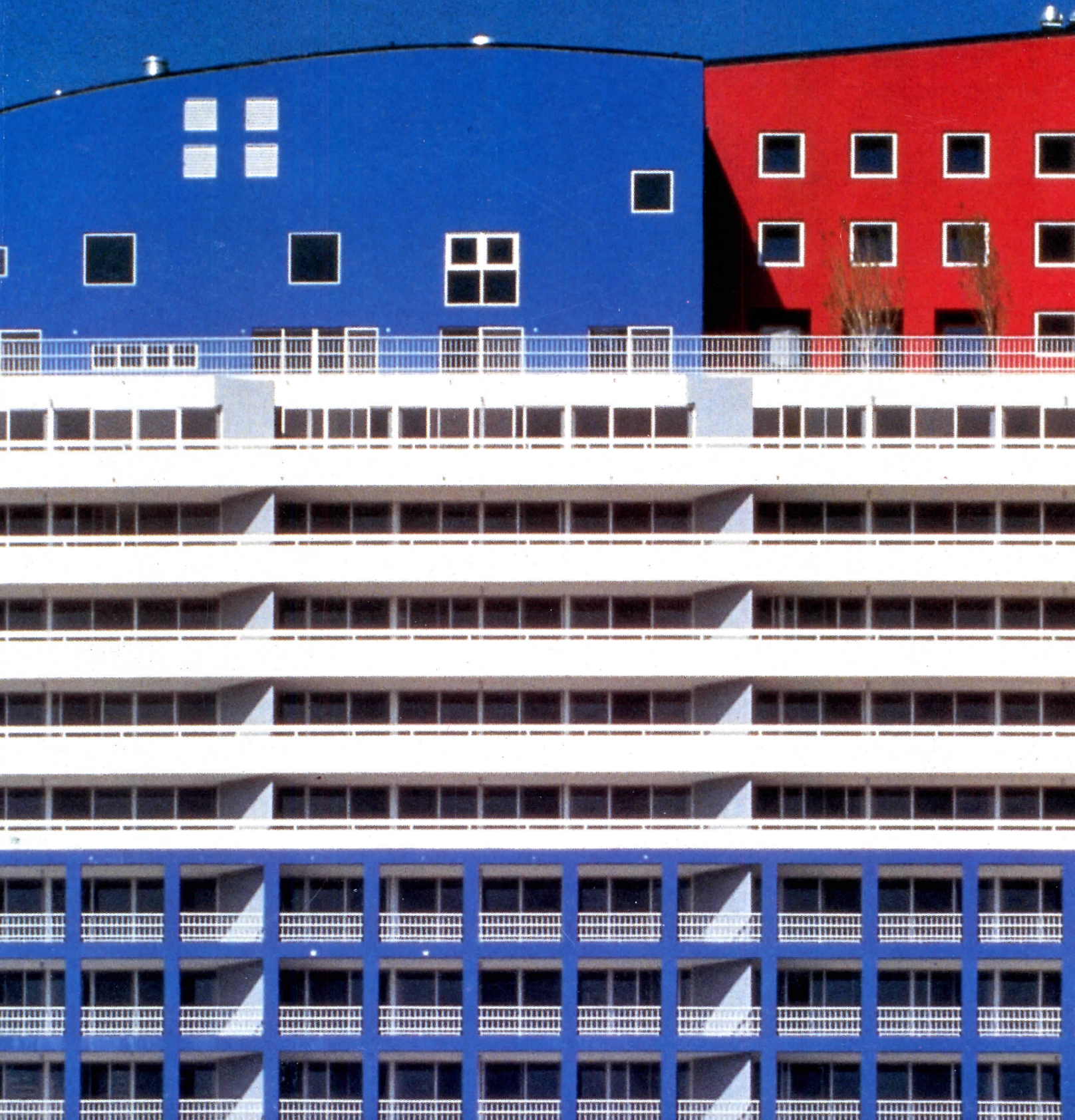


ARCHITECTURAL
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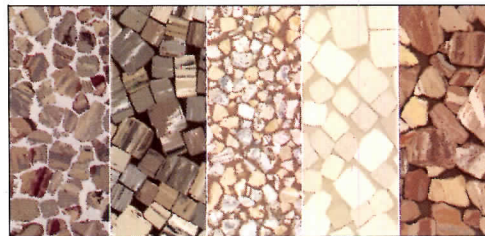
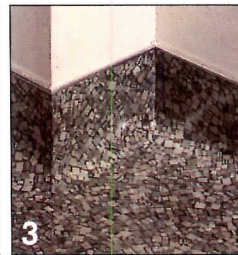
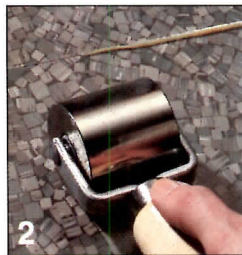
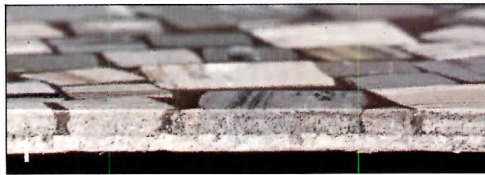
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Convention mood: Kind of calm and quiet this year



AIA members elected R. Bruce Patty, of Patty Berkebile Nelson Associates, Kansas City, as first vice president/president-elect.

There were no revolutionary resolutions, the theme speakers were thoughtful and well attended, the seminars (especially those on computers and getting new business) filled with note-taking architects, and president-elect George Notter came in fifth in the fifth annual American Institute of Architects Convention Run—1.8-mile event. There was no student activism, no nuclear disarmament disagreement, and the lively days of lively talk over abandonment of the code of ethics seemed long ago. But there was serious talk on serious ideas—and maybe that is the proper role of a convention.

Perhaps the most talked-about news event was President Robert Broshar's announcement—as part of his address to the Convention—of an "Architects' Economic and Compensation Task Force" to develop a strategy dealing with the long-term problem of economics in our industry and of architect profitability. "I'm convinced," said Broshar, "that we need an initiative that deals with our own attitudes. . . . There seems to be a perception among architects that although we're very good artists, we're not very good business men and women. Architecture seems to ride the fence between being an art and being a business. But, if given a choice. . . I would choose both; because in fact there is no choice. One will not exist for long without the other." The task force will begin work this month, under the chairmanship of former Institute vice president Tom Teasdale.

The election for first vice president and president-elect was won by R. Bruce Patty (photo above left), a founding principal of the 40-person firm of Patty Berkebile Nelson Associates of Kansas City. He currently chairs the Membership Services Commission, chaired the Grassroots '83 meetings in San Diego and Tampa. He will take office in December under the current president-elect George Notter of Boston. Defeated were David A. Pugh of Portland, Oregon, a partner in Skidmore, Owings & Merrill; and John A. Busby Jr. of Atlanta, currently chairman of the Institute's Design Commission and executive vice president of Jova/Daniels/Busby.

Elected as vice presidents were Theodore F. Mariani of Washington, D.C.; Robert J. Von Dohlen of West Hartford, Connecticut; and Gaines B. Hall of Dothan, Alabama. *W.W.*

Bylaw changes and resolutions: No revolutions

The first action of the Convention's business sessions was overwhelming passage of a bylaw change that permits any one delegate to request a roll-call vote if he or she is dissatisfied with a voice or standing vote. Upon such request, a roll call is to be held if "one third of the delegates as determined by a roll call of the regions [approves], each region being entitled to the same number of votes assigned to all components of that region." This change was proposed by California, which has many votes but typically a smaller delegation than its votes would suggest. The new bylaw was invoked several times during the remainder of the business sessions.

These actions were taken on resolutions:

- Concerned that the current AIA Board is too large to be efficient, and concerned about "responsiveness and governance, and allocations of human and financial resources," the Seattle Chapter proposed a resolution that "a task force be appointed with representatives from the membership, the Board, the AIA staff, CACE and an independent management consultant to identify and recommend alternatives for changes in Institute governance and representation. . . and that based upon membership review [at Grassroots '84] a recommendation be prepared for a vote at the 1984 convention." The resolution passed.
- A resolution requesting a bylaw change that would "provide that an ethnic minority architect with full voting rights. . . be appointed to the Board of Directors of the Institute" was revised simply to require that "the Commissioner assigned to the Affirmative Action Committee shall be aware of and concerned with problems of the minority architect, shall attend all meetings of the Committee, and shall represent the interests of affirmative action to the Board." The substitute resolution passed without dissenting vote.
- After considerable debate on whether it was better to hold Grassroots meetings around the country, as a part of the Directions '80 push for less national focus and more local focus; or in Washington where the component executives can meet with government officials, legislators, and all of the AIA staff, the delegates approved a resolution requiring that "henceforth, the Institute sponsor a single Grassroots to be held annually in Washington, to coincide with the Congressional

session, and. . . develop a travel reimbursement system that will encourage all components to participate."

- A resolution praising the Institute for "its interest and efforts on behalf of women in the profession" and urging that it "continue in this direction until. . . women. . . are indeed fully integrated into the profession" passed by acclamation.

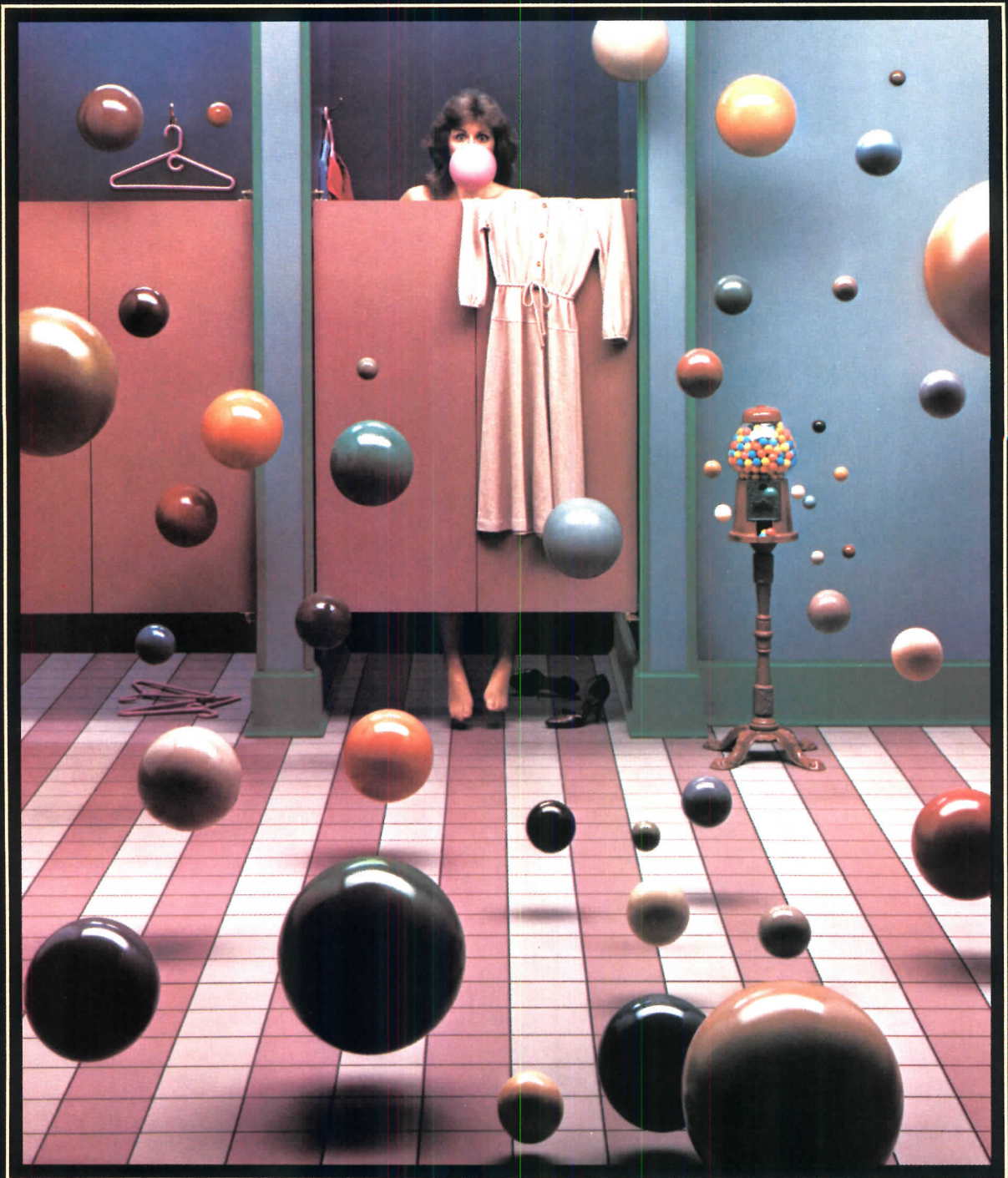
- Last year's acceptance of Directions '80, which urged the Institute to place its main focus on service to architecture, not architects, was challenged by a resolution calling for "the Institute and its components [to] strive to improve and promote the profession of architecture through service to its members, and through its members represent the interest of all architects and all aspiring architects in the nation." The resolution passed, despite criticisms that it was "self-serving."

- Another resolution passed virtually unanimously requires the AIA to "initiate and maintain an aggressive effort that will assist the components in addressing registration issues threatening traditional practice, and establish equitable definitions of architecture, engineering, and building contracting which will provide useful guidance to the components within the context of registration." Said the California sponsors: "Sure, this is self-serving. But we must be concerned that more and more of the built environment is being built by nonlicensed people." Many delegates pointed to revision [and weakening] of registration laws in an increasing number of states, the licensing of "building designers" in California, and a proposed law in Nevada that would permit contractors to provide architectural service.

The convention also agreed to:

- Develop a national policy on the issues of indoor pollution. . . and coordinate the activities of the components in their initiation of, and reaction to, legislative and regulatory proposals dealing with the issue of indoor pollution."
- Make available AIA membership, at a reduced rate, "to newly registered architects within one year of original registration, for a period of four years. . ." The Board had recommended support of this resolution because of the low pay of newly registered architects—and felt that there will probably be a cost benefit by attracting more new members at the lower rate. *W.W.*

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Professional development: Seminars on preservation, computers, and business management

The majority of the professional development seminars were concerned with three topics: preservation and conservation, business management, and computers, including managing a computerized practice and buying and selling computer-aided design services. Following are some excerpts:

Restore it, adapt it or tear it down: Tax incentives and preservation law

In this seminar, which was moderated by Thomas H. Spiers, Jr., chairman of the AIA committee on historic resources, John Fowler, general counsel for the Advisory Council on Historic Preservation, explained the basic concepts of preservation law and the required procedures (under Section 106 of the National Historic Preservation Act) to obtain Federal funding for private development projects covered by both the new jobs bill and the Federal Historic Preservation Fund (see RECORD, May 1983, page 35).

Fowler stated that the future held stronger local preservation laws, and that the favorable determination on the legality of such laws in New York's Grand Central Station case had "unleashed the dam."

H. Ward Jandl, chief of technical-preservation services for the National Park Service outlined tax credits for preservation under the 1982 tax laws (again, see May 1983 RECORD). Basically, there are three categories of credit: 25 per cent for an approved renovation of any certified historic structure, as determined by listing on the National Register or by being deemed an important part of an historic district registered with the National Park Service; 20 per cent for any improvements to a nonresidential structure over 40 years old, and 15 per cent for improvements to any nonresidential structure over 30 years old. The amount of the credit that the government can recover if the building is resold is reduced to zero over a five-year period.

Jandl said that some 92 per cent of qualifying applications for certification for the 25 per cent credit are approved, but emphasized that the new plans must maintain the essential historic features and meet certain other criteria:

1. The rehabilitation must be substantial and amount to more than the value of the building, as adjusted for land cost and depreciation deductions.
2. At least 75 per cent of the

existing exterior walls must remain in place (a particular problem when additions are planned).

3. The work must be completed within a specified length of time.

A little-known twist to the tax law states that buildings within an historic district registered with the Park Service must be certified as having no importance, if the 20- or 15- per cent credit is elected, to avoid full approvals.

Peter King, executive director of the National Council of State Preservation Officers, advised getting staff from the state office on the site before any plans are drawn. He said that the biggest area of controversy (and difference between states) was what constitutes an appropriate replacement window, an issue that manufacturers have been particularly slow to address in a ripe field. He also noted that much objection to Federal participation in preservation activities centered on the cost to the taxpayer—invalid, as all funds for Federal environmental programs come from offshore drilling revenues!

Nellie L. Longworth, president of Preservation Action, a lobbying group, advised that architects should watch the final IRS regulations issued on these credits, as they are currently unclear on whether design fees can be included in the amount used to determine "substantial renovation." (The public has 45 days to comment when they are issued before they become final.)

Her group is currently working to set up a \$75-million-dollar revolving fund through Congress for inner-city preservation. The group is also working to get the 75 per cent requirement for substantial renovation altered, because it forces owners in expensive inner-city locations to over-invest.

Longworth warned of problems ahead in the proposed Bradley-Gephardt bill that would eliminate all forms of investment tax credits. Her advice: "If you have a project you want to get through, get it going. They can't take away the credit once it is approved."

Business management: Small firm techniques for success

This seminar was moderated by William Haire, professor of architecture at Auburn University. Haire emphasized that if you have made the decision to remain small, you must stick with it and not vacillate when, for example, you

have a chance for a big new commission.

"You must make marketing plans that reflect your decision," he said, "and these should concentrate on the types of commissions for which personal service is valued. Particularly with small firms, work quality is scrutinized carefully by clients."

Haire advised watching nonlabor expenses closely to be able to put all available funds into building a good staff. He also advised offering such incentives as profit sharing and opportunities for advancement. Haire regarded such nonlabor expenses as computers as questionable: "They should be bought only if they really can increase work quality and/or decrease costs."

William Warner, whose architectural practice in Rhode Island averages about seven people, was a strong advocate of keeping practices small.

"However," he said, "I spend more time on the problems of survival than on those of success." His first advice was to keep a small practice local and meet those people in local industry and government who were likely to have commissions if not now, in the future.

Warner listed particular problems of the small firm as being the high costs of computers and liability insurance, but thought that computers could be managed with a group of small offices sharing them.

William Caudill, chairman of CRS with some 700 people, was not so sure about the merits of staying small: "The difference in firms is the quality of the people, not size." He advised, as Warner did, knowing everything about your target market (e.g. "the size of dip tanks if you want to do business with a cattle raiser"), but he felt that the world was already such a unified place that local concentration didn't make much sense. He said: "When I'm scared, I run faster, and the survivors in this profession are those who are responsive to changes in the economy and society."

The challenge to manage a computerized practice

Intended as "a problem-solving session," this seminar featured Harold Adams, president of RTKL Associates, and Charles Chief Boyd, partner in Boyd Borach Architects. Said Adams: "We now have the capability to process and assimilate vast quantities of information, but we will fail if we do not plan,

organize and manage properly." He is an advocate of taking sufficient lead-in time to allow a staff to adjust to new ways of doing things, his firm having started with computers 16 years ago and only recently become highly automated with the introduction of a sophisticated CAD system.

Adams felt that the logical first step was to understand the attitudes of a firm's employees about computers and to develop a logical plan in writing that would reflect those attitudes and ease the transition. "Only they know your business and how automation will best work with it and them," he said.

RTKL currently runs its main unit on three shifts spread over a 16-hour day. "Fee structure is one of the new areas that a firm starting out in computers will have to resolve," Adams said, "especially as it relates to reimbursables."

According to Charles Boyd: "We determined that 65 per cent of our time was spent in the preparation of drawing documents and 35 per cent in crunching numbers and words."

His firm attacked drawing first when it computerized and has since expanded into the number- and word-crunching functions, with an increase in efficiency of 40 per cent.

"The net effect of this has been an increase in our profits in relationship to our liability exposure," said Boyd. "This is very important to us. We feel this relationship is one of the crazy things that architects and engineers do today, i.e., reap minimal financial benefits for phenomenal liability exposure."

Boyd admitted that his firm had made most of the classical mistakes that could be made by a design firm—the first and most disastrous being to buy equipment without having any software. "If you learn only one thing from this presentation," he said, "I urge you to realize that software is where you need to begin."

"In our desire to market our CAD services to clients," said Adams, "we must not fall into the trap of promising quicker, cheaper services. The primary function of the CAD system is to assist with the redundant functions and allow for the most creative and investigative opportunities. Though we may compress certain aspects of a project's schedule, we cannot promise the job any quicker or sell the creative service any more cheaply." C.K.H.

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Theme speeches: The role of architecture for the nation, the city and the individual

The 1983 convention theme, "American Architecture: A Living Heritage," focused on the significance of architecture of the past, present and future. And the three theme speakers—trend analyst John Naisbitt, who is also a public director of the AIA; urban policy researcher Dr. George Sternlieb; and urban consultant/philosopher William Whyte—addressed the subject at the national/global, the neighborhood/city and the interpersonal/individual levels.

Trend analyst John Naisbitt spoke of the national/global level

In his discussion, Naisbitt drew from his best-selling book, *Megatrends: Ten New Directions Transforming Our Lives*. These ten major trends can be summarized as follows:

- We are in a "megashift" from an industrial to an information-based society.
- For every high-technology action, there is a "high-touch" reaction responding to human needs.
- Our economy is becoming part of a global structure, moving away from isolation and national self-sufficiency.
- U.S. corporate managers are starting to think about long-term goals rather than the next quarter.
- Our centralized structures are becoming decentralized; we are growing from the "bottom up."
- We are turning more to "self-help" rather than looking to the government and other institutions.
- Citizens, workers and consumers are gaining a greater voice in government, business and the marketplace.
- We are moving from hierarchies to networking; "the computer is smashing the pyramid."
- The U.S. population is shifting from the North to the South, particularly Florida, Texas and California.
- We no longer live in an "either-or" world; we have demanded—and are getting—a multitude of choices.

Discussing the "high-touch" reaction to high technology, Naisbitt predicted that the more computers and satellites and other technical devices we put into society, the more people will seek ways to compensate. Of particular interest to the architectural profession, he said:

"The more technology you put in a society, the more people aggregate, the more they go to movies, to restaurants, to shopping centers. I think, in this context, the scenario of the

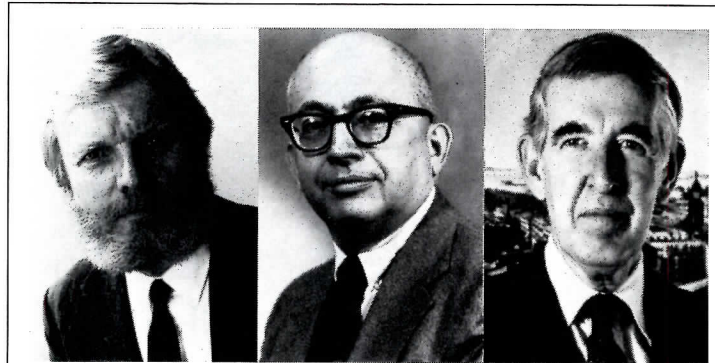
electronic cottage will not go very far. . . . People *want* to go to the office, people want to be with people, and the more technology you put into the society, the more they want to be with people."

This does not mean a revival of the cities, however, says Naisbitt:

"In this new economy, where we can locate a facility anywhere, we look not for the infrastructure, we look for the

neighborhood/city level in less optimistic terms:

"The temptation within the United States right now is to optimize the short run and to go with your winners," he said. "Within this context, most of our older cities, and particularly our industrial cities, are viewed as losers. Money put into them is viewed as lost money, and the sum result of this is, at best, a



AIA Convention theme speakers were trend analyst John Naisbitt (left), author of *Megatrends*, Professor George Sternlieb (middle), director of Rutgers University's Center of Urban Policy Research, and author William (Holly) Whyte (right), author of *The Organization Man* and currently head of the *Street Life Project in New York City*.

quality of life. . . . And it is going to be very tough for cities in the Midwest and the Northeast . . . to compete under these circumstances. . . . The question—'Are we going to save our cities?'—is I think an inappropriate question because it is a top-down question in an increasingly bottom-up society, and it is an either-or question in an increasingly multiple-option society. The point is, we are going to save some of our cities and not others, parts of some and parts of others, and it is all going to turn on local initiative."

The key to many of these changes is the computer, which to Naisbitt is "a tool that manages complexity." And if you have a tool that manages complexity, "you invite more complexity." If managed properly, however, Naisbitt sees this working to the advantage of society in that people will have more choices in every area.

Professor George Sternlieb discussed the neighborhood/city level

The second speaker, Dr. George Sternlieb, who is director of Rutgers University's Center of Urban Policy Research and a professor of urban and regional planning, spoke about the

leveling off and in very large part a diminution of support programs."

Sternlieb pointed to some of the same factors Naisbitt had mentioned as affecting the fortunes of the city: the decline of manufacturing in the United States, the shift from older areas to newer ones, the increasing lack of structure and unionization. "There is nobody who can figure out what to do with a used smokestack city—whether it be a Buffalo or a Youngstown—and there are lots of them," he said.

In some cities, however, Sternlieb saw a new danger: "a city within the city" is evolving. "It strikes the eye, it bemuses the mind, it gives the illusion that we are recreating the cities of yesterday in a new format. . . . To a certain degree, it is much more sophisticated, and to a very, very large degree, it has no relationship to the old functions or, for that matter . . . to the old people who are housed within the older city. . . . Within this city within the city, there are new jobs but the old jobs are fading away. . . ."

"The allure, the glamour of the city within the city sometimes creates a feeling that all is well—it is not well. . . . You have a very

uneasy existence of the increasingly impoverished on the one hand and the affluent on the other. . . . And the jobs that will come into the central city will not be jobs that fit the present characteristics of the occupants thereof. . . . What we have used our central cities for, very largely, is essentially as repositories for those people who not only may have fallen off the train but perhaps have never gotten on it and never will."

This mismatch of people and location will create problems, said Sternlieb, for it "interferes with some potentially very valuable real estate."

He then talked about a process he called "the Ghiradelli-Squaring of America"—the use of the attractiveness of history as a merchandising tool which in turn leads to the creation of "new history, where the plumbing is infinitely better," for the affluent part of the market.

"When you contrast the level of housekeeping within the new synthetic artifact versus the public predecessor artifact, the contrast can bring tears to anybody raised in Prospect Park, as I was. No bashed-in benches, no broken and shattered comfort stations. It is safe, sound and sanitary, and it sells."

Sternlieb also saw the changing shape of central cities as leading to a new drive for defensible space: "How do I protect my suburban commuter whom I have to bring in in order to fill the buildings which I have created in a periphery to the jungle of the cities?" He pointed to the examples of the Prudential Centers in Newark, linked to the commuter train with an aerial walkway, and the Renaissance Center in Detroit, offering everything possible in the way of security. And he likened the thinking behind that type of construction to what he calls "one of the great leitmotifs of the American psyche" as manifested in the allure of such books as *Robinson Crusoe*: "I am master of my fate . . . independent of the outside world . . . I have stopped the world . . . I have gotten off."

Said Sternlieb: "I would suggest to you that this is an enormously potent psychological reality. The vision that this is an adequate resolution for the realities of the new world is the most foolish of all fantasies. At least from one school of thought, the United States is very similar from an industrial point of view to the Italian city-states of the
Continued on page 52

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Economics:

The economy is positioned for a sustained recovery

By Phillip E. Kidd

For months, administration and private economists have heralded the latest positive statistics as evidence that the expansion of the economy has arrived. By now, there is little argument that the economy is growing. Instead, the question is, when will it quit shuffling along and break into a brisk and sustainable run?

A look back helps place the past year's performance in perspective

It serves as a reminder of how far the economy has come since interest rates broke last July—and it also provides some useful clues as to how much further the economy must go before a solid, robust recovery is possible.

A year ago, prospects were bleak. Inflation was at record levels, although showing signs of easing. Unemployment was moving toward a post-World War II high of nearly 11 per cent. Bankruptcies (both business and personal) were occurring at an alarming pace. Interest rates (both short- and long-term) were near historic highs. Moreover, the long-term capital markets were in disarray, as investors sought the safety of short-term financial instruments. And there were deep fears of a prolonged worldwide slump.

In this inhospitable environment, consumers—worried about jobs and income—had been retrenching for many months, drastically curtailing credit purchases, speeding up debt repayment, and boosting savings. All of these actions not only moderated consumption, but put households in a financial position to expand spending whenever their confidence in the economy returned.

Meanwhile, businesses were not so lucky. The malfunctioning capital markets forced them to finance their credit needs with increasingly shorter- and shorter-term debt, and so their balance sheets became alarmingly overburdened with extremely expensive short-term borrowings. Before businesses could participate in any type of recovery, they would have to substantially restructure their debt with long-term and lower-cost funds.

Abruptly, conditions changed—and new problems emerged

Inflation suddenly became less of a problem, with the marked improvement in inflation indicators throughout the first half of 1982. But there were new sources of anxiety in the wake of several failures of domestic

financial institutions and the growing awareness of serious debt problems in a widening number of foreign countries.

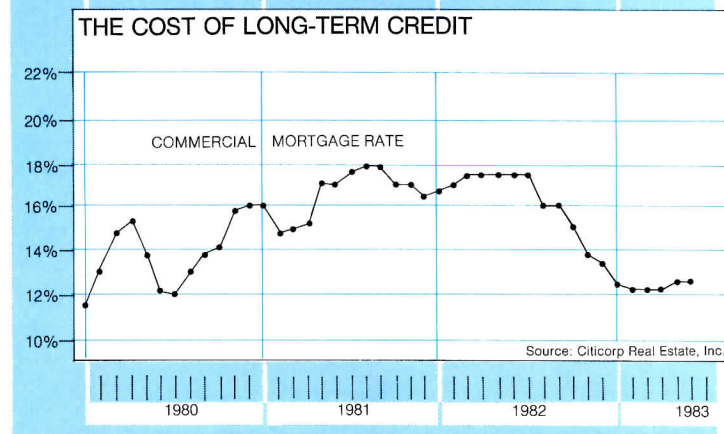
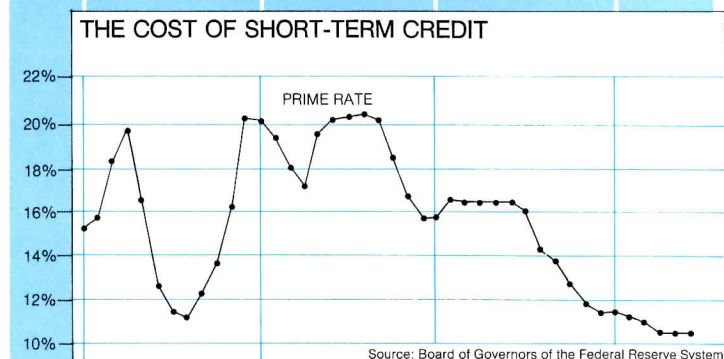
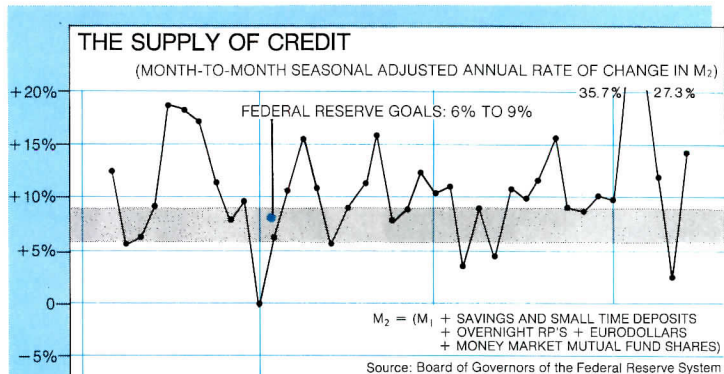
The "miracle cure" for these ills was a rapid reversal of monetary policy in the late spring, from severe restraint to aggressive ease. Short-term rates reacted immediately and began tumbling in July. Several months later, long-term rates began falling. Soon mortgage rates, which had been above 17 per cent with some form of inflation hedge attached in the summer, were dropping toward 13 per cent on a fixed-rate basis in the winter. In turn, residential building, which had been in a four-year funk, began growing vigorously.

Real improvements provide the foundation for an even stronger performance

Over-all, consumers are in good financial shape to boost their spending. Households, especially those headed by 30- to 40-year-olds, still have home ownership as a high priority. In addition, as mortgage rates slide toward 12 per cent and below, more and more households can qualify for mortgages, increasing demand for housing.

Next, businesses, including lower-rated ones, have poured into the capital markets in the past year, issuing huge amounts of bonds and a large volume of new stock to replace short-term borrowings. Currently, improving profits from productivity increases, continued cost-cutting efforts and lower borrowing costs are providing businesses with more internally generated funds to continue redressing their balance sheets, or to finance expansion. This will reduce their external demand for funds in the second half, allowing the mortgage market some badly needed leeway in its competition for credit with the Federal government.

In that confrontation, the mortgage market has regained an important ally—the thrift industry. Along with the rate declines, government deregulation of financial institutions (especially the creation of money market deposit accounts, or MMDAs), sparked a rejuvenation at thrift institutions in the first half of 1983. With credit demands soft in other sectors (except government), these institutions will channel even more of their new deposits toward the residential market, raising mortgage availability.



Monetary policy is also a source of optimism

Despite the furor over money-supply increases during the first half, the Federal Reserve appears to be pulling back from excessive pump-priming toward a firmer stance by supplying reserves as the economy needs them. This is an important change (see RECORD March 1983, page 39). It reassures the financial community that the Federal Reserve has not forgotten about inflation, while still accommodating economic growth. Given the nation's substantial idle resources, maintaining such a policy means that real economic gains can be achieved without reigniting inflationary pressures for some time to come.

None of this is meant to downplay the potentially

disruptive effects on the financial markets (and therefore the recovery) of our enormous Federal deficits. Nevertheless, a controlled monetary policy, moderate inflation, the revival of the thrift industry, strong consumer demand, and lower business borrowings in the next two quarters are solid reasons for anticipating exuberant housing activity in the second half and beyond. And, as housing revs up, its well-known expansionary impact on other sectors brightens the outlook for a better-than-expected economy in 1984.

Mr. Kidd is a prominent economic consultant and former Director of Economics Research for the McGraw-Hill Information Systems Company.



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Management: Disability insurance protects you from possible disaster

By John J. Hanlon, Jr.

This article by a manager for the Union Mutual Life Insurance Company is geared to the professional who elects to take coverage on an individual basis. It is possible that professionals would prefer insurance obtained by joining a group-coverage plan through your firm or professional organization. Although the basic considerations in choosing a policy will remain similar, there are basic structural differences between individual and group coverage, which will be covered in a subsequent article.
C.K.H.

Most professionals, architects included, may not be aware of the potential threat of disability. Personal tragedy is still thought of in terms of death, and not physical or mental impairments.

Statistics prove this is not a realistic perception.

A 35-year-old person is three times more likely to become disabled than to die. But, in all likelihood, this person is adequately protected in the event of premature death, not for disability.

Between ages 35 and 65, seven out of 10 people will suffer a disability lasting three months or longer. And before normal retirement age, one of seven workers will be disabled for five or more years.

These statistics are shocking when compared with other traumas, such as car accidents or house fires. In a given year, one in 88 homes will suffer fire damage and one in 70 motor vehicles will be involved in an accident causing injury or death; but one person in eight will become disabled.

Let's examine a hypothetical situation: A 45-year-old architect approaching the height of his career is diagnosed as having severe arthritis. He had been one of the most respected architects in his community; now, he is unable to continue practicing the material and substantial duties of his occupation as an architect. Although he finds several firms that are interested in his expertise as a consultant, he will still lose a substantial amount of his yearly income.

Because he is readily employable, he is not eligible for Social Security disability benefits. And he cannot collect workers' compensation because his disability is not the result of a work-related accident.

Impairments such as arthritis, heart disease and diabetes may not be thought of as disabling, but they are. Basically, we all live in a world of averages, and the possibility of any ailment making us unable to work is real and frightening.

The first object is to protect your income

Although such personal tragedies often can't be avoided, the financial risks associated with them can be minimized by buying individual disability income insurance. Because of the complexity of this product, it's worth learning some of the important benefits and features that are available.

Individual disability income

insurance is generically called Noncan, because once the policy is purchased, the insurance company cannot cancel it, reduce the benefits or increase the premium before the insured reaches age 65. As a matter of fact, guaranteed premium rates are a benefit unique to Noncan.

Of major importance when shopping for individual disability insurance is how the insurer defines total disability. Many Noncan policies designed today offer professionals an "own occupation" definition of total disability. In essence, this means that a claimant will receive *full* benefits for as long as he is unable to perform the material and substantial duties of the profession he practiced at the time of disability.

Additional coverage offers protection for partial disability

Sometimes an architect, for example, may be capable of returning to his occupation on a part-time basis. To provide coverage if this occurs, he may consider purchasing a residual benefit in addition to the base policy. The residual benefit pays a percentage of the full disability benefit based on loss of income while the insured is partially disabled and working only part-time in his own occupation. Another valuable feature of some residual benefit plans is that benefits are paid even if there is no prior total disability. This is an important feature to look for, because some impairments may be degenerative and never cause total disability.

A variety of benefits and features are available in basic policies

As noted above, one of seven workers will be disabled for five or more years. Therefore, it is important to consider the length of coverage, or benefit period, of a disability policy. Most individual Noncan policies provide benefits to age 65. In addition, if the insured is gainfully employed on a full-time basis at age 65, the policy may be renewed to age 75, with a two-year maximum benefit period.

When considering the benefits of long-term coverage, you should also examine the policy's elimination period—the amount of time the insured must be disabled before collecting benefits. The insured has the option of selecting the length of the elimination period at the time the policy is purchased, generally in 30-, 60-, 90- or 180-day intervals. Keep in mind that

the buying power of your premium dollar is inversely related to the length of the elimination period.

Looking at this from a financial standpoint, a 35-year-old male purchasing benefits for accident and sickness to age 65 will receive \$3,000 in monthly benefits with a 30-day elimination period for a monthly premium cost of \$100. The same \$100 will provide \$4,000 in monthly benefits if he selects a 90-day elimination period. If he suffers a disability lasting two years, he will collect \$15,000 more in benefits with the 90-day period than with the 30-day period. And, if the disability lasts for 20 years, he will collect \$231,000 more as a result of selecting the 90-day elimination period.

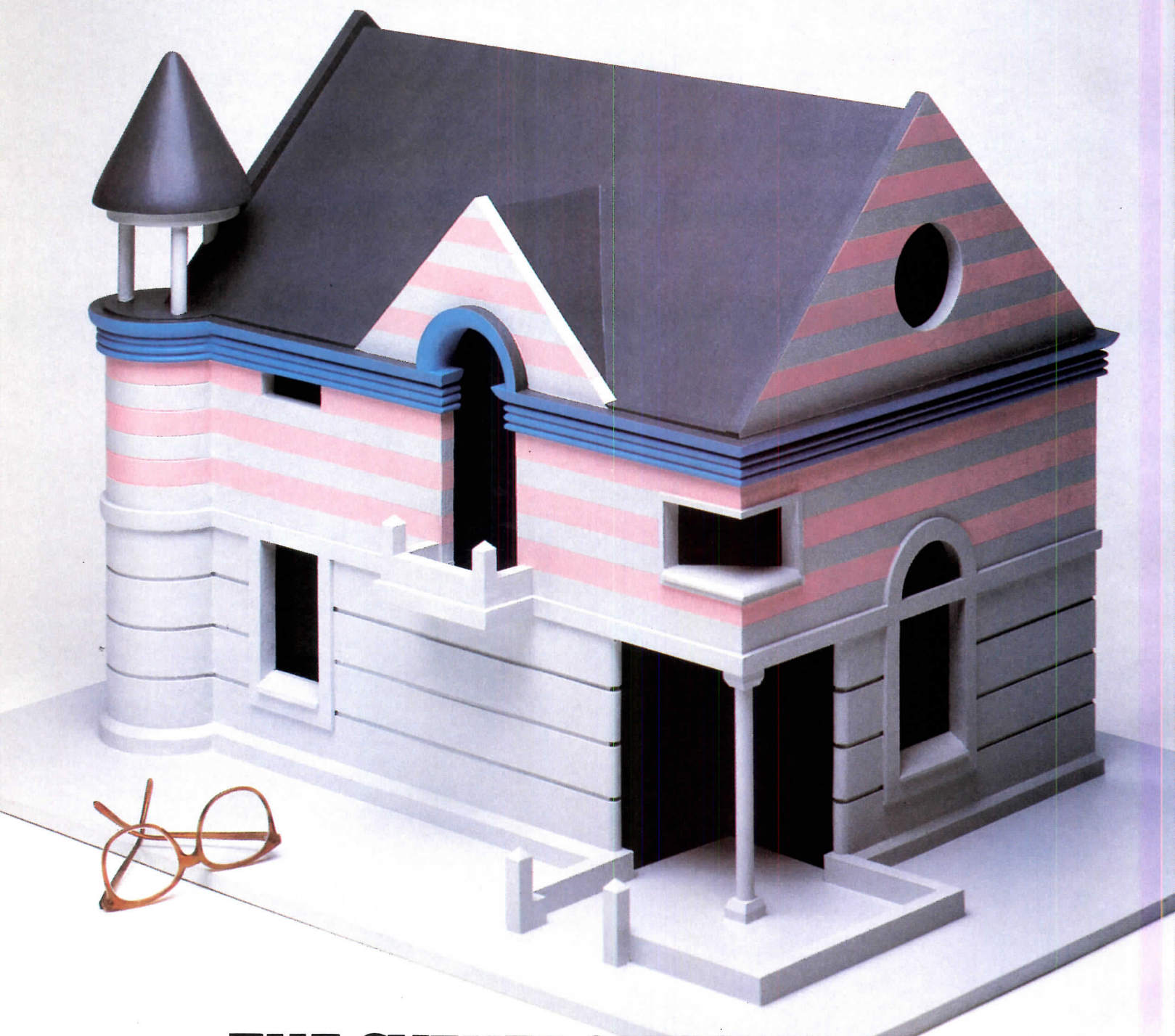
If the objective is to maximize benefits per premium dollar, longer elimination periods are more cost-effective. However, the savings of a longer elimination period must be weighed against your needs and how they can best be met.

Supplemental benefits can enhance the basic policy

Recently, the insurance industry has developed a cost-of-living option that increases benefits in proportion to the consumer price index. This benefit can be very valuable, considering the uncertainty of future inflation or the length of any disability. For example, if you have purchased a \$4,000-per-month benefit and inflation over the next 20 years is six per cent, the present value of your benefit in 20 years is \$1,248. That difference may have a dramatic effect on your lifestyle.

Another option, the future insurance option, provides for the purchase of additional insurance without medical evidence of insurability. This guarantees that changes in your health will not prevent you from keeping your disability program up to date.

Because of all of these variations and options, buying disability insurance requires a thorough investigation of the specifics of the contract and the reputation and experience of the insurance company. But most important is the selection of a quality insurance advisor to help you plan your disability protection needs. After all, your goal is to protect your most valuable asset—your ability to earn a living.



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Circle 31 on inquiry card

Computers: Selecting the right CAD system for your office

By Eric Teicholz

The process of selecting and acquiring the right CAD system is complex and has implications that go far beyond cost. Other articles in RECORD's ongoing coverage of the computer have dealt with the general background that you need in order to understand what the computer can do for you. This article offers the more specific guidelines that you will need when you set out to buy your equipment. A list of suppliers and services—as well as much other useful information on computers in general—can be obtained by consulting the RECORD's upcoming publication, The Computer.

The selection and acquisition process for CAD consists of two steps—a preliminary feasibility study, and a detailed systems analysis and evaluation. The preliminary study is conducted in a relatively short time and answers the question: "Is automated design and drafting appropriate to my organization?"

The second, an extension and refinement of the first, defines your actual needs, helps you produce a set of specifications that you can use in requesting proposals from suppliers, and offers criteria for evaluating different systems and vendors.

Specifically, the analysis and selection process is made up of the following tasks:

1. Preliminary study.
2. Information/organization analysis.
3. Manual costs definition.
4. System requirements definition.
5. Request for proposal.
6. Supplier evaluation and selection.

A preliminary study should tell you if you need CAD

The purpose of the preliminary or feasibility study is to review and document the current operational procedures of a firm and to select which areas are most amenable to automation. It should demonstrate the potential risks as well as the benefits of automation. The study should result in a "go" or "no go" decision, and it must rely heavily on relevant experience—coming either from in-house (an evaluation team?) or from an experienced consultant.

The experienced person or persons should have over-all responsibility for CAD selection,

Mr. Teicholz is a professor of architecture at Harvard University, on leave of absence to run his own service bureau, Graphic Systems, Inc., in Cambridge.

acquisition, and installation, including the development of time and dollar budgets, and the determination of major milestones.

In order to identify those tasks that are most amenable to automation, a firm should look at its entire design, drafting, and construction processes. The study should not be restricted to any particular department, since a CAD facility integrated with all of them will yield the greatest time and cost dividends.

Look for well-defined tasks where the speed and accuracy of machines will yield high dividends. Such tasks should be labor-intensive, critical in nature, easy to relate to input and output procedures, or highly repetitive. Some examples:

- Change orders, specification writing and general correspondence.
- Accounting, including project control and management.
- Materials take-offs.
- Design and drafting for engineering and production drawings.

The most likely drafting tasks for automation are those that are repetitive—either at a micro (a drawing detail) or a macro (an entire design process) level. For example, micro repetition might be present for drawings that use standard elements or symbols that are arranged in a variety of ways and minimally edited. A macro repetitive process might involve the design and analysis of various types of repetitive industrial buildings or process plants. A third type of repetitive process is the revision of drawings.

Another likely subject of automation is a task that is prone to manual errors that would not happen with most CAD systems. Such features as automatic or semi-automatic dimensioning, drawing overlays, and integrated comprehensive data bases reduce certain types of design and drawing errors. A preliminary cost/benefits analysis provides information on approximate cost savings and risks. If the answer seems to be "go"...

A detailed analysis tells where you will use CAD—and much more

The first purpose of an in-depth systems analysis is to tell you which CAD functions will actually be most beneficial for your company. It will produce a thorough understanding of the disciplines that have potential for automation; the percentage of the total workload, by discipline

and drawing types, that will be affected by automation; the current and projected drawing loads (by application); and where repetitive drafting takes place.

Tasks that are labor/cost intensive are not necessarily amenable to automation. Alternatively, tasks that realize the greatest productivity gains with automation might constitute only a small percentage of a company's workload.

To determine how CAD fits your way of working, you must evaluate your firm's management objectives, its structure, and the potential for technical and managerial integration of CAD. Thus, the analysis should start with:

- *Desired* applications for automation.
- Projected work flow.
- Relevant financial issues, such as access to capital.
- Purchase or lease decisions.
- Desired payback period.
- How capital equipment is amortized.
- Capital equipment planning.
- Personnel selection and training.
- Installation procedures.

The second step is to find out where a CAD system will really save the most money. To do this, you should make schematic work-process diagrams showing the people and time required for each step of the tasks you have identified as candidates for automation. Before drawing any conclusions, review these diagrams to see what improvements can be made, what steps streamlined or eliminated—since no one wants to automate wasteful procedures. Most companies can find ways of improving on current manual design and drafting procedures, for example.

The cost procedure is straightforward: First determine the average hourly rates for each of the skills used in the tasks under study. These are entered on the diagrams along with the estimated number of hours required to perform the tasks, taking repetitions of certain procedures into account. The total cost of that process is then tallied and multiplied by the number of times it is performed per month or per year.

When all of the processes are summed up this way, they should equal a firm's expenditures for candidate tasks for the chosen period.

Productivity gains are the savings achieved by accomplishing a task using CAD rather than manual methods. For



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example, if it takes a certain number of drafters 20 hours to produce a set of drawings manually, and 10 hours to accomplish the same task with a CAD system, the productivity ratio gain is calculated as follows:

$$\text{Productivity Gain} = \frac{20}{10} = \frac{2}{1} = 2$$

A company can therefore expect a 2:1 productivity increase for this task by using a CAD system. When systems are operating efficiently after an initial learning curve, management can expect the following productivity gains for the same tasks over those performed manually (according to a survey by Daniel J. Borda, of Arthur D. Little, Inc.).

Having determined which tasks you actually perform the

Application	Productivity Improvement Factor	
	Average	Range
Documents	4.4:1	10 to 2
Design studies	4.3:1	20 to 2
Schematics	4.2:1	20 to 1.5
Plant layout	3.4:1	10 to 1
Piping	3.2:1	10 to 1
Structural modeling	3.1:1	5 to 1
Civil engineering	3.0:1	20 to 1
Mechanical details	2.4:1	8 to 1
Engineering analysis	6.0:1	20 to 1.5
Mapping	5.1:1	30 to 0.5
Charts	4.7:1	10 to 2
Structural detailing	4.7:1	25 to 1

most at the most cost and rated them by potential productivity gains, you are now in a position to determine what you want to buy. One of the objectives here is to...

Develop a short- and long-range plan for CAD implementation

These plans should be set before some of the results are incorporated into the request for proposal. The short-range plan should include the following information:

- What you want to do first.
- An ordered list of tasks and processes that you want economically automated.
- A description of tasks, departments, and people that will be affected by automation.
- Estimated hardware, software, and operating costs for

automation.

- Estimated cost savings with automation.
- Estimated effects of automation on company management and organization.
- Implementation plan.

Once you have completed all of these steps, you can...

Write a request for proposal and send it to suppliers

A request for proposal (RFP) enables a firm to select from several systems the one that best meets its particular needs and requirements. An RFP should include the following:

1. *Introduction and general conditions:* Contains general background information, objectives of the CAD systems, structure of the user organization, motivation for CAD, projected growth of the system, user experience, selection procedures and criteria, minimum functional requirements, and projected workloads.

2. *Company description and user groups:* Defines work tasks for departments that will initially be using the CAD system. Information on location (to determine workstation communication needs), departmental workloads, and organizational structure should be included.

3. *Hardware and operating system:* Covers performance specifications for the various hardware devices. Operating (computer) system software should also be specified in terms of desired system security, file management, text editors, and response times under various system loading conditions.

4. *Drafting and application software:* Contains specifications for desired drafting software features and application areas of interest.

5. *Support:* Contains requirements for documentation, training, and hardware and software maintenance.

Then evaluate the returns in terms of software, hardware, and suppliers

Communications, documentation, feedback from other users as determined by site visits, and the system's hardware and software growth potential (often called its "modularity" and "extensibility") must all be measured in terms of utility and performance.

The buyer can now initiate the first supplier screening process to obtain a short list. This involves making a prioritized list of desired features, and noting

all critical or "must" features for the proposed CAD system. The vendors that do not provide any mandatory requirements should be eliminated for consideration at this point.

An additional screening of their systems can be obtained if the suppliers are ranked. This can be accomplished by listing how well each satisfies the mandatory system performance specifications by using an arbitrary scale (e.g., where 1 = marginally satisfied, 2 = satisfactory, and 3 = exceptional). The potential CAD user firm then totals the scores and thereby derives a preliminary vendor ranking.

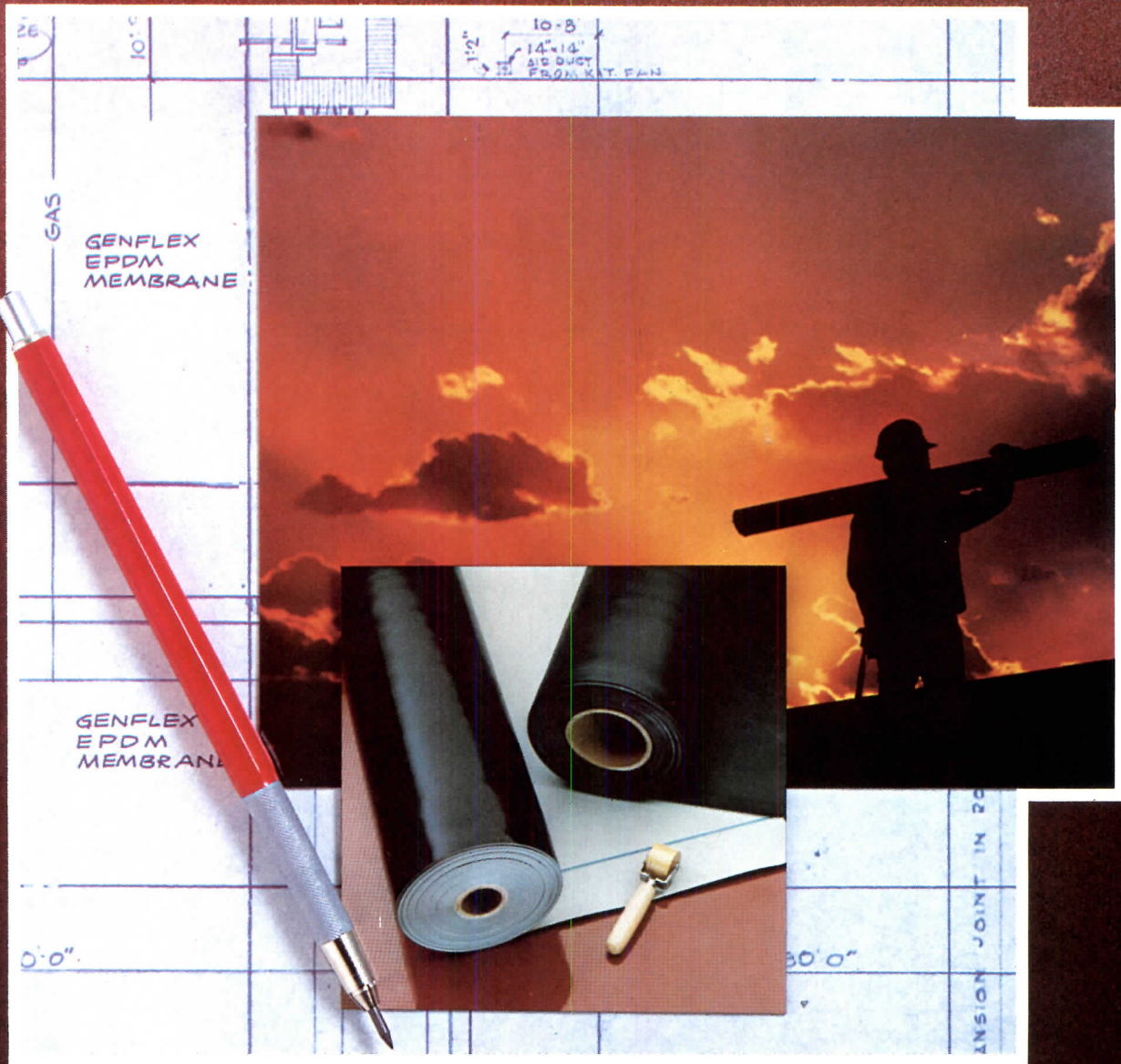
"Benchmarking" is an evaluation procedure conducted to test important desired features of a CAD system. It provides an additional screening mechanism before the final supplier determination. The benchmarking process consists of the following:

- Select subsets of typical drawings that illustrate as many of the "must" capabilities of the functional requirements as possible.
- Conduct the benchmarks on similarly sized systems approximating the eventual operating environment as much as possible. The vendor should be aware of your benchmark objectives and of what you are testing. A few "surprises" are permissible to test a system's flexibility, but even these should be planned to limit confusion.
- Evaluate and document results.

Scores and rankings can be obtained for each of the suppliers by multiplying the system property being tested by a weighting factor that reflects the relative importance of that property. Subjective human considerations (e.g., ease of drawing, creation, and editing; person/machine interfaces, etc.) should also be reflected in your evaluation.

The CAD selection and acquisition process may take from three weeks to several months depending on scope of areas investigated, the size of the firm, and the thoroughness of the study itself. If done carefully, the CAD system will result in productivity gains, cost savings, error reduction, improved drawing management and maintenance, and a resulting enhancement of design.

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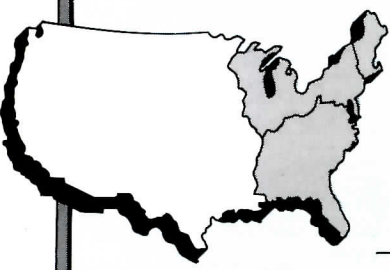
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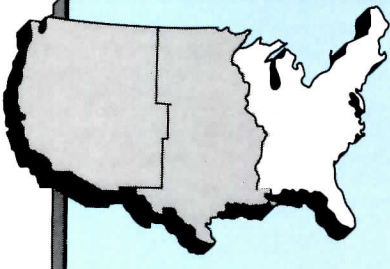
Circle 33 on inquiry card

Construction costs: The economic upswing may bring new upward pressures

Summary of Building Construction Costs



	Number of metro areas	Districts Eastern U.S.		
		10/82 to 1/83	1/82 to 1/83	1977* to 1/83
Metro NY-NJ	18	2.39	6.71	1525.12
New England States.....	33	1.40	5.22	1501.61
Northeastern and North Central States.....	120	0.82	4.46	1557.41
Southeastern States.....	106	2.63	5.73	1596.21
Average Eastern U.S.....	277	1.68	5.19	1563.51



	Number of metro areas	Districts Western U.S.		
		10/82 to 1/83	1/82 to 1/83	1977* to 1/83
Mississippi River and West Central States.....	122	0.31	3.81	1551.45
Pacific Coast and Rocky Mountain States.....	106	0.92	3.84	1638.83
Average Western U.S.....	228	0.59	3.82	1592.07

United States: Average.....	505	1.19	4.57	1576.41
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* Using only cities with base year of 1977

As stated in the previous quarterly report for the three-month period which ended last January (ARCHITECTURAL RECORD April, page 47), written at a time when costs were falling, the economic recovery puts upward pressure on costs. The accuracy of that statement is now being brought home by currently rising materials prices—as well as uncertainties in labor costs.

The current report, based on surveys by the McGraw-Hill Cost Information Systems Division, for the period that ended March 1983 shows the following:

Concrete was up .3 per cent; block was up 1 per cent; plywood was up 3.7 per cent; lumber was up 2.5 per cent; asphalt shingles were down .4 per cent; reinforcing steel was up 1 per cent; structural steel was up 1 per cent; conduit was up 1.2 per cent and; copper pipe was down 1.4 per cent.

As the upswing in the economy begins to reduce the backlog of materials, the specter of materials shortages is on the horizon. At present it is being held off by the fact that many manufacturers are still producing at as low as 70 per cent of capacity.

This will be a most interesting year in the field of labor negotiations. With the large number of one-year contracts negotiated in 1982, coupled with

unemployment, depressed markets and the new trend toward the relaxation of restrictive clauses in contracts, negotiating teams of both labor and management will be presented with new challenges and problems in negotiating what is essentially an uncharted course. The agreements they negotiate will set trends for the next labor cycle.

With the lowering of interest rates in the past six months, and the housing market still showing signs of upward movement from last year's low levels, developers and builders in some areas are reporting small price increases for new housing. This trend is not expected to touch off the high rate of increases that was the hallmark of the '70s. The housing market is still recovering from the recession, but it is a positive sign for gauging demand.

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

James Stewart
Cost Information Systems
McGraw-Hill Information
Systems Company



Historical Building Costs Indexes

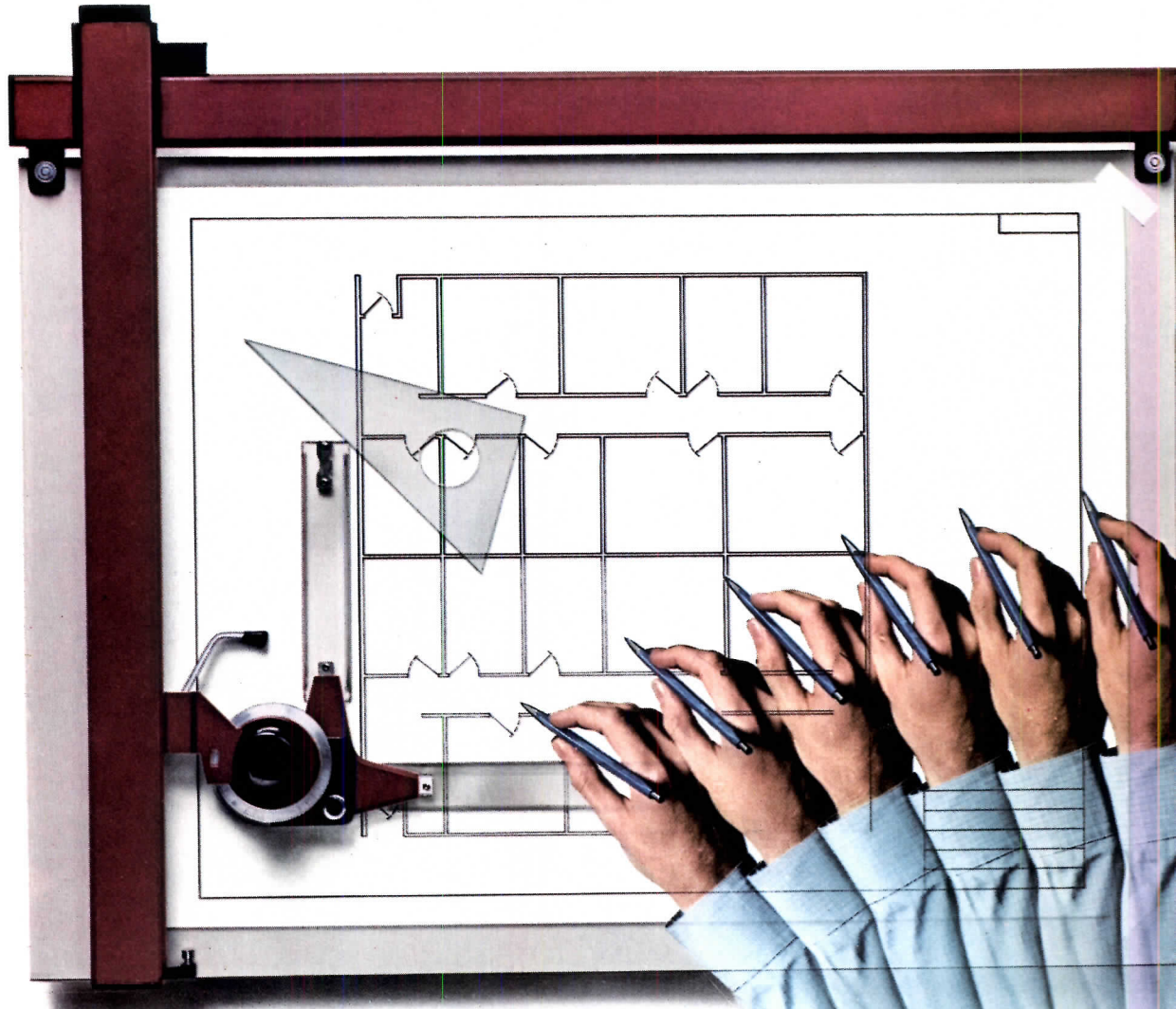
Average of all Non-Residential Building Types, 21 Cities

1977 average for each city = 1000.0

Metropolitan area	1977	1978	1979	1980		1981				1982				1983
				3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st
Atlanta	1171.5	1712.6	1925.6	2004.7	2098.6	2175.9	2238.1	2090.6	2078.0	2208.8	2212.2	2302.0	2360.6	2503.5
Baltimore	1018.4	1107.7	1304.5	1429.7	1446.5	1485.7	1486.7	1600.5	1544.9	1567.8	1603.3	1615.9	1639.5	1683.8
Birmingham	1029.7	1142.4	1329.9	1389.2	1407.2	1420.0	1436.1	1463.1	1469.9	1502.5	1490.1	1478.2	1468.1	1491.0
Boston	1028.4	0998.6	1236.0	1280.5	1283.7	1321.3	1331.9	1413.5	1432.5	1463.5	1508.3	1495.3	1502.0	1553.7
Chicago	1007.7	1032.8	1199.7	1323.6	1323.6	1279.3	1315.8	1342.7	1344.7	1343.0	1376.5	1413.9	1425.8	1415.6
Cincinnati	0848.9	0991.0	1323.9	1385.8	1385.2	1348.2	1400.3	1400.7	1350.4	1353.5	1349.9	1361.5	1362.6	1376.8
Cleveland	1034.4	1040.8	1287.5	1357.8	1388.2	1402.0	1451.7	1454.2	1459.5	1449.4	1469.9	1511.4	1511.4	1462.1
Dallas	1042.4	1130.6	1431.9	1464.2	1481.9	1588.7	1685.0	1693.9	1750.6	1740.8	1765.0	1777.3	1834.3	1816.9
Denver	1038.8	1100.4	1495.6	1510.7	1487.4	1494.7	1522.2	1587.6	1632.2	1709.7	1724.0	1715.2	1679.1	1684.6
Detroit	1018.1	1087.3	1275.3	1449.6	1447.4	1446.6	1578.8	1579.6	1580.3	1589.8	1604.6	1627.1	1638.0	1649.5
Kansas City	1023.5	0951.5	1125.8	1219.8	1233.2	1236.1	1263.0	1262.8	1323.4	1284.3	1336.9	1384.5	1381.8	1347.4
Los Angeles	1022.5	1111.0	1255.3	1339.8	1387.5	1396.4	1457.2	1473.3	1474.3	1491.6	1507.0	1500.9	1503.3	1506.0
Miami	1004.5	1080.9	1330.1	1358.7	1380.6	1402.5	1395.0	1387.5	1369.1	1350.7	1357.5	1375.1	1392.1	1429.6
Minneapolis	1060.2	1196.8	1286.9	1327.6	1327.7	1328.0	1391.1	1433.2	1442.6	1450.8	1540.8	1572.8	1576.8	1586.2
New Orleans	1001.3	1138.8	1291.9	1474.4	1505.7	1528.4	1529.6	1560.4	1572.7	1573.2	1626.4	1631.3	1616.9	1618.0
New York	1005.4	1043.0	1247.1	1307.9	1319.4	1319.6	1326.2	1397.3	1419.2	1417.8	1472.6	1497.7	1491.8	1563.7
Philadelphia	1013.8	1074.2	1487.5	1523.4	1539.5	1596.6	1628.9	1634.2	1660.7	1676.9	1755.7	1762.5	1769.4	1754.9
Pittsburgh	1016.1	1015.0	1227.0	1325.7	1341.7	1369.0	1437.6	1450.3	1493.2	1526.7	1487.4	1458.4	1479.5	1486.7
St. Louis	1039.1	1198.8	1275.9	1244.6	1320.0	1323.4	1343.0	1379.2	1397.3	1399.5	1436.3	1433.8	1451.2	1453.5
San Francisco	1083.2	1326.8	1473.4	1614.0	1644.8	1650.8	1741.6	1763.9	1776.4	1777.0	1804.5	1813.8	1810.1	1814.1
Seattle	1142.5	1137.9	1373.4	1578.9	1616.8	1621.8	1672.3	1685.9	1814.9	1905.5	1968.8	1940.9	1962.7	1986.6

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

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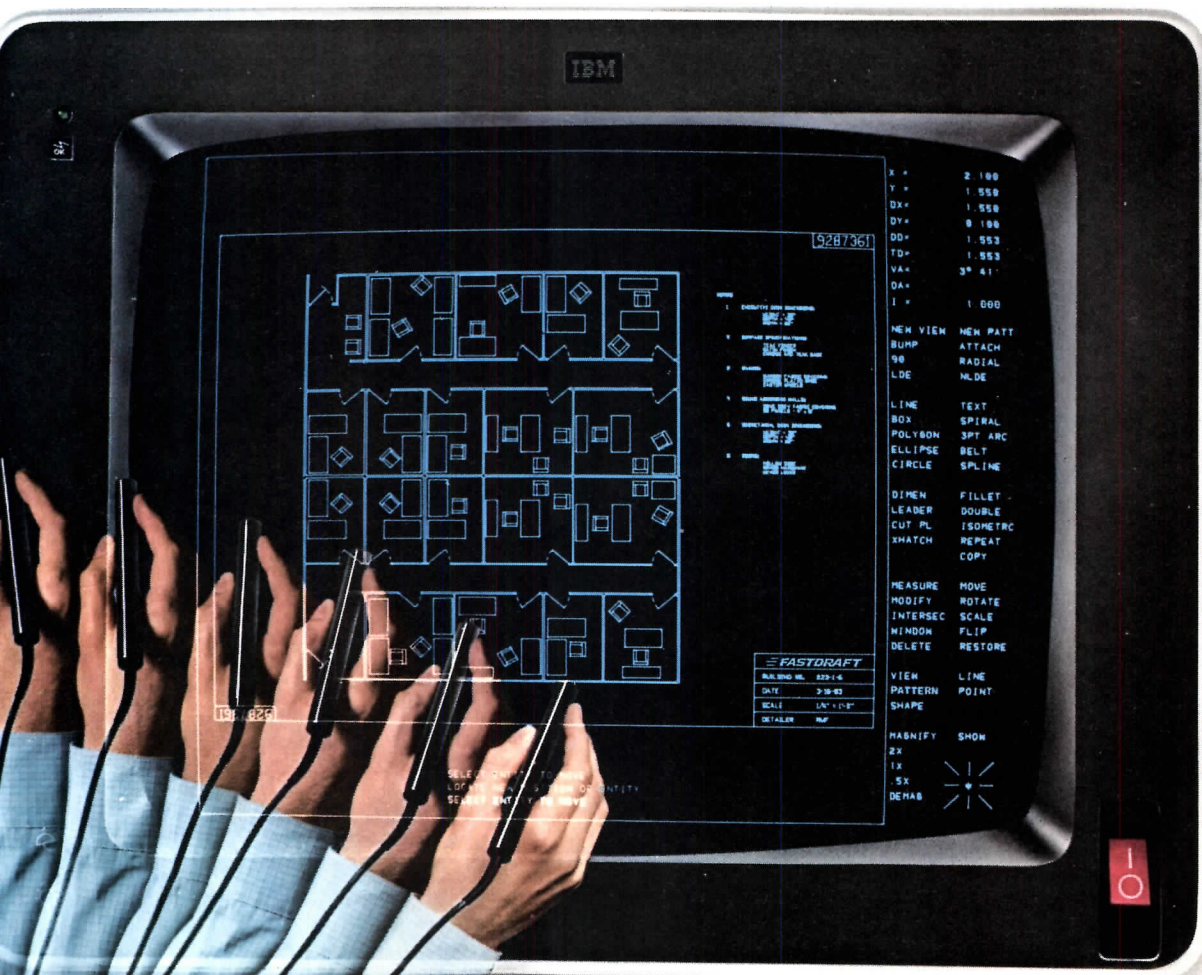
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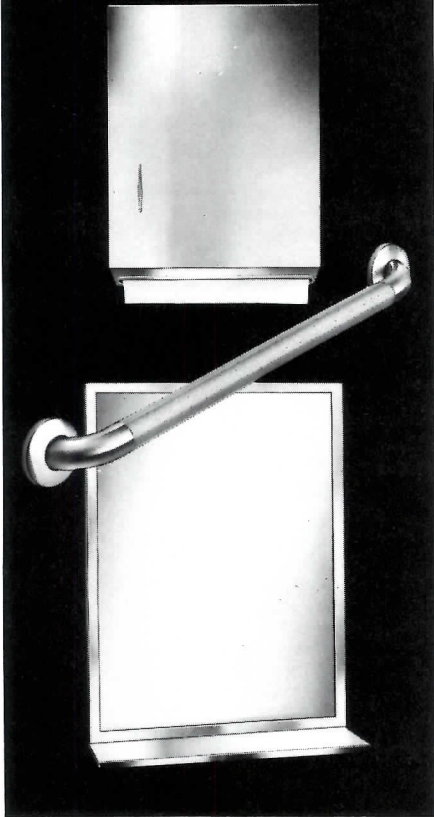
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*Business news
continued from page 37*

fifteenth and sixteenth centuries, which were far advanced from the rest of near-barbarian Europe in terms of industry, commerce, culture.

"But the rest of Europe, particularly France and Spain, was pulling itself together in terms of national states, crude and vulgar as they may have been, and the national states, by the very reason of their size, ate up the city-states."

Author William (Holly) Whyte came down to the interpersonal/individual level After these dire comparisons, the third day's speaker came as something of a relief, for his discussion of architecture on interpersonal/individual levels addressed something within the audience's control.

Whyte, who is author of *The Organization Man* and *The Social Life of Small Cities*, is currently head of the Street Life Project in New York City. He showed slides of street walls, entrances and doorways, steps and display windows and chided the architects for blank walls lacking windows, stores, ornament, humanity—anathema to street life. Photo after photo of monolithic office buildings, hotels, convention centers, malls, underground concourses, accompanied by Whyte's wry but pointed comments, made the same point Sternlieb had made the day before about the desire to insulate affluent visitors from the cities they visit and work in.

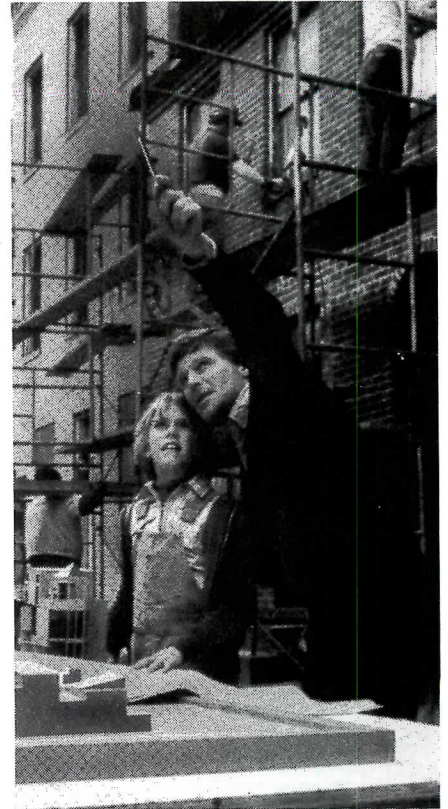
Whyte contrasted these architecturally impressive but lifeless areas with older shopping streets, such as New York's Madison Avenue, with shops on first and second levels—not necessarily pleasing from a design point of view, but vital and vibrant, "the river of life of the city."

"Many developers come from the suburbs," Whyte observed. "Our cities are being built by people who don't like cities."

On the subject of entrances, Whyte said that the ideal is "to have a door and leave it open. With a fine entrance, it's hard to tell where the street leaves off and the entrance begins."

And he complained about stairways that are often too steep, with treads that are too narrow, because of tradition rather than available space.

"Steps are good to sit on," he said, illustrating his point with numerous slides. "They're not comfortable, but they offer an infinite range of choices." The slides showed people sitting alone and in ever larger groups. "And consider the usefulness of right angles." More slides of groups conversing at corners of steps. And his audience laughed and got the point. *N.G.G.*



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Evelyn Hofer

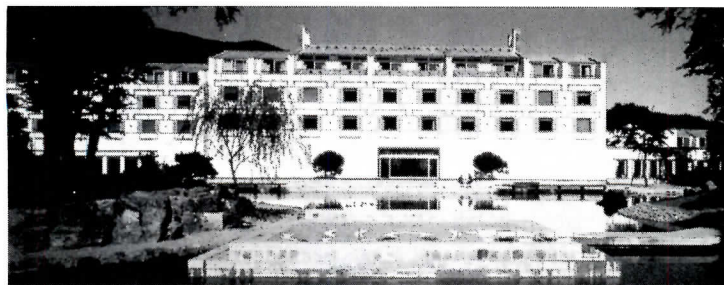
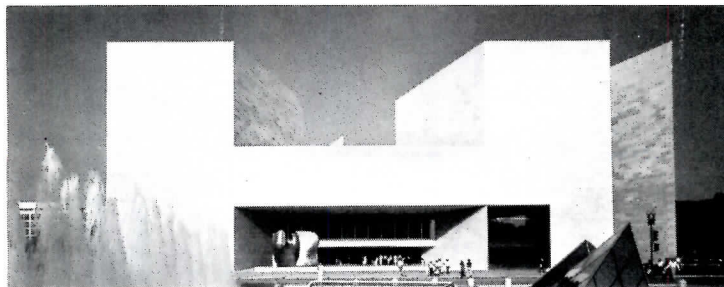
Ieoh Ming Pei has been named the winner of the fifth annual international Pritzker Architecture Prize.

Pei was born in Canton, China, and came to the United States in 1935 to study architecture at MIT and Harvard. Over the past three decades he has won recognition for many of the more than forty projects completed both in this country and abroad. His most prominent commissions have included the Mile High Center in Denver (1955); the Society Hill apartment development in Philadelphia (1964); the Oversea-Chinese Banking Corporation in Singapore (1976); the East Building of the National Gallery of Art (below) in Washington, DC (1978); the Kennedy Library complex near Boston (1979); and the Fragrant Hill Hotel (bottom) in Beijing (1982). Current projects include the New York City Convention and Exhibition Center, the Gateway office complex in Singapore, and the Dallas Concert Hall.

In announcing the award, Carleton Smith, chairman of the International Awards Foundation and secretary to the jury, quoted from the official citation: "I.M. Pei has given this century some of its most beautiful interior spaces and

exterior forms. The significance of his work goes far beyond them, for his concern has always been the surroundings in which his buildings would rise." The jury further noted that "Pei has refused to limit himself to a narrow range of architectural problems. His work over the past 40 years includes not only palaces of industry, government, and culture, but also some of the best low- and moderate-income housing. Through his skill he has elevated the use of materials to an art."

Established in 1979 by Jay A. Pritzker, chairman of the Hyatt Foundation, to recognize a creative discipline not honored by the Nobel Prizes, the award consists of \$100,000 and a bronze sculpture by Henry Moore. Previous Pritzker recipients have been Philip Johnson (1979), Luis Barragan (1980), James Stirling (1981), and Kevin Roche (1982). This year's jury included J. Carter Brown, director of the National Gallery of Art; Arata Isozaki, architect; Philip Johnson, architect; J. Irwin Miller, chairman of the Cummins Engine Company; Kevin Roche, architect; and Thomas J. Watson, Jr., past chairman of IBM.



Every year since Walter Gropius's death in 1969, his partners and colleagues at The Architects Collaborative have celebrated his birthday with champagne and strawberries at their annual Gropefest. That was the man's own wish: "It would be beautiful if all my friends of the present and of the past would get together for a little while for a fiesta—à la Bauhaus—drinking, laughing, loving. Then I shall surely join in, more than in life."

But the occasion of Gropius's centennial called for something more than a party. From his hundredth birthday on May 18 until nearly the end of June, TAC and The Harvard Graduate School of Design, which Gropius led from 1938 to 1952, as well as the Boston Public Library and the Goethe Institute, sponsored an array of lectures, exhibits and films about his work and thought.

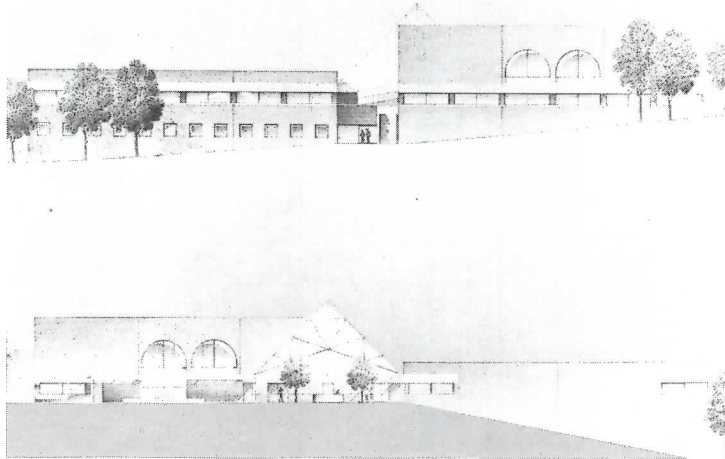
TAC itself closed its offices on May 20 to mark the anniversary with a full-blown symposium. Three of the architects who founded the partnership with Gropius—John C. Harkness, FAIA, Norman C. Fletcher, FAIA, and Sarah P. Harkness, FAIA—are still active at TAC, and Lewis A. McMillen, FAIA though listed Emeritus, also contributed memories and anecdotes.

The keynote speaker was James Marston Fitch, who began his address with a defiant statement of faith: "I remain an iron-headed functionalist." Remembering a time when architects designed only Colonial and antebellum houses and when carpenters were forced to distress carefully carved reconstructions, he also remembered that "it became increasingly stressful to reconcile the theory of practice with technology." Though the arrival of modern architecture in this country was "so long delayed that Hitler had already destroyed the Bauhaus," its principles finally relieved the stress. "The reason I am so upset [by attacks on modern architecture] is that my generation went through it."

In addition, Baghdad architect Rifat Chadirji, a Loeb Fellow at Harvard University, addressed a concern that always occupied Gropius's mind: the engagement of all men, not just artists, in art within a democracy. And members of TAC reminisced about their partner's design, philosophy, and foibles.

The traditional Gropefest followed the symposium, not forgetting champagne, strawberries and laughter. G.A.

An 84,000-square-foot, three-story structure designed by Edward Larrabee Barnes Associates, the new Schine Student Center at Syracuse University will for the first time unify cultural and social activities at the sprawling upstate New York campus. The building will relate to older Romanesque Revival structures located near the site by means of large round-arched windows and by the use of red brick and sandstone exterior finishes. The focal point of the center is a pyramidal Kalwall-sheathed atrium that is conceived as a hub from which all student-oriented facilities will radiate.

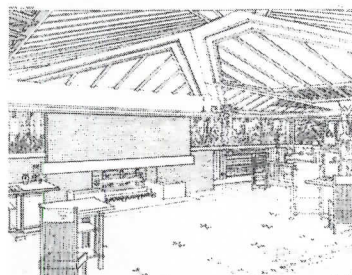


Leave it to Charleston, that most gracious of Southern cities, to do it right. When the city received \$2.2 million from the Department of Housing and Urban Development in 1978 for the construction of 115 units of low-income residences, the Charleston Housing Authority accepted the challenge of designing cost-efficient public housing that is compatible with the city's rich legacy of 18th- and 19th-century architecture. The result of the authority's work after five years of research and development is now visible at 149 Coming Street in the historic district of Radcliffeboro—a two-story duplex dwelling designed by Bradfield Associates that bears little resemblance to publicly assisted housing in less enlightened communities. The structure is something of a prototype for 22 other houses currently nearing completion in five of the city's historic residential areas. The ability of the authority to construct public projects in scattered sites throughout Charleston is not unusual; what is new is the city's attention to detail and contextual integrity to a degree that has never before been attempted in a conventional HUD development.

Built at a federally regulated cost of \$59,126, 149 Coming Street has been designed in the manner of a typical Charlestonian side house. The peak-roofed dwelling is clad in narrow cedar clapboards and boasts such details as a wooden parapet wall, paneled doors, and shutters. One of the ground-floor porches even has flushboard infill with a shouldered door surround that is reminiscent of a 19th-century architectural form employed in grander structures nearby. The folks at the authority have dubbed 149 Coming Street "our pride and joy." It should be.

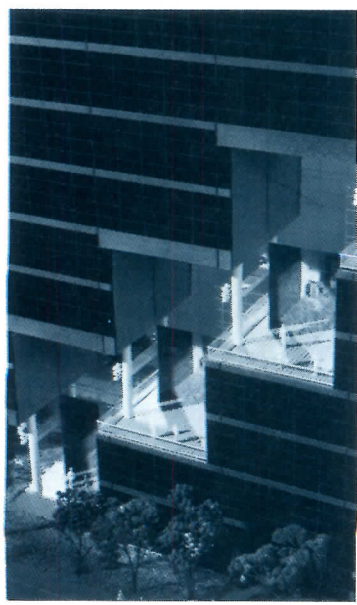
A new mecca for Houston design community

Wright exhibition scheduled for Cooper-Hewitt



New York has the D&D Building, Los Angeles the Pacific Design Center. Now it is Houston's turn for a full-service, contract and residential furnishings facility that will unite under one roof many of the manufacturers' showrooms currently scattered throughout the sprawling city. The Houston Design Center will offer 500,000 square feet of exhibition and office space in a 10-story tower located in Greenway Plaza. Clad in alternating bands of polished black and rough-cut gray granite, the building's exterior will be articulated by a striking series of stepped, double-height windows that form terraces and reveal an interior "circulation canyon" of escalators linking the showroom floors. Architects are Cambridge Seven Associates and Lloyd Jones Brewer Associates.

An exhibition devoted to the early work of Frank Lloyd Wright will open on August 30 and continue until December 31, 1983 at the Cooper-Hewitt Museum in New York. Entitled "Frank Lloyd Wright and the Prairie School," the exhibition will examine the development of Wright's career from the 1880s through 1930, beginning with his work as an employee in the office of Louis Sullivan from 1880 to 1893 and ending with a graphic design for the cover of a published lecture. Highlights of the show will be a selection of original drawings—part of a series of 37 recently purchased by the Cooper-Hewitt—and furniture designed by Wright and associate George M. Niedecken in 1917 for the Henry J. Allen House in Wichita.



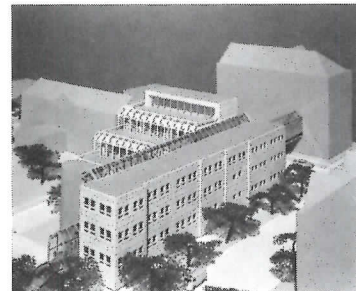
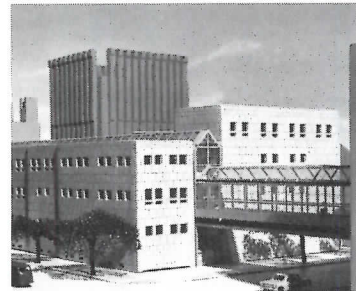
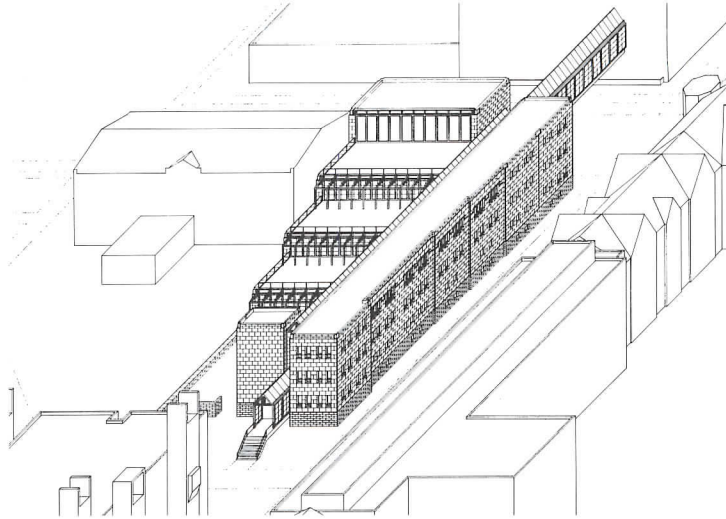
Pell proposes art bank

Senator Claiborne Pell (D-R.I.) has proposed a National Art Bank within the National Endowment for the Arts to buy and display works of art in Federal buildings. The purpose of the recently introduced bill to create the bank is two-fold, Pell said. "First, it will beautify public places by displaying works of art and second, it will help American artists through its ability to purchase their work." Pell noted that, in addition to Federal facilities, museums could borrow works from the bank, which would be encouraged to sponsor exhibitions throughout the country. His bill provides for a three-year authorization of \$1.5 million in fiscal year 1984, \$2 million in fiscal year 1985, and \$3 million in fiscal year 1986.

Competition calendar

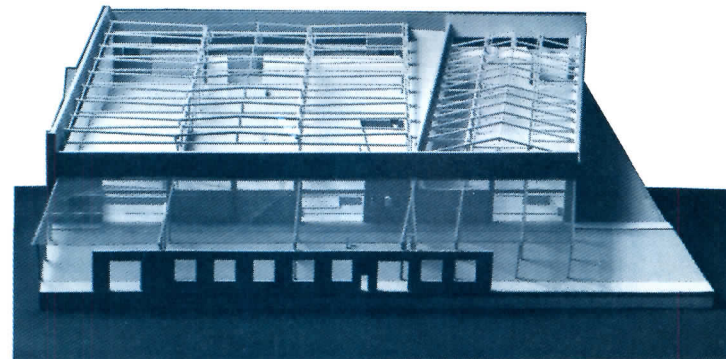
- The Association of Collegiate Schools of Architecture is sponsoring its fourth annual Design and Energy Competition with cash awards totaling \$10,000 to winning students and their sponsoring schools. For information write 1983 Design and Energy Competition, ACSA, 1735 New York Avenue NW, Washington, D.C. 20006.
- Owens-Corning Fiberglas Corporation is sponsoring its twelfth annual Energy Conservation Awards. Open to registered architects and engineers in the United States, the competition will examine entries in six categories. Entries must be received by August 26. To obtain entry materials write B.M.C. Meeks, Owens-Corning Fiberglas Corporation, Fiberglas Tower, T12, Toledo, Ohio 43659.
- The Yamagiwa Art Foundation is soliciting entries to the tenth Tokyo International Lighting Design Competition. Entries should address this year's theme of "Lighting as Communication" and must be received by September 10. For further information contact the Office of the Tokyo International Lighting Competition, Yamagiwa Art Foundation, 3-12-4, Sotokanda, Chiyoda-ku, Tokyo 101, Japan.

A new science center for the University of Chicago



A three-story, L-shaped structure clad in limestone, the new Physical Sciences Building at the University of Chicago will provide 60,000 square feet of laboratory, lecture, and office space. The facility will complete the enclosure of the Science Quadrangle and is an apt reflection of the administration's policy of "quiet" academic architecture. The center will relate to nearby neo-Gothic buildings in its use of small, deep-set punched windows grouped vertically and a series of shallow setbacks that cast long vertical shadows along the main facade. The glass-sheathed quadrangle facades, by contrast, will be characterized by three roof terraces that allow for open views of the grassy courtyard below. Architects for the project are Holabird & Root.

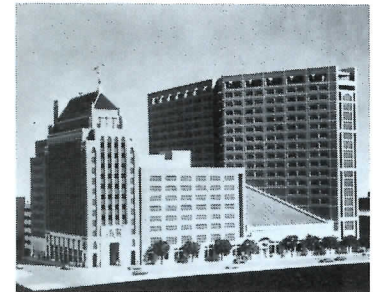
"Temporary Contemporary" for Los Angeles



What does a new museum do when it wants to begin exhibiting works of art but has no facility to do so? In the case of the Museum of Contemporary Art in Los Angeles, it gets the city to provide 55,000 square feet of unused warehouse space, convinces Citicorp to contribute \$165,000 toward the cost of renovation, and hires Frank Gehry to draw up plans for what

has been appropriately dubbed "The Temporary Contemporary." Located near the city's downtown Little Tokyo district, the interim facility will house the museum's first series of exhibitions and performing-arts programs, pending completion of a permanent building currently in design by Arata Isozaki.

Tower of power in Birmingham

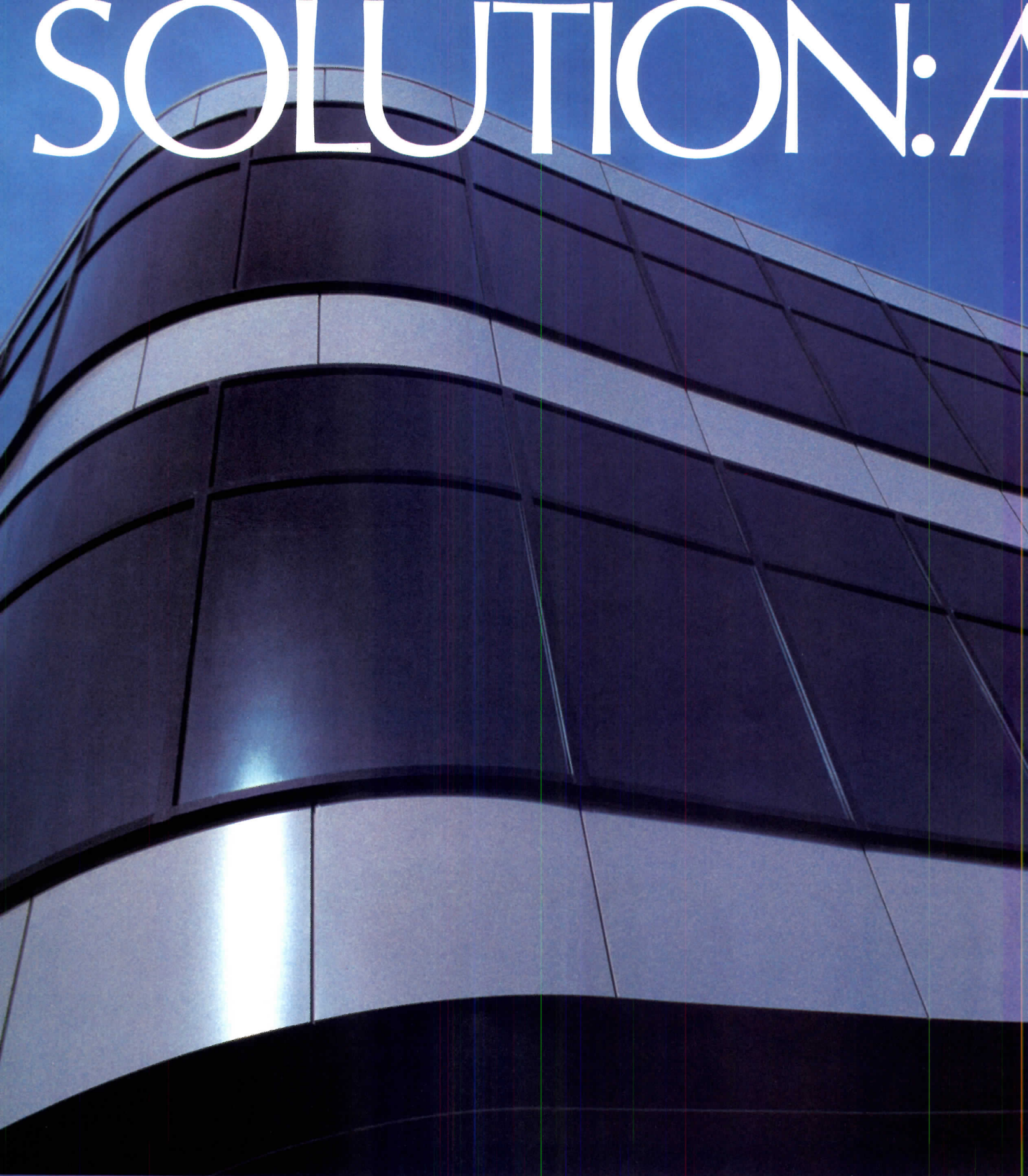


Conceived as a showcase for architectural contextualism and advanced energy technology, the new corporate headquarters for the Alabama Power Company comprises 905,000 square feet of new office space, renovation of 300,000 square feet of existing space, and construction of a 1,200-car parking garage on a two-block site in downtown Birmingham. Joint architects of the competition-winning scheme are Geddes Brecher Qualls Cunningham, and Gresham, Smith & Partners.

The principal structure in the project is a 19-story prismatic rectangle linked to the company's present building by a glass-roofed atrium. "We tried to treat the original tower—together with its collection of later additions—as logical components of a unified new complex," explains George Qualls, GBQC partner-in-charge of design. Accordingly, the focal element of the architectural ensemble will remain APCO's flagship building, a handsome Art Deco structure crowned by a monumental gilded figure of Electra rising above the peak of its tile-clad hipped roof. Although the new tower will be taller and more massive, the use of granite, vitrified ceramic tile, and concrete wall panels as exterior cladding materials will echo the weathered gray tones of the original granite, brick, and limestone building.

Consistent with the nature of its tenant, the new building will be all-electric and, it is hoped, highly energy-efficient. Basement ice storage capable of supplying most of the buildings' peak air-conditioning load will significantly reduce the demand for daytime power—a major consideration in often-steamy Birmingham. According to Cosentini Associates, mechanical engineers for the project, the ice frozen during off-peak hours will be melted to produce chilled water during business hours. In this way, cooling is achieved with a minimal use of compressors, reducing the refrigeration tonnage normally required in a complex this size.

SOLUTION: A

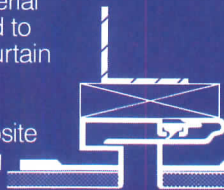


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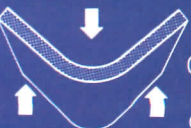


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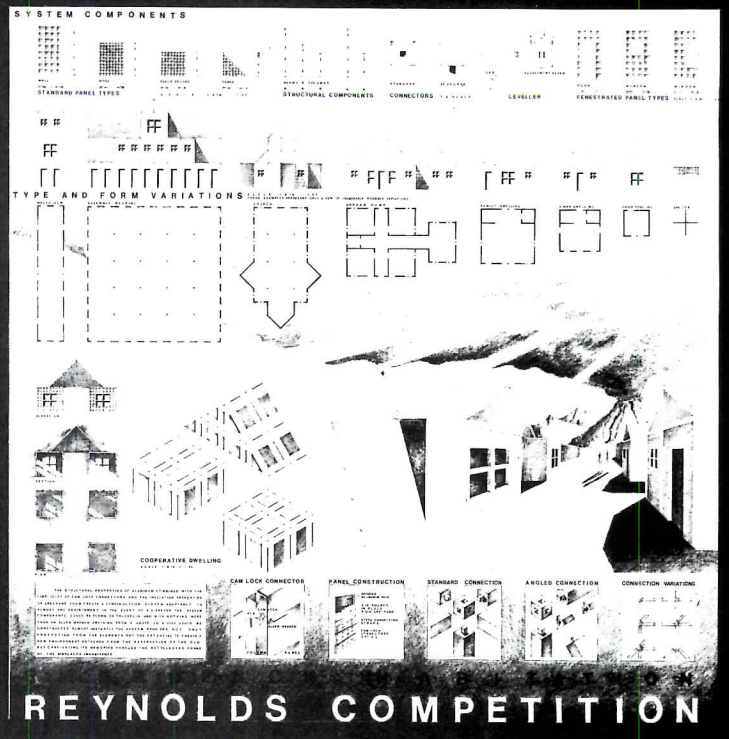
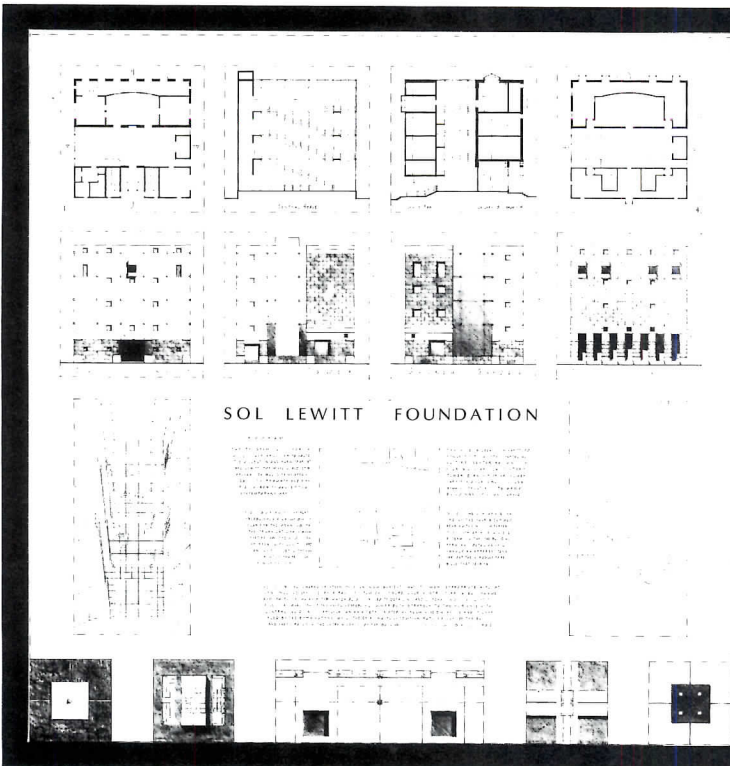


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Design awards/competitions: R.S. Reynolds Memorial Award and Reynolds Aluminum Prize for Architectural Students



2 The members of the R. S. Reynolds Memorial Award jury were Robert M. Lawrence, FAIA, of Lawrence, Lawrence & Flesher, in Oklahoma City; Hugh A. Stubbins, Jr., of Hugh Stubbins and Associates, Inc., in Cambridge, Massachusetts; and Rafael Norma, Hon. FAIA, of Mexico City.

1. **U-Bahn Wien, Vienna, Austria (International Award);** Wilhelm Holzbauer, Heinz Marschalek, Georg Ladstatter, and Bert Gantar of Architektengruppe U-Bahn, Architects. The Reynolds Award specifically cites two lines of the Vienna subway system. The first line includes 14 new stations, both underground and elevated, subway street entrances, and a bridge over the Danube. The second segment of the U-Bahn comprises the restoration of facilities designed by Otto Wagner and built between 1893 and 1906. Eight of Wagner's 17 stations, which had suffered from extensive war damage and neglect, were faithfully renovated, using cast aluminum where turn-of-the-century cast iron had been lost (see photo opposite, upper left). Aluminum

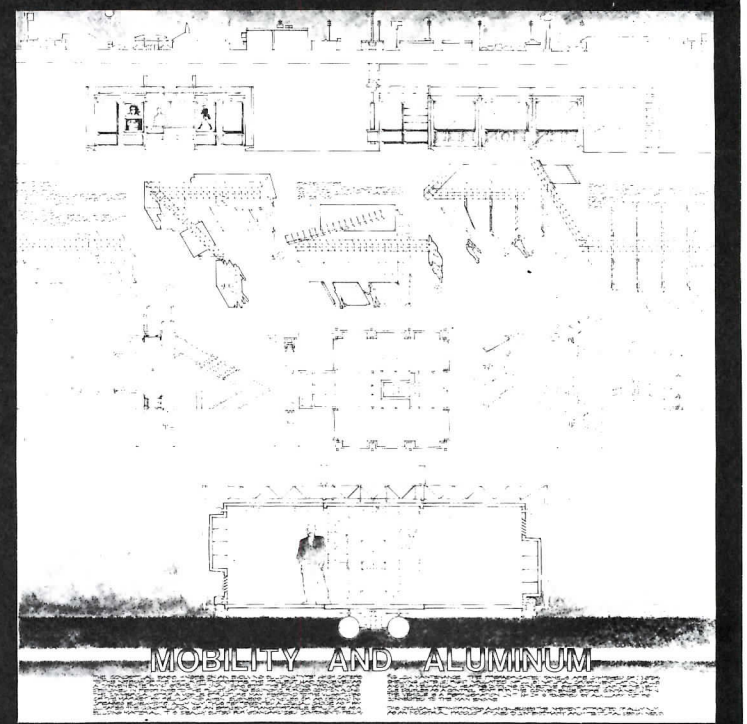
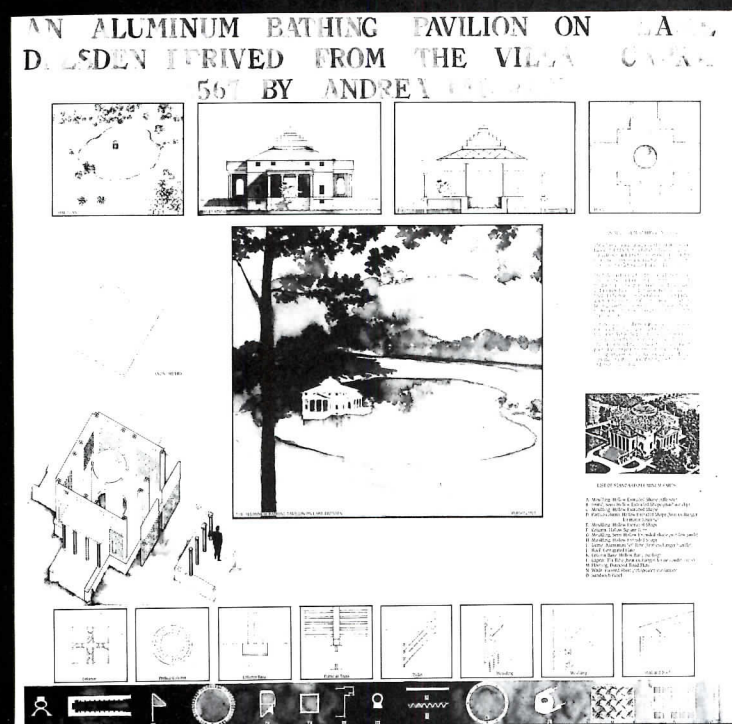
3 also figures prominently in the new construction, where it has been used for building surfaces inside and out, rain protection grids, acoustical panels, light fixtures, light-diffusing ceilings, and handrails. The architects judged aluminum "best suited to convey the image of buildings in the service of public transport, and the transient character of an edifice where trains are moving through." Gleaming curved ceilings and station lighting bands help to reinforce visually the secure limits of the platform. A system of interchangeable modular panels along passageways and platforms coordinates signs, seats, display

cases, and ticket machines. The jury commended the project for its humane environment and "a consistency of design that is sympathetic to the existing historic system while providing an exciting variety throughout the entire system."

The jurors reviewing entries for students' awards were Stanley Tigerman, FAIA (jury chairman), of Tigerman Fugman McCurry, in Chicago; Roy F. Knight, AIA, dean of the University of Tennessee School of Architecture, at Knoxville; Wesley Jones, a student at Harvard University; Denis Potts, a student at California Polytechnic State University, in San Luis Obispo; and Nora Klebow, a student at Washington University, in St. Louis.

The international R. S. Reynolds Memorial Award, sponsored by the Reynolds Metals Company and administered by the American Institute of Architects, has been presented (with a \$25,000 honorarium) to the Austrian firm Architektengruppe U-Bahn, in recognition of their work on the Vienna subway system, U-Bahn Wien. Along with the premiated design (figure 1) we illustrate the projects honored with the Reynolds Aluminum Prize for Architectural Students (which confers a \$5,000 honorarium to be shared with the winner's school) as well as schemes cited for

honorable mention (accompanied by a \$1,000 prize) and certificates of excellence in the same program. Design awards coverage continues on the following pages with a report on the 1983 East Bay Chapter of the AIA award winners.



4. **Sol Lewitt Foundation (National Prize, Architectural Students);** John Walker Bass, designer (Rhode Island School of Design). Bass proposes a museum and archives for the work of contemporary artist Sol Lewitt, to be located in downtown Hartford, Connecticut. The hypothetical site poses a difficult contextual challenge, being bounded by a 27-story office tower, a 17th-century church, and Main Street. At once relating proportionally to its neighbors, and establishing a deliberate visual tension with them, the grid-patterned cubic building also reflects the dominant geometric motifs of Lewitt's own art. Aluminum panels clad a lightweight structural steel frame in a "celebration of the joint," heightened by a

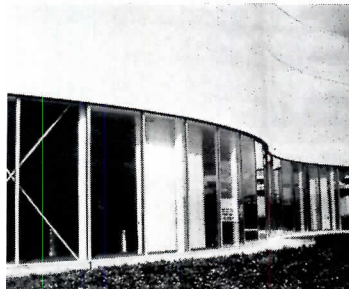
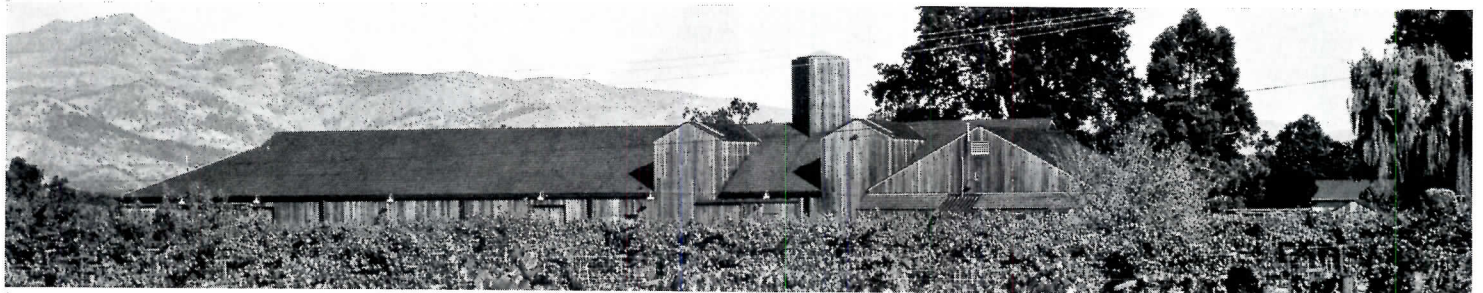
contrasting brownstone wall. The jury praised the clearly articulated juxtaposition of enclosure and void, masonry and lightweight metal.

3. **Emergency Habitation (Honorable Mention, Architectural Students);** C. Timothy Fish, designer (Georgia Institute of Technology). As outlined by Fish, the scheme combines "the structural properties of aluminum ... with the simplicity of cam-lock connectors and the insulation properties of urethane foam to create a construction system adaptable to almost any environment. In the event of a disaster, the system components could be flown or trucked in and, with nothing more than an Allen wrench, anything from a house to a city could be constructed almost instantly."

5. **"Mobility and Aluminum" (Certificate of Excellence, Architectural Students);** Adrienne Atwell, designer (Tulane University). To be fabricated of standard structural aluminum catalog parts, this half-size version of Palladio's Villa Capra rises out of a lake. According to the designer, "the villa is transformed from an elegant locale for nocturnal orgies to a somewhat less flamboyant role." Though it conveys the illusion of floating, the pavilion actually rests on a concrete foundation. The list of high-tech classical parts includes dentils made from machine clips, a dome of heat-exchanger bundle O-tubes, and fin-tube capitals.

4. **An Aluminum Bathing Pavilion (Certificate of Excellence, Architectural Students);** Jose Sama, designer (University of Florida). Perceiving a need for mobile structures "designed in response to the fluctuating economic forces common along the commercial strip," Sama has delineated a transportable aluminum module. In this instance, the adaptable prototype sheathed in prefabricated panels has been outfitted as a convenience food store-cum-filling station.

Design awards/competitions: East Bay Chapter of the AIA 1983 Design Awards



Over 130 submissions were entered in this California regional awards program. The jury members were Thomas Vreeland, FAIA, of Albert C. Martin and Associates, in Los Angeles; Robert J. Frasca, FAIA, of the Zimmer Gunsul Frasca Partnership, in Portland, Oregon; and John Dreyfuss, architecture and design critic for the *Los Angeles Times*. Excerpts from the panelists' commentary follow.

1. Cakebread Cellars, Oakville, California (First Honor Award); MLTW/Turnbull Associates, Architects. "Understated and strong, this project demonstrates a perfect balance between environment and building. It is an indigenous structure that comes out of the rural American building index, a tried and true formula which is appropriate to its use and place.

As a design, it is consistent in all its aspects, especially in the use of wood ... which avoids the uneasy intrusion of other materials."

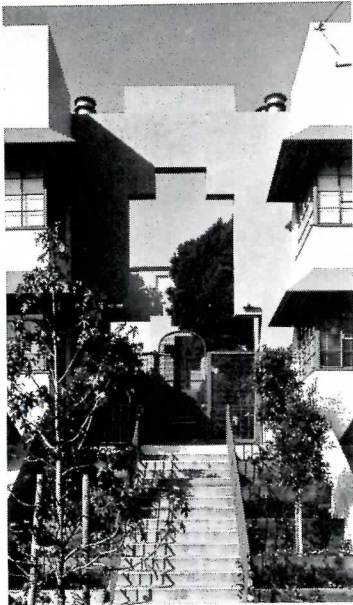
2. Leonard Residence, Occidental, California (Honor Award); William R. Dutcher, AIA, Architect. "A beautifully crafted house, exquisitely simple and unpretentious ... that sits comfortably in its woodland setting. The interior spaces are particularized and still maintain a sense of unity. The building is best characterized by the quality of substance and permanence one expects of good architecture."

3. World Savings & Loan Association, Stoneridge Shopping Center, Pleasanton, California (Honor Award); Hawley, Stowers & Associates, Architects. "A magnificently delivered product ... forms, spaces, materials, color, details come together as a disciplined yet lyrical expression of a straightforward bank and office building plan. ... Imaginative use of brick on the curving front, the flat walls and window surrounds neatly relate a broad palette of materials to create a sense of architectural strength."

4. H. I. S. Building, San Francisco (Honor Award); Swatt & Stein, Architects. "This highly appealing building in the Japanese section of San Francisco houses a sporting-goods store at ground level and a restaurant above. The architects

captured a Japanese feeling while keeping their building totally within the modern idiom. ... They used wood and tile together in a most attractive way ... avoiding the danger of letting the front of the structure become gaudy or kitsch."

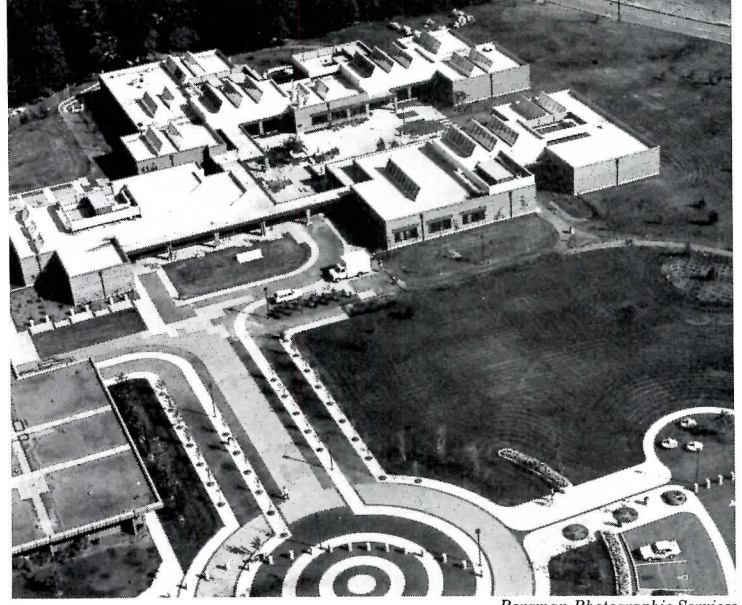
5. St. Mary's Gardens, Oakland, California (Honor Award); Peters, Clayberg & Caulfield Architects. "This [housing for the elderly] stands out for its careful detailing, delicate scaling and intelligent use of color and light. ... Great attention is paid to details relating to comfort, convenience and readability of the project, as evidenced by benches near elevators, shelves near apartment doors ... and lounges with excellent courtyard views."



7

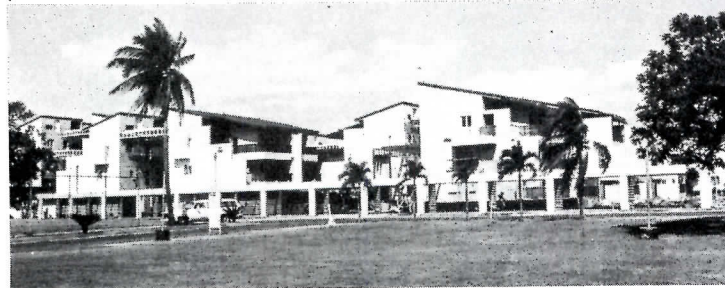


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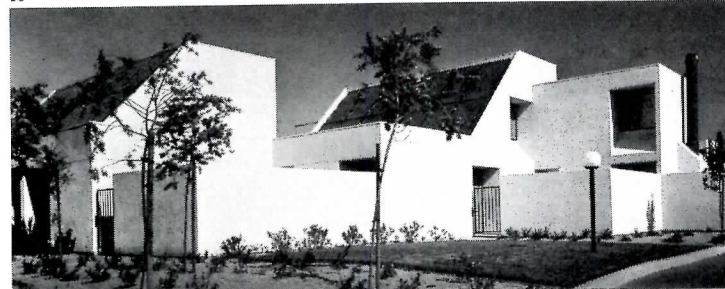


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Beryman Photographic Services



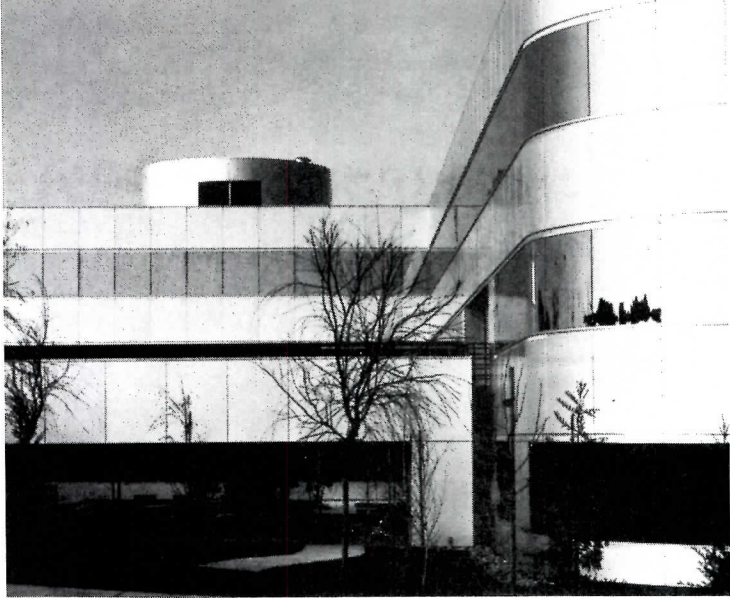
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6. Seeley G. Mudd Building Pacific School of Religion, Berkeley, California (Honor Award); Charles Stickney, AIA, Architect. "The structure complies with regional principles without getting maudlin. This is a religious school, and it expresses its use through Spartan qualities and a sense of permanence. Its rather heavy yet beautifully finished concrete exterior contrasts with a more delicate interior design. . . ."
7. Alterations to 381-383 Adams Street, Oakland (Merit Award); Shen/Glass Architects. "An example of how a few strategic decisions (if they are the correct ones) can have a maximum positive effect. In this project a minimum budget improved the quality and extended the use of an existing building by a few 'cosmetic'

changes . . . a new color scheme, a smart new entrance arch, awnings, and a courtyard upgrading program."
8. Energy Efficient State Office Building, San Jose, California (Merit Award); ELS Design Group, Architects. "In the pursuit of energy-conserving principles, the building is interlaced with social and organizational systems that reinforce the *parti*. It breaks conventional large and bureaucratic government patterns into small, more human-scaled groups . . . and it contributes to the scale of urbanism that is consistent with its surrounding community."
9. Linus Pauling Science Center, Clackamas Community College, Oregon City, Oregon (Merit Award); Roma Architects. "A mature, well-



12

developed plan appropriate to its use and climate. The . . . forms are strongly handled and the use of materials excellent. Good light throughout, especially through the use of skylights."
10. Pajaro Solar Condominiums, Davis, California (Merit Award); Sam Davis, AIA, Architect. "Solar aspects of the houses are well integrated into the design. These condominiums exemplify excellent use of minimal space, both in terms of area of buildable land and volume of living space. Site planning efficiently creates a sense of privacy among residents actually living close together."
11. U.S. Embassy Staff Housing, Manila, Philippines (Merit Award); ELS Design Group, Architects. "A systems approach to the design of

multifamily housing without becoming repetitive. It is well adapted to its climate with a good use of passive energy control. [Its planning] recognizes the idea that community spaces are as important as private spaces."
12. Civic Executive Center Office Building, Walnut Creek, California (Merit Award); Fisher-Friedman Associates, Architects. "An excellent example of how to meld a very slick-looking structure with a straightforward sensible plan for a low-rise office building. . . . Vertical travel in the building is effected through entry on the middle level. . . so users need to travel only one level up or down."

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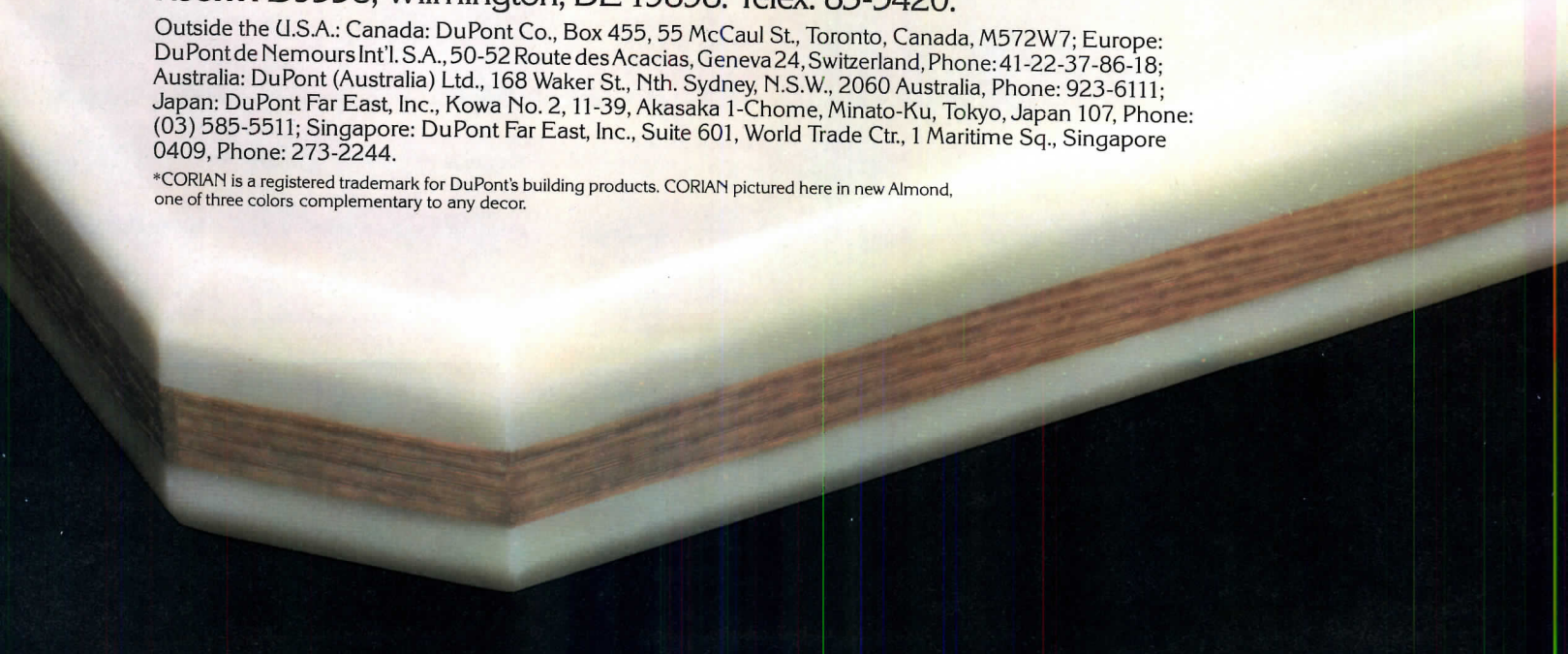
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most "cultured marble" is a porous substrate with a thin decorative surface

CORIAN is solid—the beauty goes all the way through

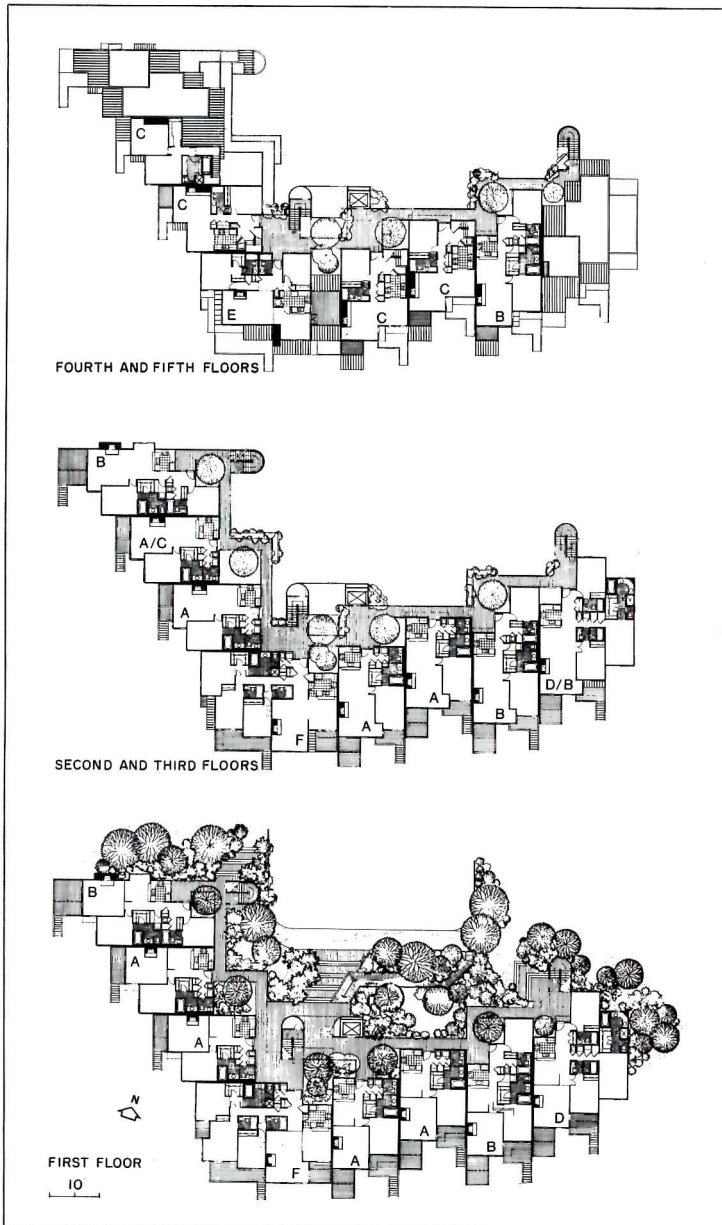


Formal edge treatment adds to appeal of guest bath in Amway Grand Plaza Hotel, Grand Rapids. DeWinter Associates, Inc., architects.



Windswept
Kiawah Island, South Carolina
Sandy & Babcock, Architects



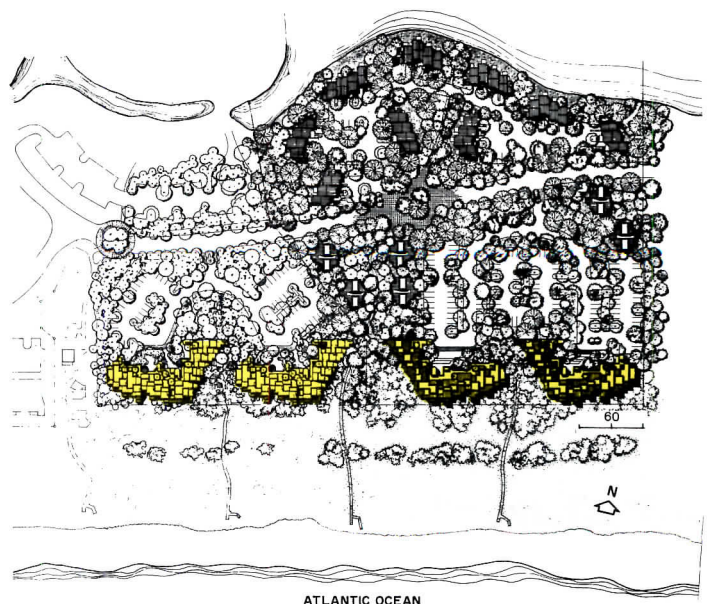


Invited by the developers to examine Kiawah Island and give thought to a master plan for the resort's second phase, architect Donald Sandy, in a spasm of professional disloyalty, advised, "Don't touch it. The only thing that can screw it up is an architect." The developers had, in any case, no idea of despoiling this surpassingly beautiful land near Charleston, South Carolina. They had already established an Architectural Review Board, composed of a resident staff of architects and landscape architects, and had consulted ecologists in an earnest program to preserve and protect the island's flora and fauna. Among other actions, the company set some design rules to protect the endangered Atlantic loggerhead turtle: outdoor lighting must shine downward at a specified angle to encourage the turtles' spawning on what is, after all, their own beach.

The clustered massing of the Windswept condominiums, which seem to emerge so naturally from the dunes, is at least partly a result of Sandy's solutions to some knotty questions. The developers, who despite their ecological sensitivity are nonetheless in the real estate business, wanted to combine profitable density with the luxury of ocean views. To minimize the visual and ecological impact of the 9- to 10-unit/acre apartments, Sandy curved the four buildings to conform with a double row of dunes on the ocean side and with the growth of oaks and palmettos inland (the Architectural Review Board zealously surveys every tree on every construction site).

A complex multitude of setbacks—front, side and top—yielded the hoped-for views and sense of privacy for each apartment. Tenants and visitors entering any apartment from common covered decks immediately see a "view corridor" to the end of the living room, either directly out to the Atlantic or obliquely down the 10-mile-long beach. The setbacks also yield a complex multitude of plans. The developers' brochure shows 12 varieties of one-, two-, and three-bedroom simplexes and duplexes, but in fact almost none of the 90-odd units is like any other.

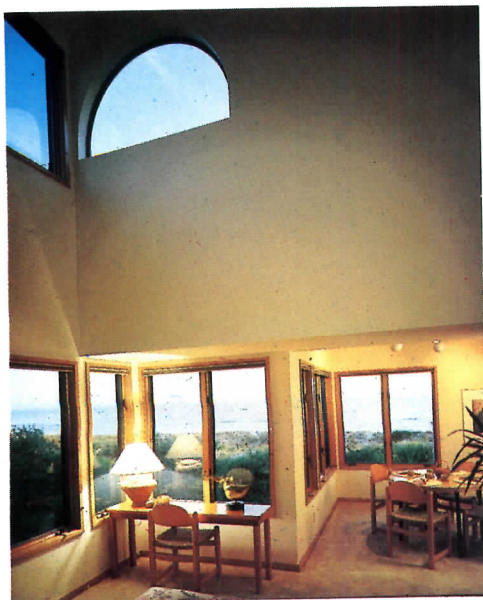
The Windswept complex had also to fit into the master plan. Earlier development included a village with town houses, a hotel, some shopping and recreation at the western end of the 1.5- by 10-mile island, and Sandy's master plan calls for similar facilities at the eastern end of these apartments. Thus, though the roof line is deliberately uneven, the buildings increase in height from three stories on the west to five stories on the east toward the projected village.



The smaller curvilinear towers that punctuate the front entrances of the Windswept condominiums contain stairs leading to outdoor corridors. The larger towers house elevators and conceal air-conditioning equipment. Because the Carolina coast is exposed to wind and high water, the buildings sit on piles—11 feet high for the lower building, up to 16 feet for the taller ones. So that the buildings will take back seat to

the natural beauty of their surroundings, exterior finishes are quiet—red cedar shingles and copper-finished metal roofs. Indoors, the chief aim was to play up the views. Hence every apartment has at least one balcony, and high windows and glass walls command views of sea and sky.

Gordon H. Schenck, Jr., photos



Windswept
Kiawah Island, South Carolina
Owner:
Kiawah Island Company
Architects:
Sandy & Babcock
Engineers:
Hill-Fister Engineers, Inc.
(structural); Rast & Associates
(mechanical/electrical); Thomas
and Hutton (civil)

Landscape architects:
Edward Pinckney Associates, Ltd.
General contractors:
Sentry Engineering & Construction,
Inc.; The Haskell Company;
DeStestano Rugheimer Company;
Ruscon Housing Company

Once again, primary colors

Chas. McGrath photos



Seen across Biscayne Bay, a row of new high-rise condominiums on Miami's Brickell Avenue includes two designed by Arquitectonica: the Imperial at the far left in top photograph, the tall Palace at the center. The long narrow Imperial, which stretches 377 feet, contains 156 apartments as well as five duplexes on the ground floor and a residential penthouse. The composition of red, white and blue

stucco walls, though designed with an eye to fun, can also be read as a key to the contents. The red wall, with its evenly spaced square windows, encloses single-loaded corridors that connect the apartments, and the curved white stripe down the middle provides balconies for the center apartments.

Seen from the window of an airplane, the Imperial, one wall looking like a bright red placard, is unmistakable and crisp as can be. On the ground, a proud cab driver, quite unaware of his passenger's professional curiosity, gestures toward this and two other of Arquitectonica's buildings on Miami's Brickell Avenue and says, "Beautiful! A unique way of building, no?"

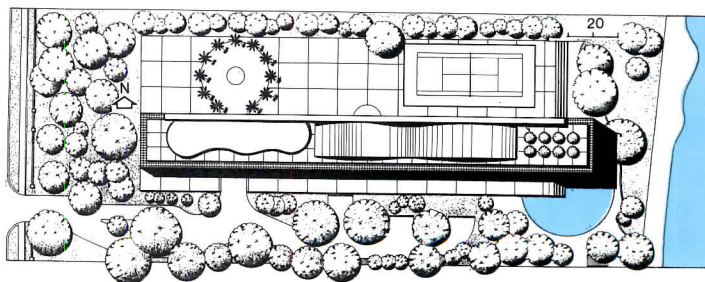
In fact, however, it is not a unique way of building. The concrete structure is conventional, the glass and stucco wall competitively priced. The young architects, no fans of post-modernism, insist that their design is firmly rooted in the modern movement—more specifically, the International Style. Thus demonstrating, if demonstration were needed, that there are few schools of architecture lacking adherents eager enough and gifted enough to continue an esthetic exploration.

Private patrons often savor esthetic exploration. Commercial developers, on the other hand, may take an occasional flyer in stylistic adventure but, Arquitectonica notes with warrantable self-satisfaction, they don't fool around with costs and construction schedules.

Nonetheless, the Imperial certainly does not *look* conventional. Liberal splashes of primary colors are the most obvious departure from conservative large-scale residential building. Though the palette harks back to a less sober-sided period of modern architecture, its use here derives not so much from referential motives as from the firm's own taste for "fun." Besides, Miami (though not always its citizens) welcomes such visual extravagance.

The composition of the facades takes the building even further from the conventional. The illusion that glass supports solid building recurs in modern architecture, but the sight of a 30-story red stucco placard floating three stories above ground emphatically catches the eye. On the opposite facade (at lower left), an eight-story hole would seem to destroy the integrity of the linear glass and white stucco wall. And the blue clip around one end of the building is pure *jeu d'esprit*: the three apartments behind merely duplicate those above and below.

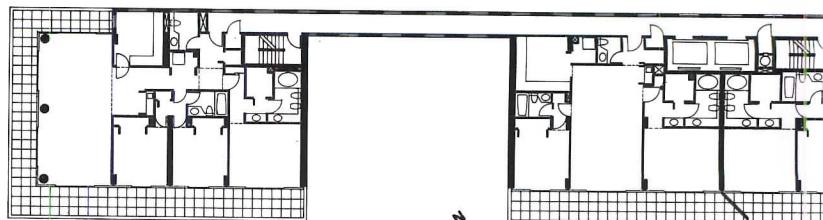
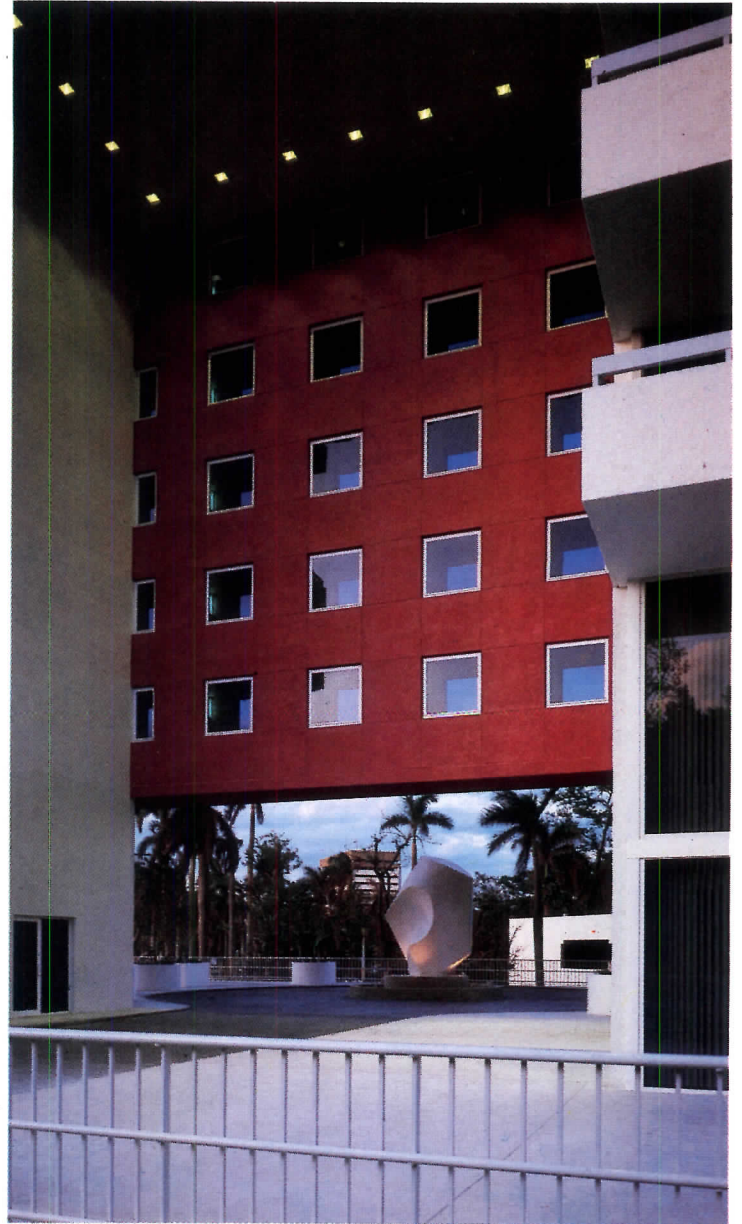
Arquitectonica shares with other contemporary architects a desire for something more interesting on the roofs of high-rises than cooling towers. At the Imperial, a bright blue penthouse with an undulating wall and an undulating roof declares itself against the sloping top of the red wall. The penthouse encloses a large two-story residence as well as mechanical equipment.





Toward one end of the Imperial an eight-story hole offers vehicular access for drop-offs in what Arquitectonica calls a "drive-through lobby." Treating one wall of the building as nonchalantly as they might a piece of construction paper, the architects simply ran it across the aperture and cut off the window grid as space demanded. The white stucco parapets at each floor, which emphasize the

building's linearity, provide both balconies and sun control for the south-facing apartments. The trapezoidal red wall extends above the roofline to act as a privacy screen for the front yard of the penthouse (opposite) and to drive home the impression that the wall is a separate element unrelated to the rest of the building.



TYPICAL FLOOR (6-11)

The Imperial at Brickell
Miami, Florida

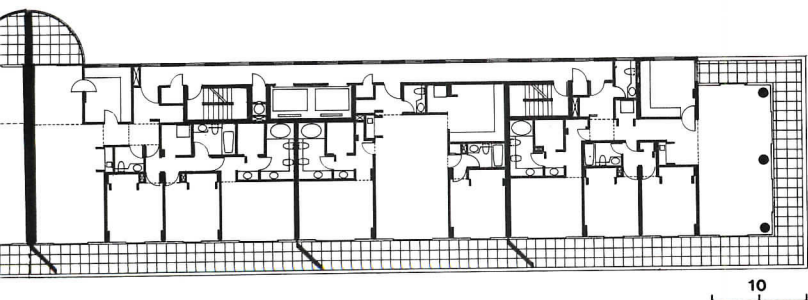
Owner:
The Harlon Group

Architects:
Arquitectonica International Corporation—Bernardo Fort-Brescia, Hervin A. R. Romney, Laurinda Spear, principals, project designers; Carl Young, project manager

Engineers:
John Ross Associates, Engineering Consultants

Landscape architects:
O'Leary-Shafer-Cosio

Construction manager:
M. R. Harrison Construction Company



A Florentine touch

Paul Zakoian photos

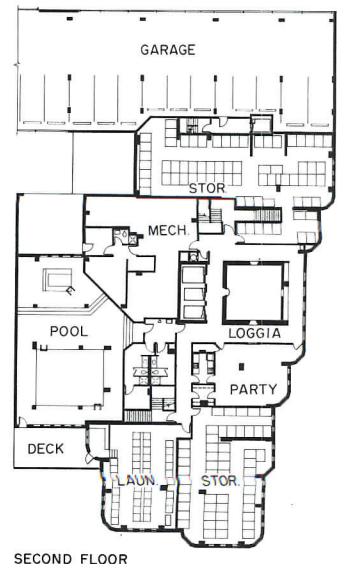
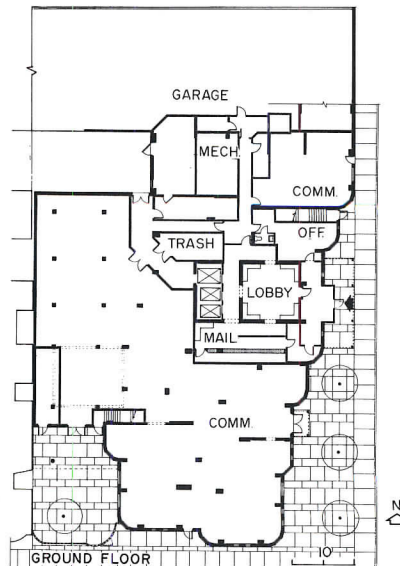


The likening of long, peopled corridors to urban streets has become almost commonplace in current architectural rhetoric. But the illusionistic enclosure of an entire Florentine courtyard under a blue Tiepolo sky is, to say the least, unexpected, especially in Chicago with its cold windy winters and more than half a millenium's distance from the Italian Pre-Renaissance. Artist Richard Haas's painted rendering of Tuscan carved and inlaid colored marbles fools the eye, even close up. Indeed, Haas has piled new illusion on old illusion: the marble walls of the church of San Miniato al Monte, the major model for this apartment lobby, are themselves *scaggiola*, or painted plaster. (Here, the ground is cloth-covered dry wall.) The only genuine stone in the space consists of Indiana limestone seats on the simple benches along the walls.

Architects Weese Seegers Hickey Weese have, moreover, made certain that the tenants of the Chestnut Place apartments will derive full and constant pleasure from the game—whether they go to elevators, the garage or the mail room, they cannot miss the sight through open arches on all four sides of the lobby. Tenants and guests may be diverted also by second-floor views from the “loggia,” which provides a circulation route for the swimming pool and the party room.

Nor did the architects hesitate to adapt the painter's art and techniques for appropriate if mundane use elsewhere. Upstairs corridors, for instance, have carpets patterned after Haas's painted lobby floor. The architects have also used stencils to turn flat metal elevator and service doors into rather ornate “paneled” doors that are both attractive and cheap. For merely an extra \$5 apiece, loosely estimated, plain brown doors can have two or three colors and cast shadows.

On the exterior, references are mixed. Though the striped brick walls recall both Tuscan and Chicago architecture, the shape of the 30-story tower has nothing to do with Florence and little enough to do with familiar Chicago. Rather, in true Chicago functionalist fashion, the form follows from some interior benefits sought by the architects. The angular winding of the long walls makes every living room in effect a corner apartment: from the window, the tenant can see at most the wall only of the apartment next door. Furthermore, the corner windows, which call to mind the famous three-sided Chicago windows, open views to Lincoln Park, Grant Park and/or Lake Michigan. This device also reduces the visible length of corridor connecting apartments.



Built in an older section of Chicago on State Street, an area now in the early stages of rejuvenation, the 30-story Chestnut Place Apartments have at this point an eminence that may lessen in a few years. The building's quiet tan striped brick wall and Chicago bay windows will assume an easy comfort in the neighborhood that its comparative size and newness deny now. Modest demeanor stops at the doorway,

however: tenants will step into a lobby cunningly transformed by Richard Haas into a sky-covered, marble-inlaid, multicolored courtyard in Florence.



Chestnut Place Apartments
Chicago, Illinois
Owners:
Chestnut Place Associates
Architects:
Weese Seegers Hickey Weese
Architects Ltd.—Cynthia Weese,
Ben Weese, Peter Landon
Engineers:
Cohen Barreto Marchertas, Inc.
(structural); AMSCO Consulting
Engineers (mechanical)

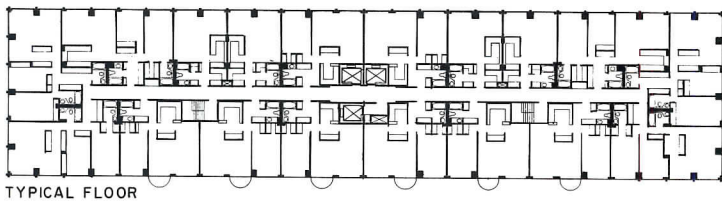
Trompe l'oeil:
Richard Haas, muralist;
Evergreene Printing Studios
mural execution
General contractor:
E. W. Corrigan Construction Co.



TYPICAL FLOOR

An Ionic colonnade?

©Howard N. Kaplan photos



The games of architectural reference that Stanley Tigerman plays with such spirit turned into a two-edged sword at Pensacola Place: one of the references he could not ignore was Boardwalk, another apartment building he designed for the same developer some years ago while still in his Miesian period (see aerial photograph at bottom). The two sides of Tigerman are accounted for in a straightforwardly schizophrenic building. The side of Pensacola Place facing the older building essentially repeats that facade with brown-tinted glass and tee-shaped columns (at top of photograph at left). On the opposite facade, the composition differs quite a lot (at right). Moreover, Pensacola Place gains additional associative complexity because the two buildings are on axis with Graceland Cemetery. The “Ionic colonnade” that covers the tower thus faces the graves of both Sullivan and Mies. Neither of them, Tigerman notes drily, would care much for the reference to Classical architecture.

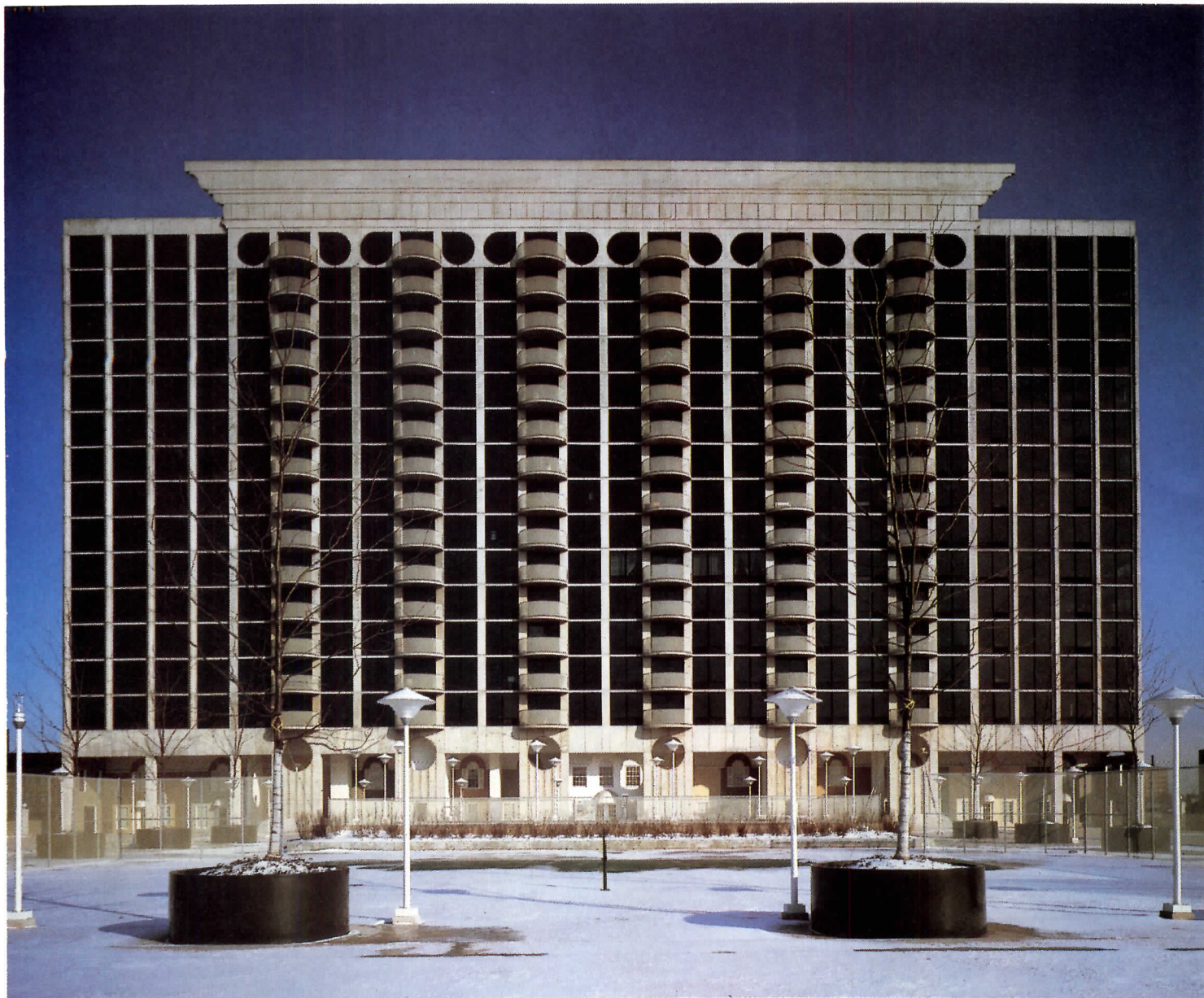
Although the colonnade dominates stylistically, the composition of the facade incorporates Tigerman’s versions of two other styles more suitable to the different contents behind the walls. The base of the tower includes two levels of commercial space; on the side facing Boardwalk, the stores, served by a second-floor balcony, simply retire behind a glass grid (left), but next to the parking lot (aerial photograph), a typical brick suburban supermarket burrows behind the arcade. (The typology, architect Robert Fugman points out, is standard design for the Jewel chain, which manages the store.) And on the two floors above the retail space, duplex town houses form streets of suburban residences complete with all the trappings commonly associated with the idea of house—clapboard siding, small-paned double sash and shutters, even “chimneys” stamped into the concrete transfer beam. (A future construction phase calls for more of these houses around the periphery of the platform above the supermarket.)

The creation of the gigantic make-believe colonnade was effected with the simplest materials. The “columns,” which are tiered apartment balconies, gained substance from vinyl-covered fine-mesh chainlink railings that combine transparency for views with apparent solidity for illusion. The apartments immediately behind the “volute” beneath the “entablature” get very special windows, having three curved corners as well as deep reveals where the architect beefed up the exposed concrete structure to give the top of the colonnade visual depth.



At Pensacola Place, architect Stanley Tigerman had to satisfy the demands both of his own earlier design and his more recent thoughts about style (the aerial photograph at bottom shows the older Boardwalk, also designed by Tigerman, on axis with Pensacola Place and Lake Michigan). The front door (far left), which faces Boardwalk, echoes that Miesian curtain wall, though the angular

transfer beam over the town houses suggests rather the ridged roofs in suburbia. On the "new" side of Pensacola Place (below), semicircular balconies pretend to be gigantic Ionic columns. Since the concrete at the outside of the fluted bases provides the only structural support, Tigerman could cut holes through them directly below the "columns."



Pensacola Place
Chicago, Illinois

Owners:
Pensacola Associates

Architects:
Tigerman Fugman McCurry—
Robert Fugman, associate-in-charge; Philip Holden, Thomas Horen, Robert Caddigan, Polly Hawkins, assistants

Engineers:
Cohen Barretto Marchertas
(structural); Wallace & Migdal
(mechanical/electrical)
General contractor:
Mayfair Construction

Living in a schoolhouse

Sam Sweezy photos except as noted



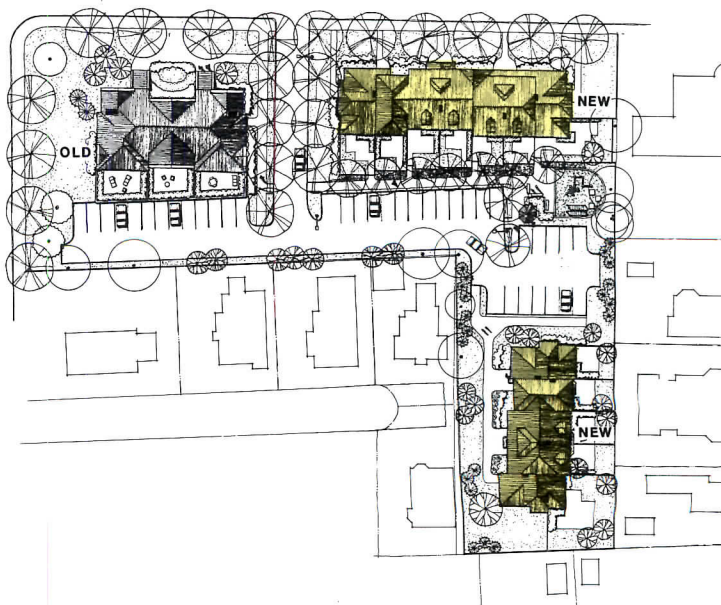
The condominium complex at Clafin Park combines a renovated schoolhouse (top and opposite) with two new buildings of row houses (directly above). The row houses, with their clapboards, front porches and manicured lawns, continue the residential ambiance created by neighboring Victorian houses. The old building got new copper-lined balconies in the slate roof.

Notwithstanding the demographic and industrial setbacks it has suffered in recent years, the Northeast still has its share of advantages. One of the smaller, happier pluses turns out to be the region's depopulated public schools. Too solid for casual demolition, handsomely if not stylishly built, and familiar landmarks in their residential neighborhoods, any number of these have been converted to apartments.

At the 80-year-old Clafin Park School, 13 condominium units designed by Sasaki Associates have replaced classrooms. In addition to gutting the building and starting over, the architects had to cure some ill-advised alterations that had accumulated over the years. The most offensive eyesore was a 700-square-foot concrete stair assembly and new doorway for the front entry. The two original stairways and doors—one for boys and one for girls in the early days of coeducation—were reconstructed. An iron fire stair that used to climb the building was removed, necessitating the installation of brownstone lintels over windows to match those elsewhere. And, as often happens in older buildings, new contents would not fit without some tricky detailing: new copper-lined balconies were dug into the roofs, for instance, but could not be as deep as the architects hoped because of intervening beams, and other beams required unexpected, if rather charming, changes in floor levels.

On the other hand, old buildings can offer serendipitous pleasures that most architects either could not or would not include in a new design. High ceilings and tall windows they would have if they could. But who would build a brick bearing arch as portal for a basement bathtub? Who would think of a small stained glass window above three larger windows in a dormer? Who would waste the entire corner of a building for a square emergency stairway in an atrium gloriously lighted by large windows?

To complete the Clafin Park complex, Sasaki Associates designed two new buildings for 12 town houses. The notion of building these with brick to match the schoolhouse was discarded as impracticable almost as soon as it was thought of. Instead, the houses have taupe clapboard walls to complement their capacious Victorian neighbors, all painted in soft colors. The slope of the asphalt shingle roofs parallels that of the slate roof on the older building, and rows of scalloped shingles on the gables recall the school's rough-dressed brownstone lintels and fancy brickwork cornices. Brick sidewalks define the edges of the enclave.

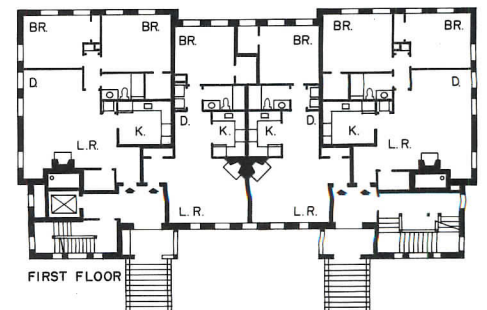
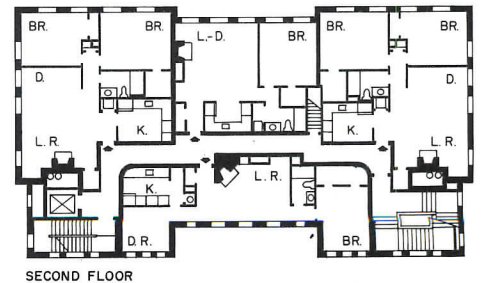
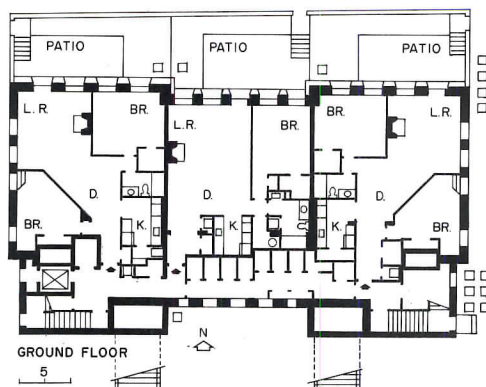




The tall space under the roof at Clafin Park School once accommodated an auditorium. Its height allowed the insertion of an extra floor to turn the two duplexes into penthouses, which take full design advantage of architectural givens like heavy timber supports and tall arched windows. The older building's shape and fenestration permitted, indeed demanded, an

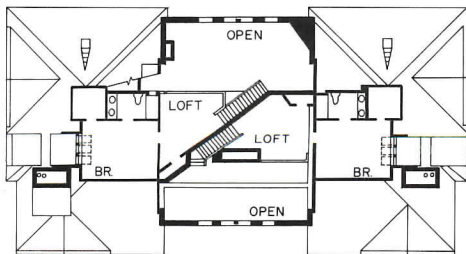
assortment of apartment plans (at bottom), involving private access to patios on the ground floor, a long corridor on the second for circulation from the elevator (housed in an old chimney), and a diagonal partition in the penthouse to give the two apartments on that floor equal area and access to the elevator—as well as the benefit of the large living room windows. The interiors of the town houses (far

©Peter Vanderwarker

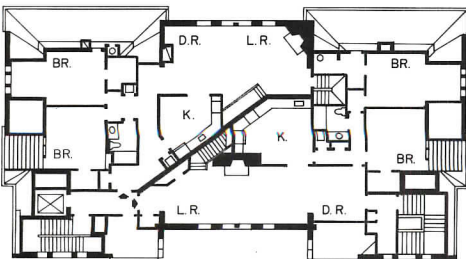


right), despite their external protective coloration in the Victorian neighborhood, are definitely non-Victorian. Stairways and living rooms get daylight from skylit atriums that extend the full height of each house.

©Peter Vanderwarker



FOURTH FLOOR



THIRD FLOOR

Clafin Park
Newtonville, Massachusetts

Owners:
Clafin Park Associates, a subsidiary of Pioneer Financial & Cooperative Bank

Architects:
Sasaki Associates—Kenneth DeMay, principal-in-charge; Peter Thomas, project architect; Michael K. Kaufman, project manager; Mark McDonough, John

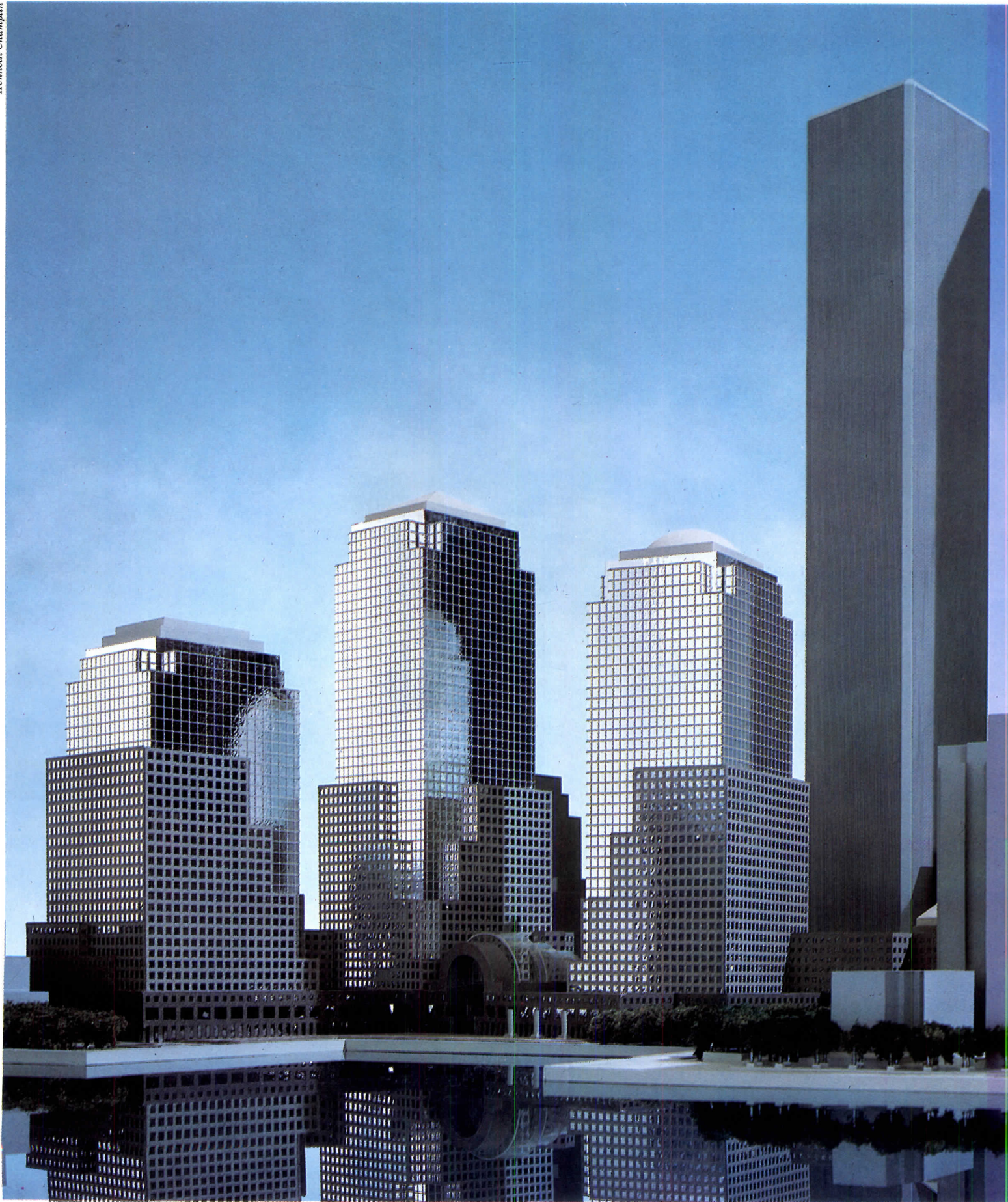
Rutherford, David Peterson, Philip Sheldon, project staff

Engineers:
Eugene Hamilton, P.E. (structural); Environmental Design Engineers (mechanical); Verne Norman Associates (electrical)

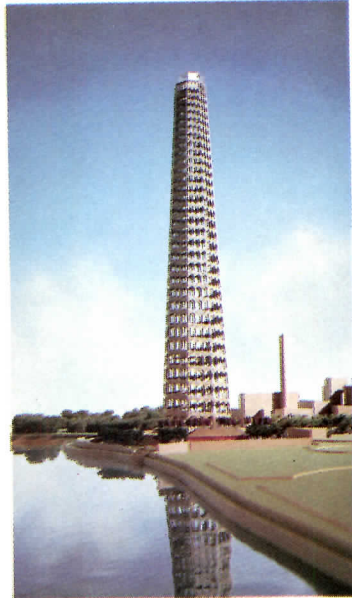
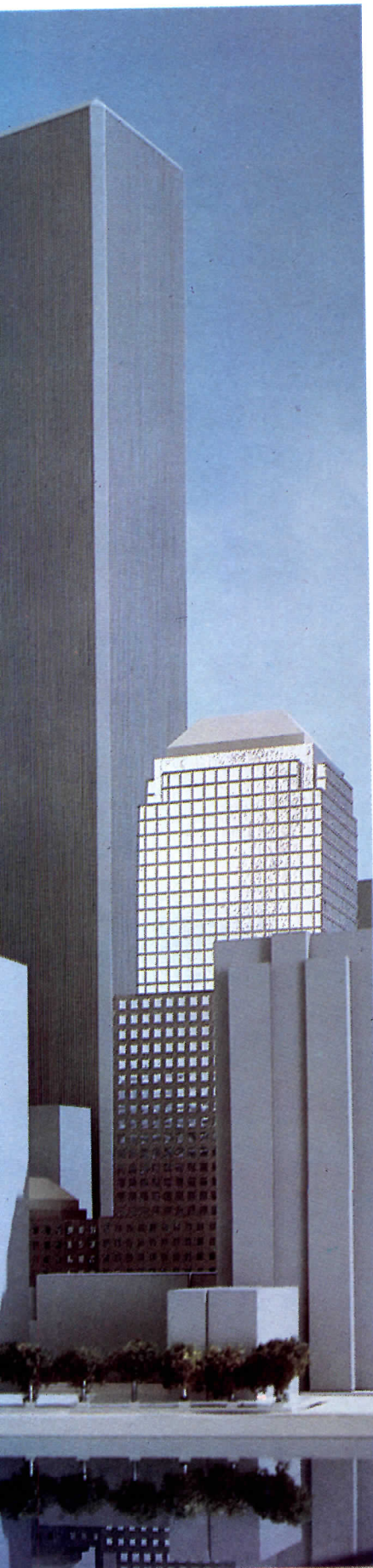
Landscape architects and site engineers:
Sasaki Associates, Inc.

New layers of meaning: Works in progress by Cesar Pelli

Kenneth Champlin



A collection of work by Cesar Pelli & Associates follows on pages 106-113. Illustrated below, these projects are: (1) The World Financial Center, in New York City, (2) The Indiana Tower, at White River Park in Indianapolis, (3) The Cleveland Clinic, in Cleveland, Ohio, (4) The Rice University Graduate School of Administration, in Houston, and (5) Pin Oak One, also in Houston.



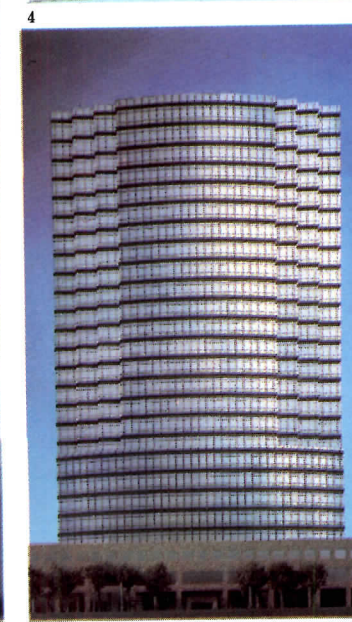
Kenneth Champlin



J. Beard



William Butler



© Wojciech Hoyt/ESTO

In his most recent projects, Cesar Pelli reveals a delight in contextual reference, historical allusion, and ornament that rarely glimmered through the abstract glass skins that won him acclaim during the 1960s and '70s. Given the scale and diversity of his current endeavors, the growing catholicity of Pelli's design vocabulary is unquestionably noteworthy, though it in no way signifies the *volte-face* of a penitent modernist desperate to adopt a more fashionable idiom. Pelli has never struck a heroic pose of creative autonomy, yet he still holds to principles that informed his work long before he ended his role as chief designer for Gruen Associates in 1977 to become dean of Yale's School of Architecture and head of his own firm. Always sensitive to the demands of specific programs and the community of thought that nurtures his ideas, Pelli has nonetheless systematically pursued the development of form grounded in the actuality of modern construction—above all the steel and concrete frame and the thin, multilayered curtain wall. If this focus has held steady as he has matured, his vantage point has not. "I have been moving from treating this issue with almost didactic clarity," Pelli says, "to making it just as consistent but not as obvious—and much richer. My goal is to suggest ways that an architecture based on the reality of how we build today can be as full of possibilities for expression as an architecture that depended on the older building traditions of carved stone. My analysis of present realities is ideological not in the sense of serving a cause, but in that I'm using a set of ideas to measure what I do." Whether accommodating a highly specialized program, such as that for the Cleveland Clinic (figure 3), or the undifferentiated modules of office blocks, Pelli's outward imagery proclaims internal logic. At the same time, however, he fully appreciates the limits of rationalism and the necessary role of myth—witness his scheme for the Indiana Tower (figure 2), by definition a poetic icon.

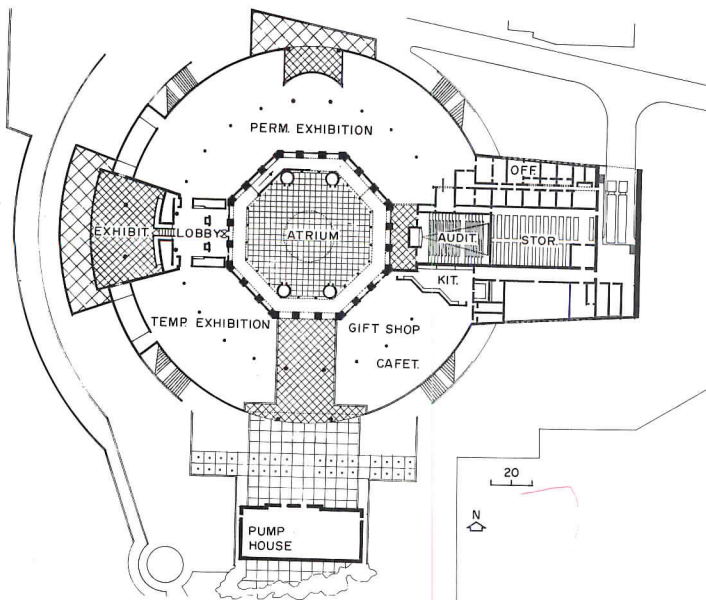
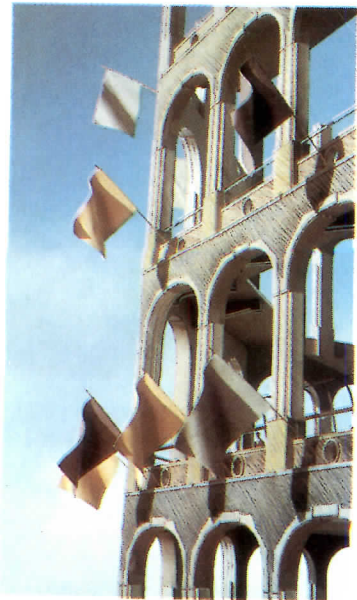
The impingement of mundane reality on ideal form is a constant theme with Pelli, particularly in his designs for tall buildings such as the towers of the World Financial Center (figure 1). These are not mere high rises but genuine skyscrapers, romantic images of collective public aspirations, and testaments to the architect's responsibility to reinforce an existing urban fabric. (In his master plan for Pin Oak in Houston [figure 5], Pelli has conceived the fabric itself.) Keyed at their bases to the contingencies of city life, his towers emerge as crystalline prisms, crowned by finials that deliberately evoke an earlier epoch of skyscraper design. By simply addressing such questions as how to make "celebratory" tops or grand entrances, Pelli has returned to issues largely ignored by the Modern Movement. Even so, to his mind, it is the buildings of the last 40 or 50 years that constitute the "past" most relevant for architects eager to reconnect with tradition. Despite the loss of the Modernists' revolutionary fervor, Pelli argues, they are still our nearest mentors. When compelled by circumstance to emulate more distant forebears, as at Rice University (figure 4), Pelli takes pains to honor the past on his own terms. In any case, his chief esthetic media remain the frame and curtain wall, though now he folds the skin, embellishes it, and peels it back to exploit its intrinsic qualities. Pelli is confident that such refinement of available, affordable technology will continue to yield a vital architectural tradition. As an educator, he finds a sympathetic outlook emerging among the next generation of designers: "At Yale and in other schools there is a marked shift away from the purely formal considerations of a few years ago towards a concern with how you make a building, and once you make it, what its implications are. The interest in paper architecture has practically disappeared." *Douglas Brenner*

Indiana Tower, White River Park Indianapolis, Indiana

Commissioned to design a landmark for the projected White River Park in Indianapolis, Pelli sought a form that would function as both a popular icon and a poetic emblem, like the Eiffel Tower or the Statue of Liberty. His set theme was "Indiana's past and present achievement, and future promise," a concept that he felt could not be symbolized adequately by a purely technological achievement. "The problem was really too simple for that," says Pelli. "We could just build a mile-high elevator shaft." Instead, he proposed a 750-foot-high single-shell structure of cast-in-place concrete and limestone, whose pyramidal massing, spiral ramp, and arcades simultaneously recall a variety of archetypes without replicating any single model—it is at once obelisk, campanile, commemorative column, and watchtower, Babel and Pisa. Pelli explains, "We felt a need to play with our dreams and half-forgotten memories." His goal is to engage the visitor in a similar fashion, imaginatively as well as physically, whether viewing exhibits and festivities at ground level or mounting the gently pitched ramp (or elevators) to observation decks at 150 feet and inside the glazed pinnacle of the tower. Aside from the panorama of city and prairie, the climb will offer a graphic chronicle of Indiana history, inscribed on the inner limestone face of the ramp. (Every year new images and verbal records will be added to this frieze.) Pelli envisages the ramp as a setting for varied public events, ranging from torchlight processions to a yearly race to the top.



Kenneth Champlin photos

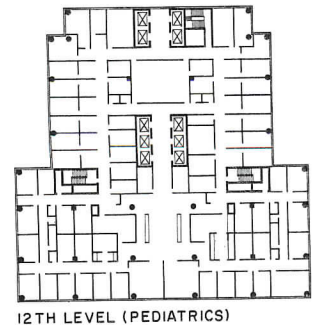
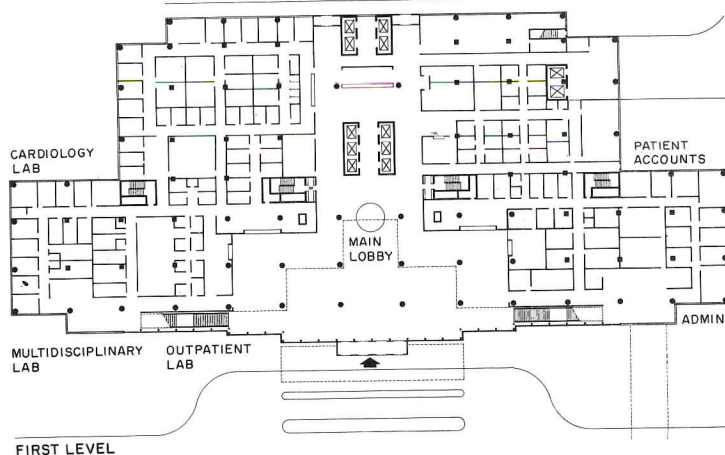
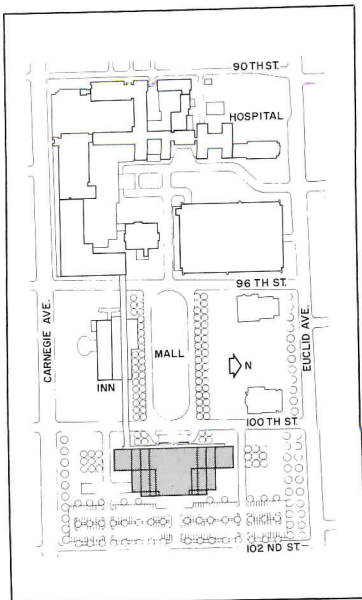


The Cleveland Clinic Cleveland, Ohio

"The primary responsibilities of the architect are to the specifics: client, site, and program," says Pelli. "These elements are not sufficient in themselves to make architecture, since they set up limits, not goals. But the goals have to intersect with the specifics of the problem. There is no room for prima donnas." Pragmatism is the salient trait of Pelli's design for the Cleveland Clinic, a 620,000-square-foot structure that houses 21 general and specialty outpatient clinics. Ziggurat massing results from the client's desire for maximum independence among these departments, whose individual programmed spaces range from 4,500 square feet to 55,000. Stacking these units according to coordinates of size and related services ensures that no more than two departments will have to share the central waiting room on any level. The vertical alignment of waiting rooms above the three-story main lobby introduces a central point where patients can orient themselves. Pelli has also reoriented the existing 6.5-acre hospital complex by locating the new clinic at the head of a new mall. Phase 1 of the project also includes construction of a 325,000-square-foot, L-shaped hospital wing at the southwest corner of the mall. Later phases will add a clinic inn, conference center, and hospital. The 14-story Phase-1 clinic shown here is clad with alternating bands of granite and double-glazed tinted glass. While the broad, symmetrical expanse of the west facade commands the formal order of the mall, the more varied profile of the opposite front lends itself to future expansion.

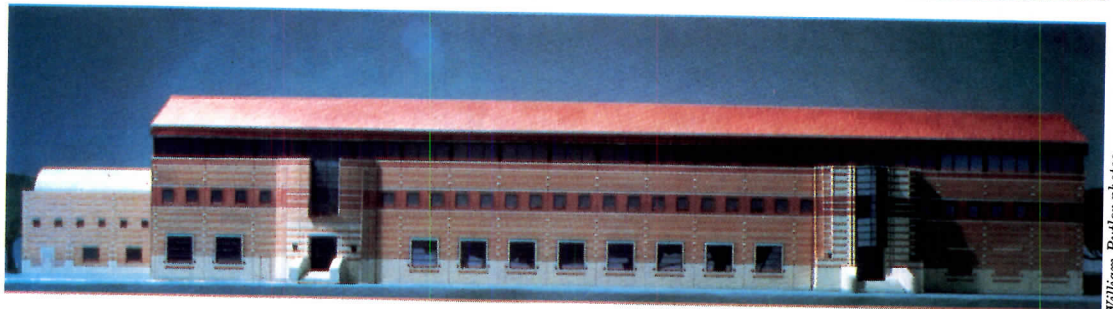
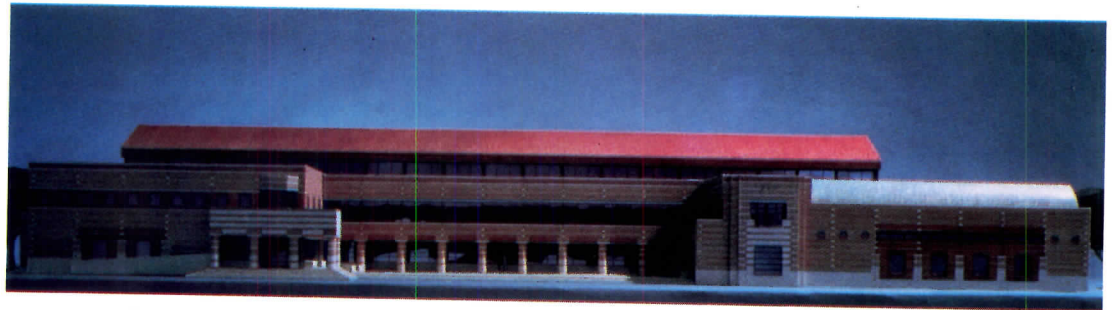


J. Baird

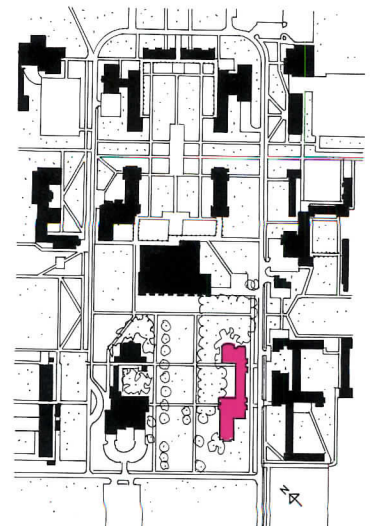
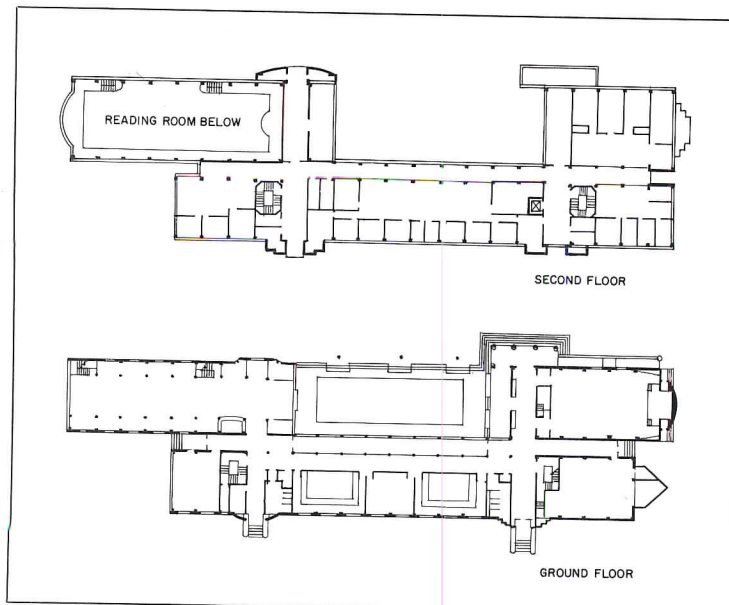


Herring Hall, Rice University Houston, Texas

The trustees of Rice University insisted that their new graduate school of administration be congenial to the "Mediterranean Gothic" style of the earliest buildings on campus, which were designed in 1911 by Ralph Adams Cram. Like James Stirling, whose remodeling of the Rice school of architecture was completed in 1981, Cesar Pelli adopted the campus vernacular of brick with limestone trim and terra-cotta gabled roofs. Unlike Stirling, however, Pelli was asked to design an entire freestanding structure facing directly onto a central quadrangle. The low massing and long colonnade of his Herring Hall repeat elements of Cram's original scheme, and the orientation of projecting wings reaffirms his axial courtyard campus plan of 1910. Owing to budgetary restraints, Pelli used a steel-stud structure clad with a four-inch brick veneer—in effect, a brick curtain wall. His self-imposed challenge was to achieve a general intensity of detail approaching Cram's without being able to rely on the same level of craftsmanship, and without compromising the modernity of his own design: "I decided to go as far as I can before my intentions start to become confused." In line with that strategy, he has faithfully executed exterior surfaces in traditional salmon "Rice brick," laid in Flemish bond with a shiner every five rows; and yet, by inserting strip windows along the tops of the facades, he has emphasized that the wall is only a skin. (Diaper patterns in the gable ends and control joints keyed with contrasting limestone convey the same message.) Loadbearing stone entrance surrounds that figured in initial elevations had to be abandoned as prohibitively expensive. Pelli elected instead to give these portals a three-dimensional presence by folding out the wall into projecting bays. The 50,000-square-foot building is scheduled for completion next year.

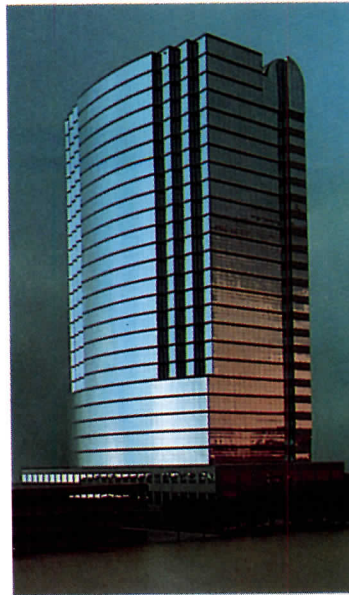
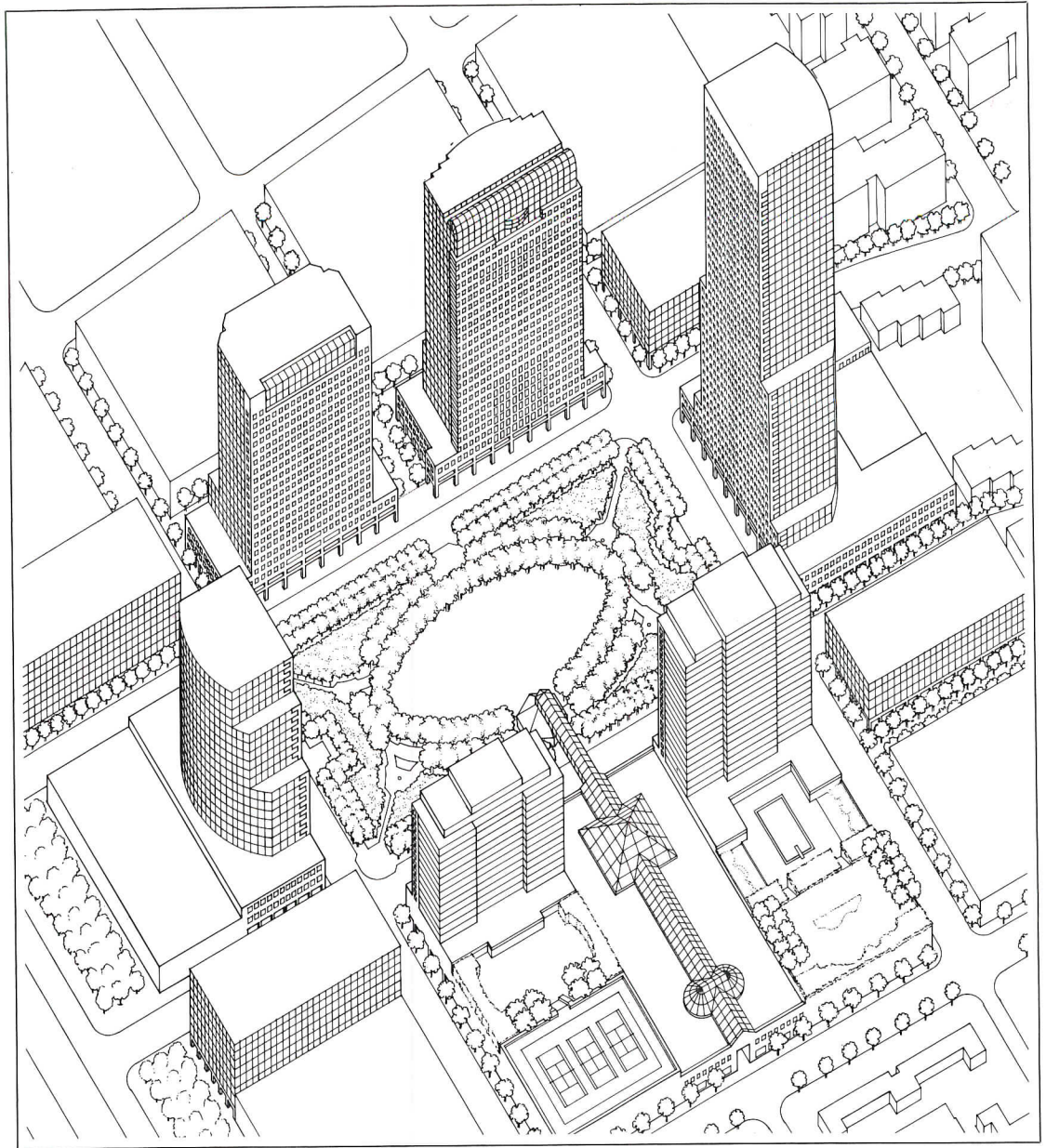


William Butler photos



Pin Oak commercial center Houston, Texas

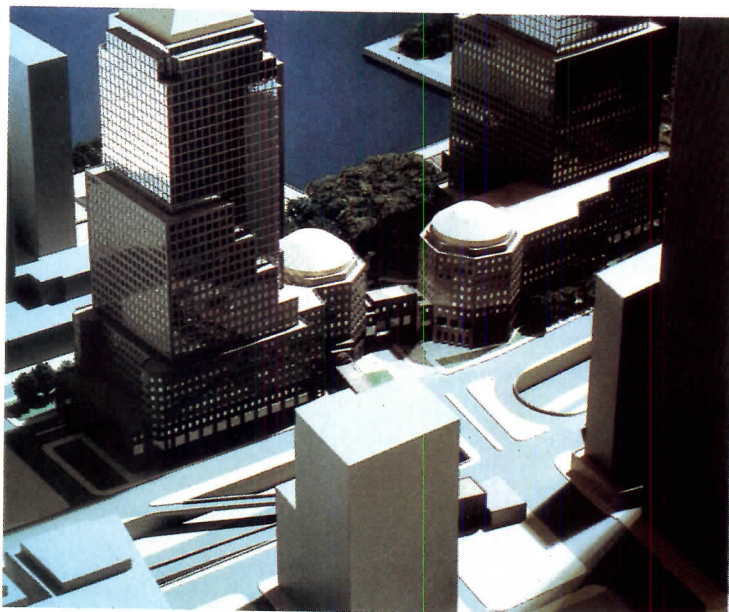
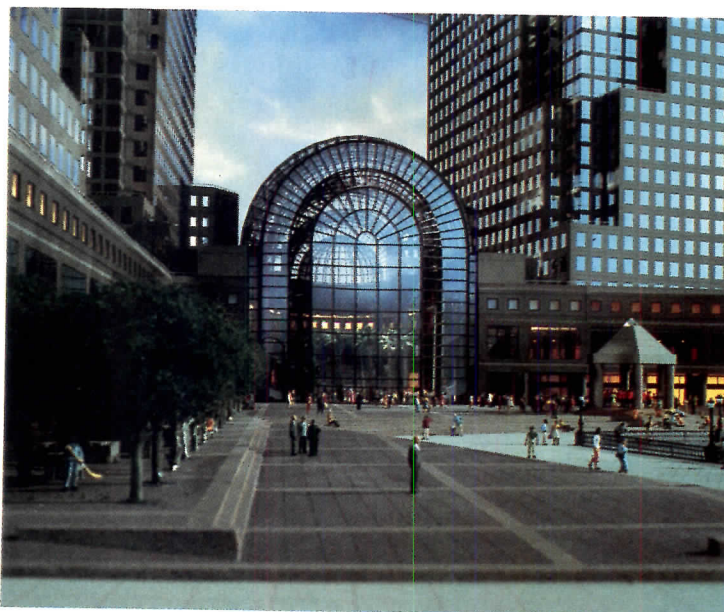
"Houston is a village that grew almost without realizing it was becoming a city," says Pelli. "In the process, it came to lack many of the things a city requires. One of these is recognizable, beautiful public spaces." Pelli's master plan for the Pin Oak commercial center attempts to impose a hierarchy of such spaces on 95 acres of open land. Calculated to provide a lively alternative to the standard office park, and a focus for coherent urban expansion, the project comprises three million square feet of offices, two hotels, a 150,000-square-foot retail center, 2.5 million square feet of residential development, and 7,750 parking spaces, all phased for construction over a 10-year period. Pin Oak's gridiron scheme channels motor traffic along major avenues connecting to a nearby freeway, and concentrates pedestrian circulation around a 4.5-acre central landscaped park, which Pelli likens to an English square or a South American plaza. A bridge joins the public garden to the skylighted shopping center, and street-level arcades further unify the square into a coherent entity. Though conceived as an "outdoor living room," this composition is most likely to be appreciated from a car or from upper windows, given Houston's climate. By differentiating between flat granite-clad facades along the park and more emphatically modeled glass-and-metal curtain walls on other frontages, Pelli seeks to heighten the dual role of these urban buildings as frames for public spaces and independent objects to be seen from distant highways. Pin Oak One (model photos below), the first segment of the complex, houses 26 floors of offices, ground-level retail quarters, and a two-story lobby linking the pedestrian arcade to a 1,200-car garage. Finished in light gray granite and silver reflective glass toward the park, the tower is to be faced on its remaining sides with more mirror glass and narrow colored spandrels. The curved element at the building's summit is a glazed gallery opening off two-story executive suites.



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World Financial Center New York City

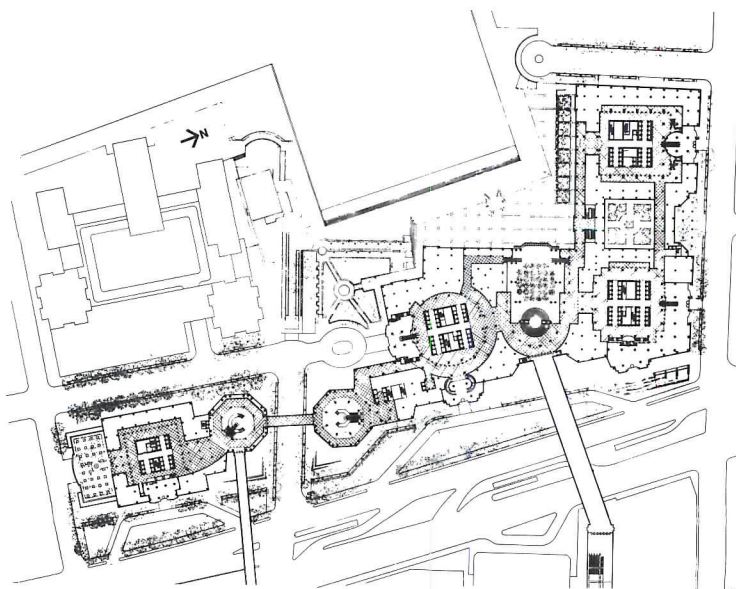
Construction is under way on all seven million square feet of the World Financial Center in Lower Manhattan. Situated on 14 acres of the Battery Park City landfill along the Hudson River, the competition-winning project comprises 100,000 square feet of retail space and 150,000 square feet devoted to recreation, expositions, and other public uses. The configuration of four office towers, two octagonal pavilions, a barrel-vaulted winter garden, and landscaped plaza reflects what Pelli calls "the deformation by reality of an idealized formal concept." He began with an elementary scheme for a public urban space—four towers at the corners of a perfect square—and then modified this platonic order to conform to actual site conditions. Given a cove that notches deep into the shoreline (top center of plan below), it was impossible to build a tower at the southwest corner of his square (the displaced fourth tower now stands to the southeast of the remaining trio). And given the pivotal location of his site at the point where the irregular street pattern of Manhattan's southern tip starts to meet the grid of the rest of the island, Pelli has deflected various elements of his scheme away from a rigidly orthogonal system. Although slight enough to be barely perceptible to the nearby onlooker, these rotations enable the complex to relate visually on a broader urban level to such extremely heterogeneous neighbors as the World Trade Center, Battery Park housing, and the projected Westway. Aligned with Liberty Street to the east, the nine-story octagons



Kenneth Champlin photos

(lower photo this page) frame a ceremonial public gateway to the riverside plaza.

The four towers, which vary in height from 33 to 50 stories, have corresponding setbacks at intervals marking earlier stages in the rise of Manhattan's skyline. Between the three-story sheaths of granite at their bases and their copper crowns, the towers are clad in a curtain wall whose figure-ground pattern of reflective glass against stone grades from dark to light as it ascends. The modeled finials, which house mechanical equipment, hark back to the ornamental tops of classical and art deco skyscrapers nearby that have become symbols of the modern metropolis. "We now feel we have to reconnect the building not only to the present and history of the city, but also to its psychological needs," says Pelli. "When a building reaches the sky it is entering a sacred realm. By sacred we mean aspirations that go beyond our daily lives. This cannot be attained in a bland, purely utilitarian manner, for the skyscraper, whatever its function, acquires truly public responsibilities."

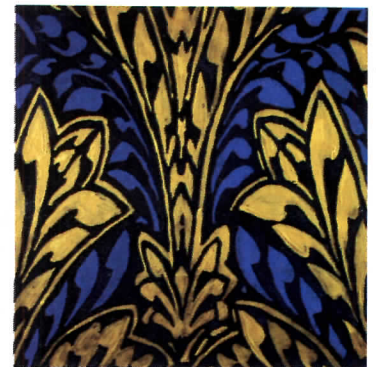




Reminiscent of the Crystal Palace and other glass halls of the 19th century, the winter garden (opposite) continues what Pelli has long regarded as one of the noblest traditions in modern architecture. While this vast conservatory (barely smaller than the main concourse of Grand Central Station) demonstrates the decorative potential of the structural skeleton, the tower facades and entries attest to Pelli's abiding preoccupation with the esthetics of the skin. "Once you accept that we are building with thin, overlapping layers," he says, "you see that what our architecture requires is for the layers to become richly alive." Instead of returning to pediments, arches, or other conventional symbols of entry through stone walls, Pelli has devised prosceniumlike portals that imply a drawing back of the curtain wall. Granite gives way to ceramic panels, which in turn peel back to reveal layers of tinted glass, clear glass, and bronze. At the next stage of enclosure, fabric wall coverings freely adapted from patterns by William Morris and Owen Jones (insert), and Pelli's own grid-motif wallpapers adorn interior surfaces. Structural columns will



Kenneth Clamplin photos



be left unornamented, except for a coating of dark paint, to denote their independence from the more ephemeral order of interior partitions: "Like the black-clothed men in Kabuki who shift furniture, they serve an essential function but don't actually play leading roles."



Architect's retreat



*Johnson study/library
New Canaan, Connecticut
Philip Johnson, Architect*

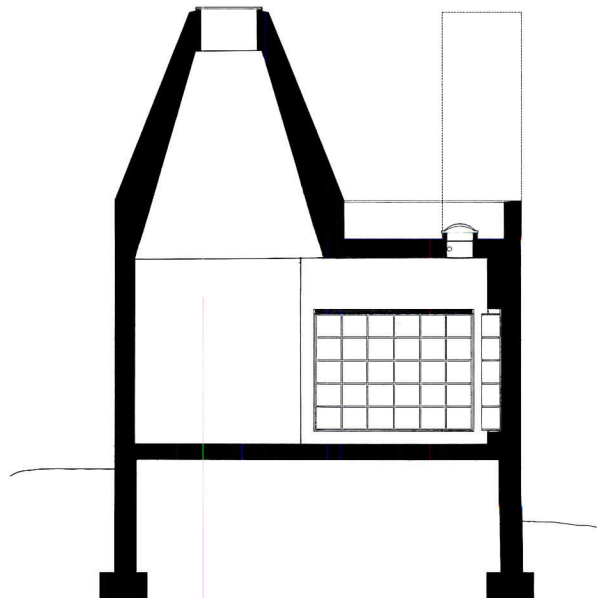
"I can't work in a glass house. There are too many squirrels running around outside." So Philip Johnson built this tiny study/library, the sixth building (after the house, the guest house, the pavilion, the painting gallery, and the sculpture gallery) on his 40-acre property in New Canaan. "Everything about this little building helps me concentrate. It's a three-minute walk from the house, and that helps. The space is just right (about 15 by 20 feet with a 10-foot ceiling), the light is glareless, the colors are gentle, I'm surrounded by books, and I can't be distracted by anything going on outside. I find I spend six hours there almost every Saturday and Sunday—in two-hour stretches, to be sure, since that's about as long as I can concentrate and besides there's no . . . well, there's no water."

As to "references" and "allusions," Johnson says, "I have been trying to work some out ever since the building was finished. Some see an Islamic influence—dome and minaret. Others see a play on solids and voids—the glass house, of course. And still others have decided I wanted a sculptural object in the middle distance—which I guess it is. I don't think any of that is right—I just wanted a place to work and to explore some ideas in space and scale and light that interest me."

The scale of the building is, of course, purposely unclear—indeed falsified by the overscaled 4- by 6-foot window and oversize entry, a 3- by 7-foot door let into a 5- by 10-foot wooden panel. The major light source is the oculus—3 feet in diameter at the top of its cone and capped with double glass, 10 feet in diameter at the ceiling line. ("There's a historical reference for you. I did try to figure out why the oculus in the Pantheon is just the size it is.") Three 1½- by 4-foot skylights wash the faces of the books with light. The window is dark glass, so there are no shadows or glare and except on the brightest days it reads as a picture on the wall—"no distractions."

The walls of the building are 10-inch concrete block, finished outside with a cement-base waterproof coating and inside with 2 inches of rigid insulation and plaster over metal lath; the cone is laid up with 8-inch concrete bricks similarly insulated and finished; the floor is wood-framed. The roof slab is more complicated—it is 8 inches thick, rather elegantly reinforced (see drawing page 119) and poured with a 3-foot-deep concrete ring stiffener to support the load of the oculus.

And so, in several ways, it might be said of this small and simple building that its simplicity is really only skin deep. *W.W.*



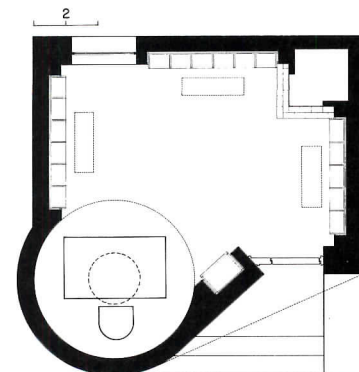
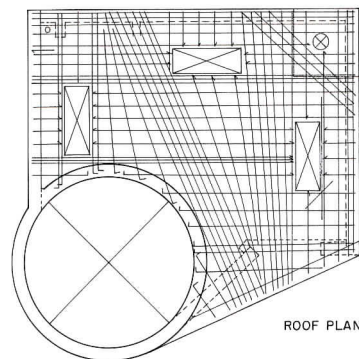




© Richard Payne photos except as noted



Inside, the colors of Johnson's study further soften the soft light from the oculus and skylights—the inside of the cone is blue-gray, the walls a very pale pink, the bookshelves wine-colored (and segmented in 15-by 15-inch squares "so those oversize architecture books won't tip over"). At night, the room is lighted by spherical, clear-glass bulbs set up into the skylights, so the light always comes from the same place. "Since the color scheme is rather bland, I thought the carpet should be rather jazzy. I didn't want anything in those newest colors, and the motel carpet I ended up with is just right—you can't make it dirty since it was designed not to show catsup stains." There is no furniture except for the 5- by 5-foot table and the two chairs—"I don't invite many visitors into this space, and it didn't work at all for one conference I tried here. It really is a place for one man to concentrate." The drawing: steel reinforcing layout for the roof slab.



*Johnson study/library
New Canaan, Connecticut*
Architect and owner:
Philip Johnson
Engineers:
*Robertson, Fowler & Associates
(structural), Sanford Hess
Associates (mechanical), Claude
Engel (lighting)*
Contractor:
Louis Lee & Company

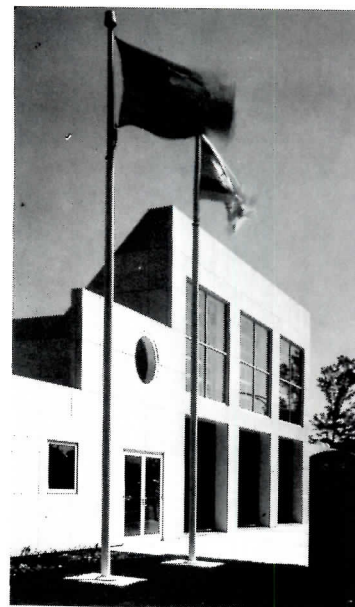
Blue-collar buildings

Glamorous they are not: nor lavish, nor elegant, nor...well, sexy. Instead, they are workhorses: places where the floors are never carpeted and the railings are plain pipe, where a time clock ticks in the corridor, and where hardly anyone wears a tie.

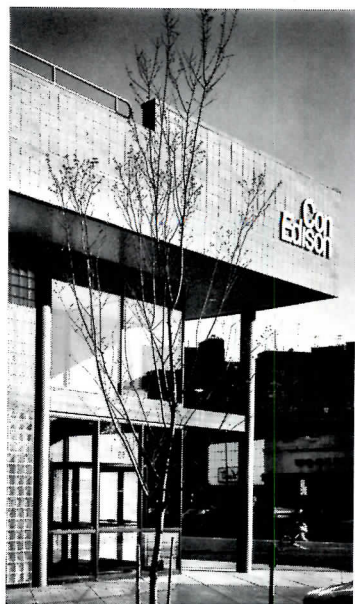
Unlike many of the buildings that are published and/or praised, the little apricot fire station in Chicago (photo top right, facing page, and pages 122-123), the gray masonry public-utility customer service building in the Bronx (photo middle right, and pages 124-125), and the red-brick park-maintenance facility in Philadelphia (photo bottom right, and pages 126-127), were not built with particularly generous budgets, or by particularly enlightened clients, or on particularly beautiful sites. Rather, each of the three was designed amid the bureaucratic maze of red tape that goes hand-in-glove with publicly funded (as in the case of the fire station and the maintenance facility) or public-opinion-regulated (as in the case of the utility building) projects. To state the obvious: For the acting clients of these buildings, there was no contest between the pragmatic and the esthetic. That there is architecture here, when simple accommodation might have sufficed, is testimony to talent and tenacity.

Mitchell/Giurgola Architects, for example, was awarded the commission for the Independence National Historical Park Maintenance Facility at the same time (1974) they were awarded the commission for the Liberty Bell pavilion which sits in the park. Bicentennial money ran out after the pavilion was built, however, and the Philadelphia firm waited five years before dusting off their maintenance-facility plans and beginning construction. For Richard Dattner, the problem was not so much absence of money as a complex client relationship: The Consolidated Edison Company does not actually own the customer service building it occupies in the Bronx (a private development company does), yet Con Edison did have a watchdog role—and in-house architects—to ensure that its interests would not be neglected. Ensuring those interests consumed four years. Chicago architect Laurence Booth also experienced a four-year lag between design and dedication of the fire station he designed for a working-class neighborhood in Chicago: one year went to bidding, and three years went to the low bidder's unforgettable construction schedule.

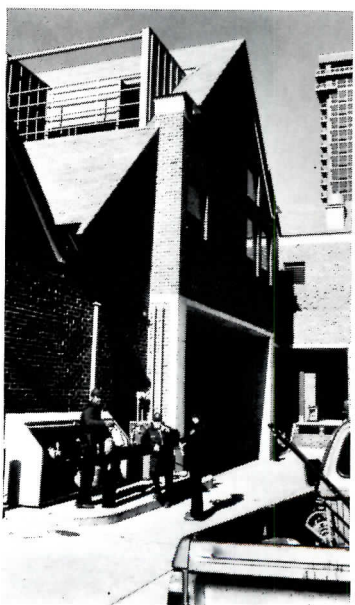
But whether five or four years, who would argue that these blue-collar buildings were not worth the wait? They work—and on their own terms they are really quite special.



Jim Hedrich, Hedrich-Blessing



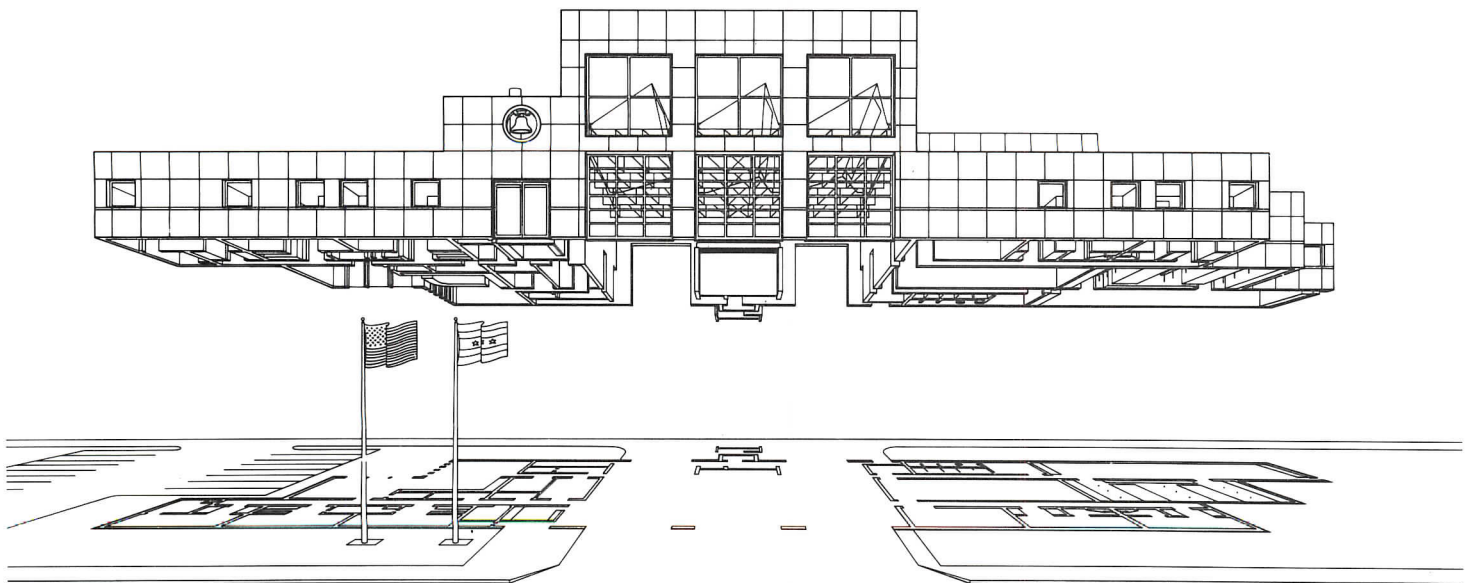
Norman McGrath



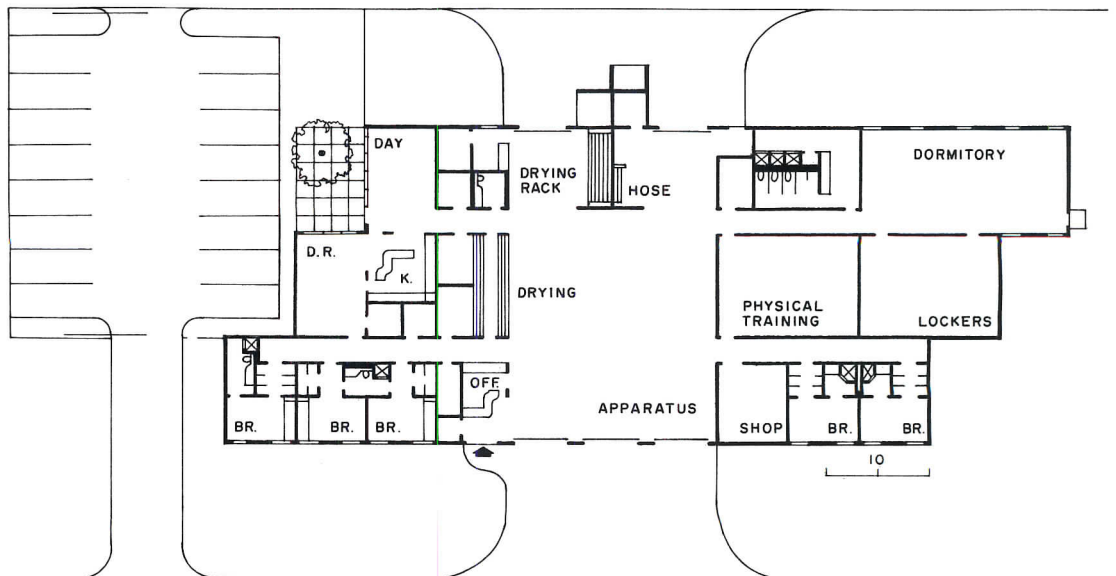
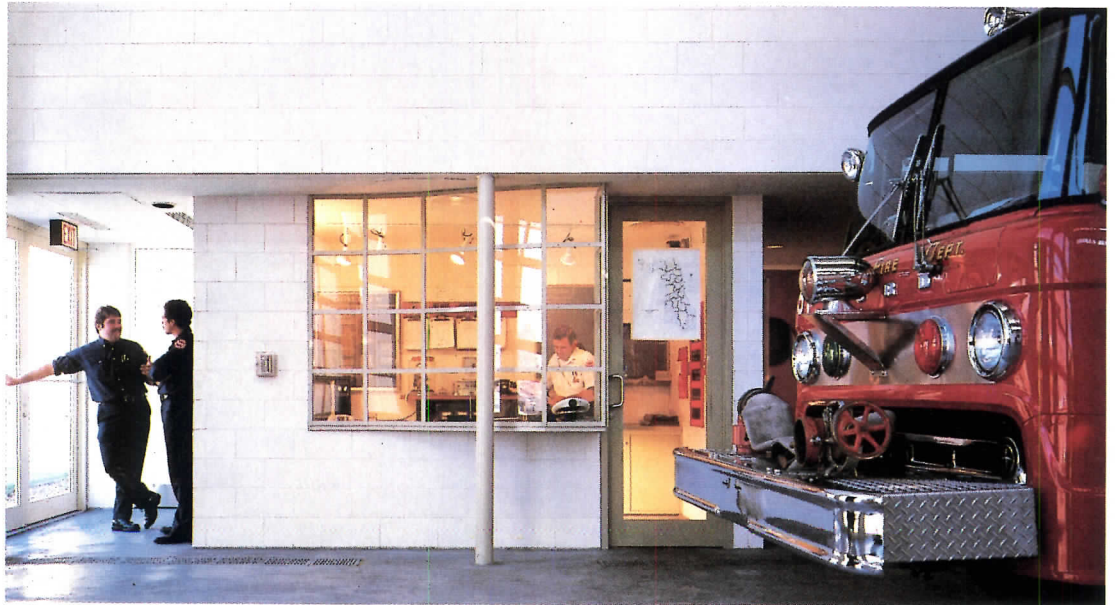
John Q. Lawson

Photo top: CF-14 (Fire Station), Booth/Hansen & Associates, design architects; John Casserly, architect for the City of Chicago. Photo middle: Consolidated Edison Company Customer Service Facility, Richard Dattner, Architect. Photo above: Independence National Historical Park Maintenance Facility, Mitchell/Giurgola Architects.

CF-14 Fire Station



Though not a single Dalmatian lounges in the driveway, and though the city failed to hang a bell in the space allocated, passers-by should have no trouble identifying the Chicago Fire Department's Pulaski Road outpost as just that. No trouble at all, according to architect Laurence Booth, who designed CF-14 (as it is officially referred to) four years ago with City Architect Joseph Casserly: "The building is meant to be symbolic of the public trust that the fire station manifests... that being a guardian to private and public property. The quiet solidarity of the form, the sentinels to warn traffic, an inviting public pedestrian entry, the enlarged apparatus room: all combine to form a street facade of firmness and I hope a certain joy." And a welcome facade it is, when assayed from the bustling street of the predominantly working-class neighborhood it serves; especially as compared to the massive—and joyless—industrial and commercial buildings that form its context. Booth's stated desire for an "open, friendly" building is most clearly evidenced in his choice of sprightly apricot porcelain enamel panels for the building's skin, and his not-so-subtle manipulation of scale for the central garage (which, with its high profile and generous fenestration, reads like a giant civic billboard announcing the protection supplied by the glistening fire trucks within). The two low-lying flat-roofed sheds flanking the central garage supply the appropriate employee accommodations: men's and women's locker rooms and dormitories, a weight room for pumping iron when the alarm isn't sounding, offices for the chief and support staff. Energy conservation was accomplished with six-inch batt insulation in the walls, and 12-inch insulation in the ceilings; (the main apparatus room (photo below far right) has skylights that allow low-angled winter sun to assist heating, while high-angled summer sun is excluded.



CF-14
Chicago, Illinois

Owner:
City of Chicago

Architects:
Joseph Casserly (architect for the
City of Chicago); Booth/Hansen &
Associates—Laurence Booth,
architect; William Ketcham, project
associate

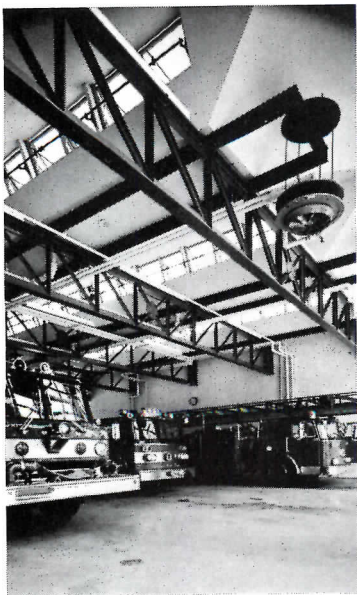
Engineers:
Beer, Swab, Gorski, Graff
(structure); Wallace-Migdal &

Drucker Ltd. (mechanical/
electrical)

General contractor:
Ruby Construction Co.



Jim Hedrich, Hedrich-Blessing photos



Consolidated Edison Customer Service Facility

Situated along the thriving commercial hub of Westchester Square—across the street from Woolworth's, next door to a purveyor of auto parts—the 30,000-square-foot Consolidated Edison Company Customer Service Facility offers residents of the northeast Bronx a walk-in alternative to paying their utility bills by mail and to airing their utility grievances by telephone. And since many area residents do not have checking accounts (and who enjoys being put on hold?), it is a welcome alternative indeed. The scored-concrete-block building is no less welcome to the meter readers who are provided a commodious base of operations in the basement (plan not shown), and to the administrative and support staff who are provided no less commodious offices on the second floor (plan below). The disparate public and private functions (and hierarchy) are acknowledged by separate entrances: a rather grand, brightly daylit, double-height vestibule for customers and office workers (photo top right, and below facing page), and a not-so-grand stairway to the basement for meter readers (photo bottom right). Consolidated Edison's role as an advocate of energy-conscious design is addressed with an aluminum *brise-soleil* for the second-floor windows, and deep recesses for the big ground-floor windows on the south facade.

Although New York architect Richard Dattner characterizes the sturdy, two-story structure as "not groovy," he does so without regret. For "groovy" would have been incompatible: with the working-class neighborhood; with the \$73-per-square-foot budget; and, most particularly, with the public-regulated utility company's request for "simple, functional design...avoiding any impression of wasteful expenditure of customer's money."



Consolidated Edison
Customer Service Facility
Bronx, New York

Owner:
Miro Development Co.

Lessee:
Consolidated Edison Company

Architect:
Richard Dattner—Richard Dattner,
principal; William Stein, project
architect; Joseph Coppola,
programming; Jaime Ortega,

Walter Broner, project team

Landscape architect:
Vreeland & Guerriero

Engineers:
Goldreich, Page & Thropp
(structural); Aaron Zicherman
(mechanical)

General contractor:
Calcedo Construction Corp.



Norman McGrath photos

Independence National Historical Park Maintenance Facility

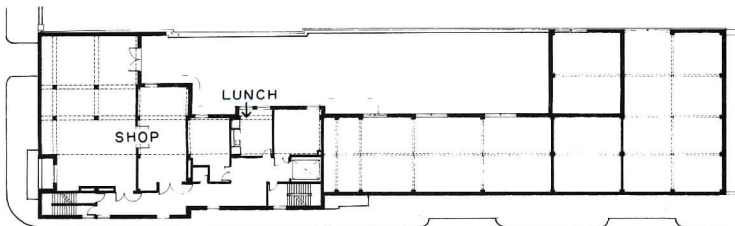
Society Hill is one of Philadelphia's most prestigious neighborhoods; its almost-too-charming streets pass some of the City of Brotherly Love's most expensive real estate. So, in 1974, when the United States Department of the Interior National Park Service unveiled plans for a 20,000-square-foot maintenance facility—to be located in the veritable heart of venerable Society Hill—the owners of that expensive real estate banded together in protest. After all, the proposed site was adjacent to Old Saint Mary's Church and Cemetery, where Commodore John Barry, "Father of the American Navy," has been resting in peace since 1803. But the protesters lost, and the maintenance facility—which services nearby Independence National Historical Park—opened in 1981. While the neighbors are still touchy on the subject of the light-industrial building set squarely in the midst of their 18th- and 19th-century town houses, they could have done a lot worse. The Philadelphia office of Mitchell/Giurgola Architects made sure they didn't. To break down the potentially overscale mass of the maintenance facility, the architects divided the building into nine distinct one- and two-story "sheds," each with its own pitched roof. The rhythmic modulation of the variegated roofscape not only assists in integrating the new structure with its residential context, but in articulating the various functions housed within: high-traffic areas (truck and maintenance vehicle garages, fertilizer and equipment storage bins, foremen and receiving offices, employee showers and locker rooms) are relegated to the first floor; low-traffic areas (carpentry, painting, plumbing, and electrical shops) to the second. Natural light is supplied to the upper level through large, triangular, north-facing clerestory windows.



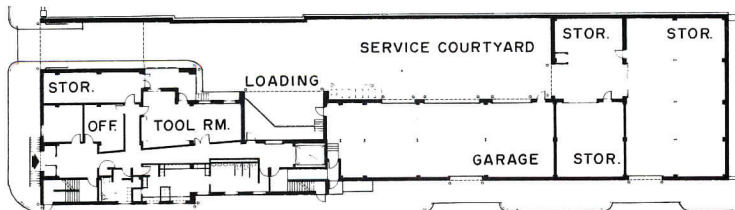
*Independence National
Historical Park
Maintenance Facility
Philadelphia, Pennsylvania*
Owner:
*National Parks Service,
Department of the Interior*
Architects:
*Mitchell/Giurgola Architects—John
Q. Lawson, partner-in-charge
George Yu, project architect*
Engineers:
*Keast & Hood Co. (structural);
Vinokur-Pace Engineering
Services, Inc. (mechanical/
electrical/plumbing)*
General contractor:
James J. Clearkin



John Q. Lawson photos



SECOND FLOOR



GROUND FLOOR

20

A proper Bostonian

One Post Office Square
Boston, Massachusetts
Jung/Brannen Associates,
Inc., Architects



Completed in 1922, the former home of the Federal Reserve Bank, now converted to the Meridien Hotel, was patterned by architect R. Clipston Sturgis after Rome's Palazzo della Cancelleria.

Boston, more than most American cities, has successfully reined development to achieve the best of two worlds, preserving and renewing the venerable buildings that trace the city's rich historical past while welcoming the contrast and change of new construction. Given this developmental framework, says Jung/Brannen designer Robert Hsiung, a true "Boston building" should not be conceived as an object in itself, but should reinforce the city's strong, distinctive urban pattern and comfortable pedestrian scale. In this sense the firm's hotel-office complex at One Post Office Square is a thoroughly proper Bostonian in its deft blending of old with new and its deference to context.

The project occupies the former site of the relocated Federal Reserve Bank, which paired a heavy-handed but imposing 1920s Renaissance Revival banking citadel with a 1950s addition. The firm undertook exhaustive site and market studies, examining options ranging from total rehabilitation of both buildings to their total demolition before arriving at the happy solution of restoring the 1922 building to lost grandeur as a luxury hotel and replacing the newer structure with a 40-story office tower.

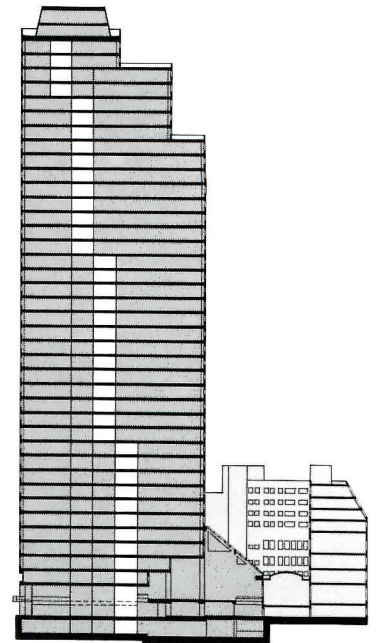
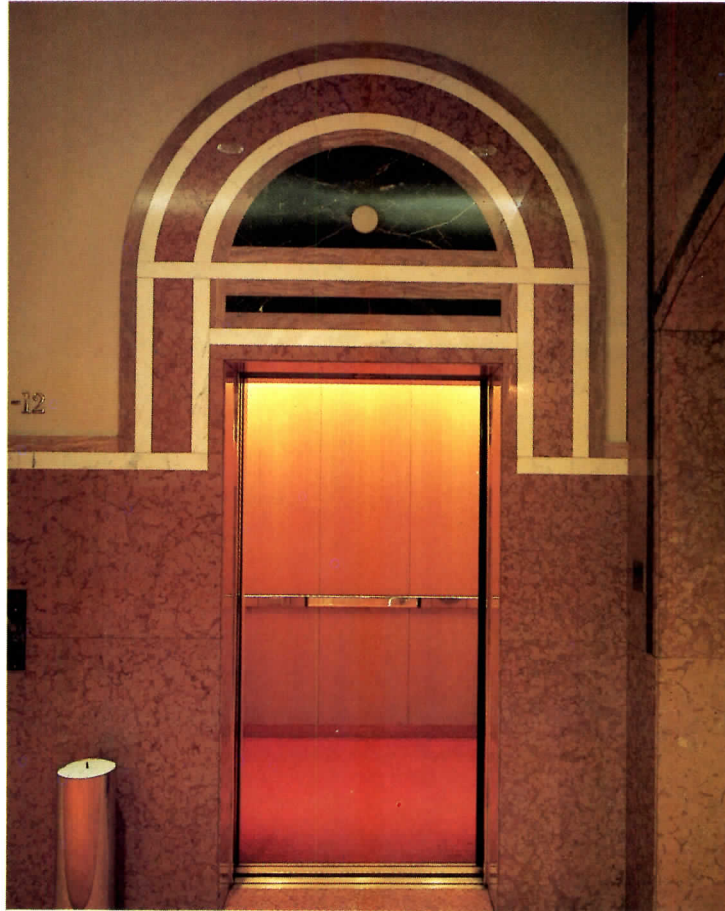
For architect Hsiung a major concern was to exploit the opportunity offered by 24-hour usage of the hotel to enliven the street life of the surrounding nine-to-five financial district, while respecting the existing mix of recent, largely undistinguished commercial buildings and older mid-rises.

The solution lay in forging a persuasive link from the vintage hotel to the office tower and in turn to the facing plaza, and in controlling the apparent scale of the tower.

Spatially, the link is formed by a two-level connection between hotel and tower: a ground-level street that serves as an auto entrance for both buildings, and above it an atrium that rises from three stories at the office lobby to six stories on the hotel side of the complex. Visually, the tie is strengthened by a fenestration pattern that echoes on the lower seven floors of the tower the proportions and spacing of the hotel windows, decreasing on the upper floors to small discrete openings compatible with the punched windows of nearby masonry buildings and with the scale of the offices within, and expanding again at the top of the tower. And in a final note of reticence, the office building's facade of precast concrete with exposed granite aggregate panels was chosen to respond both to the limestone and granite of the hotel and to the similar tones and textures that dominate the district. *M.G.*

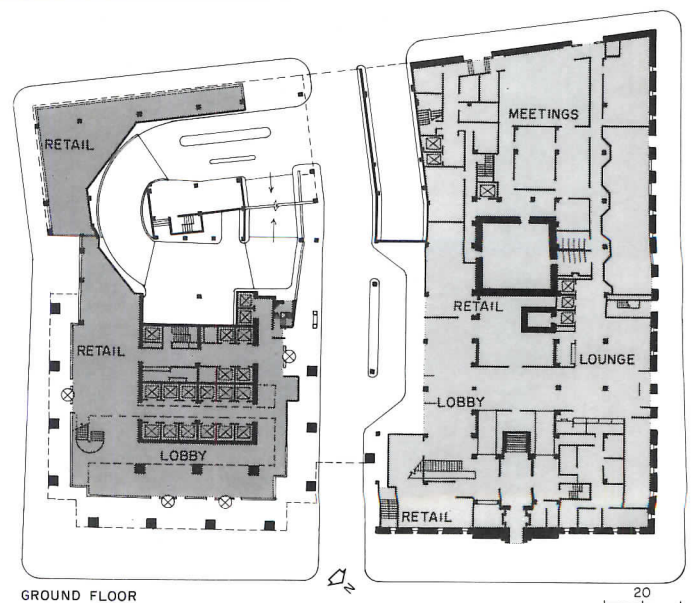


©Steve Rosenthal photos



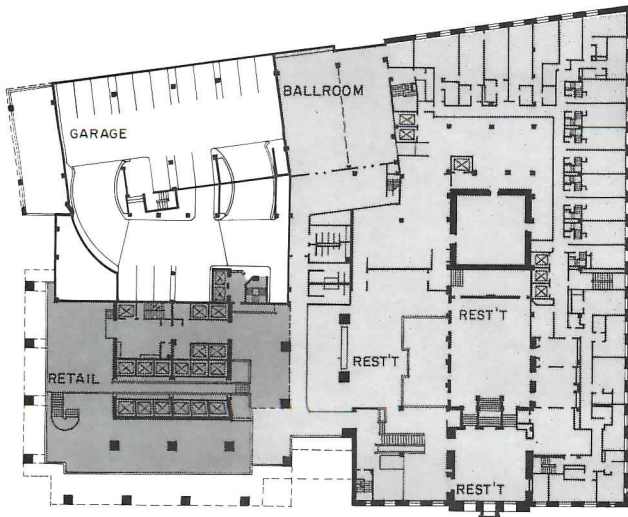
In keeping with his desire to brighten the streetscape and close the long link from hotel to tower to the park across the street, Hsiung conceived the office lobby as "a lantern to light up the street." And so it is: a rich glowing glass-encased space sheathed in marble rendered in spontaneously Italianate patterns ("I just opened my old sketchbooks," says Hsiung) and a kaleidoscope of color—gold, russet, claret, 10 in all—on a base of warm rusty carpet. From the second lobby level a bridge (photo left and plan overleaf) spans the elevator banks and gives on to the atrium beyond.

Apart from the internal street (ground-floor plan below) the key connection between the Old World splendor of the restored hotel and the equal but thoroughly contemporary splendor of the office lobby is the soaring skylit atrium, a fit setting for an airy cafe lush with greenery. Not content with a purely physical link, however, the architects turned to decoration as a means of reinforcing the bond

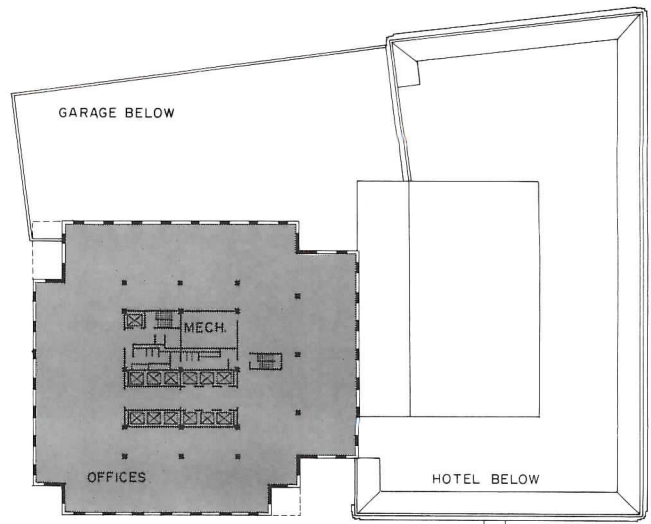


between the two structures and approximating an historical linkage. The device employed is the patterning of the atrium walls with a muted, painted variation on the decorative theme introduced in the tower lobby (background in photo left). When the budget permits, Hsiung is ready with stunning designs for similar embellishment of the multistory expanse of the end walls of the atrium, a fillip that will

enrich the space and complete the coupling of old with new. But even now the transition from the discreet sleekness of the tower to the period elegance of the adjoining hotel is accomplished with an ease and inevitability that compliments both.



SECOND FLOOR



TYPICAL FLOORS (13-25)





*One Post Office Square
Boston, Massachusetts*

Owner:

One Post Office Square Associates

Architects:

*Jung/Brannen Associates, Inc.—
Robert Brannen, principal-in-
charge; Robert Y.C. Hsiung,
designer; Mart Ojamaa, Axel
Kaufmann, project architects*

Associated architect:

Pietro Belluschi, Inc.

Engineers:

*LeMessurier Associates/SCI
(structural); Joseph R. Loring &
Associates, Inc. (mechanical/
electrical)*

Hotel interiors:

Jutras & Nobile Associates

General contractor:

*Beacon Construction Company,
Jackson Construction Company
(joint venture)*

The Meridien hotel chain's reputation for quiet (and costly) luxury is fully supported by its new-old acquisition on Post Office Square. The Federal bankers of the twenties did not stint, and the removal of clumsy "improvements" made by their successors bared a wealth of detail unreproducible in today's straiter building climate. Ornate paneling and moldings abound, sparked by marble door

frames and mantles. An intimate lounge off the atrium sports a lovingly restored gilded coffered ceiling and original murals by N.C. Wyeth (photo top right opposite). And the addition of three floors behind a sloping glass roof, required to boost the hotel's room capacity to economic viability, serendipitously creates a bank of charming garret rooms (photo bottom right opposite).

Roofs that work: when everybody observes the rules

Roofs do not work partially. Either they keep out water or they leak. In spite of some popular opinion, there is no big mystery about the design and construction of roofs that work. The principal ingredients for successful roofs are know-how and commitment from the architect, careful attention to specifications and details by the contractor, and the owner's willingness to pay adequately for the design work, for adequate materials and for proper workmanship from the contractor.

Examples of carefully designed and constructed roofs are no rarity, but neither are they as prevalent as they might be. Proof that successful application is possible is demonstrated in three case histories shown in this article (pages 138 to 143). But since all good roofing installations start with proper detailing, the opening of this article shows three examples of basic details for parapet/roof connections, curbs for gravel stops, and interior drain waterproofing. The first series of three details is for asphalt-type membranes; accompanying them are the same details for single-ply membranes.

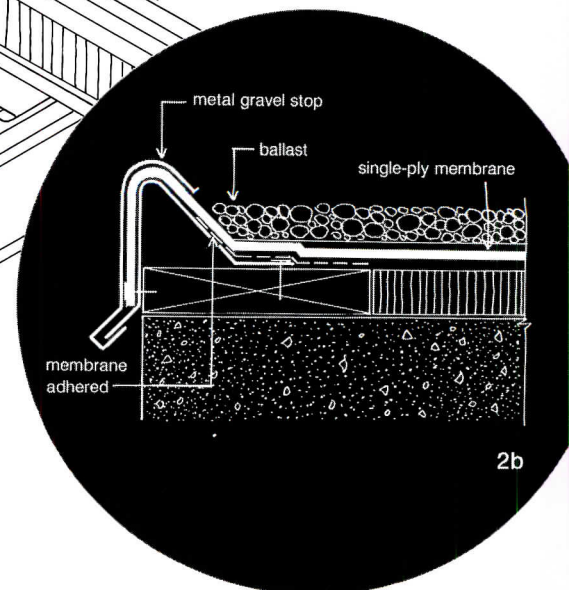
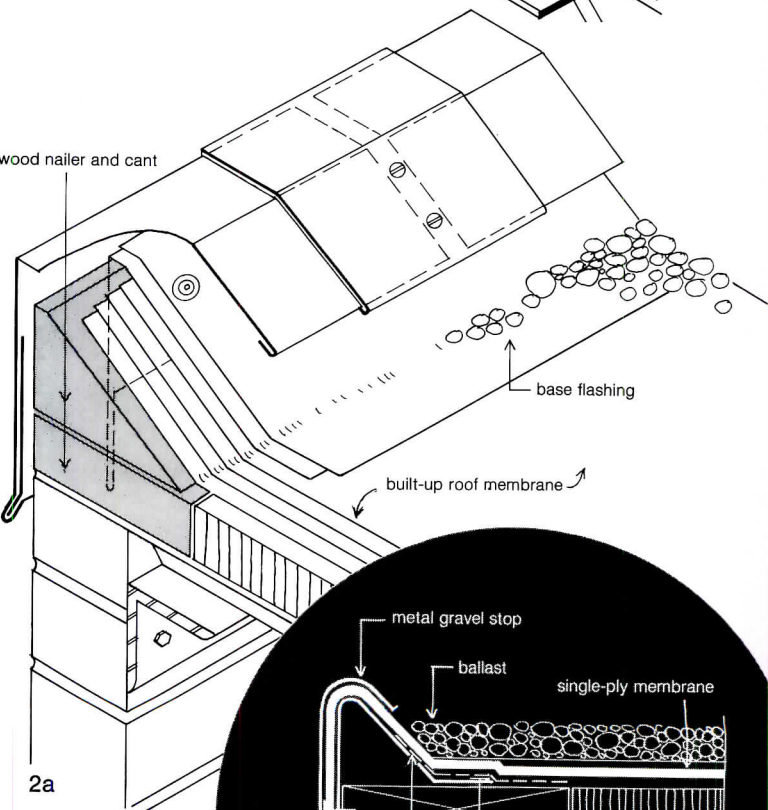
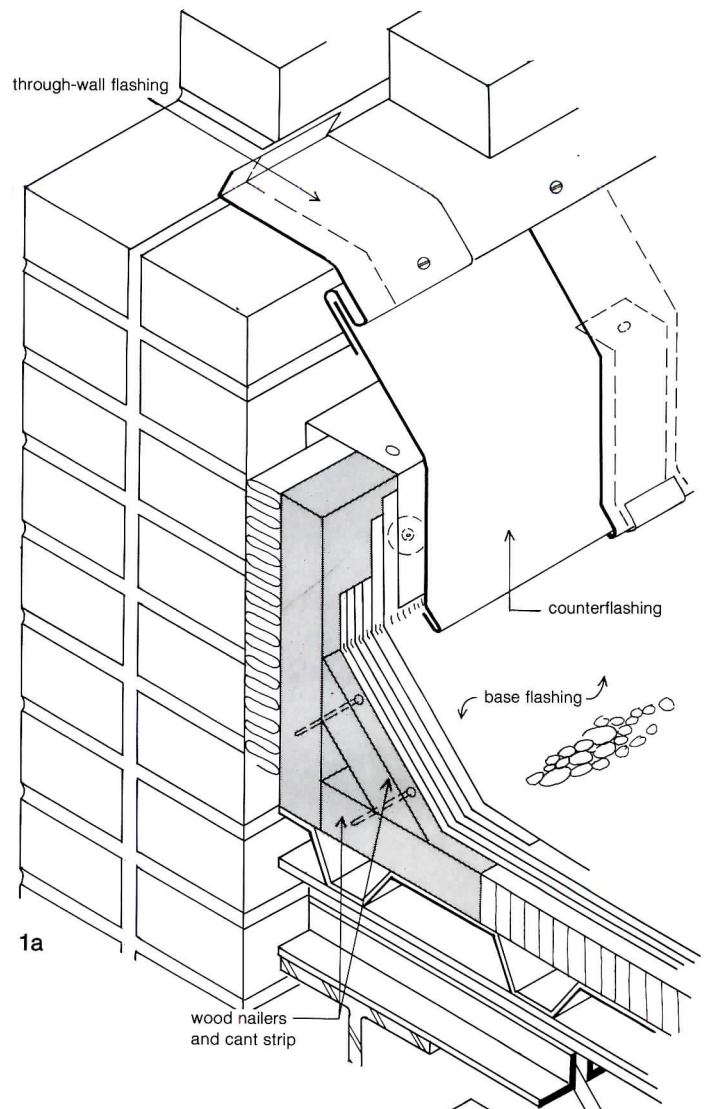
In actual practice, opinions vary on just how many details the architect should show in documents, but consensus is that (redundancies aside) the more the architect shows in detail, the more he understands how the systems work, and the more the contractor can follow the architect's intent.

"Complete details encourage the designer to think through his approach, which results in a better installation by avoiding 'improvised' constructions," says Richard Baxter of Carolina Roofing Service. He knows whereof he speaks because of his long experience in product application with a major roofing manufacturer, and more recently with roofing contracting in metropolitan areas in the Southeast. Though many architects do not think of roofing details in this fashion, experienced contractors, such as Baxter, emphasize that isometric drawings are much more informative than simple sections in showing how different constructions fit together, such as the intersection of an expansion joint with a wall. Many more details of this sort, he feels, should be included in the construction documents.

When documentation of details is complete, the contractor is much more inclined to build the roof properly. Not only can he visualize how the architect expects the detail to be executed technically, but he senses the architect's seriousness in the total roofing effort. Furthermore, good details enable the contractor to bid the work with greater accuracy and minimize misunderstandings between architect and contractor.

Still, good details are only part of the answer to successful roofs. The remaining ingredients are prebid and preroofing conferences for contractors that allow interested contractors to assess the proposal, and finally to allow the contractor awarded the work to study the project in more detail. Preroofing conferences are, in fact, standard procedures for many private roofing consultants. For example, Ron Scott of Roof Engineering Inc. uses the meeting to make sure that all those participants in the roofing design and construction agree on how work should proceed, and this is assured by reading the entire specification aloud. "If any disagreements arise," says Scott, "this can be ironed out at the start, and revisions, if necessary, can be made in the construction documents and approved at the following meeting."

The final step in follow-through, one that some architects enter into reluctantly, is rigorous field inspection and written reports. "This is no job for someone who wants to be well liked," said John Halfrey, designer/engineer with The Carlson Group. "But they are sure ways of checking that the work has been done as specified." *James B. Gardner*

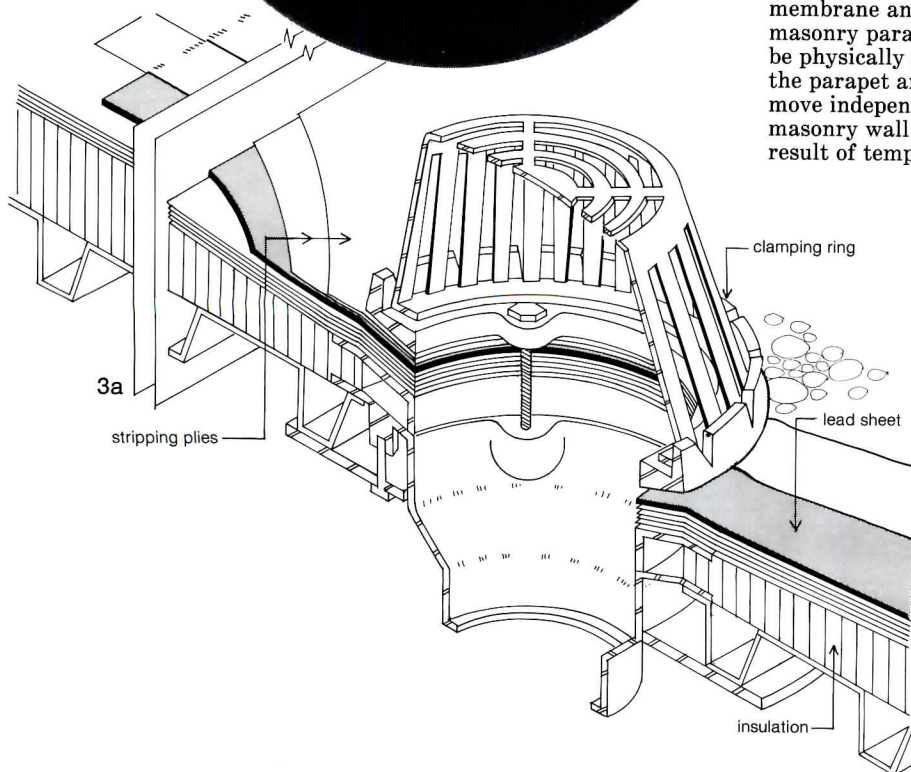
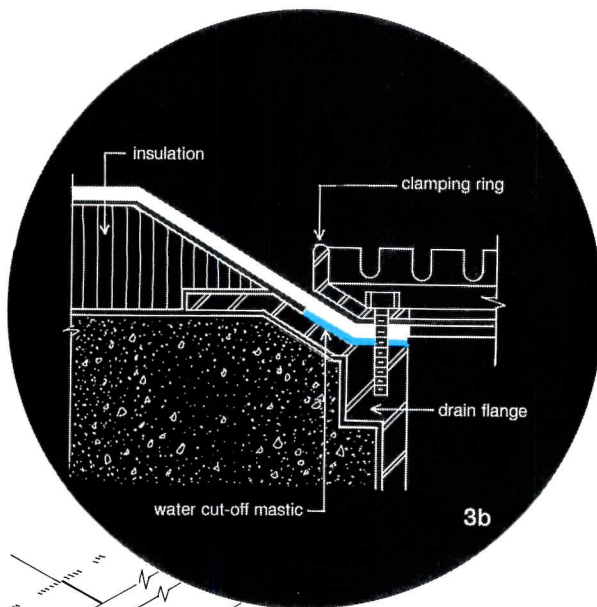
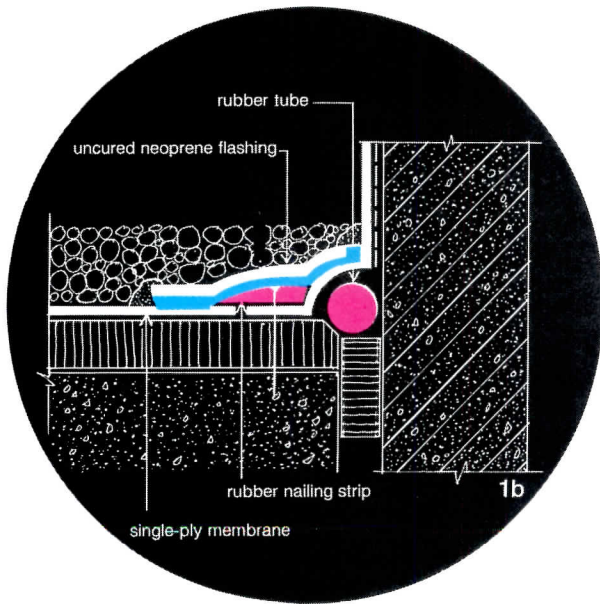


- 1a. built-up roof flashing for a parapet wall
- 2a. built-up roof flashing for a gravel stop
- 3a. built-up roof flashing for an interior drain

Diagrams from
National Roofing
Contractors Association

- 1b. single-ply flashing for a parapet wall
- 2b. single-ply flashing for a gravel stop
- 3b. single-ply flashing for an interior drain

Diagrams from
Carlisle SynTec Systems



The basic requirement for any roof is a good membrane. But most roofing failures occur not because of an improper membrane, but because of excessive straining and flexing resulting from improper attachment to building perimeters and to penetrations required for vents and mechanical equipment.

Good details for the flashing of built-up roofs have been developed and modified as required by organizations such as the National Roofing Contractors Association. These particular details reflect the unique characteristics of bituminous membrane materials—sufficient tensile strength, but limited elongation capability. Elastomeric single-ply membranes, on the other hand, can be stretched beyond their original length without harm. From the designer's standpoint, this makes them easier to use than built-up roofing materials, particularly for waterproofing areas of expected movement. Details for any system vary from designer to designer depending upon experience, preference and cost, yet many basic principles are the same.

Shown here are three basic flashing conditions for built-up roofs, and corresponding details for a single-ply system using an EPDM membrane. They include flashing systems for a parapet wall, a gravel stop and an interior drain. Where a base flashing has to waterproof the area between a bituminous membrane and an abutting masonry parapet, the space must be physically separated so that the parapet and the flashing can move independently. The rigid masonry wall will move as a result of temperature change and

wind, but the membrane does not have sufficient elongation capability to move with it. A vertical wood nailer section supported by a cant strip separates wall and roof, and the base flashing attaches to a vertical nailer, a cant strip and a horizontal nailer. To keep rain away from the base flashing it is shielded at the top by counterflashing. And, finally, water is kept away from the masonry by through-wall flashing. In the single-ply detail, the membrane forms a continuous waterproof surface spanning across the joint of the deck and thence up the wall. For a margin of safety against expansion and contraction, a tube of expanded, closed-cell neoprene rubber is placed in the space between deck and wall. The fold in the membrane it creates provides positive drainage away from the flashing and helps to insulate the joint.

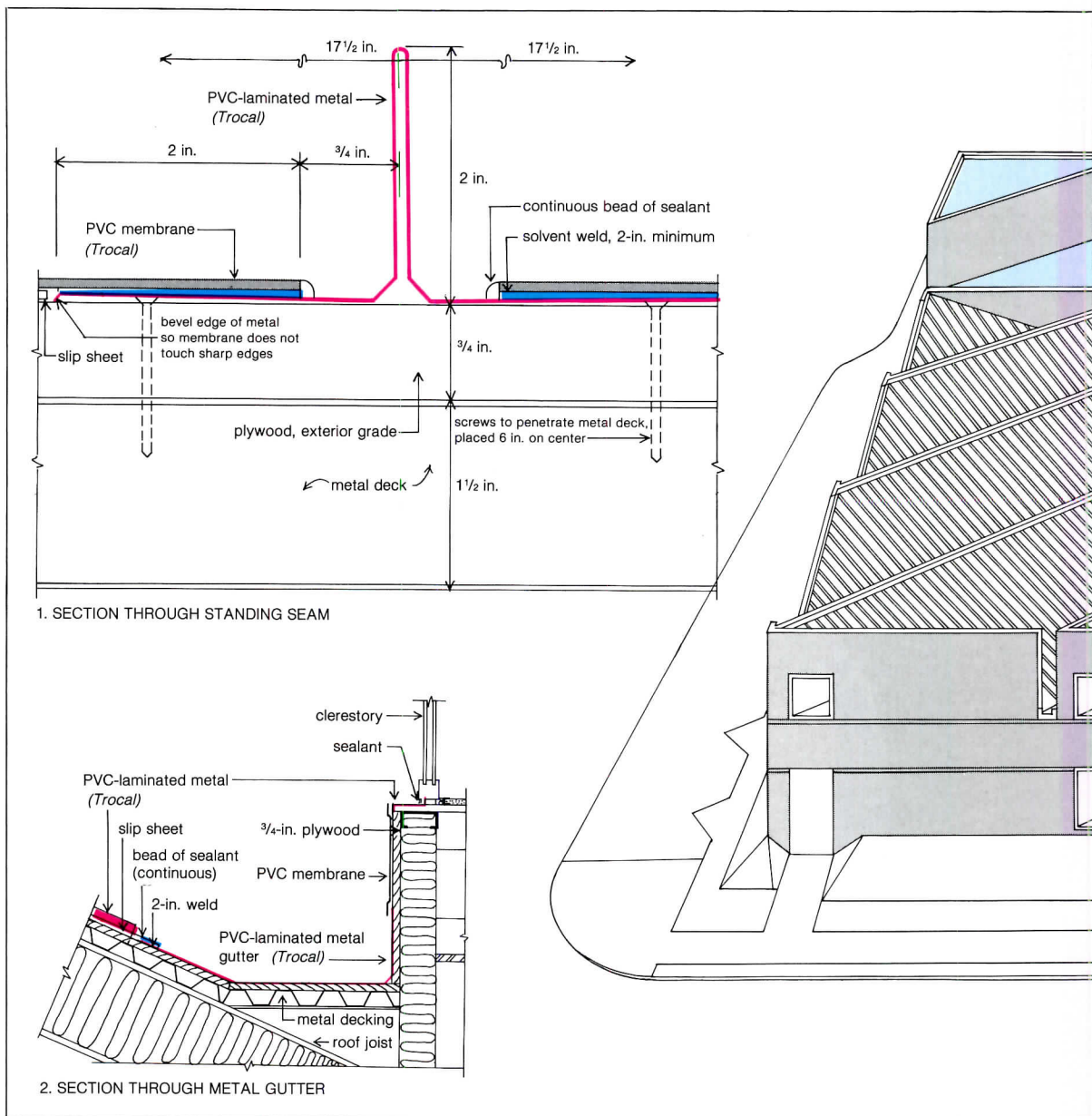
For the gravel-stop detail (drawing 2a), movement can be dealt with more simply. The angular wood cant retains gravel on the roof and serves as an anchor for the membrane, and the structure can still move independently of the wall. In the single-ply detail (drawing 2b), prefabricated metal is used in place of the angular wood cant. It is fastened to a flat 2- by 6-in. nailer and the membrane is fastened to it.

For drains, the built-up roof detail (drawing 3a) incorporates a lead flange placed on top of the membrane plies to allow metal drain movement to occur without rupturing the membrane. It also provides a soft, but firm surface for positive anchorage of the clamping ring. To complete the waterproofing, two stripping plies are adhered with bitumen to the lead sheet. With the single-ply detail, except for a water cut-off mastic, the membrane is the only component joined to the drain's flange. With this construction the clamping ring must be seated tightly so water does not penetrate the membrane.

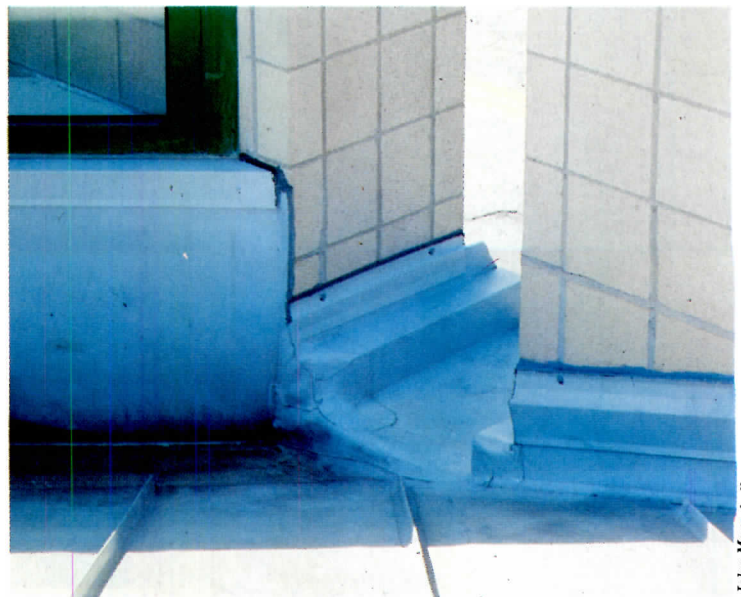
Two new techniques use single-ply materials to make built-up roof flashings simpler. In the first, a modified bitumen replaces built-up roof base flashing materials because they conform and adhere more easily to wood nailers. The design, however, remains the same. The second approach eliminates built-up roof perimeter flashings entirely by tying an elastomeric single-ply sheet into the built-up roof and using it for flashings instead.

Standing-seam roof is a design feature using PVC and metal

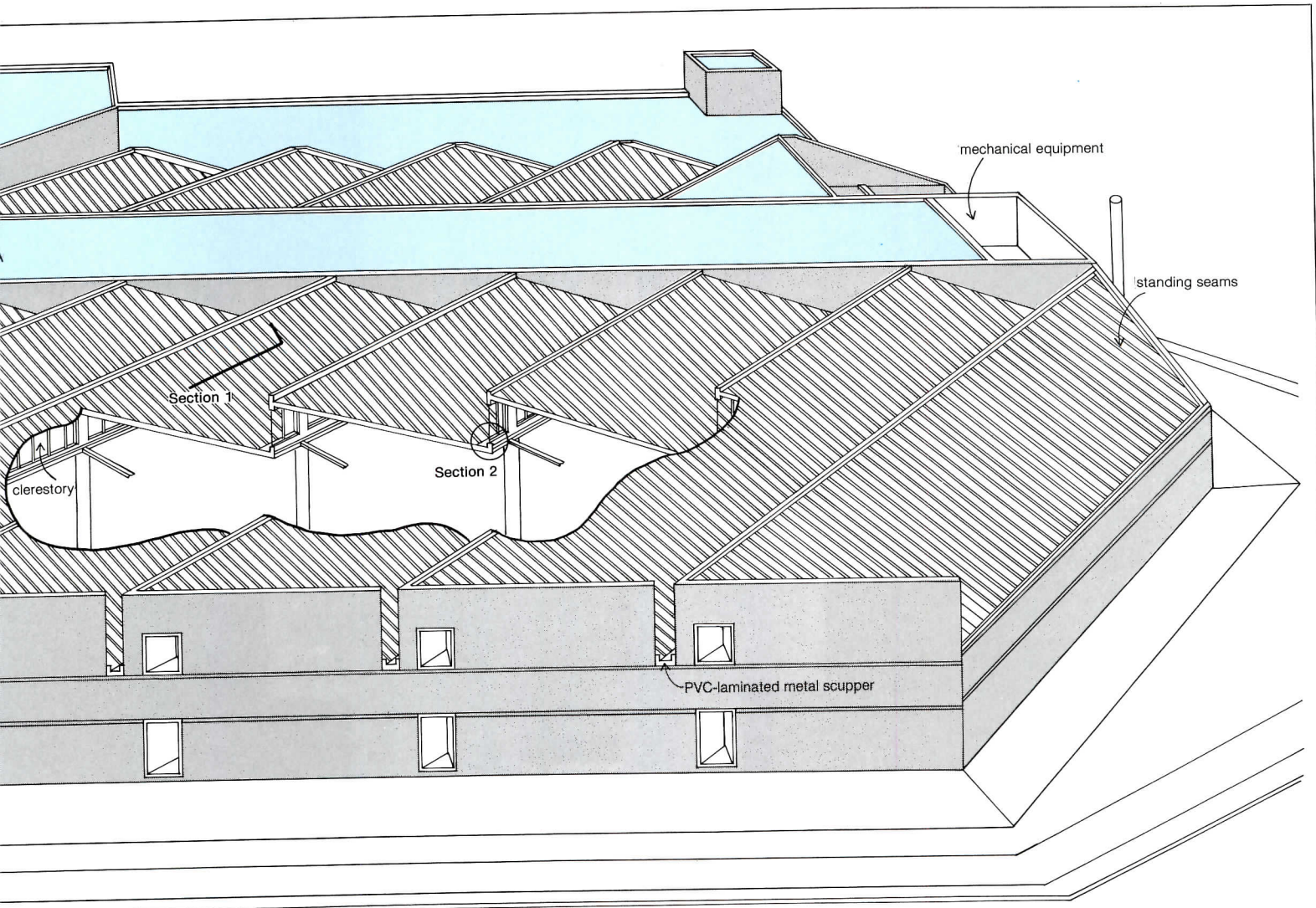
By their choice of a PVC membrane for the sawtooth roof of the new Middletown, Ohio Public Library, architects Lorenz & Williams achieved several objectives at once for their energy-conscious design. First, the reflectivity of the material bounces light into the interior for an effective approach to daylighting, minimizes heat through the roof, and reduces the deleterious effects of UV on the membrane. Second, the availability of a PVC-laminated metal allowed the architects to develop an inexpensive standing seam roof that adds design interest (from locations where it can be seen), while also providing anchoring support for possible later addition of solar heating panels. Because of the novelty of this standing seam design, the architects took special care to design details explicitly. The standing seam detail (see drawing at right) required the roofing contractor to bend the PVC-coated metal into a tight radius using 10-ft long sections that were provided with expansion joints by leaving a 1/2-in. space between each length. Small strips of the PVC membrane were solvent welded over these joints to maintain the seam's continuity. To complete the sawtooth sections, roofers rolled strips of membrane and cotton fleece over the plywood deck and then welded the membrane to the standing seams. The resiliency of the cotton fleece gives the membrane a smooth appearance and prevents it from chafing on the plywood deck. A fiberglass mat in the membrane adds tensile strength and helps further to keep it flat.





Amazingly, not only the roof but the roof accessories as well are constituted of PVC. At the bottom of the slope of the sawtooth where the standing seam terminates, the continuation of the roof horizontally and part-way up the window sill is PVC-coated metal (see drawing 2, above). And the sill section directly under the PVC window frame also is PVC-coated metal. The remaining middle area of the sill is finished with PVC membrane, solvent welded to the PVC-coated metal. The scupper also is a prefabricated piece of 22-gauge PVC, which is flashed into wall sections of tile and to the roof. PVC-coated metal strips serve as counterflashing at the top of the scupper as well.



John Marschall



 sawtooth sections covered with a reinforced PVC single-ply membrane (Trocal/SV-1800, 60 mils) adhered to standing seams, which are fastened to a 3/4-in. plywood deck

 flat roof sections covered with a nonreinforced PVC single-ply membrane (Trocal/SMA, 48 mils) loosely laid over a composite insulation board made from perlite and polyurethane foam

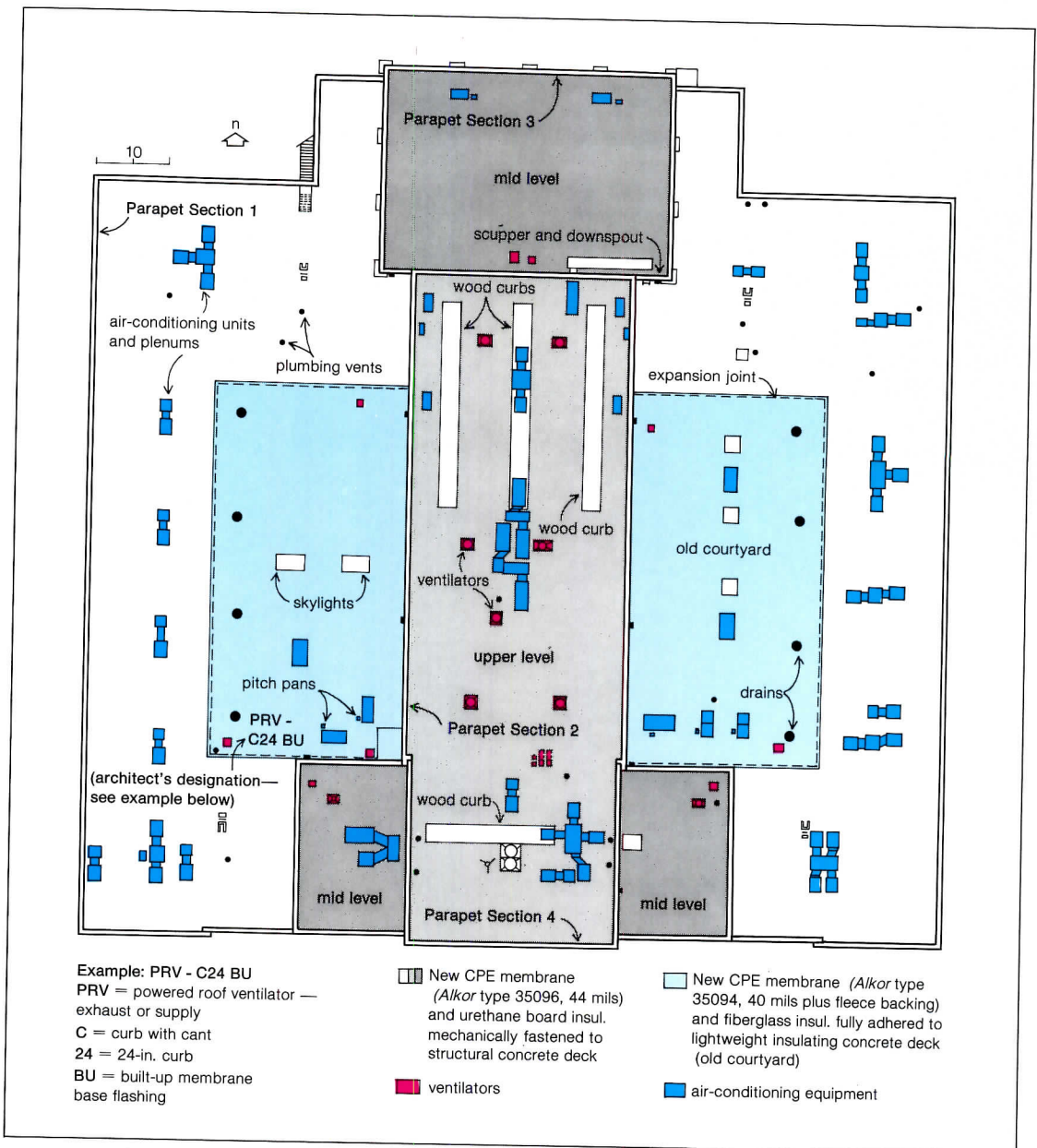


In several areas where the roof is flat, a nonreinforced PVC membrane is loosely laid under stone ballast, and concrete pavers are provided for foot traffic. This view shows a portion of a flat roof area as seen by someone standing at point A on the drawing above, looking towards its bottom left. To assure that the different elements of this roof system were put together as they had envisioned, the architects drew many details, referenced others produced by the membrane's manufacturer and discussed the complete document package with the contractor during a pre-roofing conference at the job site. Also, work was observed by the project architect, who had detailed many of the conditions himself.

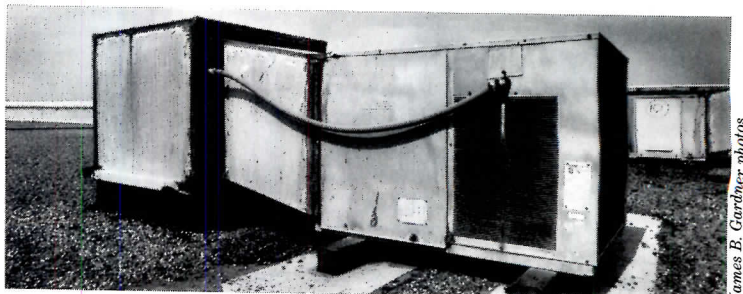
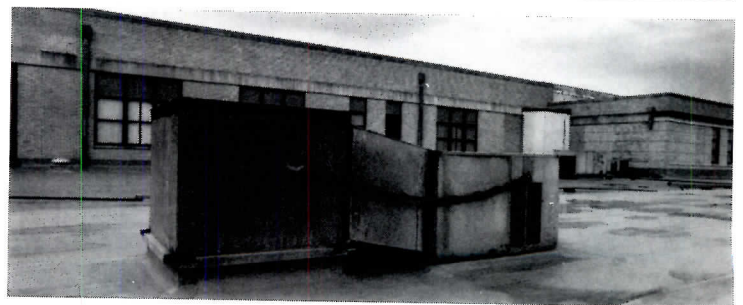
Bill Swartz

Reroofing a 44-year-old school with extreme care and detail

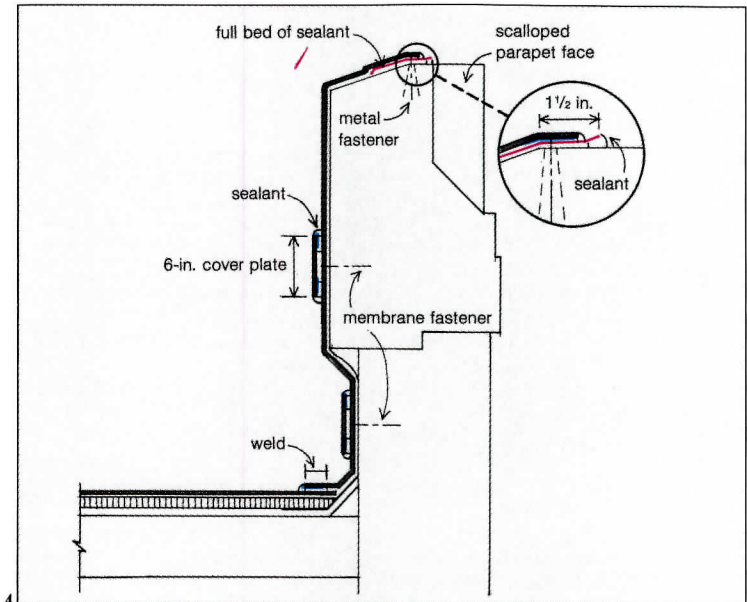
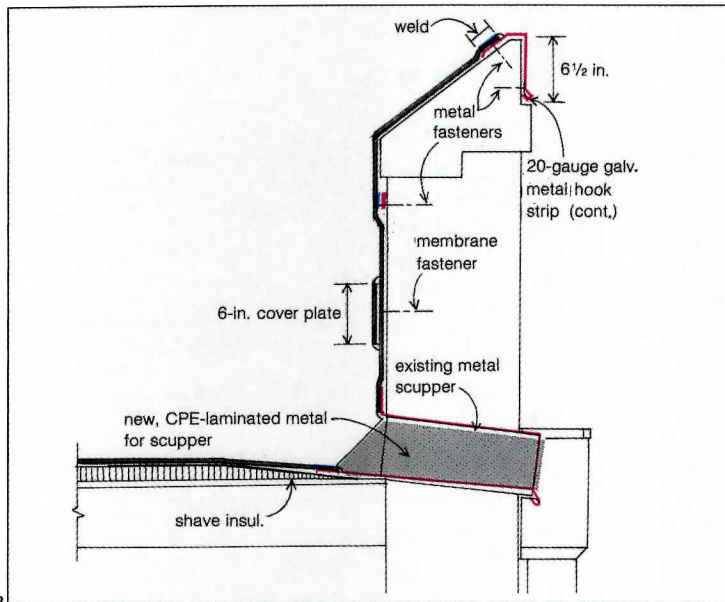
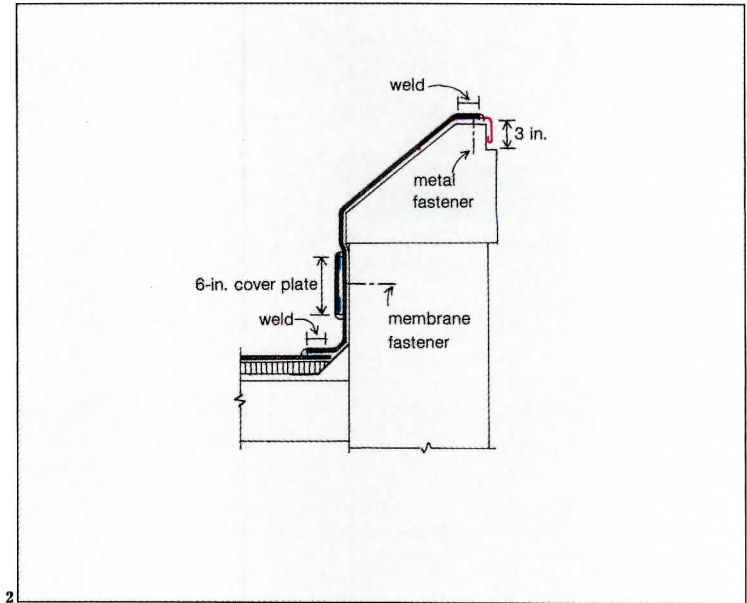
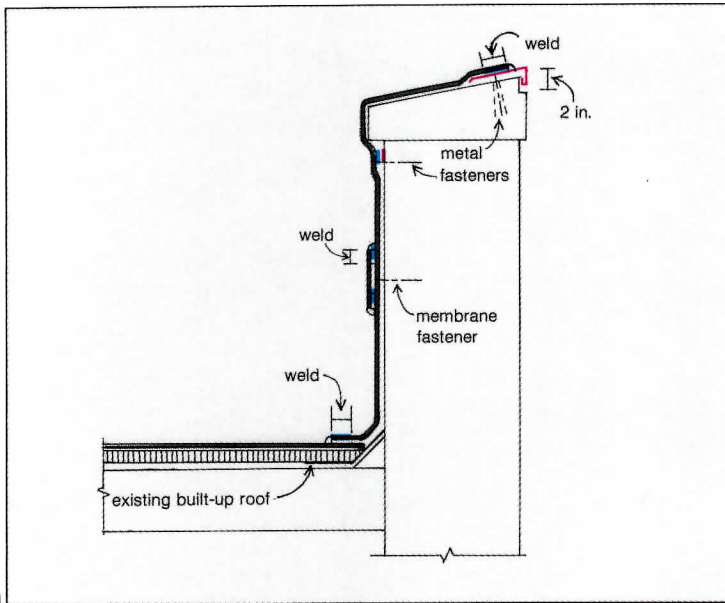
A large part of architect Lloyd Pape's practice is redoing deteriorated roofs—not especially because he intended it that way, but more because he is good at it. (The precise construction documents he prepares have earned him the respect of several of the industry's most knowledgeable roofing contractors.) A case in point is the reroofing of a 44-year-old school in Galveston, Texas, on which he consulted with Ben Templin & Associates. As had occurred on many buildings its age, new openings had been made in the roof structure again and again as the need arose for added mechanical and plumbing equipment. And, of course, all of these openings had to be flashed. Because of the age of the roof and the condition of the patchwork of flashings, the building was overdue for a new roof. During inspection, Pape used a flexible template to trace the actual flashing contours so he could make scale drawings of the conditions. These tracings became the basis for drawings in his construction documents. Pape also developed a roof plan (recreated at right) that showed the location, measurements and construction of these conditions with identifying codes and keyed drawings (see example). In the written specification, Pape outlined specific minimum performance characteristics to make sure he would get the type of material he wanted. He encouraged good workmanship by outlining procedures in a quality-assurance section in the general conditions. Then, as a final step in quality control, Pape checked the installation with field inspection.



Positive flashing techniques with CPE seal the air handler and compressor sections of a rooftop air conditioner (top right), replacing the deteriorated conditions seen in another unit (bottom right) before it was repaired. For the air handler, the CPE membrane extends from the base of the unit to just beneath its curb where it is adhered to CPE metal. For the compressor sections, two more wood sleepers were added to the two already there by temporarily elevating the unit to form an open box. Then a sheet of CPE metal, the same size as the box, was slipped on top to serve as an anchorage for the waterproofing membrane of CPE, which was solvent welded to it.



James E. Gardner, photos



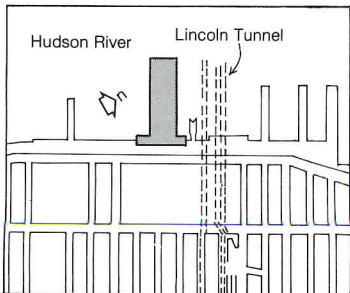
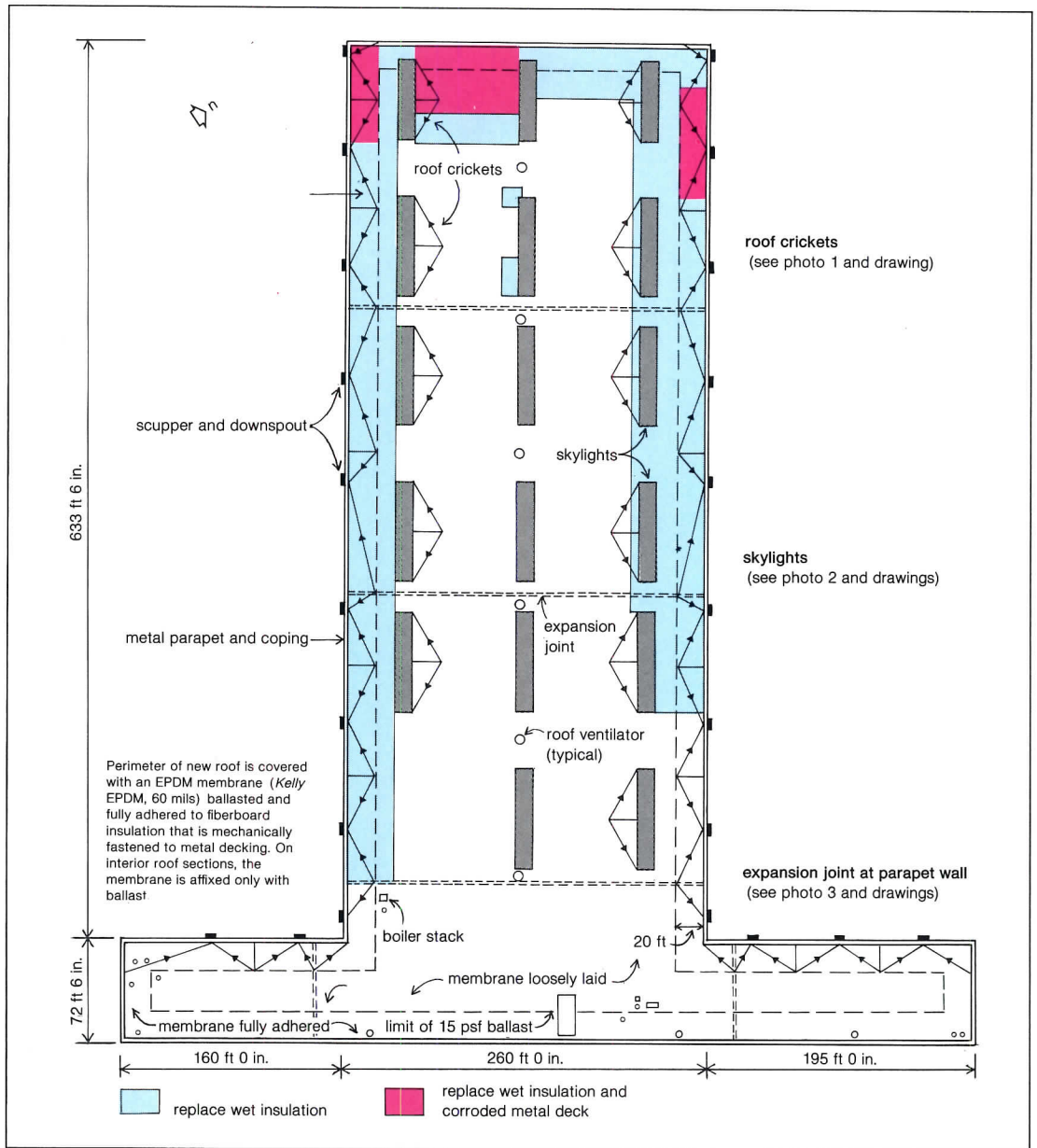
For parapet walls of varied height and shape, even though basic installation techniques were repeated, Pape drew separate details to show minor but important variations. On parapet 3, for instance, CPE-laminated metal at the peak provides attachment for the CPE membrane. Its 6½-in. face fastens to a metal hook strip on the parapet to resist wind uplift. Because of the scalloped shape of parapet 4, the laminated metal ended at the peak, and was set in sealant so that its exposed edge would be watertight. On parapets 1 and 2, the laminated metal flashing was shaped so that upon turning down from the top, it fits neatly in an existing recess on the stone cap. Not enough metal is exposed to require additional fasteners.

To restrain the membrane from billowing out on the inside face of parapets 1 and 3 (and perhaps being torn off), the membrane is adhered to a strip of laminated metal fastened to the concrete at the parapet cap. For further protection against damage from wind, the membrane is affixed to the parapets with nylon plates and metal fasteners. Each parapet required one row spaced at 28-in. centers, except parapet 4, which needed two rows to hold the membrane. Architect Pape's drawings showed exact locations for placing the fasteners and detailed how 6-in. discs of membrane should be applied to cover the fasteners. This method of mechanically attaching the membrane was used instead of fully adhering it to avoid trapping moisture in the parapets, which could cause spawling of the concrete.

For securing the new membrane to existing metal scuppers, they were first lined with the CPE-laminated metal (see drawing 3). The attachment point was created by extending the CPE-laminated metal at the base of the scupper out onto the roof and solvent welding the membrane to it. To overcome the irregular surface of the existing joints between sheets of insulation, 24- by 24-in. sheets of lead were used. Slope from the roof to the scuppers was created by shaving the insulation or using prefabricated tapered edge strips.

Huge car garage is drained in double slopes to shed rain

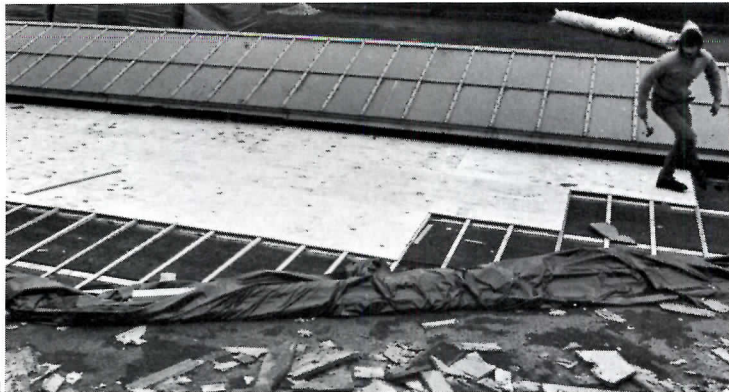
In their exceedingly careful study and proposal for reroofing a five-acre pier shed on New York City's Hudson River, the engineers of Goodkind & O'dea produced more worth emulating than just good construction documents. True, the 161-page written specification and 25 drawings that comprised the bid package enabled the contractors to build exactly what the engineers wanted. The real key to the project's success, however, was the engineers' preliminary investigation and accurate assessment of the roof conditions long before any reroofing design or construction commenced. One problem they found was ponds of water in many areas that resulted from clogged drains. Water also ponded because of the absence of slope in the roof's lengthwise direction. Further, because of voids in the membrane caused by deterioration and high winds, substantial quantities of water leaked into the structure, portions of the metal deck corroded and large areas of the roof's insulation became waterlogged. The engineers' job then, was to provide an embrasive solution of materials and design as a remedy for failure that resulted from neglect, strong winds and from a roof drainage detail that needed improvement. By restoring the owner's roof to prime condition, the engineers stopped the owner's continuous bills for stop-gap maintenance. Equally important, they provided a roof system that would forestall complaints from owners of water-spattered cars stored in the facility following a tow-away for overtime parking.



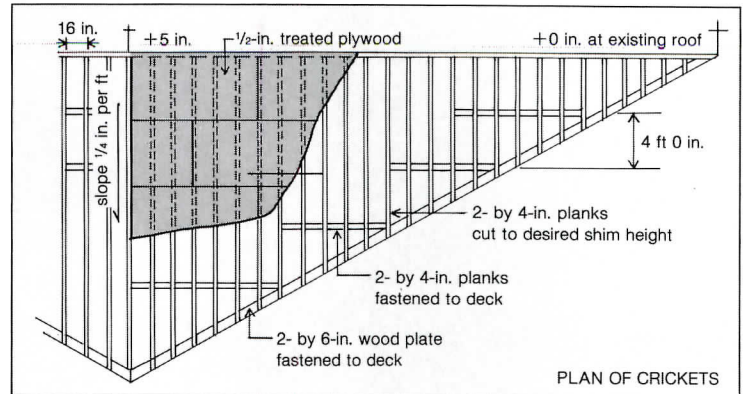
James B. Gardner

The parapets along perimeters added to the wind problems of an already highly exposed area, so the engineers took a cautious approach in designing the system for attaching the new membrane. For the areas within 20 ft of the perimeter where uplift pressures were greatest, the fiberboard insulation was fastened to the metal deck with mechanical fasteners, and the membrane was fully adhered to the fiberboard with an adhesive. For further protection, the engineers specified that 2.33 million lb of 3/4- to 2 1/2-in. round stone ballast be applied at the rate of 15 psf over the adhered membrane and at 10 psf elsewhere, where the membrane was loosely laid (see roof plan, above). First, however, they studied the original framing plan to determine if the structure could support the additional load.

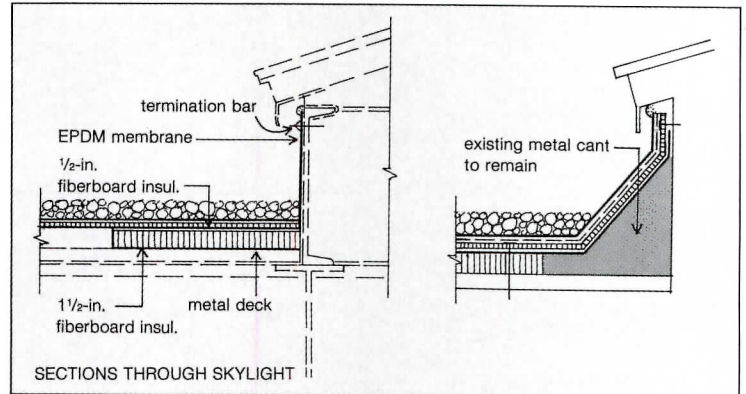
Gaston DuBois Construction photo



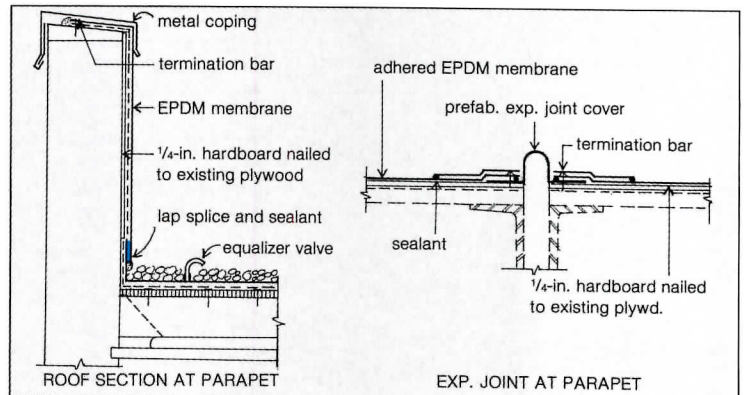
James B. Gardner



James B. Gardner



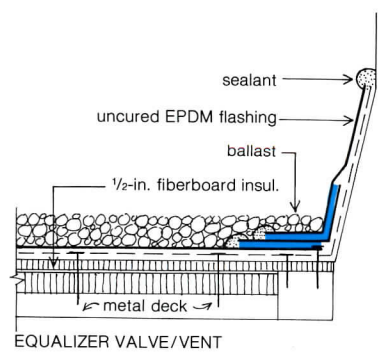
James B. Gardner

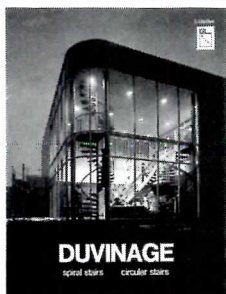


1. To encourage water to drain from the roof and avoid ponding, the consulting engineers specified that roof crickets of tapered perlite be constructed on the up-sloped sides of 11 skylights and along all but the east and west parapet walls (see roof plan). To expedite the work, the contractor suggested that he prefabricate the crickets in his shop using treated timber, plywood and shims (photo 1). But before he was allowed to proceed, the engineers and roofing-membrane manufacturer asked to approve the shop drawings.

2. Deterioration of the base flashings at many skylights let in water, which resulted in damaged and wet insulation. To ensure that the new roof membrane could be fastened to a firm, smooth surface and be securely held, the engineers required the removal of all the faulty material which was identified by thermographic tests. As work progressed, the engineers found that some of the materials, such as the existing metal cant strips, were perfectly sound. Where the cant strips had deteriorated, they removed them and used the detail shown in the drawing, center, left. But where the engineers' field observers found the cants to be satisfactory, they left them in place as in the drawings, center, right. This allowed the job to progress faster, and saved time and money.

3. To assure correct application of the EPDM membrane at the five expansion joints of the large structure, the engineers drew a section of the parapet walls in addition to the usually-provided section through the roof. (Photo 3 shows a roofer preparing to cover one of the joints with uncured neoprene.) They also showed details to avoid wind-related problems. The membrane at the parapet is not merely adhered, but anchored as well by termination bar. In an additional refinement for minimizing wind uplift problems, the engineers called for pressure-equalizer valves to be installed around the perimeter. Flashings for these details are shown in the drawings at the right of photo 3, above.





Spiral and circular stairs
A 16-page color brochure features photographs of spiral and circular stair installations. Ten tread and platform designs are shown as well as rails, balusters and accessories. Stair details, materials and available colors are also shown. Duvinage Corp., Hagerstown, Md.
Circle 400 on reader service card



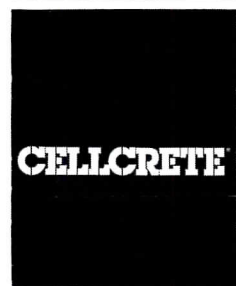
Glass room additions
A 12-page color brochure shows several uses for greenhouse-style glass room additions. Additional data sheets contain specifications and details for double and multiglazable structures. English Greenhouse Products Corp., Camden, N.J.
Circle 406 on reader service card



Granite and terrazzo tiles
A packet of literature covers different types of flexible granite and terrazzo tiles, their colors, dimensions and available trim pieces. Installations are shown, and information on maintenance and specifications are included. Fritz Chemical Co., Dallas, Texas.
Circle 401 on reader service card



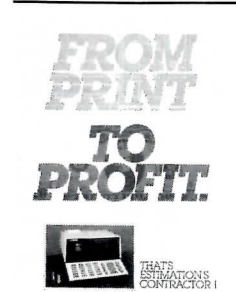
Aluminum thermal windows
A 4-page color brochure covers Ultrabreak, a high-density polyurethane thermal barrier used in this manufacturer's windows, said to maintain the insulating characteristics of polyurethane while approaching the tensile strength of the aluminum section. EFCO Corp., Monett, Mo.
Circle 407 on reader service card



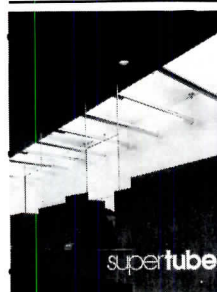
Concrete wall system
Cellcrete, a system of concrete wall panels that are tied together and have the space between them filled with urethane foam or solid concrete, is covered in an 8-page brochure. Photos show light commercial and residential installations. Insulating values are included. The Scott System, Inc., Denver, Colo.
Circle 402 on reader service card



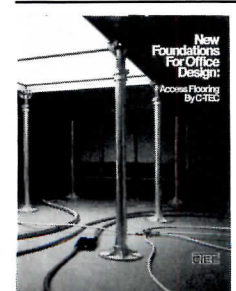
Security
A data sheet describes how a card system controls access to computer rooms, warehouses, parking lots, etc., as far as a mile away from electronic units. Color photos show system components: a card reader, electronic unit, programmer, and printer. Systematics, Inc., Chatsworth, Calif.
Circle 408 on reader service card



Computer system
The Contractor I, a computer system for estimating and job management, is covered in an 8-page brochure. Hardware and software, such as estimating programs for concrete/excavation, drywall, carpentry and masonry, are described. Estimation, Inc., Linthicum Heights, Md.
Circle 403 on reader service card



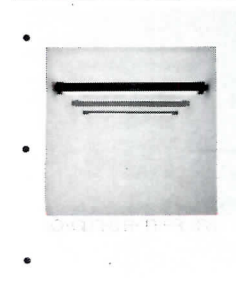
Lighting fixtures
A 12-page color brochure covers Supertube tubular aluminum lighting fixtures, which are available in 10 standard colors as well as in custom colors. Photos show several different installations. Specifications, options and accessories are included. Columbia Lighting, Inc., Spokane, Wash.
Circle 409 on reader service card



Access flooring
An access floor system is described in an 8-page color brochure. Photos show available finishes; sections and details illustrate components of floor construction, including ramps and steps. Specifications and information on accessories are included. C-Tec, Inc., Grand Rapids, Mich.
Circle 404 on reader service card



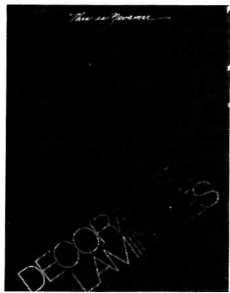
Fire retardant wood
Photos illustrating installations of wood treated with Flame Proof LHC are included in a 6-page color brochure. Applications and performance of the treatment are described along with charts showing test results. Osmose Wood Preserving Co. of America, Inc., Buffalo, N.Y.
Circle 410 on reader service card



Lighting fixtures
A 6-page color brochure features Longlites extruded aluminum fixtures, which extend up to 24 ft. Duct systems, finishes, shielding, mountings, connectors and the effects of different lenses are covered, and 13 sample systems are shown. Peerless Electric Co., Berkeley, Calif.
Circle 405 on reader service card



Meters
A 10-page brochure covers lighting, luminance and color meters. Meter functions and accessories are described and illustrated. Technical graphs, charts and details are included. Minolta Corp., Ramsey, N.J.
Circle 411 on reader service card
More literature on page 149

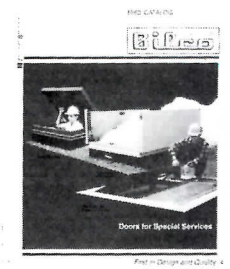


Laminates

Nine laminate finishes, including solid colors, woodgrains and marbles, are illustrated in an 8-page color brochure. Photographs showing typical installations and specifications are included. Nevamar Corp., Odenton, Md. Circle 412 on reader service card



Motorized and manual blinds
Specifications and details for several models of *Galaxy* blinds are featured in a 16-page brochure. Blinds for oddly shaped and steeply angled installations are shown. Control options are also shown and described. Levolor Lorentzen, Inc., Lyndhurst, N.J. Circle 418 on reader service card

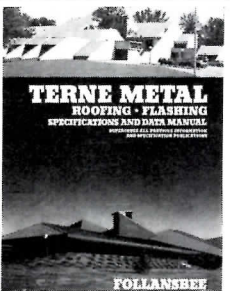


Special doors

A 16-page 1983 catalog covers special doors, including roof scuttles, fire vents, ceiling access doors and basement doors. Details, specifications, standard sizes and weights are given for all models, which are shown in photographs. The Bilco Co., New Haven, Conn. Circle 413 on reader service card

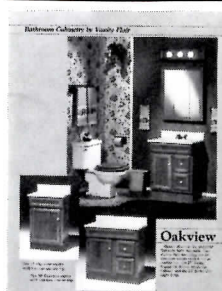


Built-in refrigerators
Several models of built-in refrigerators, including side-by-side and undercounter, are shown in photographs in a 12-page color brochure. Diagrams of each model are accompanied by a chart showing dimensions, energy consumption and weight. Sub-Zero Freezer Co., Inc., Madison, Wis. Circle 419 on reader service card

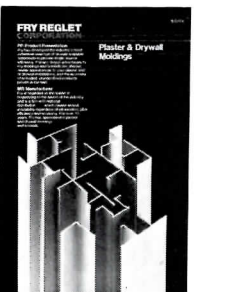


Roofing and flashing

Terne metal roofing and flashing applications, including standing, batten and flat-locked seam roofing, are illustrated in section details in an 8-page color brochure. Specifications and photos showing some typical installations are included. Follansbee Steel Corp., Follansbee, W. Va. Circle 414 on reader service card



Bathroom cabinetry
A page of literature features the *Oakview* ensemble, which includes vanities with *Uni-Lav* marble tops, a medicine cabinet and a light strip. Drawings with dimensions illustrate available sizes and construction features are detailed. General Marble Corp., Rancho Cucamonga, Calif. Circle 420 on reader service card

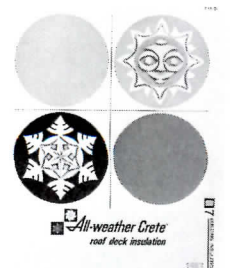


Moldings and screeds

An 8-page brochure features details and specifications for plaster and drywall screeds and moldings. The function of each model is described, and a page on special configurations is included. Fry Reglet Corp., Alhambra, Calif. Circle 415 on reader service card



Tiles
A 20-page color brochure covers the *Valentino* line of single- and double-fired tiles for residential and light-commercial use. Photographs show individual tiles as well as installations. Tile dimensions and technical data are included. Ceramiche Piemme of the Americas, Ltd., New York City. Circle 421 on reader service card



Roof deck insulation

A 12-page brochure describes the use of *All-weather Crete* roof insulation on various roof constructions, for reroof application and on plaza deck construction. Thermal calculations, test data and design notes are included. Silbrico Corp., Hodgkins, Ill. Circle 416 on reader service card

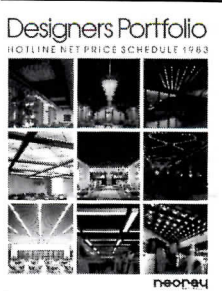


Acoustical partitions
A 4-page color brochure describes and illustrates the *Silencer I* acoustical partition system. Diagrams show panel construction and photos show a number of installations. Applications, module sizes and finishes are all covered. Contemporary Products, Inc., Brentwood, N.Y. Circle 422 on reader service card



Bent glass

A 4-page color brochure features photographs of several different installations of architectural bent glass, including a parking garage, office buildings and hotels. Types of glass and bending tolerances are described. California Glass Bending Corp., Wilmington, Calif. Circle 417 on reader service card



Lighting
A multitude of lighting fixtures and lighting installations are shown in *Neo-Ray's 1983 Designer's Portfolio*. Details, dimensions and prices are included in the 68-page catalog. Accessories are also listed. Neo-Ray Products, Inc., Brooklyn, N.Y. Circle 423 on reader service card
Continued on page 151

The Porsche 928 and the TR/10,000

Two of a kind.



TR/10,000

Introducing the Series TR/10,000 from TRACO.

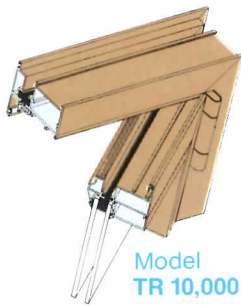
Superior engineering. Strength. Craftsmanship. And elegance. Ingredients that make the Porsche 928 the *definitive* high-performance automobile. TRACO has blended the same ingredients to create a truly high-performance *window*—the new TR/10,000.

The TR/10,000's sophisticated European design and unique German hardware create two modes of operation: Turn the operating handle ¼ turn, and the window *turns in* for safe, easy cleaning. Another ¼ turn, and

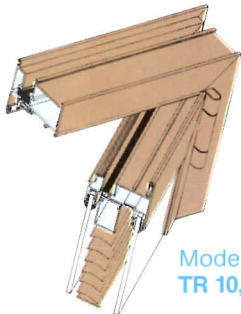


are molded from a unique EPDM rubber compound that won't crack or shrink. Together, they form a triple-compression seal, tested to withstand 50 MPH winds with less than .008 penetration, and 20 pounds of water pressure with zero penetration.*

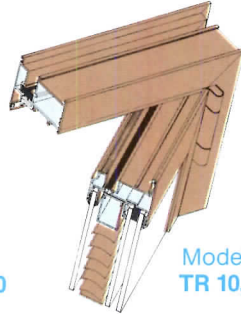
High performance. In an automobile, it is Porsche 928. In a commercial window, the new Series TR/10,000. From TRACO. For complete information, write or call **TRACO**, Cranberry Industrial Park, Box 805, Warrendale, PA 15095. **412/776-7000**. **TWX 510-462-1420**.



Model TR 10,000



Model TR 10,200



Model TR 10,300

it *tilts* from the top for comfortable, indirect ventilation.

Double-tubular design of frame and vent, hydraulically crimped corner miters and a 3¼" master frame provide the Series TR/10,000's strength. The kind rarely equalled in a commercial or monumental window.

The TR/10,000 boasts superior resistance to sound, wind and water along with an impressive overall "U" rating of .54. Individual weather seals on three different planes

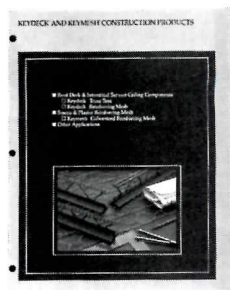
Model TR 10,000 features 1" thick insulated glass, hermetically sealed, and a structural thermal break in all frame members. Unit can be field or factory glazed. Model TR 10,200 offers double glazing with integral venetian blind option. 2½" space between two panes of glass offers excellent acoustical and insulating properties. Triple glazing is standard on Model TR 10,300, which

also features integral venetian blind option. This high-performance unit offers the ultimate in acoustical and insulating properties. Model TR 10,500 (not shown), is a fixed unit, designed to mate with operating models. Every Series TR 10,000 window is custom-made to order. Choose from a wide variety of options and high-performance architectural finishes to meet your specific requirements.

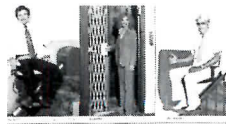
*All Series TR/10,000 models meet or exceed all AAMA and ANSI requirements. Official AAMA Classification: TH-A3-HP70

TRACO
A Three Rivers Aluminum Company

Circle 57 on inquiry card



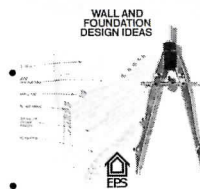
Truss tees/reinforcing mesh
A 12-page color brochure covers roof deck and interstitial service ceiling components as well as galvanized, stucco and plaster reinforcing mesh. Photos show installation procedures and details show the composition of roof decks, panels and tiles. Design properties, specifications and fire-resistance ratings are shown in tables. Keystone Consolidated Industries, Peoria, Ill.
Circle 424 on reader service card



Easing life's everyday ups and downs for over five decades...

Elevators
An 8-page color brochure features photographs of a variety of stair lifts and elevators. Options, such as hardwood or solid steel panels and multiple gates on the elevators and the ability to swivel and fold away the seat on the stair lifts, are illustrated. Inclinator Co. of America, Harrisburg, Pa.
Circle 427 on reader service card

EXPANDED POLYSTYRENE INSULATION



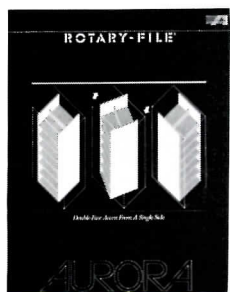
Insulation
Ideas for the use of expanded polystyrene insulation for foundation perimeters, slab installations and masonry fill are shown in an 8-page color brochure. Use of the product for exterior sheathing and as a drywall base is also illustrated. The Society of the Plastics Ind., Inc., Des Plaines, Ill.
Circle 428 on reader service card



Water coolers
A 20-page color catalog covers freestanding, semirecessed and fully recessed water coolers, chillers and nonrefrigerated fountains. Diagrams and photos of installations, a model selection guide and color chart are included. Ebco Manufacturing Co., Columbus, Ohio.
Circle 429 on reader service card



Walk-in coolers and freezers
Technical data, details and product photos fill a 28-page catalog on sectional prefab walk-in coolers and freezers and refrigerated buildings. General design information covers panel construction and insulation. A variety of cooler doors is shown, including manual and electrically operated doors, glass display doors and double-swing cart doors. Bally Case & Cooler, Inc., Bally, Pa.
Circle 425 on reader service card



Filing
A color brochure features the *Rotary-File*, an enameled steel rotating file cabinet, which accommodates letter and legal files, computer printouts and tape reels. Photos, illustrations of open office plan configurations and specifications are included. Aurora Steel Products, Aurora, Ill.
Circle 426 on reader service card

NEW!

SQUARE FEAT

There's a new shape in rubber floor tile from Roppe... giving you a choice of Raised Square or Raised Circular Design. Solid rubber throughout for years of rugged wear, even in high traffic areas. Slip-resistant surface reduces noise; resists scuffing, gouging, burns and most chemicals; and cleans up with soap and water. Easy to install, too. In ten beautiful colors. Cove base and accessories to match and coordinate. For your nearest distributor, write Roppe Rubber Corporation, 1602 N. Union Street, Box X, Fostoria, Ohio 44830. Or call toll-free.

ROPPE
1-800-537-9527
In Ohio 419/435-8546

For more information, circle item numbers on Reader Service Card, pages 197-198

Circle 58 on inquiry card

A "living" building that adapts to its environment. **ELEVATORS BY DOVER**

From night to day, season to season, the dynamic skin of the Hooker Chemical Center is in a constant state of change. The exterior consists of two glass walls about four feet apart, with louvers between these walls that open and close, adjusting automatically to outside light. The result is an extraordinary energy consumption less than half that of a conventional structure. This energy-efficient building is served by four Dover Traction Elevators. For more information on Dover Elevators for all types of buildings, write Dover Corporation, Elevator Division, P.O. Box 2177, Memphis, Tennessee 38101.

DOVER® **ELEVATORS**

Hooker Chemical Center
Niagara Falls, New York

ARCHITECT:

Cannon Design Inc.

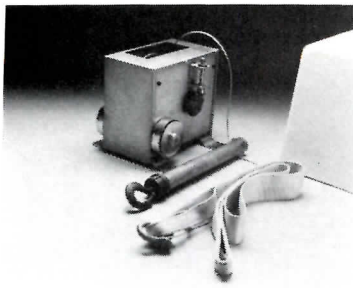
GENERAL CONTRACTOR:

Siegfried-Scrufari,

Joint Venture

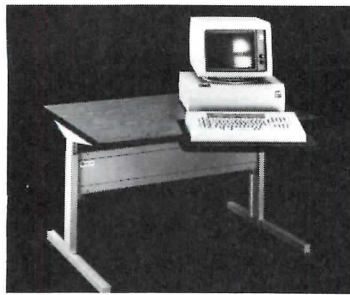
Dover Elevators sold and
installed by Dover Elevator Co.,
Buffalo, N.Y.





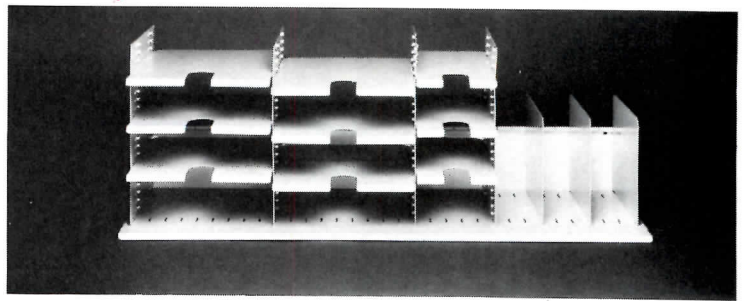
Fire escape

The *Safescape II* is a fire-escape device, which may be used for locations up to 40 stories high. On the interior model the cast-iron gears, housed in an *Alodine* aluminum casing, attach to a bolt mounted into a load-bearing structure near a window. The exterior model is mounted on balconies and has a spring-loaded extension arm that automatically snaps into place to hold the steel cable and harness clear of a building's outer walls. S.F.M. Corp., Plainfield, N.J.
 Circle 300 on reader service card



Adjustable tables

A line of 30-in.-deep tables features retractable hand cranks that move worksurfaces from 26¾ in. to 31½ in. Some models also feature dropped and angled keyboard access. Tops are oak, teak or putty finished laminates. Structural Concepts Corp., Spring Lake, Mich.
 Circle 303 on reader service card

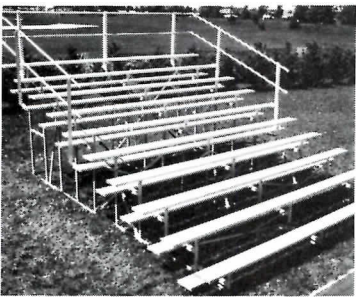


Filing

Insertables have slotted steel bases and variably sized horizontal/vertical components that combine to form a modular organizing system adaptable to cabinets of almost any open office furniture system. They measure 10, 12 or 15 in. in depth, 7, 9 or 12 in. in height and 13, 25 or 33 in. in width and may be joined together to fill wider

spaces. They come in a standard putty color; custom colors may be ordered. Kwik-File, Inc., Golden Valley, Minn.
 Circle 304 on reader service card
 Continued on page 155

For more information, circle item numbers on Reader Service Card, pages 197-198



Bleachers

Claimed to weigh half as much as conventional bleachers, the aluminum *10 Row Bleacher* features silver-anodized seatboards and mill-finished footboards and a choice of aluminum or steel supporting structures. Standard sizes are 15, 21, or 27 ft, and custom sizes may be ordered. Stadiums Unlimited, Inc., Grinnell, Iowa.
 Circle 301 on reader service card



Chairs

The *Snodgrass Collection* of chairs features options of open or full backs, with or without arms. Full-backed models may also have fully upholstered, enclosed arms. Frames come in chrome or 7 neutral finishes. Upholstery includes worsted wool crepes, tweeds, jacquards or leathers. Steelcase, Inc., Grand Rapids, Mich.
 Circle 302 on reader service card

Dramatic water savings, reduced sewage volumes...



ENVIROVAC 0.375 gallons gravity 5 gallons



vitreous china water flush toilet

with proven ENVIROVAC toilets and collection systems.

If you are involved in the design or operation of:

- municipal or private water treatment systems
- municipal or private wastewater collection systems

Consider these important ENVIROVAC advantages:

3 pint water flush toilet. That's more than a 90% reduction in water normally required for flushing resulting in: smaller diameter water supply piping, smaller water treatment plants, reduced water acquisition costs.

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

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

Low cost alternative sewer systems. ENVIROVAC vacuum collection systems can be used to collect

sewage from residential and commercial buildings. Compared to conventional sewers, ENVIROVAC vacuum sewers save money two ways:

- Smaller diameter mains, 2", 3", 4" and 6" cost less.
- Sewer installation costs less because vacuum mains do not require continuous slope. Also, vacuum mains are ideally suited for areas with high water table, sandy or rocky soil conditions.

Ideal for split black/gray water designs. The use of ENVIROVAC systems allows on-site gray water disposal and collection of the 3 pint toilet flush with small diameter, horizontal vacuum mains.

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

ENVIROVAC INC.

1260 Turret Drive, Rockford, IL 61111
 815/654-8300 Toll Free 800/435-6951
 (except in IL, HI, AK)

Circle 59 on inquiry card

BURNDY CONNECTS

INTERNATIONAL SALES AND MANUFACTURING BRUSSELS, BARCELONA, PARIS, ROTTERDAM, STOCKHOLM, STUTTGART, TURIN, ZURICH, ST. HELENS (ENG), TORONTO, SYDNEY, TOKYO, MEXICO CITY, SAO PAULO

Low installed costs

It's the least expensive undercarpet system to install.

Convenience

Simple "one-second" connection for all taps, splices, transitions, and ground shields.

Flexibility

Interchangeable components for all present and future requirements.

Built-In Reliability

One-tool, one-connector system; prewired receptacles; auto-ground/strain relief. UL listed. Meets NEC Article 328.

Burndy Flexway:™ Everything you'll ever need... or want...in undercarpet wiring.

Power. Telecommunications. Data.

It's not only the most flexible, most cost-effective undercarpet wiring system on the market today—it's also the most reliable. We designed it that way. Right from the start. Everything has been system-engineered to simplify installation. Cut costs. And provide unrivalled reliability—everytime.

What's more, Burndy now offers you the complete undercarpet wiring package

including power, telecommunications and data transmission. All available through one convenient source: Your local authorized Burndy FLEXWAY Distributor. For details, contact: Burndy Corporation, MS 142, Norwalk, CT 06856. (203) 838-4444.



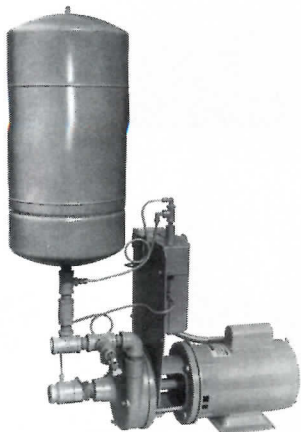
BURNDY

Offices in principal cities throughout the United States.



CAD

The A-CADS/1 system, said to provide low-cost automated drafting, includes a computer CRT terminal, a B-size plotter and a digitizer pad. With the appropriate software, a user can create, store and manipulate graphic material as well as supporting text. Andromeda Systems, Inc., Canoga Park, Calif.
 Circle 305 on reader service card



Water booster system

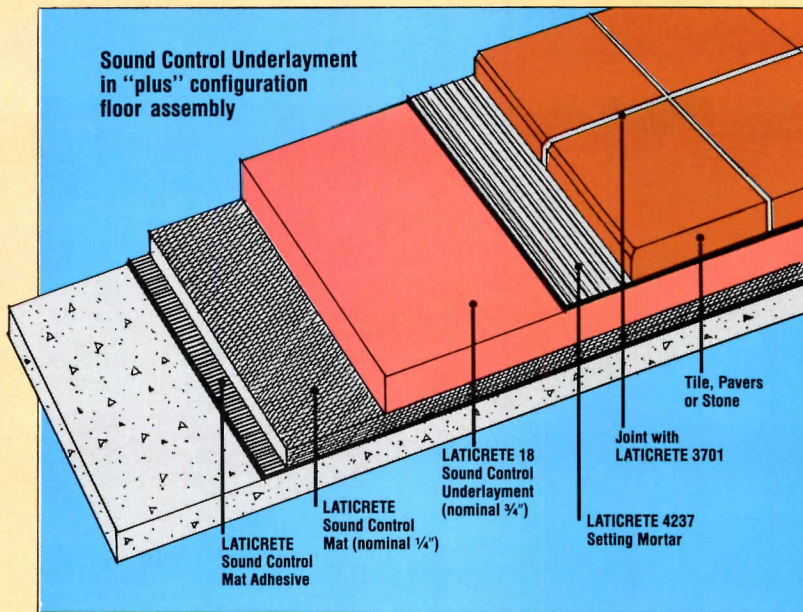
The *Miniflo* is a water booster system suitable for small commercial buildings, apartment buildings and residences. The system features capacities to 200 GPM, boosts to 200 ft, and working pressures to 100 PSI. Components include a close-coupled centrifugal pump, an 8.6 gal. pressure tank, a suction-mounted check valve, a pressure-temperature relief valve and prewired controls. The control system allows the pump to run only after the demand has exceeded the make-up capability of the pressure tank. PACO Pumps, Oakland, Calif.
 Circle 306 on reader service card



Fire-resistant paneling

Prefinished, nontoxic, hardboard paneling, called *Architectural Interiors*, has a flame-spread rating of 25. Panels are 4 ft by 8 ft, 1/4-in. thick, and come in 5 woodgrain finishes and white. Masonite Corp., Laurel, Miss.
 Circle 307 on reader service card
 Continued on page 157

Give Your High-Rise Building Quiet Quality with LATICRETE® 18 Sound Control Underlayment



Beauty and durability make ceramic tile, marble and stone ideal flooring materials for today's luxury condominiums, apartments and offices. Unfortunately, concerns about noise transmission have often limited the use of these materials in high-rise buildings.

Bring this natural combination together with LATICRETE® 18 Sound Control Underlayment. This trowel-applied underlayment is designed to reduce sound transmission through ceramic tile, stone and other hard flooring surfaces.

LATICRETE 18 is:

Thin and Lightweight—Simplifies design requirements and facilitates remodeling.

Load Bearing—Supports ceramic tile under point loads; reduces the risk of cracked flooring.

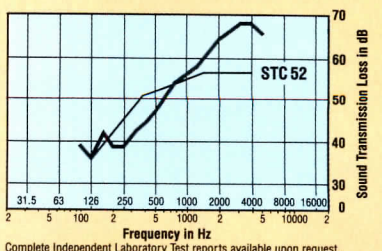
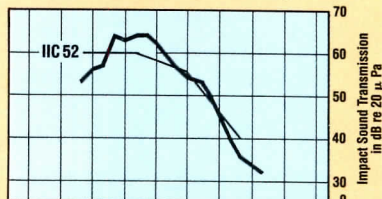
Independent Laboratory Tested—Satisfies stringent building code requirements for

New York, Los Angeles and other cities throughout the country.

Job Proven—Over 15 years of installation history.

For more information on how you can design "Quiet Quality" into your next high-rise building, call us, toll free, (800) 243-4788.

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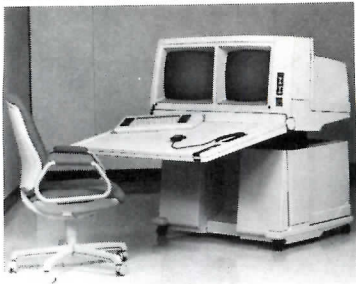
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Circle 62 on inquiry card

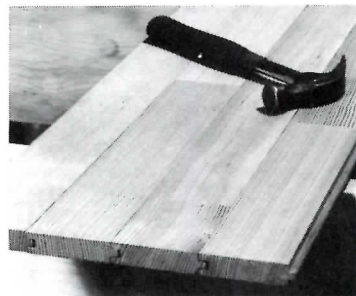




Dual-screen workstation

As part of an Intergraph turnkey system, *Interact* is a dual-screen engineering workstation with 3 internal processors and more than $\frac{3}{4}$ of a megabyte of memory. Two 19-in. monochromatic raster screens display drawings. Pushbutton controls adjust screen and worksurface positions. The dual-screen housing pivots over a 30 deg range and the workstation pivots from horizontal to 35 deg down. Both screens and worksurface have a vertical range of 12.5 in. to accommodate users in sitting or standing positions. Display operations include dynamic pan, continuous zoom and real-time rotation of 3-dimensional elements. The digitizing surface is large enough to accommodate a standard D-size drawing. A movable keyboard for the input of commands and text is also included. Intergraph Corp., Huntsville, Ala.

Circle 308 on reader service card



Flooring

This hardwood flooring is manufactured from 1-in. by 4-in. tongue-and-groove, kiln-dried Douglas fir. The wood is finger-jointed and glued into long lengths. It may be used for interior flooring over subfloors or directly over joists. The Pacific Lumber Co., San Francisco, Calif.

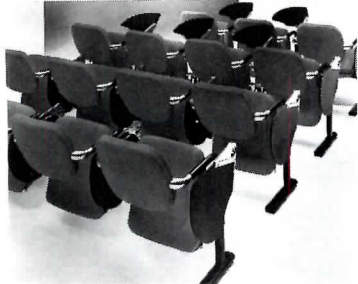
Circle 309 on reader service card



Cycle lockers

Maintenance-free lockers constructed of structural fiberglass store bicycles, mopeds, and general merchandise. Applications include apartment complexes, colleges and office parks. Philip Johnson Corp., Grand Rapids, Mich.

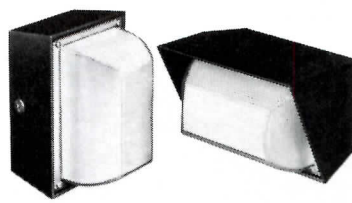
Circle 310 on reader service card



Teleconference seating

A teleconference seating system features foam backs and folding foam seats. Folding writing desk tablets are covered with opaque black plastic. The metal base is fixed on nylon stretchers. Rows may be completely disassembled. Shelby Williams Industries, Inc., Morristown, Tenn.

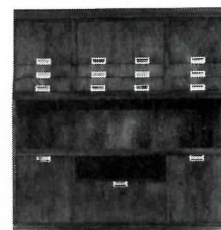
Circle 311 on reader service card



Lighting fixtures

Designed to be vandalproof and maintenance free, the *Protector* series of HPS lighting fixtures features a choice of 35, 50, or 70W lamps in a cast-aluminum housing with a polycarbonate refractor. Fixtures may be used for wall or ceiling applications. Kenall Manufacturing Co., Chicago, Ill.

Circle 312 on reader service card



Office furniture

The modular unit shown is one of many in the *Transitional 9000* collection. It is 72½ in. high, 69⅛ in. wide and 19 in. deep, and comes in oak, oil walnut or mahogany. Jofco, Inc., Jasper, Ind.

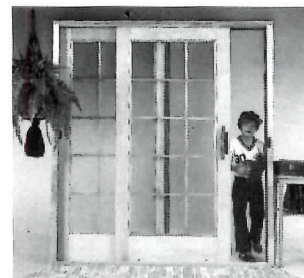
Circle 313 on reader service card
Continued on page 159

Patio Door Multiple Choice.



New innovative design! All the warmth, beauty and insulating quality of fine Ponderosa Pine wood construction. Tight fitting... Air Infiltration Factor (A.I.F.) of only .12.

**The Courtyard
Swinging Door**



Elegant French door styling in a sliding door! Sized to replace old sliders, size-for-size. Thermally efficient... A.I.F. of only .25—performs well in all applications.

**The Courtyard II
Sliding Door**



Designed like no other vinyl clad door! Energy-saving design with the warmth of wood inside, and the maintenance-free durability of a vinyl clad wood exterior. A.I.F. of only .25.

**THE THERMACLAD
DOOR**



The warmth, beauty and insulating quality of Ponderosa Pine wood... the natural alternative to aluminum doors. A.I.F. of only .25. Can be stained or painted to blend with any decor.

**THE THERMAWOOD
DOOR**

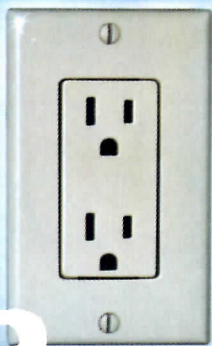
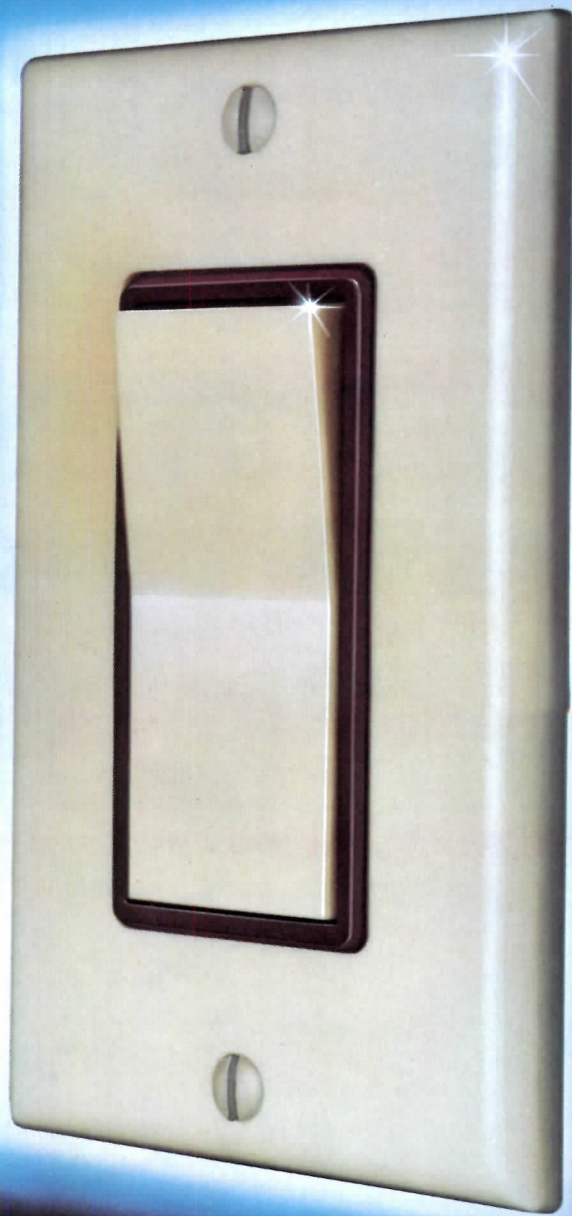
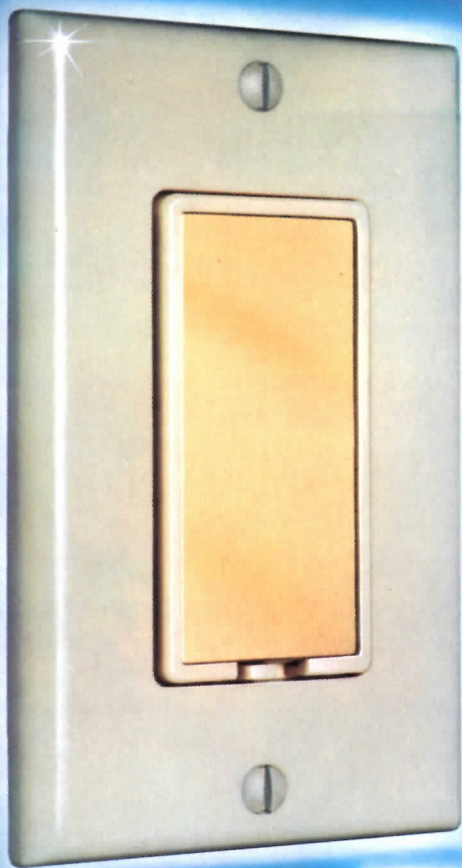
All Malta doors are available in standard sizes including new space-saving 5-ft. widths. Lots of options, including wood grilles, triple pane insulating safety glass.

Sized for replacement or new construction.

Malta has the door that's right for you.

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Touch-sensitive dimmers. Framed rocker switches. Matching outlets and wallplates...in popular colors.

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And you get more than styling. Decora devices are constructed with the highest quality materials to give dependable, trouble-free performance. All are UL listed.

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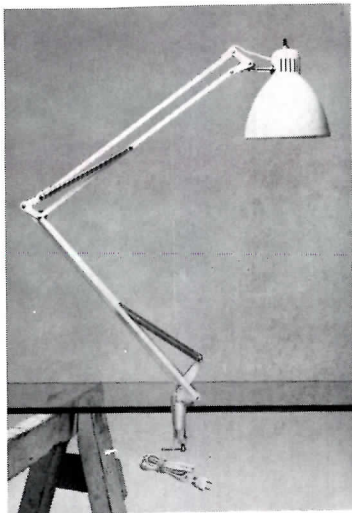
Circle 64 on inquiry card



Insulating blinds

Thermocell blinds are made of polyester film tubes attached linearly to form a barrier of dead air space. Blinds extend as accordians; in the retracted position, each linear foot of extended length compresses into only 1/8 in. of space. They come in 3 finishes, each with a different R-value: 2.5 for the clear finish, 4.5 for the white finish, and 6.0 for the chrome finish. Thermal Technology Corp., of Aspen, Inc., Broomfield, Colo.

Circle 314 on reader service card



Lamp

The original *Luxo* lamp, designed in 1937 by Jac Jacobsen, is being reintroduced after having been unavailable in the U.S. for about 7 years. It is made of steel and comes in flat black and white, and orange, red, blue, green, brown, ivory, gray and chrome enamels. The lamp takes a 60W incandescent bulb. Limn Co., San Francisco, Calif.

Circle 315 on reader service card



Drawings tube

The *ArtBin AT60-T*, made of copolymer, is 3 in. in diameter and adjusts to any length from 34 to 60 in. The tube features an adjustable shoulder strap and a twist-off cap. It is light in weight and may be used for shipping drawings. Flambeau Products Corp., Middlefield, Ohio.

Circle 316 on reader service card
Continued on page 161

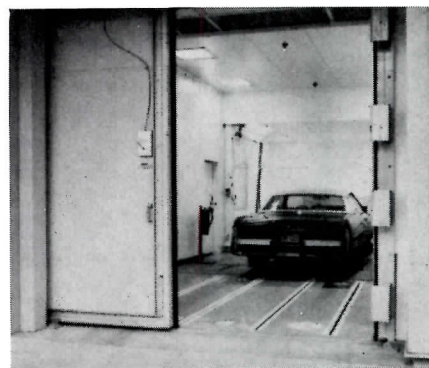
Engineering the world's most critical barriers:

CLIMATE

To control an atmosphere at a testing facility is difficult enough. To control a variable atmosphere – and preserve the integrity of shifting interrelationships

of temperature and humidity, is infinitely more so. That's why the specialized door of choice is so often a Jamison.

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For Shell

Testing chassis lubricants requires controlled atmospheric conditions with ambient temperatures ranging from +125°F to -40°F and humidity from 20% to 100%. To preserve the integrity of these environments, Shell Oil Company installed personnel size and vehicle size freezer doors custom built by Jamison Door Company.

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Circle 65 on inquiry card

Parker introduces a colorful solution to washroom problems.

Colorium units from Parker eliminate many of the problems normally associated with washroom equipment. These colorful units are equipped with panels and seats of solid polymer resins. The Colorium material will not rust or dent. And, unlike the plastic laminated surfaces of other washroom equipment, the Colorium material has no seams to delaminate.

Since the colors extend throughout the entire thickness of the material, scratches and cuts are not highly visible. Vandalism is therefore discouraged.

Colorium units are resistant to moisture, odors, mildew and stains. Their beautiful appearance is easily maintained with ordinary household cleaners.

The Colorium washroom equipment line is available in five colors and includes paper towel dispenser and waste receptacle combinations, a multi-purpose unit, sanitary napkin dispensers, soap dispensers, shower seats and a variety of other washroom accessories. All are designed and constructed to be permanent solutions to today's washroom needs.



The letters of the word "Colorium" below are made out of the actual Colorium material. They clearly show that the color extends throughout the solid material.

ColoriumTM

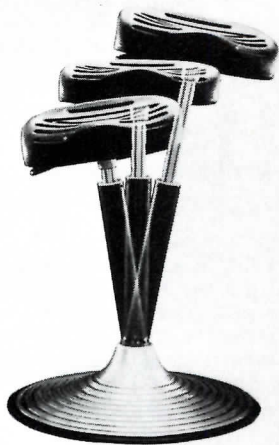
Washroom Equipment

For complete information on the Colorium line, contact:



The Charles Parker Company
290 Pratt Street--P.O. Box 916
Meriden, CT 06450
Tel: (203) 235-6365

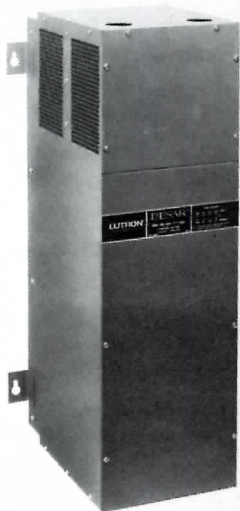
Circle 66 on inquiry card



Adjustable stool

The *Sit-Stand* is a seat that adjusts from 27 to 34 in. high with fingertip controls. It also bends with the user in any direction, automatically returning to its upright position when not in use. It weighs only 20 lb and can be moved with one hand. The column and base are made of cast aluminum and the seat is made of integral foam. Fixtures Manufacturing Corp., Kansas City, Mo.

Circle 317 on reader service card

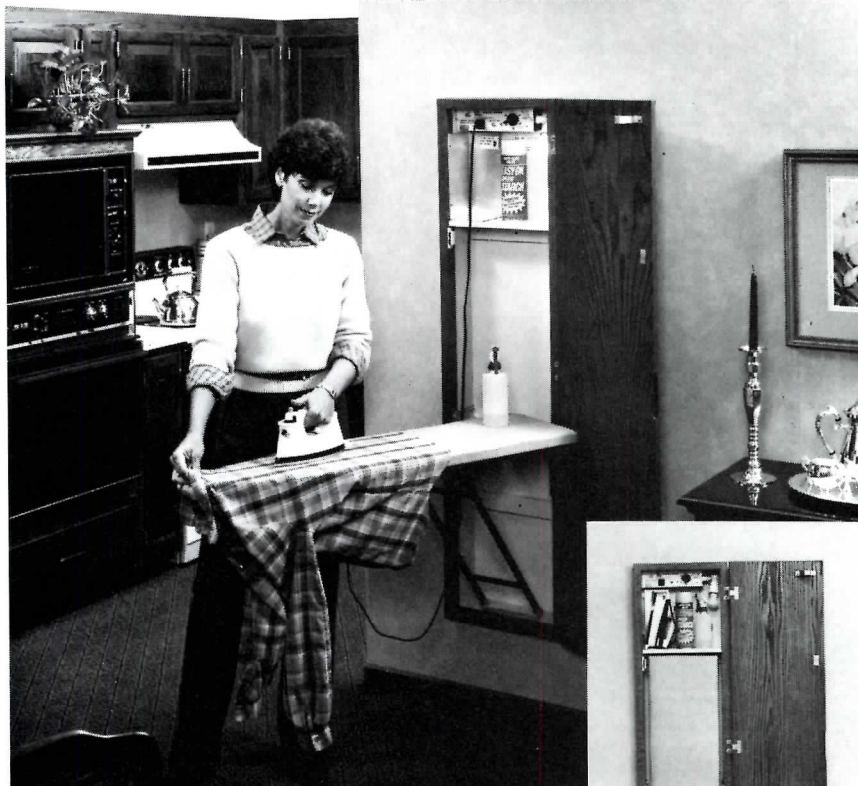


Lighting energy controller

A 100A fluorescent lighting energy adjuster (LEA) can replace 5 or more 20A units in large open areas. The solid-state LEA is claimed to provide smooth, continuous variation of lighting levels from 40 per cent to full illumination. The 277V model controls up to 450 rapid-start fluorescent lamps, and the 120V model controls up to 200 lamps. Lutron Electronics Co., Inc., Coopersburg, Pa.

Circle 318 on reader service card

Built-ins Build sales

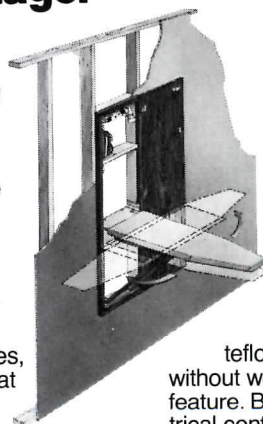


and The SICO Room Makers® Ironing Center has a built-in advantage.

When you show your prospective buyers how The SICO Room Makers® Ironing Center folds fully out of its recessed cabinet, so the entire board surface can be used, pivots 180°, and can be lowered so ironing can be done even seated (all exclusive SICO® features), they're going to know you put extra thought and quality into your units. And quality sells itself.

Condominiums, townhomes, even conventional homes that make better use of space have the competitive edge today. The SICO Room Makers® Ironing Center can be built into any room. The handsome well-made wood cabinet can be stained or painted to match woodwork or wall treatment.

Inside the deluxe model (illustrated) is



everything needed for quick touch-ups, or a whole week's worth of ironing. The electrical center is wired for 120 volt, 15 amps. There's a plug-in, work light, indicator light (lights when center is on), automatic shut-off when door is closed, 30-minute timer turns off if door is left open, heat shield around iron storage shelf, and steel ironing board with padded

teflon cover. Standard Model comes without work light and adjustable height feature. Basic Model comes without electrical center and adjustable height feature.

If you know SICO, you know we make it right, with first class design, materials and workmanship. And that reflects on your unit. New construction or remodeling, build in a SICO Room Makers® Ironing Center and build sales.

The Room Makers®



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A frame is a frame is a frame. Unless it's aluminum.

Choosing an interior door frame is usually limited to some variation of the common steel frame.

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Howmet door frames come in a wide choice of painted or anodized

finishes. Plus, they are reasonably priced and readily available.

The Howmet Imperial™ door frames install ceiling height only. And the Howmet Royal™ door frames install ceiling height or less. Both are available with or without matching, fire-rated sidelites, doors and hardware.

Custom Engineered Ceiling Grids

Howmet also manufactures aluminum ceiling grids in a variety of innovative finishes and

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Sloan presents the no-hands restroom.

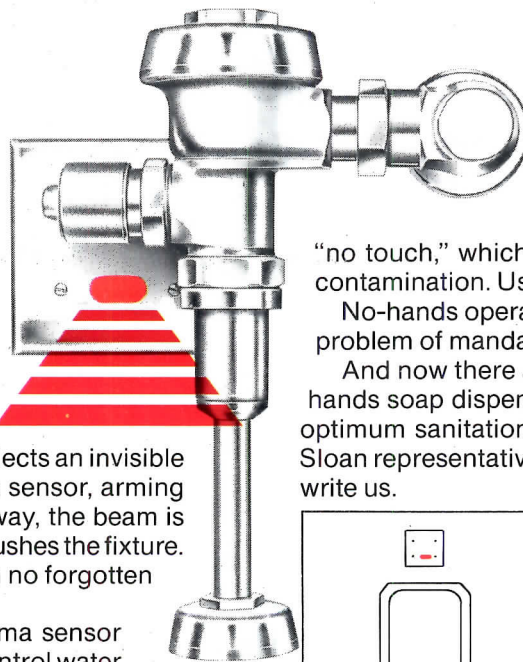
Take the operation of the restroom out of people's hands, and it becomes a cleaner, more cost-efficient place.

That's the big idea from Sloan—the no-hands restroom, with no handles, buttons, or levers. Everything operates *automatically*, under the command and control of Sloan Optima™ electronic sensors.

On toilets and urinals, the user reflects an invisible beam of light back into the Optima sensor, arming the system. When the user steps away, the beam is broken, and the Sloan flushometer flushes the fixture.

Results: improved sanitation, with no forgotten flushes. And less water waste.

On lavatories, breaking the Optima sensor beam opens and closes a valve to control water automatically. Since the water runs only when needed, water usage is significantly reduced. There are no handles

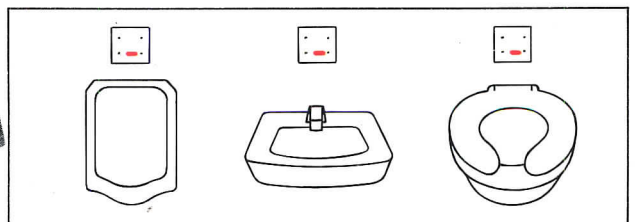


to get dirty and there's less sink-top cleaning.

Of course, "no-hands" means "no touch," which reduces the chance of bacterial contamination. Users will appreciate *that*.

No-hands operation also automatically solves the problem of mandated access for the handicapped.

And now there are Sloan Optima systems for no-hands soap dispensers, hand dryers, and more. Get optimum sanitation and optimum savings. Ask your Sloan representative about Optima systems today. Or write us.



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