Museum illustrate the design potential of nine different EIF and coating systems. Sto Industries, Inc., Rutland, Vt.
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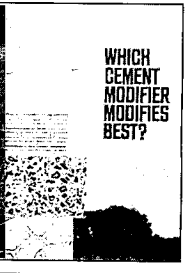
Fiberglass-gypsum sheathing
Weather- and fire-resistant Dens-Glass panels are particularly suited for use with exterior finish systems, according to a 10-page architectural catalog on the fiberglass-faced sheathing. Georgia-Pacific Corp., Atlanta.
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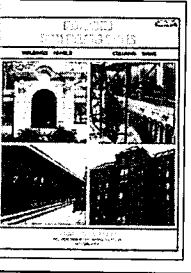
Synthetic stucco
A color catalog stresses the esthetic, economic, and energy-saving features of three different wall coating systems; architectural details and technical data are included. Pleko Products, Tacoma, Wash.
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Hard-finish walls
Four distinct textures offered by Insul/Crete mechanically fastened EIFS—smooth, exposed aggregate, textured stucco, and stone and glass Mineralite—are shown in a design brochure. Insul/Crete Co., McFarland, Wis.
Circle 409 on reader service card



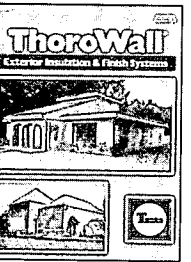
Thin-veneer cement
Portland cement modified with an all-acrylic emulsion is said to insure superior long-term performance in exterior thin coating systems; a chart compares various modifiers. Rohm & Haas, Philadelphia.
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Molded architectural shapes
A brochure explains how even complex cornices and columns can be economically sculpted from fire-retardant polystyrene foam for use with exterior finish systems. Treadway Industries, Inc., Leesburg, Fla.
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Exterior finish system
Project case studies visually highlight the architectural capabilities of Ful-O-Mite EIFS as applied to homes, commercial buildings, hotels, and schools. Design references are given. H. B. Fuller Co., Palatine, Ill.
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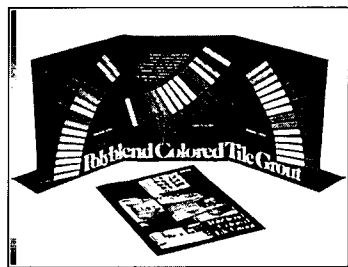
Insulated wall system
ThoroWall A, a flexible system, and ThoroWall H, with an impact-resistant fiber-cement base coat, are illustrated in a technical brochure. Thoro System Products, Miami.
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Literature continued on page 148

Ask for America's finest drafting furniture by name... The Naturalists by **MAYLINE**



Mayline Company Inc., 619 Commerce Street, Sheboygan, WI 53081

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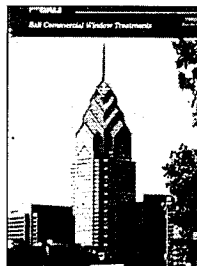
Colored grouts
Polyblend tile grout comes in 47 colors, from lipstick red to fawn beige. A selection guide contains sample chips of each one. Custom Building Products, Bell, Calif.
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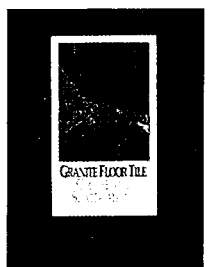
English kitchen cabinets
A colorful brochure on the "unfitted" kitchen shows how freestanding food preparation, storage, and appliance cabinets, made of solid ash, work as task-specific furniture. Smallbone, New York City.
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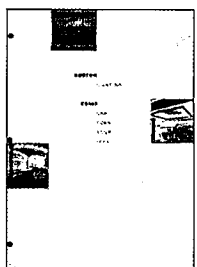
Radiator enclosures
Custom designs for various heating configurations are shown in a 14-page catalog. Historically detailed replicas and curved enclosures for new buildings are featured. Vulcan Radiator, South Windsor, Conn.
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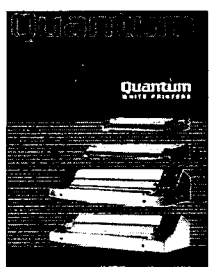
Commercial window treatments
A 28-page design booklet illustrates Bali custom blinds and pleated shades, and discusses shading coefficients, thermal values, life-safety data, and acoustical control. Carey-McFall Corp., Montgomery, Pa.
Circle 419 on reader service card



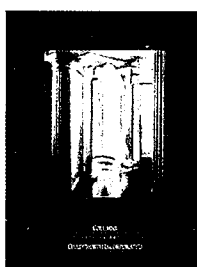
Granite floor tile
A stone information kit includes profiles of recent granite flooring installations, identifying the design architect and stone type. Cold Spring Granite, Cold Spring, Minn.
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Custom lighting fixtures
A capabilities brochure explains how nonstandard lighting fixtures are made to meet specific architectural design requirements. Voigt Lighting Industries, Inc., Leonia, N. J.
Circle 420 on reader service card



Whiteprinters
A color brochure on the Quantum printer line highlights such product features as energy efficiency, touch-button speed controls, and instant-on operation. Vemco Co., San Dimas, Calif.
Circle 415 on reader service card



Columns and capitals
An expanded line of authentic architectural elements, ranging from Doric to Art Deco, is illustrated in a six-page catalog. Capitals are also offered as table bases. Chadsworth Inc., Atlanta.
Circle 421 on reader service card



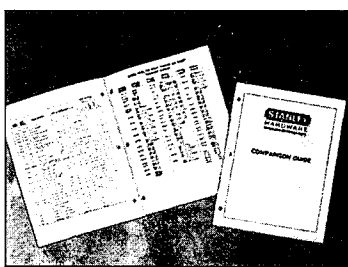
Reflective insulation
A booklet explains the concept of reflective insulation, and describes the installation and thermal benefits of aluminum-faced bubble-pack products. Energy Saver Imports, Broomfield, Colo.
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Modified bitumen roofing
All Siplast roofing systems are described in a 24-page technical catalog. Details and recommended installation methods are illustrated. Siplast, Inc., Irving, Tex.
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Heavy-traffic carpet backing
A brochure tells how Enhancer carpet backing withstands the stress of heavyweight rolled traffic while facilitating mobility, especially in healthcare, hospital, and airport installations. Dow Chemical U. S. A., Dalton, Ga.
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Architectural hinges
A comparison guide matches hinges from various vendors with the equivalent Stanley architectural hinge product. Stanley Hardware, New Britain Conn.
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Continued from page 139

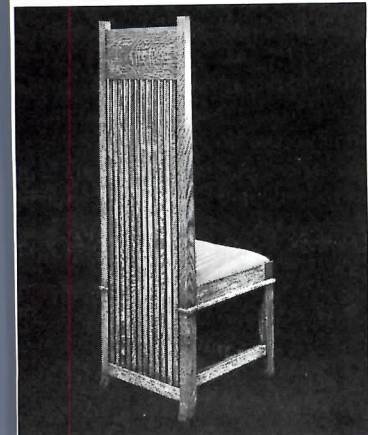
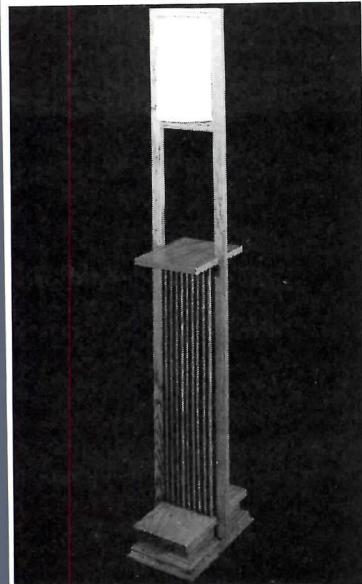
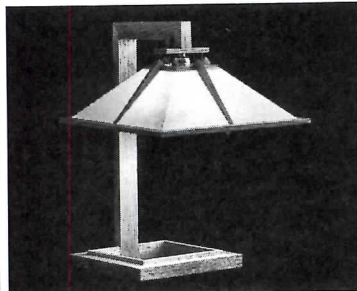
FLW furniture

Architect Thomas A. Heinz, who has worked on many Frank Lloyd Wright structures as well as the Wright Room at the Metropolitan Museum of Art, is responsible for the documentation and authentic details of a line of Wright furniture reproduced in contemporary fabrics, finishes, and woods. The initial group, made in Grand Rapids, Mich., includes a tall-back dining chair and a gate-leg print table, both originally designed for the Dana House of 1904; a slant-back chair that appeared in several early Wright interiors; a 20-in.-high desk lamp; and a 65-in.-high, two-shelf oak floor lamp. Niedermaier, Chicago.

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Continued on page 147



Entrance Exam.

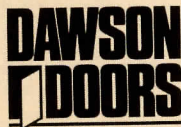


Entrance exams leave little room for error. The questions are tough: Were your original design objectives supported by high quality door and entrance construction? Will the doors stand up under traffic conditions and operate without problems day in, day out? Does the fabrication and finish represent the kind of craftsmanship you expected. Passing this kind of test over and over

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means specifying a manufacturer with a reputation for producing beautifully crafted doors and entrances. Dawson is the company. Whether your concept calls for mirror

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Today's Cutting Edge Building Technology



Glass gables are integrated into Sun Palace membrane roof.

Glue-laminated wood structure supports tensioned membrane roof at Sun Palace swimming facility.



Point-hung tensioned membrane structure at Toyohashi.



Translucent membrane roof brings daylight to college gymnasium at Hiroshima.



Clustered tension membrane Modular Shelters, Pompano Beach, Florida.

Tensioned fabric membrane structures have become the technology of choice for an increasing range of building applications.

Their light weight and a nearly infinite variety of support structure systems allow architects extraordinary design freedom. Their ability to span large areas without interior support posts makes it feasible to bring many outdoor activities indoors, unhampered by weather. Above all, tensioned fabric membranes make possible delightful environments combining indoors and outdoors in new ways.

The magic of light-translucent membrane materials for an entire roof creates a naturalistic atmosphere as if one is outdoors in broad daylight. The light, however, has a softer, more diffused quality than actual daylight, with almost no shadows. Besides creating this delightful atmosphere, this translucency greatly reduces the need for supplementary lighting during daylight hours, a vital factor in applications such as skylight roofs for atriums, shopping malls, convention centers, and sports and entertainment arenas.

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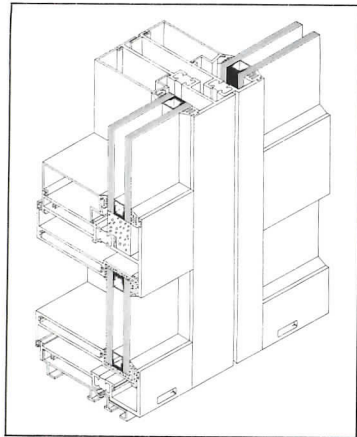
Helios Industries, Inc., the International Operations Division of Taiyo Kogyo Corporation, has been at the forefront in developing new technologies in the design and utilization of fabric membrane structures all around the globe. Our technological expertise and experience in erecting membrane structures is ready and available to assist you.

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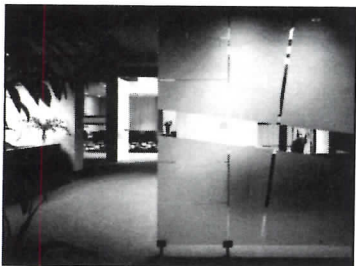


Helios Industries, Inc.
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Discrete vented curtainwall

The operable vents of 8900 Series aluminum windows are framed on the inside, which eliminates any additional sight lines and allows the vents to maintain the same glazing plane as the fixed-light units. Custom Window Co., Englewood, Colo. Circle 312 on reader service card



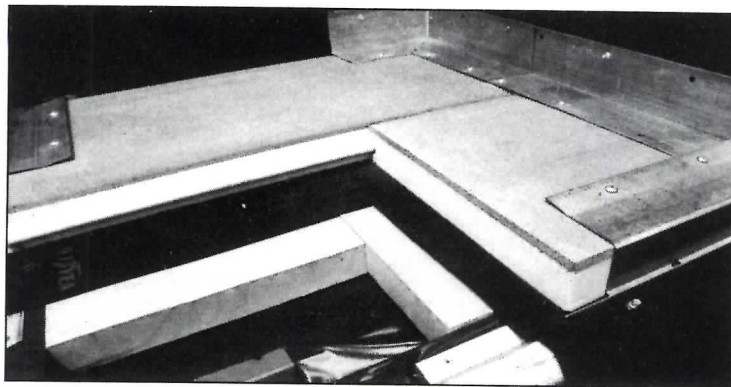
Etched-glass panels

Curtainwalls, freestanding screens, railings, signage, and other interior and exterior design elements of etched glass may be ordered in any custom pattern; standard geometrics are also offered. Architectural Glass Designs, Fremont, Calif. Circle 313 on reader service card



Translucent skylight

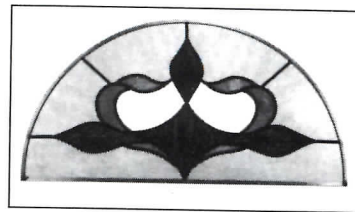
A custom skylight and curtain-wall system, the basic Skywall comes in staggered, shoji, and square grid patterns and a choice of U factors. The shatterproof translucent material is said not to yellow, darken, or erode. Skywall, Inc., Chattanooga, Tenn. Circle 314 on reader service card



Concrete-topped insulation

The Protected Membrane Roof uses interlocking insulation boards topped with 3/8 in. of latex-modified concrete, both to

protect the polystyrene and to act as ballast, holding the membrane in place. Goodyear Roofing Systems, Akron, Ohio. Circle 315 on reader service card



Stained-glass inserts

Leaded stained-glass inserts, available in a number of decorative patterns, are offered to fit standard half-round frames sold by major window manufacturers. Wizard Windows, Winlock, Wash. Circle 316 on reader service card Continued on page 149

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Sprinkler-head escutcheon
A collar of flame-retardant Cicolac plastic works with any type of acoustical ceiling and sprinkler heads without removable or split escutcheons. Ceiling changes can be made without draining the system or splitting the tile. Acoustic Specialties, Holtsville, N. Y.
Circle 317 on reader service card

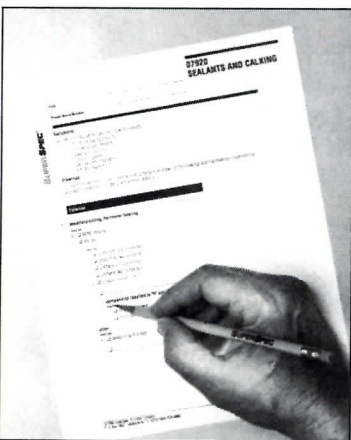


Healthcare chairs
The Universal Occasional Chair is made with a hardwood frame in different leg styles; upholstery is vinyl or fabric over

multidensity layered fire-retardant foam. La-Z-Boy, Contract Div., Monroe, Mich.
Circle 320 on reader service card



Cross-cut veneer flooring
Italian-made Legnotex is African hardwood which has been sliced, dyed, and reassembled in layers to create wood floors and panels with a unique striated pattern. Colorways include blues, iridescent pastels, and metallic looks. Hoboken Wood Floors, Wayne, N. J.
Circle 321 on reader service card
Continued on page 151



On-line specification
SuperSpec, said to facilitate creation of documents during the design phase of a project, now offers its checklist specification-writing service on-line, with the user's own PC and printer generating the final project manual. SuperSpec, Inc., Jacksonville, Fla.
Circle 318 on reader service card

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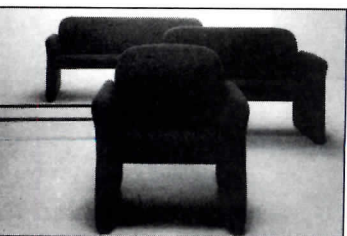
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Upholstered seating
Phoenix is a complete range of contract seating, all with a flared arm design in open, closed, and fully upholstered configurations. Pictured: a lounge chair, and two- and three-seat sofas. The Gunlocke Co., Wayland, N. Y.
Circle 319 on reader service card

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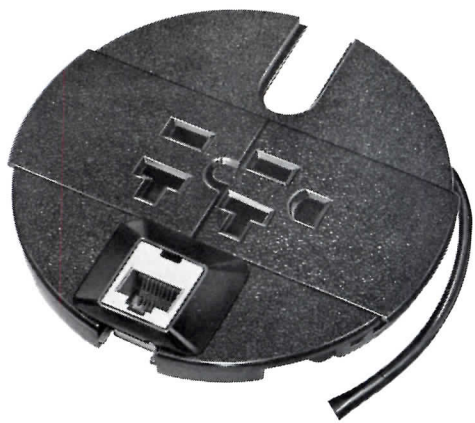
RACEWAY COMPONENTS, INC.

Mfg. I.B.E.W.

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

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

The Raceway Low Tension Disconnect comes integrated into the Flush Poke-Thru for new installation. Or, it can be supplied for retrofit into installed Raceway Flush Poke-Thru's. Learn more about them by writing Raceway Components, Inc., 208 19th Avenue, Paterson, New Jersey 07524 (201) 279-1116.

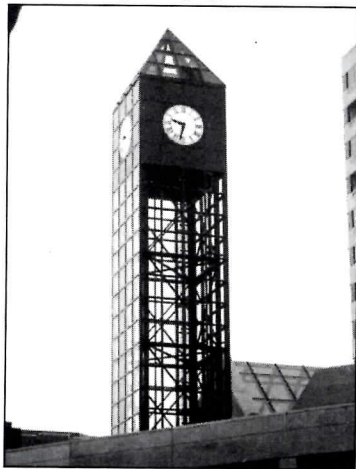
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**RACEWAY
COMPONENTS, INC.**

Circle 73 on inquiry card

Continued from page 149



Tower and post clocks

The clock pictured, the focal point of a Texas retail center, was recently installed by a Cincinnati company founded in 1842. In addition to a standard line of two- and four-faced clocks with acrylic dials, the company can fabricate tower clocks and other custom designs with dials ranging in size from 2 to 24 ft in diameter. An electronic bell system can provide hour strikes, chimes, or music. The Verdin Co., Cincinnati.

Circle 322 on reader service card

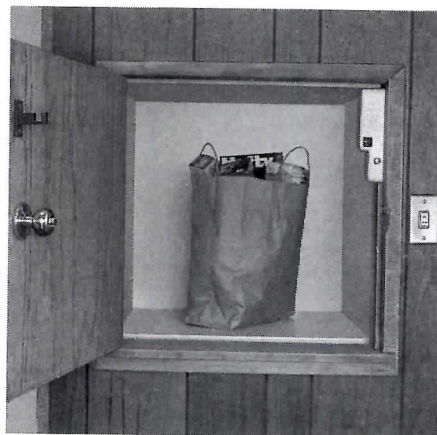


Retrofit roofing membrane

A new cushioned felt backing allows for the installation of Sarnafil PVC membrane over a number of existing roof types without a recovery board. The UL- and FM-approved membrane, available in 21 colors, can go directly over both smooth built-up and mineral cap-sheet roofs without affecting the existing fire rating. Sarnafil, Inc., Canton, Mass.

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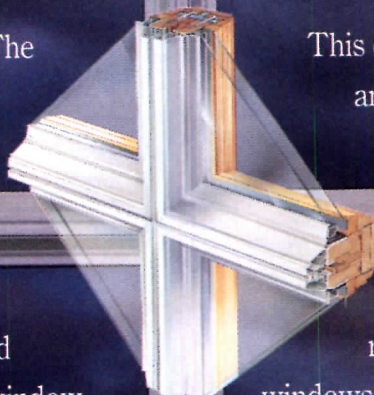
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Glick/Boehm uncovers normally-hidden appeal of steel joists in new "power" shopping center.

Developer:
Lincoln Developers, Inc. Raleigh, N.C.
Architect:
Glick/Boehm & Assoc. Charleston, S.C.

Engineer:
T. G. Padgett & Assoc. Charleston, S.C.
Structural Fabricator:
Palmetto Steel Co. Charleston, S.C.

Steel joists, colorfully painted, will replace the traditional ceiling in North Charleston's new Festival Centre. "Not only will this add interest," said the architect, Gary J. Boehm, A.I.A., "but it will help us achieve the open, gutsy feeling we and the owner want."

A combination strip shopping center and enclosed mall, known more popularly now as a "power center," Festival Centre will initially include 350,000 sq. ft., with 80,000 enclosed. An additional 250,000 is planned.

Eye appeal was a bonus feature. The primary reasons for choosing steel joist construction were typical. It was the most economical way to meet the needs, and the availability of steel joists helped meet occupancy dates—critical in shopping centers.

But it also made possible construction features important to the major "anchor" tenants—wide spans and a minimal number of columns, allowing the "wide-open" feeling the big stores want. In every important way, steel joists "looked good!"

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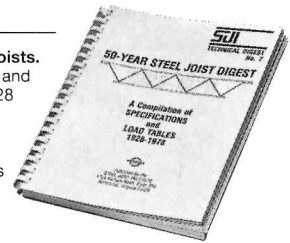
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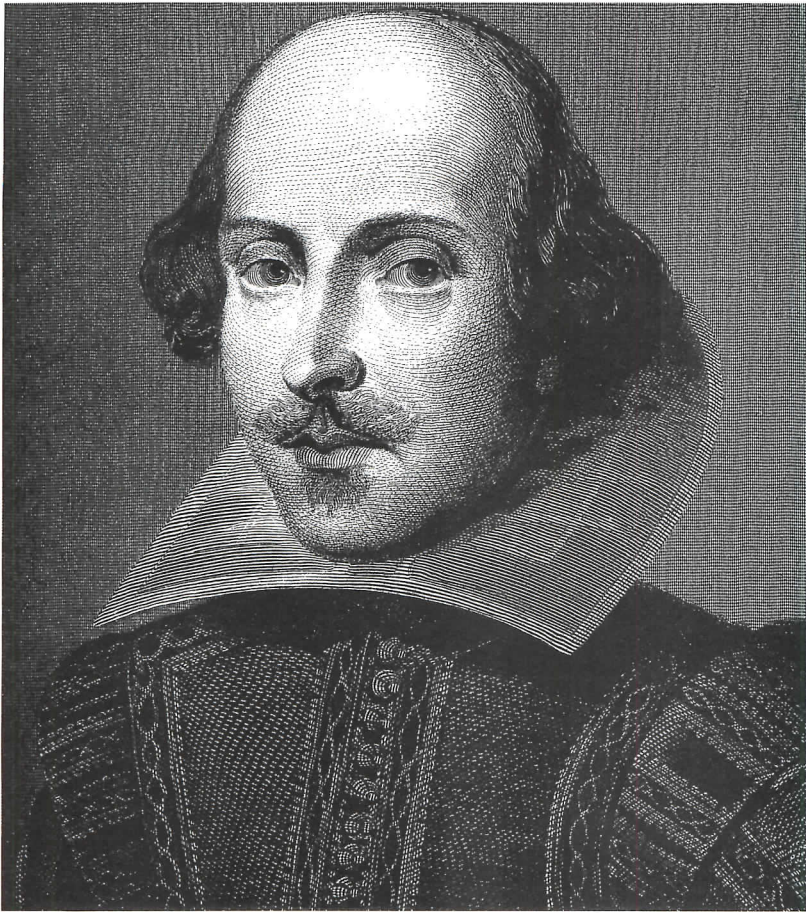
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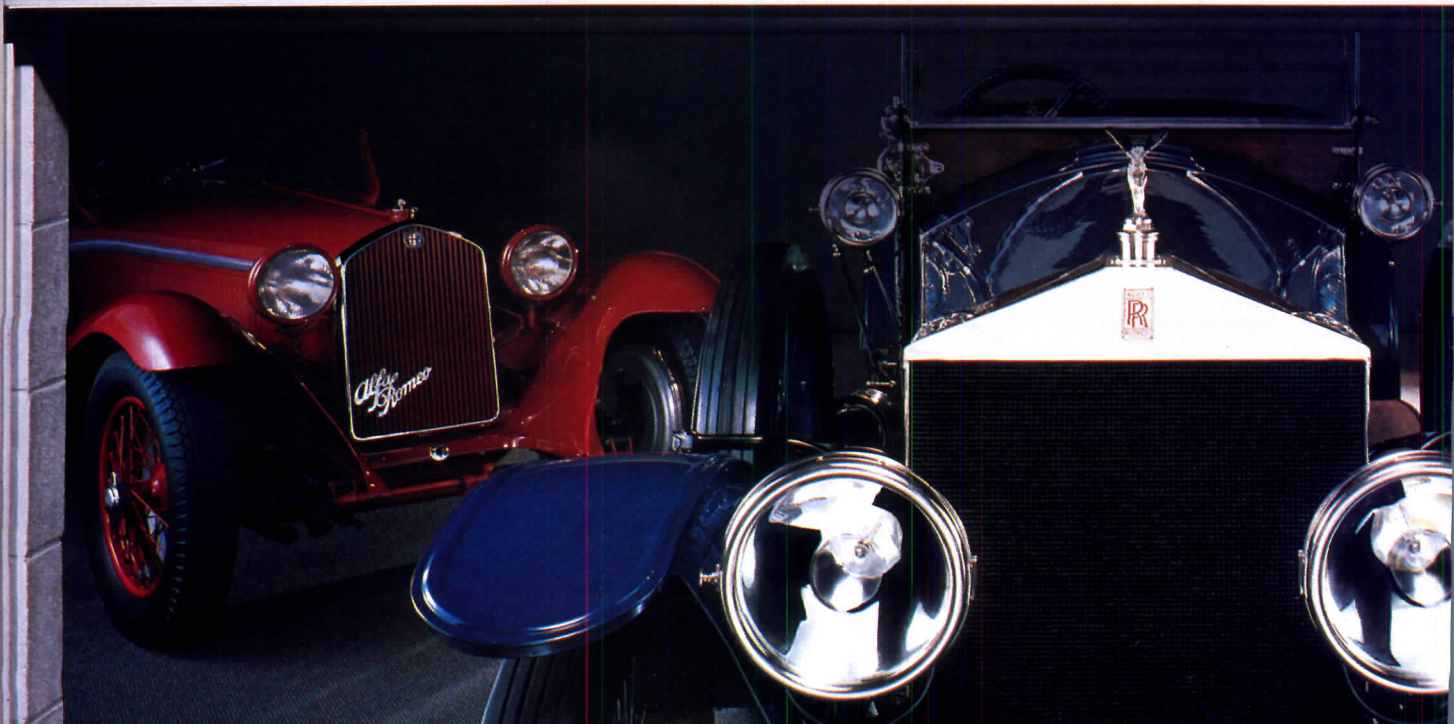
For information on how your company can benefit through a partnership with the arts, contact the Business Committee for the Arts, Inc., 1775 Broadway, Suite 510, New York, New York 10019, or call (212) 664-0600.

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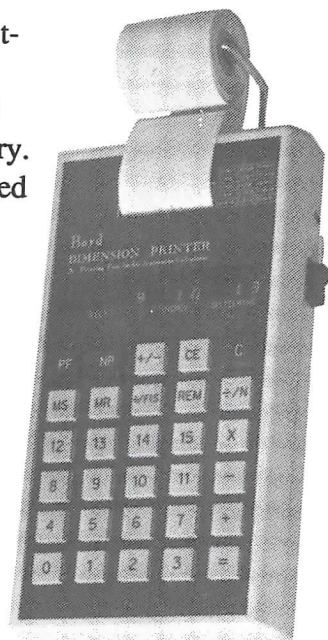
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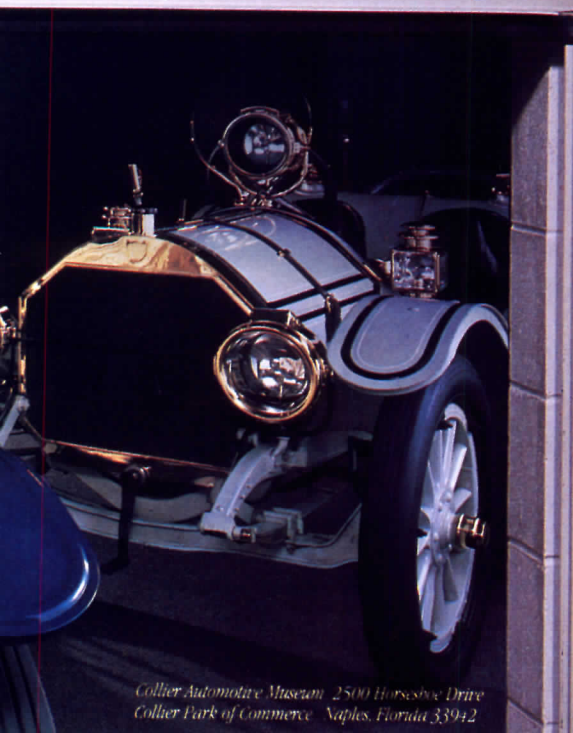
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Partner—Skidmore, Owings & Merrill

Samuel Mockbee, AIA

Partner—Mockbee, Coker, Howorth Architects

Leonard Parker, FAIA

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Cathy Simon, FAIA

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CATEGORY 1 – Completed/Existing



FIRST PRIZE

Gensler and Associates/Architects
Project: Capital Bank, Miami, Florida

SECOND PRIZE — Tied

(Right)
Walter Chatham, AIA
Project: 301-311 West Fourth Street,
Winston-Salem, North Carolina

(Left)
Hoover Berg Desmond
Project: North Classroom Building,
Auraria Higher Education Center,
Denver, Colorado

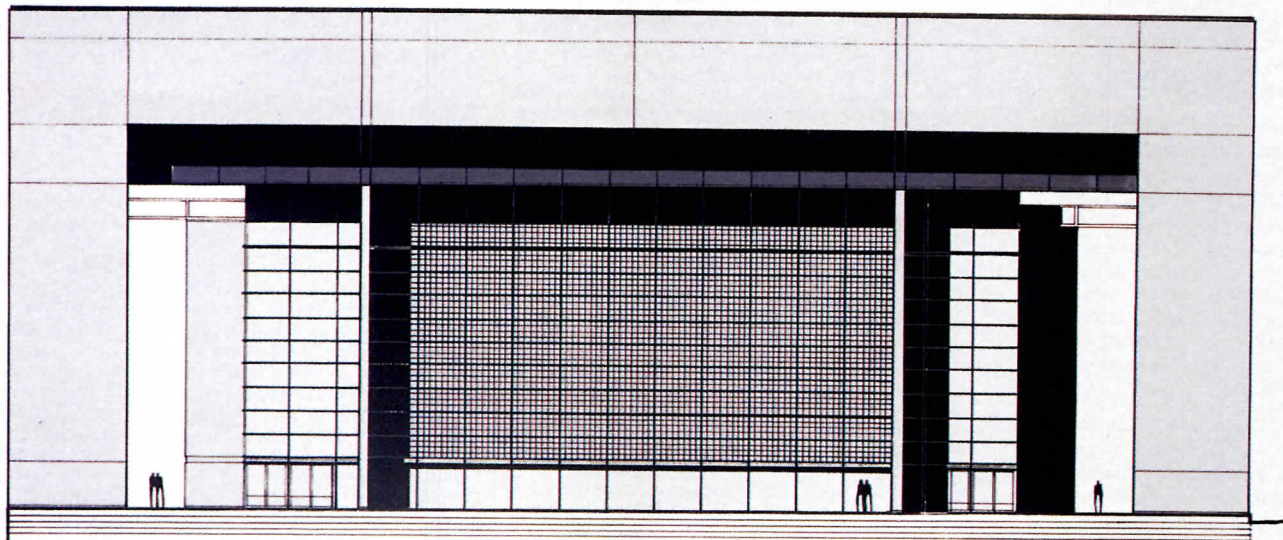
HONORABLE MENTIONS

(Not shown)
Jack L. Gordon Architects, P.C.
Project: New York State Psychiatric
Institute—Elevator/Stair Tower
Addition, New York, New York

William McDonough Architects
Project: Triangle Artists'
Workshop 1987—Collaborative
Architecture Project,
Pine Plains, New York

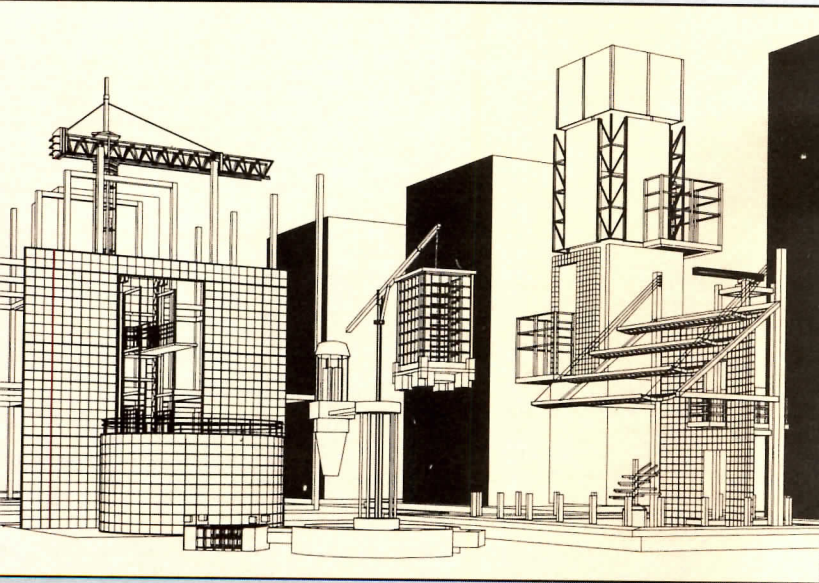


CATEGORY 2 – Planned/Pending/In-Works

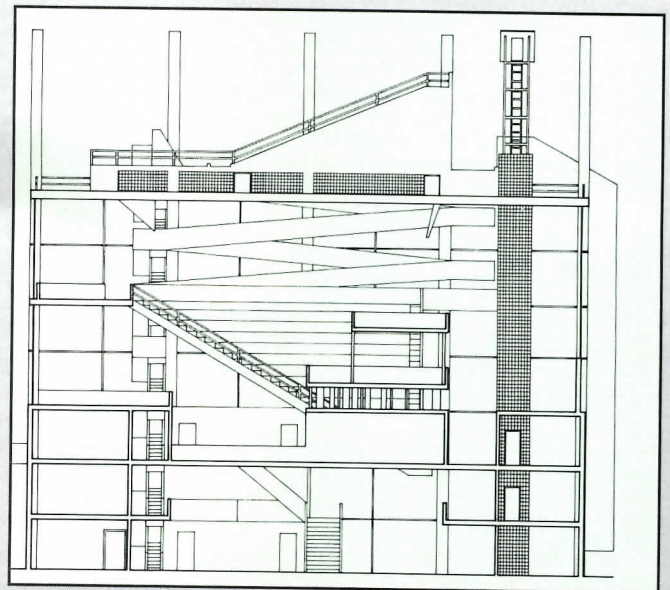


FIRST PRIZE
Douglas E. Oliver
Project: Clemson Performing Arts Center Design
Competition, Clemson University, Clemson, South Carolina

CATEGORY 3 – Conceptual



FIRST PRIZE
University of Colorado at Denver,
School of Architecture and Planning
Project: Five Projects:
Glass Block in the City



SECOND PRIZE
Eric Ibsen
Project: A Modern Church

HONORABLE MENTIONS (Not shown)
Thelean Shu
Project: An American Film Institute,
New York, New York

Yi-Shio Margaret Kuo
Project: Dedication to Glass Block

Mark S. Klancic
Project: Viewpoint to the Universe

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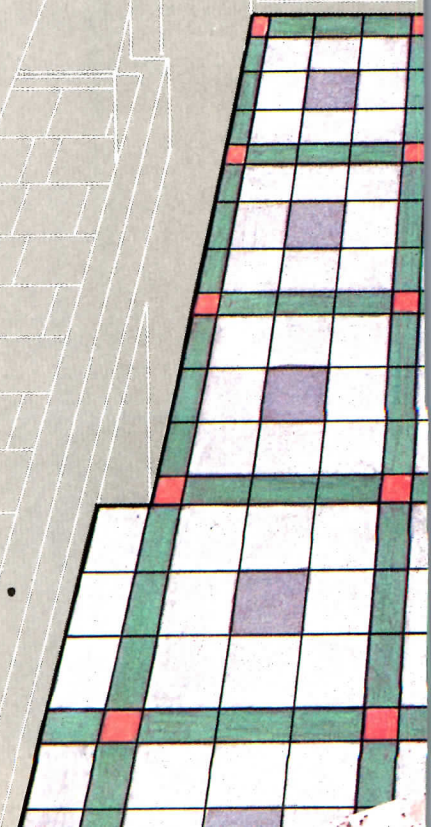
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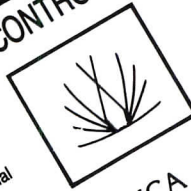
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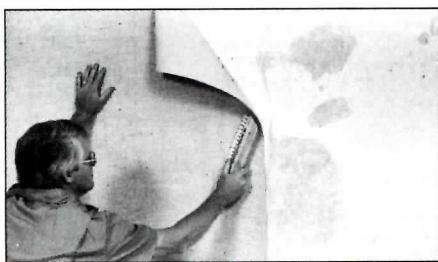


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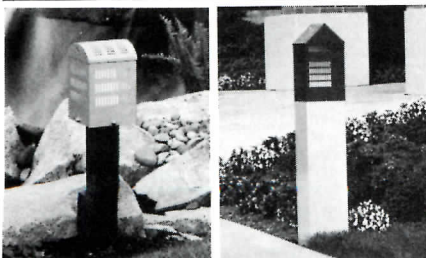
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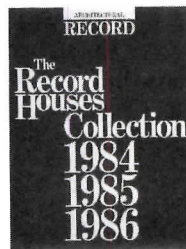


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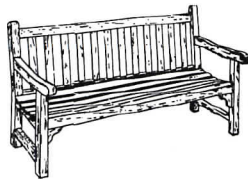
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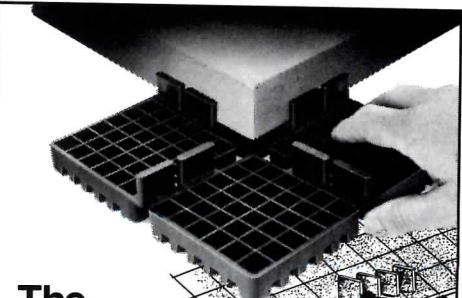
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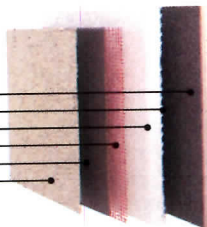
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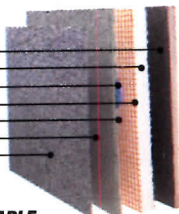
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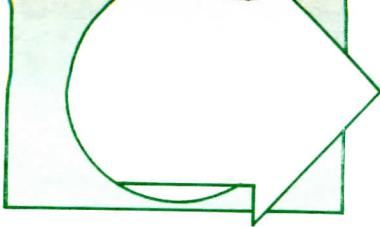
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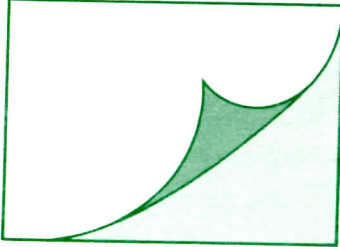
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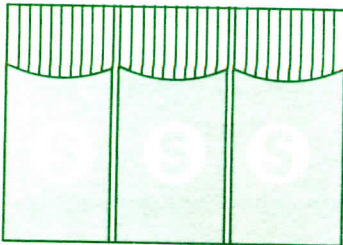
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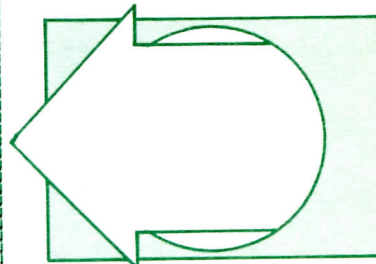
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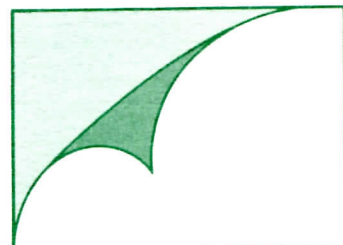
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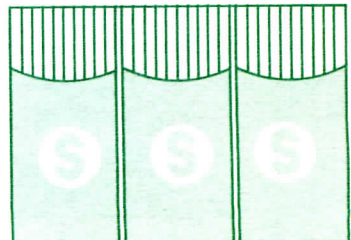
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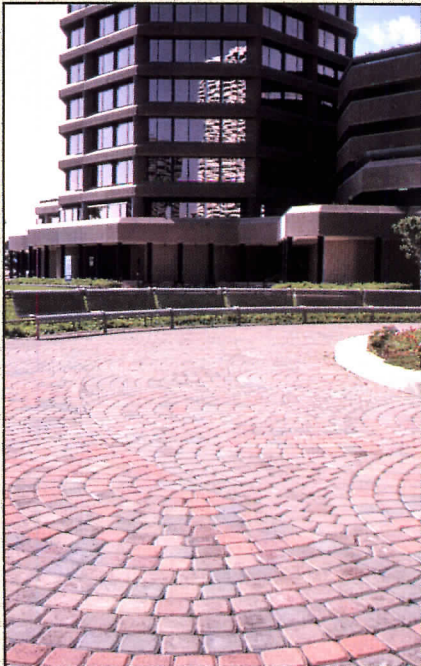
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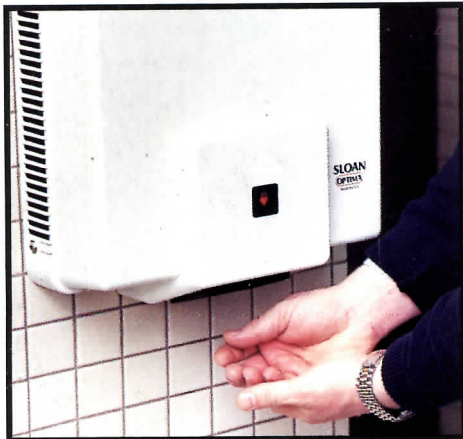
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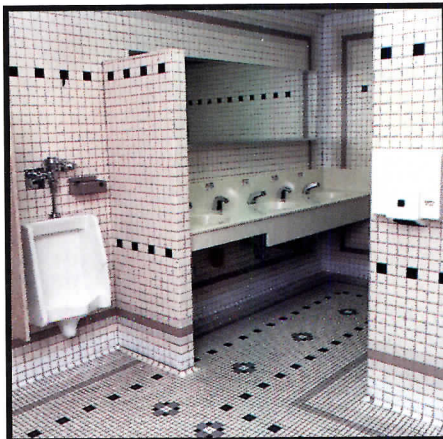
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