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STOCKTON STATE COLLEGE, NEW JERSEY, BY GEDDES BRECHER QUALLS CUNNINGHAM
WARREN PLATNER'S WINDOWS ON THE WORLD
BUILDING TYPES STUDY: HOUSING FOR THE AGED
FULL CONTENTS ON PAGES 10 AND 11

ARCHITECTURAL RECORD

MAY 1977 **5** A MCGRAW-HILL PUBLICATION FIVE DOLLARS PER COPY

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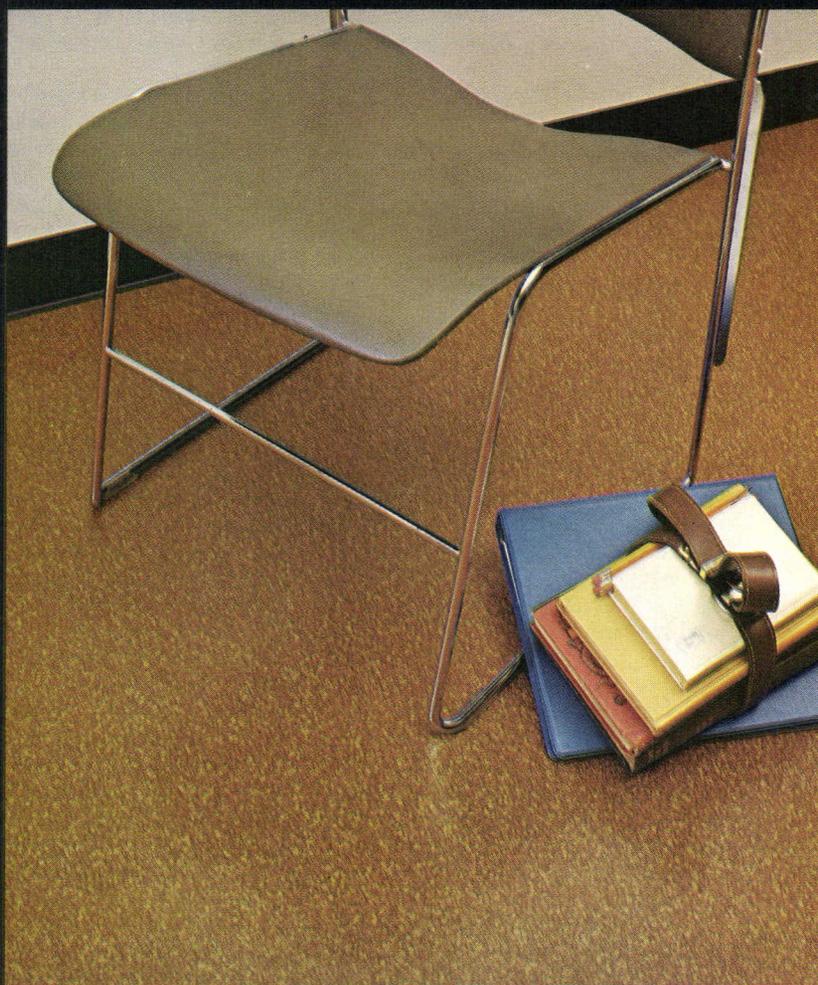
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Letters to the editor

As a behavioral scientist I found the SITE projects in the "Bringing In The Business" article in the March 1977 issue intriguing to say the least. Of particular interest was Gerald Allen's mention of the power of the "juxtaposition of the modestly familiar with the stunningly unfamiliar." This is precisely the root of psychologist D.O. Hebb's theory of fear! It's the reason a ghoulish is more frightening than a rubber dinosaur, or even King Kong, for that matter. Could it be that fear is the basis for the attraction to these structures?

In answer to the question "where did you go from here?" I predict the reemergence of the use of giant human and animal-like figures—Papier-Maché Giants of America, if you will—to keep the "bomb in the shoebox" but constantly to temper the fear with fun. It's just what America needs to enter the 80s with a sense of humor.

*Jim Hiett
Gainesville, Florida*

I read with disbelief the article about Best Products Company Buildings and wish to head a list of names of readers that object vehemently against atrocities and abominations presented in your March '77 issue in the name of "sense of humor," "environmental concern" and "humanizing of buildings."

This is an affront to human dignity, an insult to architectural innovativeness and stooping to the lowest on the altar of gimmickry.

Hail to Salesmanship!

*Fred Bisharat
Palo Alto, California*

Best Products' crumbling new store in Houston certainly got the jump on Armageddon. Gerald Allen's article could better have been titled "From the Sublime to the Ridiculous." Burdines of Florida is obviously a sensitive approach to a difficult problem. Best Products' store is a contrivance to shock and bewilder the passing motorist in hopes that he will come in and spend money. A "higher good" oh, come on now. I am only curious to know how that puny canopy supports that large pile of rubble.

*Edward R. Roehm AIA
The Design Collaborative, P.C.
Virginia Beach, Virginia*

Cheers to Gerald Allen for his lively and perceptive essay and photos on "Bringing in the Business." In a generally grim time in the architectural profession, it doesn't hurt to receive the first professional journal that defies

you not to laugh out loud. More important than the funny stuff, though, is the thoughtful look at a ubiquitous but not-well-liked building type. While the concept of "like" and "unlike" may be somewhat related to Venturi's idea of contradiction, I felt this was the freshest architectural criticism in recent memory, and that it was further enhanced by the writing style and vocabulary. Let's have more of the same, but different.

*Murray Whisnant
Charlotte, North Carolina*

Gerald Allen's pertinent question at the end of his March study on "Bringing In The Business" might unfortunately be answered in any number of negative ways, given America's love affair with watching violence. That architecture here should belatedly discover its unique decadent potential is due not to any lack of precedent or foresight; some time has passed since Europe suffered a "fascination of decay" and since Chernikov's towers bent tensely into one another.

Mrs. Lewis summed it up magnificently: "This is the perfect ugly public space. Let's get SITE to do something with it." (So much for Vitruvius.) And Mr. Lewis' sinister "sense of humor" slides into our foremost architectural journal, not by any corruption, but by way of our own carefully cultivated backdoor values.

After all the flowered phrases have gone dry, we'll have our wasteland, obvious, and waiting for us.

*John David Abeles Pfeffer, AIA
Santa Fe, New Mexico*

When you are handing out the architectural awards for this year, may I suggest a special "Sheer Lunacy" category with the award to SITE, Inc. for their work on the Best warehouses. In a world crying for order, harmony and a subdued architecture integrated with nature, we now have an example tailor made to incite the anarchistic tendencies of those in our society (a growing number it would seem from the statistics on vandalism and property destruction) who tend towards nihilism.

One can imagine bored suburban teenagers on a Saturday night "improving" the design with a sledgehammer. Perhaps the designers, in what I can only conclude is the ultimate in cynicism, are attempting to show us the future of this house of cards we have built.

My condolences to those at SITE, Inc. for anti-architecture at its Best.

*Gordon Janesky
Am-Cal Construction Corp.
Tarrytown, New York*

Calendar

MAY

11-13 The 29th Annual National Engineering Conference, sponsored by the American Institute of Steel Construction; Hyatt-Regency Hotel, Washington, D.C. Contact: American Institute of Steel Construction, 1221 Avenue of the Americas, New York, N.Y. 10020.

12-13 Conference, "Solar Utilization Now—Building with the Sun", sponsored by the University of Tennessee; Hyatt Regency Hotel, Knoxville, Tenn. Contact: Dr. Jerry Gehre, director, Professional Practice Program, East Tennessee State University, Johnson City, Tenn. 37601.

15-18 "The Structural Use of Wood in Adverse Environments," symposium sponsored by The Society of Wood Science and Technology; Totem Park Convention Center, University of British Columbia, Vancouver, B.C., Canada. Contact: Dr. R. W. Meyer, Department of Materials Science and Engineering at Washington State University, Pullman, Washington, 99164.

16-18 National Conference sponsored by the Citizen's Council for Land Use Research and Education (CLURE); at the University of Michigan, Ann Arbor. Contact: CLURE, Rm. 503, School of Natural Resources, University of Michigan, Ann Arbor, Michigan 48109.

16-18 Conference on Corrosion of Metal in Buildings, sponsored by the National Bureau of Standards, Gaithersburg, Md. Contact: G. Frohnsdorff, B350 Building Research Building, NBS, Washington, D.C. 20234.

16-19 Society of Fire Protection Engineers 1977 Annual Meeting, "Engineering an End to Residential Life Loss," in conjunction with the National Fire Protection Association; Washington, D.C. Hotel, Contact: D. Peter Lund, Executive Director, Society of Fire Protection Engineers, 60 Battery-march St., Boston, Mass. 02110.

22-25 1977 International Conference of the Society of American Value Engineers; Hyatt Regency Hotel, Dearborn, Michigan. Contact: Society of American Value Engineers, 29551 Greenfield Rd., Ste. 210, Southfield, Mich. 48076.

23-25 9th Annual Apartment Builder/Developer Conference & Exposition, sponsored by Wagner-Hohns-Inglis, Inc.; Las Vegas, Nevada. 609/261-0100.

27-29 1977 Annual Aspen Energy Forum 1977, "Solar Architecture", sponsored by the Roaring Fork Resource Center; Aspen Institute, Colo. Contact: Roaring Fork Resource Center, Roaring Fork Valley, P.O. Box 9950, Aspen, Colo. 81611.

ARCHITECTURAL RECORD (Combined with AMERICAN ARCHITECT, ARCHITECTURE and WESTERN ARCHITECT AND ENGINEER)

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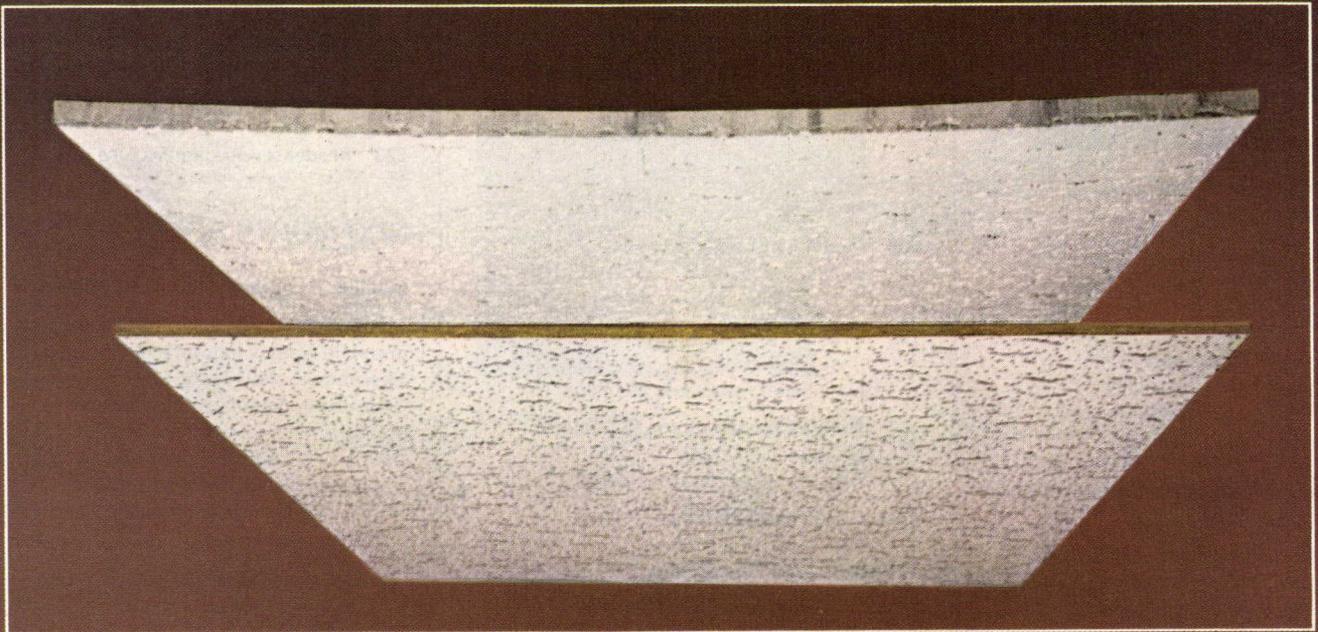
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Some random thoughts on ethics

We are on the verge of a convention—in San Diego on June 5th through 8th—at which a terribly important question is going to be debated and voted upon—the question of changes in the Code of Ethics of the American Institute of Architects.

That is, as no doubt someone will say early in the discussion at San Diego, the most important question to come before a convention in a very long time. A great deal—for architects in practice and those who will be entering the profession in the years ahead—depends on the answer.

It will be argued that the changes—most importantly, the change that would permit architects to take prime contracts, and thus become design-build firms, as long as they make “timely and full disclosure of a possible conflict of interest”—reflect simply what is happening in the world today: an adjustment to the forces of consumerism, an adjustment to the changing attitudes of government as to what involves restraint of trade; and an adjustment to the “marketplace” or to “the way it is”—the demand of clients for something new, especially for single responsibility.

Let it be said that I think no one can argue that the matter has not been well debated. At the last convention, as I wrote then (June 1976): “The debate was a model of its kind. The comments of almost everyone—the proponents and the opponents—were delivered thoughtfully and (how rare these days!) in moderate tones. [Then AIA President] De Moll, as moderator, gave everyone who wanted to have his or her say that opportunity.”

That kind of thorough and thoughtful debate has taken place—reports from all districts make clear—at Grassroots meetings throughout the year. And the time allotted to business meetings during the upcoming Convention suggests that, wisely, the AIA leadership expects a long debate there.

So there should be no excuse for anyone to be surprised at the result from San Diego.

For myself, I find that the year of debate has not changed one whit the feeling that I expressed in an editorial over a year ago (February 1976):

“One editor’s advice to the profession: Go slowly. Don’t give up professionalism lightly. And I believe that is exactly what is at stake here. I believe that if the architect gives up his role as agent of the owner, he becomes an entrepreneur. I think that if the architect takes the prime contract for a building job—no matter how honorable his intentions (indeed,

no matter how honorable or skillful his performance), he is no longer a professional but an entrepreneur. It does not require a questionable *act* to destroy professionalism—all that is required is the *possibility* of conflict of interest.

“Is this too purist a view? I hope not. I’m well aware of the problems and ‘realities’ involved. There is indeed a fair number of clients—mostly corporate clients who build regularly and who have on staff architects and engineers who can serve as the owner’s ‘agent’—who have elected to go the design-build route. But I would argue that the vast majority of clients—most of whom get involved in a major building job once or twice in a lifetime—need and want the protection of architects working under a strict standard of ethics. Most of those clients understand the values involved, and are well served. Let’s remember that under the ‘traditional’ methods, most buildings *are* completed on time and within the budget. The professional system has real values—and they are primarily values for the client, not the architect.

“For architects, I think the questions are no less than ‘What are we?’ ‘What are our values?’ And I do not think there are any compromise answers.”

I still—too purist or not—believe that. One additional thought: I hate to see the profession consider such fundamental changes at a time which seems quite atypical. I worry about making such fundamental changes at a time when so many architects have diminished workloads—for reasons which have more to do with the general state of the economy than they do with competition from design-builders. (Has anyone noticed that the number of complaints about architects’ “unrealistic attitude towards costs” have almost disappeared now that the contractors are hungry and bidding work much more tightly?) I worry about making fundamental changes in attitudes towards commission agents at a time when so many firms are involved in the Middle East—though this remains an unimportant question for the vast majority of architects. Since we are being told that we’ve got to become more businesslike, we might all remember a basic primer of business: The time to make changes is when you can make them from a position of strength—lest they be mistaken for a sign of weakness and panic.

I wish us all luck—and good judgment—in San Diego.

—Walter F. Wagner Jr.

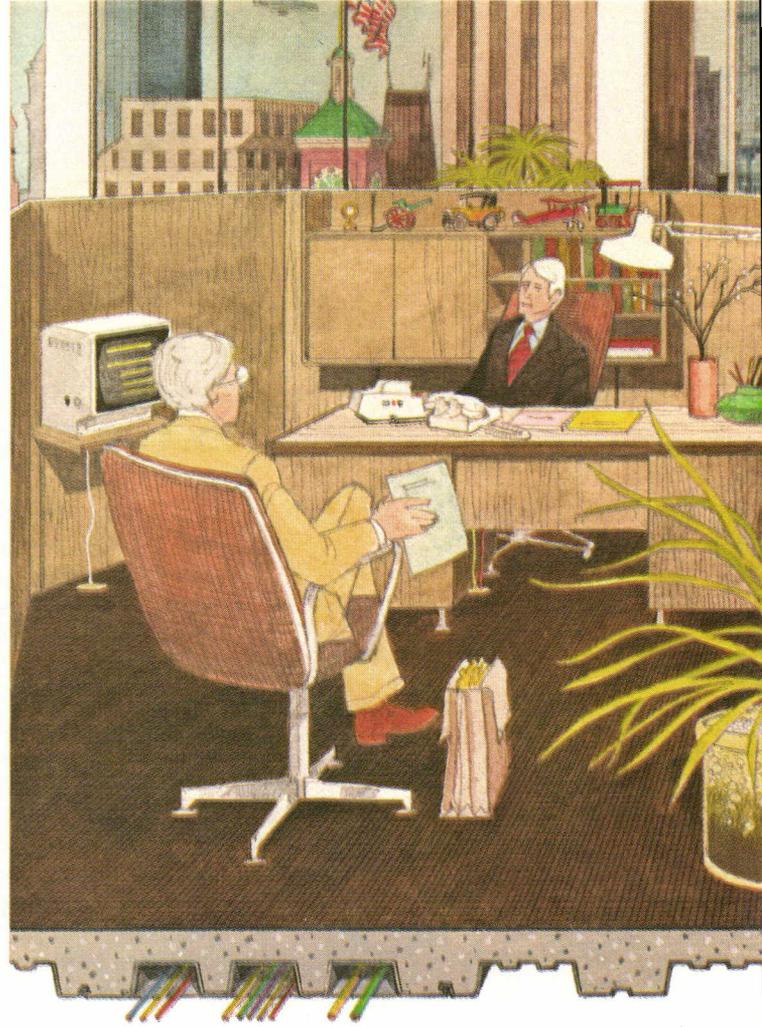


1977

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1979

Same office area, new use.

Many office layouts change in as short a time as two years. Sometimes it involves simple changes in work patterns. It might well be a major relocation resulting from departmental changes. Whatever the cause, telephone company statistics say that the average office phone is moved every 10 months.

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NEWS REPORTS
 BUILDINGS IN THE NEWS
 HUMAN SETTLEMENTS
 REQUIRED READING

Housing and Urban Development Secretary Patricia Harris is moving to get more subsidized housing units off the agency's "reservation" list and into actual construction. Details on page 34.

There is a big business opportunity for architects and engineers in the Federal Energy Administration's strong support for on-site "energy audits" of commercial and industrial structures. Details on page 35.

Two legislative proposals would bar Federal technical service contractors from winning work through lower bid prices by forcing professional engineers to work for reduced pay. Details on page 35.

The 95th Congress handed construction management, including architects, a real victory in killing the situs picketing-collective bargaining reform bill. Details on page 34.

There is evidence that the Carter Administration is unconvinced that large-scale mass transit systems are the key to inner-city revival. Details on page 35.

If there are architectural barriers restricting movement by the handicapped, businesses can claim up to \$25,000 in tax deductions for the expenses of removing them. Details on page 35.

The International Design Conference at Aspen, Colorado, June 12 to 19, is being called "Shop Talk," according to its Program Chairman, Jane Thompson, and it will examine what designers do, think, and feel at various stages of their professional lives. Participants include John Massey, of the Container Corporation, focusing on corporate activities abroad; John Tyson, of Bell Northern of Canada, describing his unique corporate design department; Lou Dorfman, of CBS, leading a discussion on the "Mythology on Madison Avenue"; Italian architect Ettore Sottsass, talking about "A Day in the Life of a Designer"; architect Richard Saul Wurman, "Hailing Failing," dealing with periodic frustrations in fulfilling goals; and historian Reyner Banham, with social psychologist Richard Farson, debating the social ramifications of large-scale design. Reservations, by mail only, are due by May 29. Fee is \$150, and \$100 for a companion; \$75 for students (proof needed), and \$50 per child. Checks should be payable to IDCA, c/o The Bank of Aspen, P.O. Box "O", Aspen, Colorado 81611; for other information, write IDCA, Box 664, Aspen, Colorado 81611.

The National Institute of Architectural Education (NAIE) announces an exhibit of architectural student work entitled "Selected Paris Prize Drawings, 1906-1976." The exhibit coincides with the opening of NAIE's new headquarters at 139 East 52nd Street, New York City. This exhibit of superb drawings reflects the many changes in architectural design theory in the 20th Century. One element reappears throughout: the exquisitely drafted plates—the undeniably strong concept of master planning within a powerfully-disciplined, and often delightful, framework. The exhibit runs at the NAIE's headquarters from May 17 to June 3, weekdays 10 AM to 5 PM.

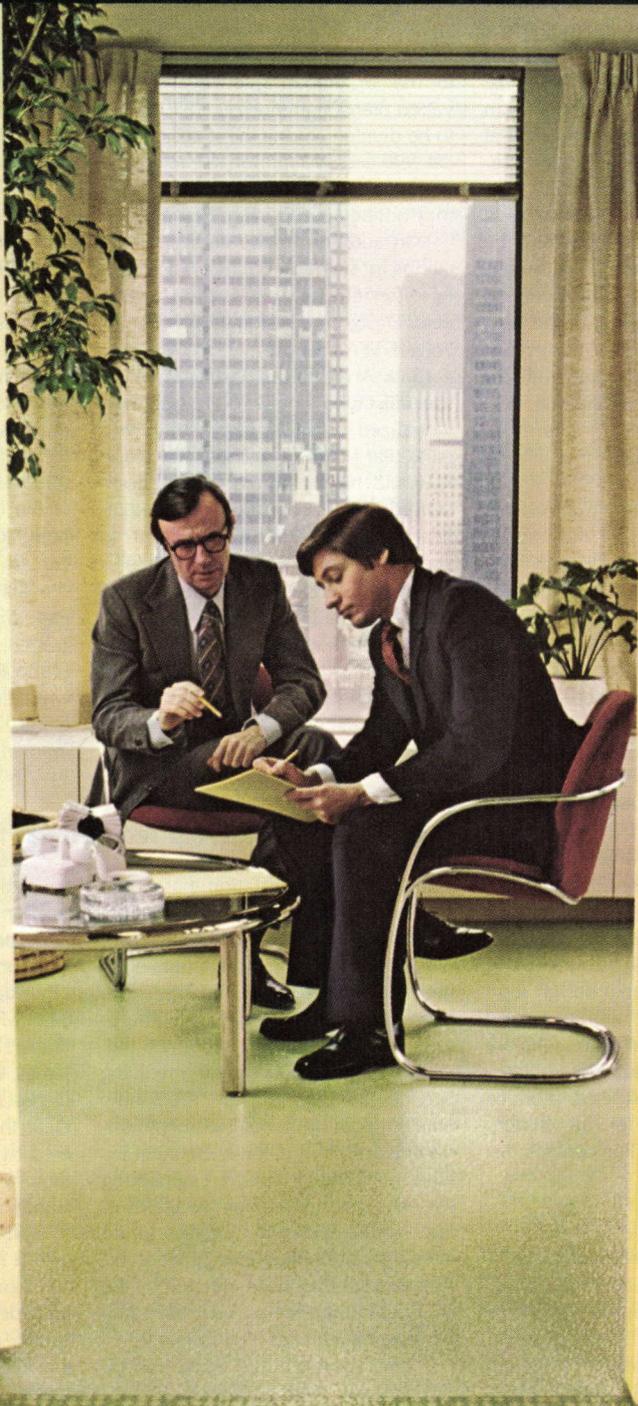
NEOCON 9, National Exposition of Contract Interior Furnishings will be held at the Merchandise Mart Chicago, June 22-24. Sessions will cover everything from safety and performance to "Global Challenges Shaping Tomorrow's Environment." Contact: James Bidwill, Merchandise Mart, 830 Merchandise Mart Plaza, Chicago, Illinois 60654. Further details on page 35.

The American Institute of Architects has announced that 56 members have been elected to the College of Fellows, a lifetime honor bestowed for outstanding contribution to the profession. Investiture of the new Fellows will take place on June 5 at the Institute's national convention in San Diego, California. Selection was made by a jury composed of Preston M. Bolton, Lewis Davis, Herbert E. Duncan Jr., Robert E. Fehlberg, William Muchow, Bernard B. Rothschild, and Carl L. Bradley. The AIA members advanced to Fellowship are: Lavone Dickensheets Andrews, Eugene E. Aubrey, Jack Sherman Baker, Richard E. Baringer, Edward Charles Bassett, John H. Bickel, Richard Patrick Blake, Richard L. Bliss, Robert C. Broshar, John H. Burgee, Lo-Yi C. Y. Chan, John S. Chase, John D. Cordwell, James D. Cowan, Warren J. Cox, John Morris Dixon, Kermit Parrish Dorius, John P. Eberhard, Aaron Freed, James Ingo Freed, James A. Greene, Jordan L. Gruzen, Arthur Howard Hoag, Jr., James Mathews Hunt, Sr., Jeh V. Johnson, Julian Eugene Kulski, Zeb Vance Lackey, Richard D. Levin, Alan G. Levy, William Kirby Kockard, Carl F. Luckenbach, Frithjof F. Lunde, Robert J. Lynch, Henry J. Magaziner, Robert Eastwood McConnell, Edwin Keith McPheeters, Thomas M. Payette, Edward G. Petrazio, Frank Blair Reeves, Robert Reinheimer, Jr., Mildred F. Schmertz, George A. D. Schuett, Charles E. Schwing, George Whiteside Shupee, Howard F. Sims, Saul Charles Smiley, Paul D. Spreiregen, George W. Sprinkle, James Edgar Stageberg, Ronald A. Straka, Albert Homer Swanke, Robert Tyler, Thomas W. Ventulett, III, Joseph A. Wilkes, Harry C. Wolf, III.

By the way, Architectural Record received, in April, the 1977 National Magazine Award for Specialized Journalism, recognizing the May 1976 issue that was devoted to "Human Settlements."

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Massachusetts gets FEA grant

Massachusetts is the first state in the nation to receive a substantial grant from the Federal Energy Administration (FEA) to implement an energy conservation plan.

The state has received FEA approval of a \$563,000 grant for an energy conservation program that will cut energy costs by \$250,000,000 a year, Governor Michael S. Dukakis announced yesterday.

He said the goal of the state plan is to reduce energy consumption by nearly eight per cent by 1980. The plan, he said, is designed to reduce statewide expenditures on imported fuel estimated at \$250,000,000 annually.

Governor Dukakis said that the state building code will contain a new section applying to requirements of the energy crisis. The state will require standards for insulation, lighting and heating in all new construction under a new code that will take effect in the Fall, the Governor said.

State Consumer Affairs Secretary Christine Sullivan said about 100,000 homes will be required to insulate in the state under President Carter's energy program.

Governor Dukakis estimated the revised state energy code will cut energy use in new buildings by as much

as 50 per cent and will lead to annual energy savings of \$60,000,000 by 1980.

After 1980, when total energy conservation plans are in full operation, it is possible that more than \$400,000,000 a year will be saved, the Governor said. This would include the use of solar hot water and solar heating systems.

State Public Safety Secretary Charles V. Barry said he fears a tax on gasoline would be "backing ourselves right into a rationing situation."

Several members of the Governor's Cabinet expressed doubt that the President's expected \$.50 cent a gallon standby tax on gasoline would result in energy savings. They believe that motorists would buy cars that give greater mileage per gallon but wind up driving more. They predicted the low and modern income groups would suffer from the increased costs.

State transportation Secretary Frederick P. Salvucci said setting the price of gasoline at \$1.50 a gallon and issuing ration stamps that would exempt the increased tax would compel conservation. Motorists who drive more would have to pay the higher price when the stamps were used up, he said.—Paul Giguere, World News, Boston.

Urban housing policy for developing countries: part 2

This second and final installment of a paper presented by Maurice Kilbridge, Dean of the Harvard Graduate School of Design, to government officials in Mexico City last November, organizes his suggestions on housing policy for the urban poor under several headings which he has "ranked loosely in order of their importance."

The first installment, in the April 1977 Human Settlements column, covers Dean Kilbridge's views on the inevitable urban growth of cities of the developing world; the matching of expectations to resource availability; and adjustment to a totally new concept of what a city should be. Here he proposes housing policies that follow from these concepts of the "developing city."

Accessibility to employment: The urban poor have shown by their repeated behavior that they prefer low-quality housing near employment opportunities to higher quality housing in a remote location requiring long daily commutes. I mention as illustration that in the case of some Calcutta street sleepers, who represent the extreme in this choice, location may be more important than housing itself. A recent survey found that many of them had housing on the city periphery but could not afford the time and money for daily commuting.

The point is simply that to serve the needs of the poor their housing should be located close around and about the centers of commercial and industrial employment. Ideally, the poor should be able to walk or cycle to work. They do not own automobiles, and in most developing cities public transportation is deplorable. Many city planners and architects resist this concept as untidy. They would prefer neatly separated industrial and residential sectors, or industrial estates served by public transit. But if one accepts the basic concept of the "developing city," he will see the underlying spatial order and not be put off by superficial disorder.

The neighborhood environment: The next most important consideration, in my view, is the quality of the neighborhood environment. I believe this is more important than the quality of the house itself. In warmer climates and where housing is crowded, people tend to spend more time outside their houses than in them.

For this and other good reasons, dwellers in congested low-income communities frequently are more concerned with environmental improvement than with the structure or even the size of their houses. They usually can improve their houses by themselves if they wish, but problems of inadequate sanitation, contaminated water, lack of electricity, or prohibitive distances to the nearest school or medical clinic are beyond their abilities to

cope with. If government will focus its attention on the total living environment rather than housing as such, it can provide the community framework within which individual housing can be managed as a private matter.

The "standard housing" trap: We have learned that we must come more to terms with the economic and social reality of housing. We cannot hope to provide "standard" housing for all, or even most, of the urban poor in developing countries in this century, almost no matter how one defines "standard." The cost of doing so publicly is simply beyond the means of poorer nations, even if they were to make housing the largest of their development expenditures. And the economic rent of housing that meets any reasonable set of minimum standards is well above what the urban poor can afford privately.

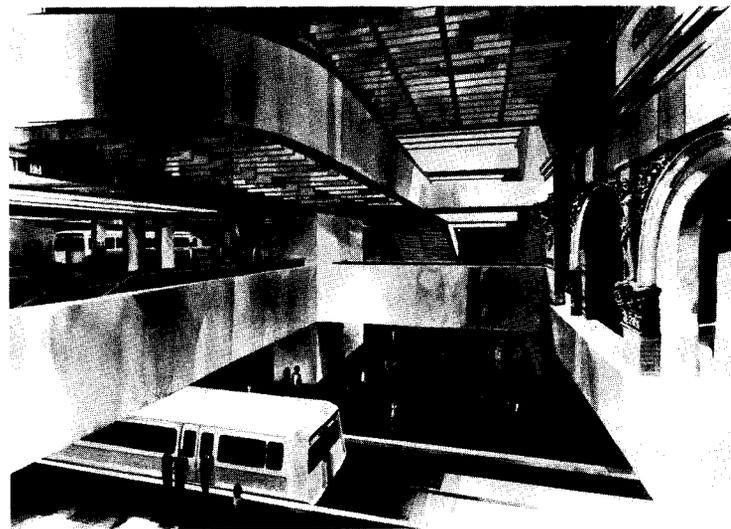
In fact, the word "standard" seems no longer to be a generally useful qualifier for housing in developing countries. Standards taken from advanced countries, even when attempts are made to adapt them to local conditions, tend to be irrelevant. Yet the concept of "standard housing" is inherent in public-financed projects because of the belief that government should be providing better housing and not creating new slums. But as long as this concept holds, the very poor of most nations usually are unable to occupy such housing, either because government cannot afford to build enough of it, or because the poor cannot afford the economic rent of such housing.

One consequence of falling into the "standard housing" trap is that public housing intended for low-income people frequently ends up housing the lower-middle-income or middle-income people. The crushing demand for housing raises market rents above what the poor can pay, or wish to pay.

Even with the best of intentions on the part of government, the very poor either tend to get squeezed out by the not so poor, or they voluntarily relinquish their right to the housing provided because they are unwilling to spend a large part of their income on rent, even though subsidized. Frequently when low-income people do occupy public-financed housing they sublet space to others, resulting in over-crowding as bad as in the slum or squatter settlement from which they came. And no managerial system seems able to prevent this. The economic and cultural factors at play result in the benefits of public-financed standard housing going mostly to persons above the lowest level of income.

"Informal" settlements: Considering the vast experience in Mexico with illegal settlements of all varieties, and the gradual emergence through this

continued on page 39



Atlanta to get new rapid transit station

Several features of MARTA's new central rapid transit station planned for Atlanta by Finch-Heery are arousing interest in the design community:

- The utilization of the facade from an historical Atlanta building as the chief focal point inside the station. Saved from demolition by Finch-Heery and the transit authority, the facade has been taken down piece by piece and will be reassembled during the next months. (see photo)

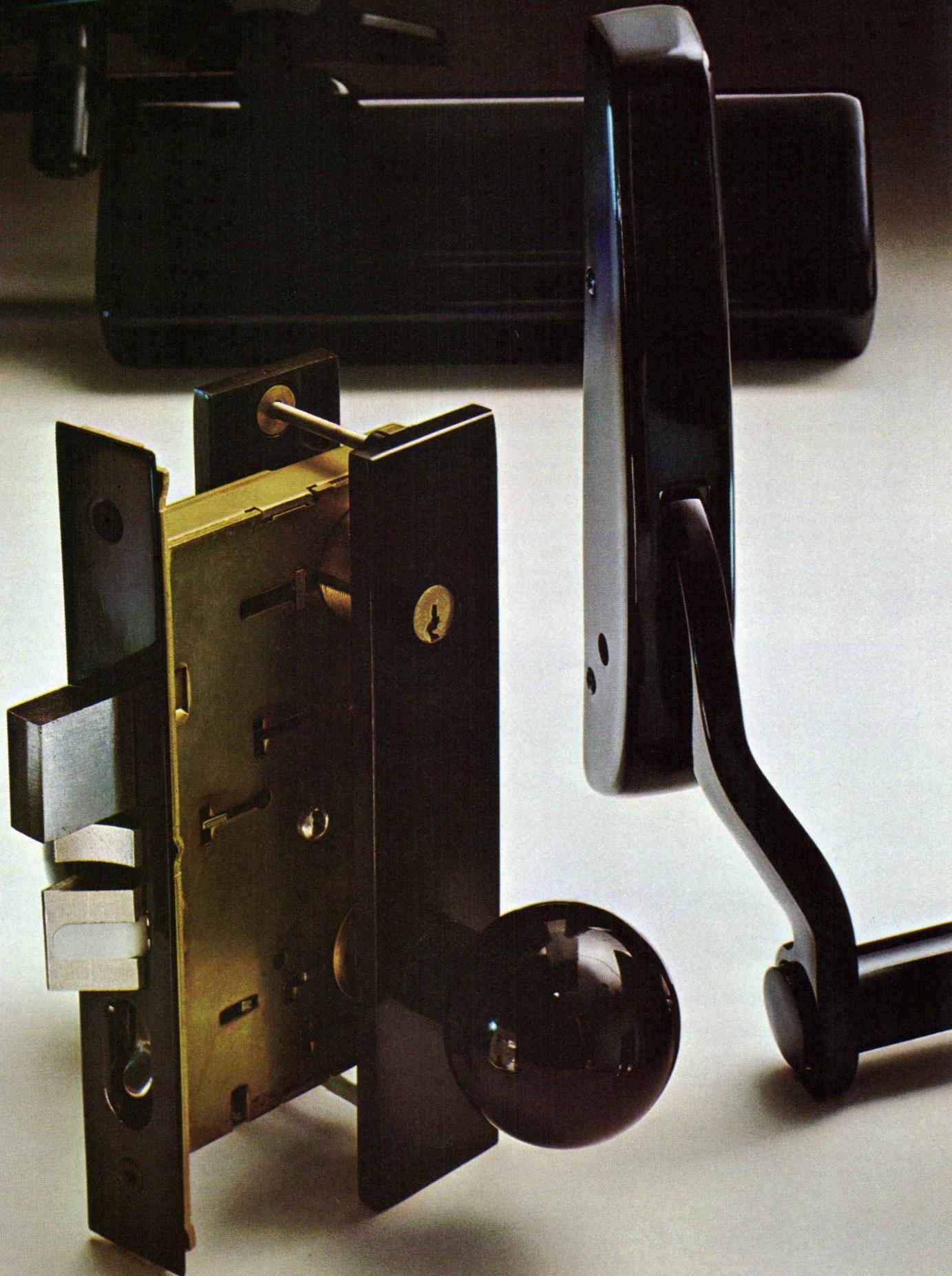
- The construction of a plaza and pedestrian mall, encompassing two city blocks. The plaza and mall will become an important center of activity, and urban planners hope the mall

will be the catalyst for a series of connecting promenades in the center city.

- The use of native materials that will give the station, plaza, and pedestrian mall a distinct Georgia identity and will also make the facility more economical to maintain.

MARTA general manager Alan Kiepper is extremely pleased with the innovative station design. "It's more than the hub of the nation's most modern rapid transit system," Kiepper said. "The station is also an outstanding center of activity, reflecting the creative planning and civic cooperation that have made Atlanta one of the outstanding cities in the world."

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experience of rather sophisticated and flexible methods for dealing with them, I will forgo detailed comments on this point. It is, of course, wise housing policy to make the best of what is. Informal settlements that have long been considered part of the problem may in reality be part of the solution. The argument can be made that, where possible, existing squatter settlements should be accepted and legalized and provided with the basic services. For the future, wise land planning and development policy resolutely pursued may prevent the development of more such settlements. In addition to land-use planning for low-income housing, the two major means of preventing new illegal settlements are, in my opinion, self-help housing and upgrading older housing.

Self-help housing: The concept of self-help housing is quite familiar and need not be explained in any detail here. I mentioned earlier the economic impossibility of the governments of developing nations providing completed housing for the great masses of the poor. While housing is a necessity, a substantial or "standard" house is not. Model low-income housing projects achieve very little unless they can be multiplied within the economic and managerial means of government or the private sector to meet the needs of many of the poor. No developing nation of any size has been able to achieve this. We long ago accepted the notion that self-help is essential to mass housing for the poor. More recently we have learned that in government's relationship to such efforts, that management is best that manages least. Provide the minimum assistance and stand out of the way, as it were.

On this principle, various schemes involving site-and-services, core housing, access to building materials, and installment construction have been undertaken with differing degrees of success, and, in general, much promise for the future. This concept of minimal self-help housing is undoubtedly the most common and popular policy in the developing world today, and, I add parenthetically, it is totally consistent with the concept of the "developing city."

Self-help housing, particularly sites and services, has both advantages and disadvantages. Let me enumerate the advantages first, for I feel they far outweigh the disadvantages.

When land tenure is assured and the basic infrastructure of water, power, sanitation and essential social services are provided, the energies of the poor are released to work in their own interest, at their own pace, and in their own way to provide their own housing. It is, after all, the unorganized self-help efforts of private individuals that account for the production of most of the world's shelter. The poor migrants and relocators in our large developing cities have the personal qualities and circumstances that ide-

ally suit them to self-help efforts. They are not political activists, unless bulldozing government behavior has made them so, and they are not inclined to form oppressive juntas. They are far too insecure for this, their personal and family needs too overpowering. Their essential interest is to provide shelter for their families, and, given half a chance they will do so. They have the ambition, energy and time (since many are unemployed, or underemployed) to construct their own houses.

By substituting current labor for accumulated savings, the urban poor can overcome the single largest obstacle to home ownership. And the process can go on for some time, almost indefinitely. Once the basic shelter is built, the homeowner will add to it and improve it, here a little, there a little, through the years. Have you ever seen this happen in a public housing project?

The two criticisms commonly leveled at self-help housing are that it is inherently low-density, since there is no way of constructing a self-help high-rise, and that it is of inferior quality and the slums of the future. To me, neither of these seems to be a very serious or valid objection. We have learned, for one thing, that it is quite possible with thoughtful land-use planning to build pleasant high-density, low-rise communities. Furthermore, we have learned that it is a great mistake to crowd low-income families into high-rise blocks.

As concerns the criticism of poor quality, I believe this is only apparent and not real. Esthetically, self-help housing usually leaves something to be desired, but the construction itself tends to be quite good, and the gradual process of upgrading by the owner-resident as the property improves in value over time tends to produce solid and substantial housing. And by comparison, the esthetic qualities of public low-income housing projects are hardly superior. While it may be claimed that self-help housing may become the slums of the future, one could counter that much of the new public housing is the slum of the present—instant slum, as it were.

Upgrading older housing stock: Another non-bulldozing method available to government to increase the supply of low-income housing, and one seldom availed of, is to improve or upgrade the older tenement areas that have become slums. Absentee ownership, rent controls, and public and private neglect have reduced much of the basically adequate housing of older sections of developing cities to substandard conditions, forcing families particularly to relocate to the periphery of the city. In some cities such inner slums account for a large percentage of the total housing stock, and we have tended to ignore them as squatter settlements and new communities have seized our attention.

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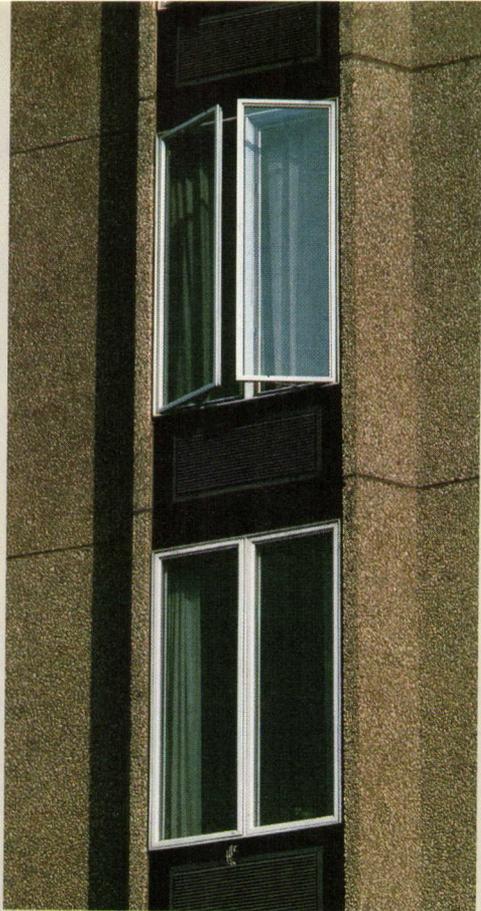
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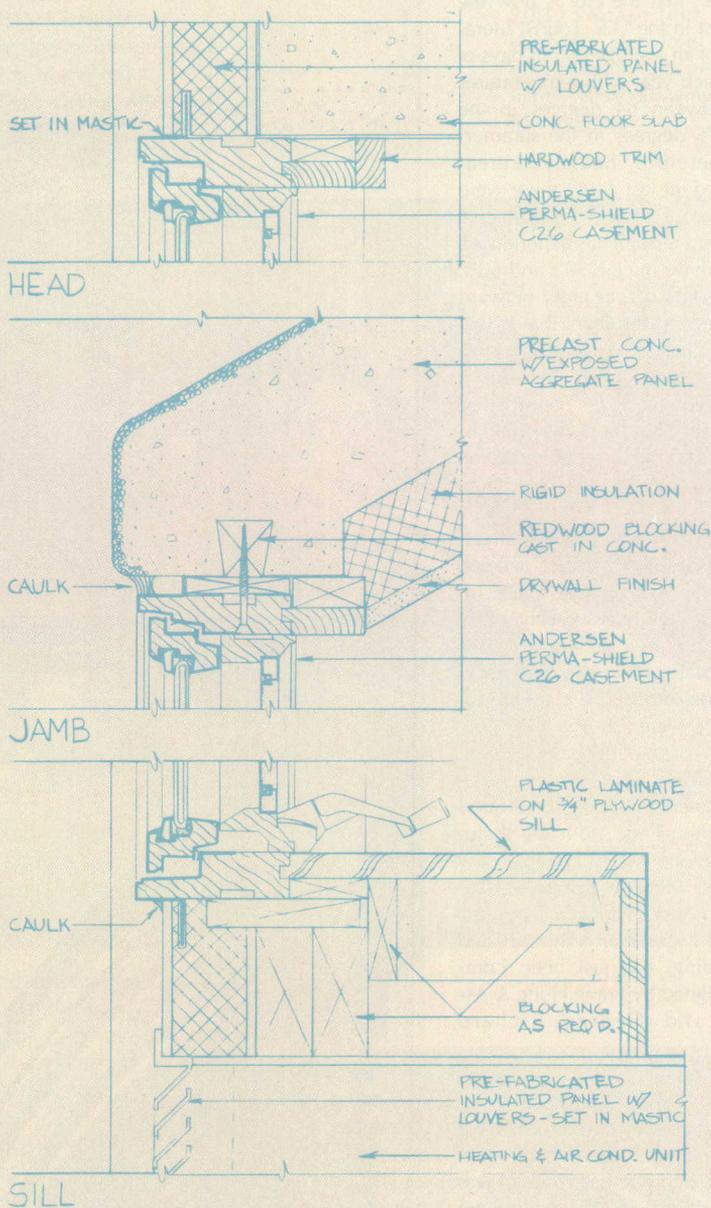
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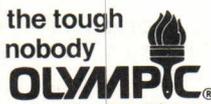
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Advertising and AIA ethics: For all the activity, no early resolution is in sight

by Arthur T. Kornblut, Esq.

A common perception of ethics is that they are permanent and timeless. While this may be true of some aspects of human behavior, the architect's ethics are a fairly recent innovation, and although self-imposed, have evolved in light of changing social, economic and legal demands, each version reflecting ideals extant at the time of its enactment. Superimposed on the latest ethics debate, which will continue at the 1977 AIA convention next month, should be an awareness of current government scrutiny of all forms of professional self-regulation. This month's column takes a closer look at one aspect of the proposed changes to the AIA ethics: advertising.

The propriety of ethical restrictions on the advertising of professional services is currently undergoing debate in practically all professions. The stimulus of this inquiry is threefold: governmental pressure stemming from innovative use of the antitrust laws; lawsuits between professional societies and professional and non-professional private citizens; and the well intentioned advocacy of certain members of various professional societies who believe advertising will somehow enhance the profession's stature and the public's acceptance of the services it has to offer.

Within the architectural profession, proponents of easing the broad ban on advertising contained in the existing AIA ethics argue that "An architect shall not use paid advertising . . ." is too subjective to enable reasonable interpretation, uniform application, or objective enforcement. They claim the profession must engage in sophistry to apply that restriction in light of the complexities of modern practice. Further, it is pointed out that many architects ignore this prohibition with impunity through the use of various techniques that, in and of themselves, fall short of buying advertising space in the mass media.

The proposed AIA ethics would retain the prohibition against members purchasing "advertising in the public media to offer architectural services" but would permit them to "inform the public . . . of the availability of architectural services." One might be able to reconcile practical applications flowing from these two statements. However, they seem to present the same dilemma faced by lawyers who are ethically prohibited from having any interest in litigation in which they represent a

client, but who can have their fees based on a percentage of any judgment received.

While the debate over advertising has been with the design professions for a long time, and will continue irrespective of decisions yet to be reached over the proposed changes to the AIA ethics, the entire argument could quickly become academic from a legal standpoint.

In 1975, the U.S. Supreme Court in *Goldfarb v. Virginia State Bar* made it clear that members of professions were subject to the antitrust laws, and they violated those laws by adopting and enforcing minimum fee schedules. A footnote in that case attracted widespread attention because it indicated the Court would distinguish between purely commercial restraints and those that were desirable to further a profession's public service aspects. The Court said, "It would be unrealistic to view the practice of professions as interchangeable with other business activities, and automatically to apply to the professions antitrust concepts which originated in other areas."

In 1976, the Court again ruled on a "professional" restriction, this time directly involving advertising. In *Virginia State Board of Pharmacy v. Virginia Citizens Consumer Council*, the Court held that a State Board of Pharmacy ban against the advertising of prescription drugs violated consumers' constitutional rights to such information. While holding the advertising ban to be illegal, equivocation was again evident in the Court's thinking. In concurring opinions, it was noted that it would have been a quite different matter if prohibitions against advertising by the traditional learned professions of medicine or law had been at issue.

A key court decision is pending

With these two cases as a backdrop, the Supreme Court is now facing squarely the issue of a ban against advertising by lawyers. In *Bates v. State Bar of Arizona*, the Court heard arguments in January whether a bar restriction

against advertising could legally prohibit two lawyers from publicizing their legal clinic through a local newspaper ad. Attorneys for the clinic argued that the ban was a classic interference with the communication of information to the public, challenging it on both antitrust and constitutional grounds. The state bar, on the other hand, countered by stating that such restrictions were reasonable and in the public interest as they prevented deceptions and misleading inferences. It was pointed out that proponents of advertising claim only "honest" ads would be permitted, but no one had yet suggested realistically who would appraise the thousands of ads that would result.

By the time the AIA must make a decision on its own proposals about advertising (next month), the Supreme Court may have issued a decision in the *Bates* case. If so, it will be illuminating to see whether the decision is limited to the narrow issue of an Arizona law clinic advertising specific services or whether it will address the broad issue of professional advertising. If the decision is a limited one, it will be a relatively brief time before the Court may get another opportunity to consider this issue. In 1976, the Justice Department filed suit against the American Bar Association alleging among other things that the ABA restriction on advertising by attorneys violated the antitrust laws. Terming this government action "bizarre," the ABA has indicated that it will vigorously defend itself against these allegations, and the matter is presently pending in the U.S. District Court.

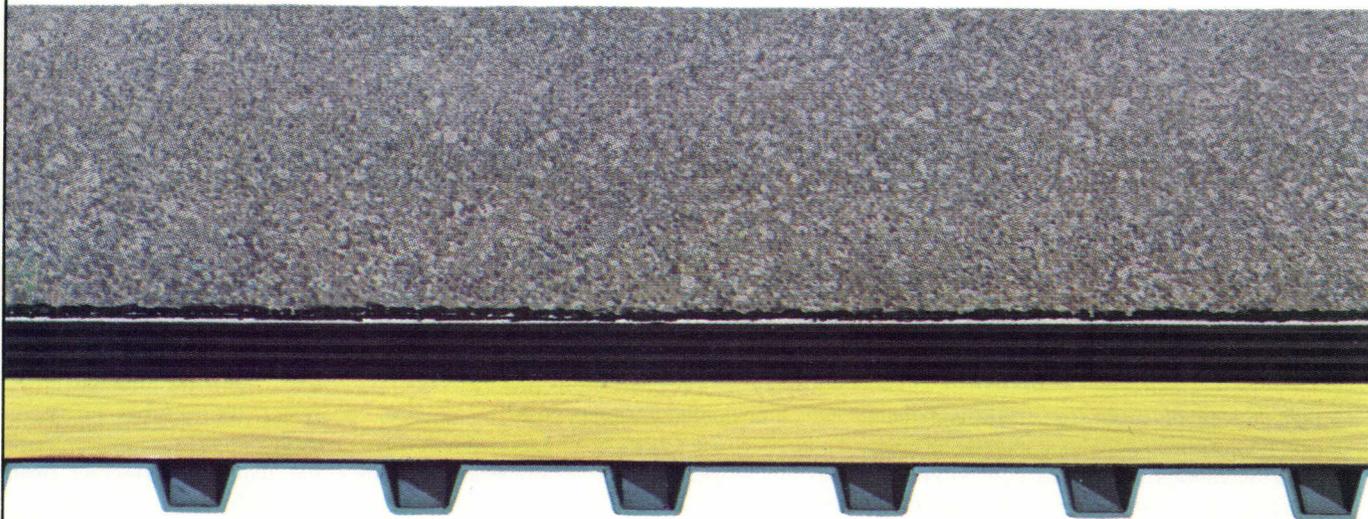
For architects, all of this activity portends no early resolution of the advertising issue. If the ethics remain unchanged, AIA could become involved in legal challenges and will feel continued pressures from those who view change as a positive means for bringing architectural services to the force in the minds of future clients. If change comes along the lines proposed, advertising by architects probably will see ingenious but possibly detrimental applications not presently contemplated by its advocates, thus prompting further change. Its cost will become another element of overhead in a firm's financial statement, and its implications for the profession's liability exposure are most uncertain. Clearly, advertising has played an important role in expanding liability in the products liability field.

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

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Managing your marketing communications program

by Stephen A. Kliment, AIA

The range of activities your firm can carry on under the umbrella of "marketing communications" (MC) falls naturally into four groups: *direct marketing support*; *public relations*; *development of publications*; and *information clearinghouse* (see Table 1). Chances are that none but the nation's very largest firms will take on more than a fraction of these choices. The choices do, however, point up how important an organized communications concept can be to your firm.

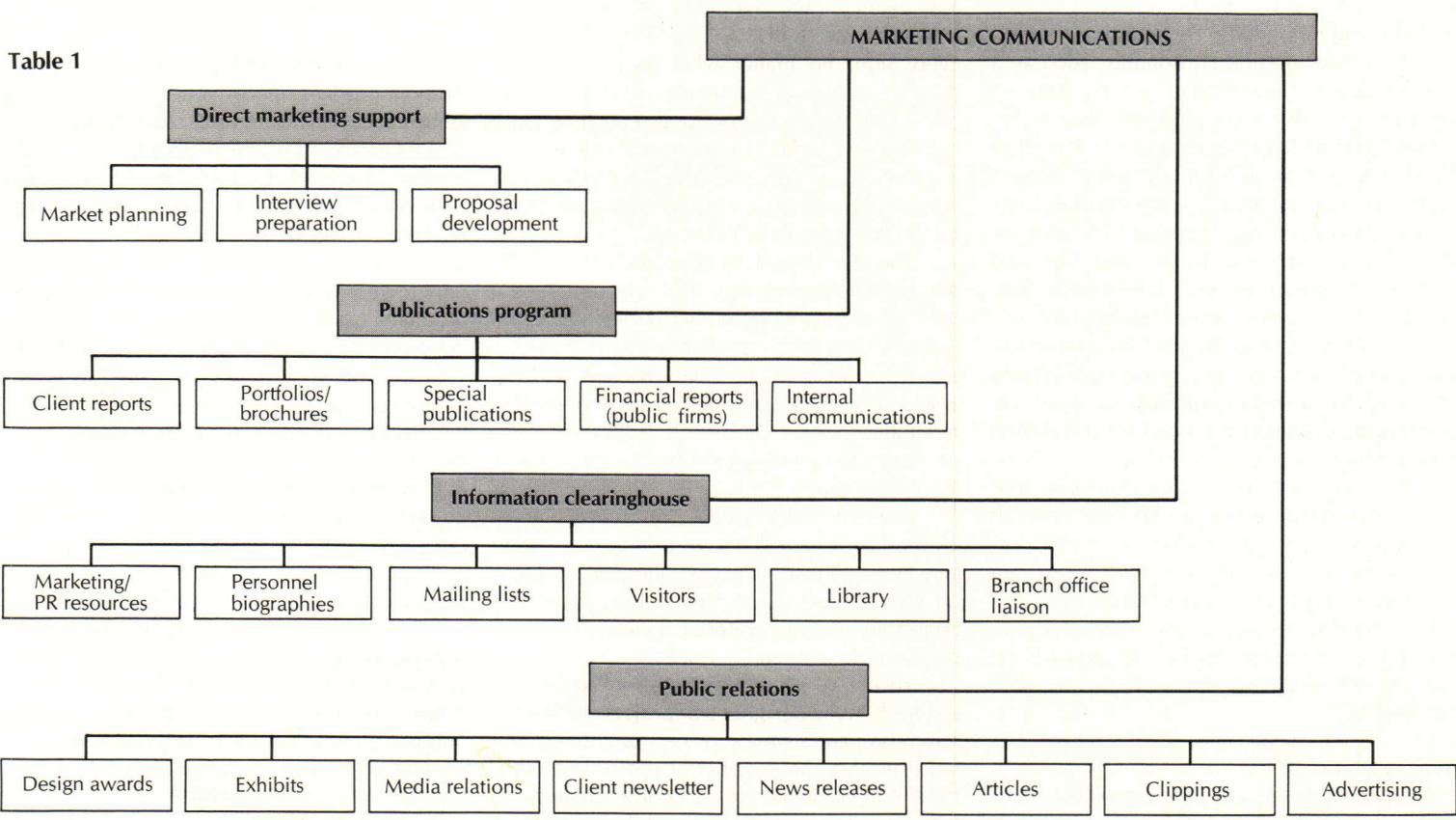
A glance at Table 1 will help you to spot potential communications activities you are not now doing; to group activities and relate them to efficient use of manpower in your office; to assemble those activities that could be assigned on either a per-project or a retainer basis to outside consultants or suppliers; and to help you prepare an annual marketing communications plan and budget. What criteria should you apply to selecting the right mix of marketing communications activities to fit your

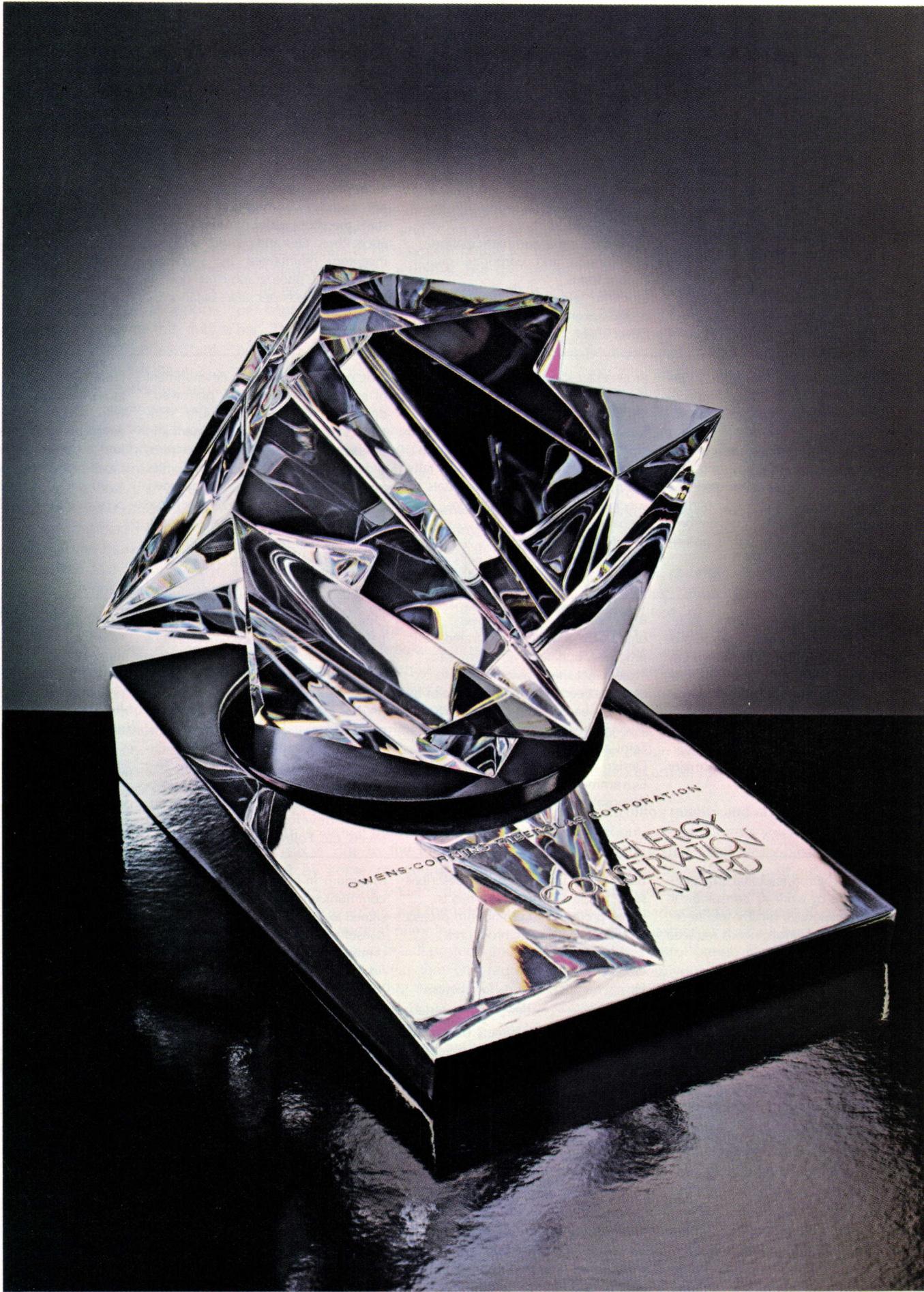
Mr. Kliment is an architect and communications consultant in New York City. He was at one time editor of *Architectural and Engineering News*, and is a former vice president of Caudill Rowlett Scott. He has lectured on the subject of communications and the design professions at the Harvard Graduate School of Design. This article has been adapted from a chapter in his forthcoming book, "Creative Communications for a Successful Design Practice," to be published this spring by the Whitney Library of Design.

- firm's overall marketing effort?
- First are your growth objectives. If you plan to maintain your present level of personnel and volume, a different volume and mix are called for than if you plan to double your volume in three years.
 - The size of your work backlog is another factor. A small backlog will place greater pressure on methods promising early market results, such as an intensive campaign of "bird-dogging" leads and active dissemination of your brochure; a large backlog will allow you to place a greater proportion of your resources into longer range methods such as press relations, active participation in design award programs and even, if your mailing list of eligible prospects is large enough, a regular client newsletter.
 - A third factor is the current level of your bill-

- ings, and hence the numbers of dollars you can realistically allocate to your MC activities.
- A fourth criterion has to do with the kind of client who is your principal source of work. If, on the bulk of your projects, you are the prime professional, your marketing effort will be more elaborate and costly than if you are usually a consultant to the prime professional.
 - The final criterion is your firm's type of practice (see Table 2, page 79). A firm with a general practice may have a level of billings similar to that of a specialized firm, yet the specialized, national scope of the latter will necessitate a high budget for travel and for entertainment at conferences and conventions of client prospects (such as school or hospital administrators); and for a greater than average focus on being published in the journals, both those read by these same potential clients, and those read by colleagues with general practices who may wish to associate on a project. On the other hand, firms with a local or regional practice will put more of their marketing communications money into memberships in local social and civic organizations and the cultivation of local media.

Table 1





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IT'S BACK TO SCHOOL FOR THE SYSTEMS APPROACH



In an office at Stockton State College, near Atlantic City, New Jersey, a tacked-up hand-lettered sign says, "Schools are bad places for people, but they can be changed, non-violently." Set non-violently into a sandy pine-studded site, next to a lake, the neat nonchalance of Stockton, designed by Geddes Brecher Qualls Cunningham, is such a reform-minded nudge. The system, in a curricular way, and the systems, in a structural and mechanical way, have loosened their ties.—*William Marlin*

Norman McGrath photos except where noted



An expert, and this would apply especially to an educational expert, has been described as a person who has stopped thinking because, after all, he *knows*.

If anyone stopped thinking when they were trying to figure out what the program of Stockton State College should consist of, or when they were trying to figure out what architectural configuration the program should take, it doesn't show.

What does show, because of the buildings, not despite them, is a campus site, covering almost 1,600 acres, that looks pretty much as the terrain did before the College came along. The placid scruffiness of the famous Pine Barrens of southern New Jersey cover this part of the state like a deep-pile carpet of dense dark green and brown over an underweave of soft sandy gold. This texture, edging either side of the roads that trail into the region, also edges right up to and, in some places, into the low-lying latticework of the College buildings.

Clearly, Robert L. Geddes, of Princeton-based Geddes Brecher

Qualls Cunningham (GBQC), meant the "architecture" of Stockton to start miles away.

Another thing that shows that no one stopped thinking when Stockton was being put together is the manifest nature of the way it was put together. This shows up in several closely aligned respects: One has to do with its structural and technical composition; another, with its arrangement and sequencing of space, at various levels of specificity and intensity of use; still another, with the social and human significance of Stockton's reform-minded academic program which, without pedantry, assumed what Geddes calls a "hard-edged, exactly measured, but truly *enabling* mechanism for learning in—and from."

One sees *how* these buildings were made, sizing up their material and methodological character quite quickly, but, right away, one also starts seeing *why*. Because the most telling thing about Stockton's shape is the shape of the life that courses toward it, around it, and through it: The structure of the place, so-called is a countenance of



The primary organization element of Stockton State College is the street-like gallery, two levels high, which threads through the long linear plan, creating a leg- and sense-stretching atmosphere that links up everything, and everyone. The principle of circulation was the premise of the overall design, indoors and out, and, as if to subtly pace this pedestrianization, the enfolding structure, a pristine composite of off-the-shelf sub-systems, reads clearly and consistently throughout, set off by colorful graphics, woodland views to the outside, and an all-hours, all-seasons mix of people.







skin sub-system—each of these was pre-bid among manufacturers using the performance specification and schematic drawings. Naturally, the various submissions in each classification were scrutinized for optimum compatibility, but in *both* functional and visual terms.

So GBQC not only designed a set of rational buildings, but it also designed, if that is the word, the entire logistic for getting them into place. And in what must be the most important aspect of this, or any, architect's authority to specify what goes into a building, GBQC, from the earliest days, had a positive role in helping the client think through what Stockton should be as a place of education. They weren't designing just a school. They were designing, much as Louis Kahn used to put it, by delving into the nature of *school* itself. From this well-spring came a pattern of purpose, yielding the formal and technical properties of Stockton, not the other way around. Moreover, the reliance upon standardized sub-systems—remember, that was going to be one of the esthetic ethics of 20th-century design?—gives the impression that it was unforced. This is not to say that the architects were not answerable to severe constraints on time and cost. They were, from day one, and, as Cunningham says, "The construction industry's conventional methods are not exactly those you turn to when there have to be appreciable reductions in the time required for design, bidding, construction, and occupancy." The unforced impression that results from what they *did* turn to is a sign of the potential of systems, of available stock stuff. At Stockton, systems were not merely used, they were fulfilled.

With no curb on architectural creativity, the three *completed* phases (with two left to go) were built quickly, setting a New Jersey record for construction time in this building type, and coming in at about \$20 million. Of this amount, about \$7,600,000 represents the pre-bid contracts. A second requirement was immediately solved with

the systems approach and, from all appearances, is still being solved, constantly—the recurrent shifting around of partitions and lighting to create new layouts, from little office clusters to entire teaching sections. For example, when the 196,000-square-foot second phase was finished, in 1974, the 107,000-square-foot first phase was completely revised, and in just 120 days. The interior components are used over and over, or, when there is a surplus, they are put into inventory, so to speak, for use later on. Replacements, when they are needed, can generally be ordered and received in ten weeks. The labor costs are low—having ranged from six to twenty dollars per square foot. Of course, this very flexibility can present problems. Administrators and faculty are tempted to come in, just any time, and, more out of caprice than real long-term planning, request changes just for the sake of change. There are campus personnel in charge of seeing to reorganization requirements and, the corollary, seeing to it that any reorganization really reflects long-term thinking rather than someone's whim. Otherwise, without watching it, Stockton, which was meant to be a better designed, more serviceable kind of Ford, could end up being a maintenance-prone Jaguar, suffering from over-indulgence.

Still a third requirement was taken care of here, and one to which architectural design must be increasingly accountable—energy conservation. Deep sun screens are an integral feature of the sub-system make-up, latched neatly onto the window walls which, in turn, latch neatly onto the external structure. Covered passageways, the tranquil, landscaped open spaces between the loft structures, the encroaching woodlands—these, too, help the buildings to breathe comfortably in the heat. It is not left solely to the HVAC sub-system to intervene.

Technically and structurally, this is total design, and yet, its material massing and spatial organization are even more significant as tracings of something more total, a *cultural idea*.

"I have always been interested in the ethical roots of esthetics, explains Geddes, "and in the esthetic roots of ethics. In fact, being interested in these things—parts of a unity—is the social responsibility of an architect, as I see it. Buildings go beyond being just operational. They enable us to communicate values. This is why I am fascinated by the relationship between the tasks which a building is meant to serve and the form which that building gradually takes—almost *has* to take. Out of the reality of such tasks comes a coherent, cohesive environment—task and form. These color everything I do, and the explain why I am most stubborn when it comes to determining—well, you might say the *gestalt* of a structure, its formal organization, its organizing principle. Because though buildings may be thought of as consisting of surfaces, masses, and spaces, there is, over-all the reality of procession or, put more simply, the ways in which a building, or, as at Stockton, a set of buildings, allows you to move in, or around, or through. This is why time is the essential dimension of architecture. Human beings, unlike a lot of their buildings, do *not* just stand there."

At Stockton College, the material wherewithal for this idea came off the shelf, but the synthesis of sub-systems in its design suggests, somehow, that this cultural idea should also be more conspicuously on the shelf—at least more discernible an element in our environmental decisions, if not (as yet) in heavy enough demand. No one trekking through the pines toward these buildings, or looking out at them, walking along the well-lit and lively gallery, can fail to notice that something more than bare needs have been taken care of. These students, who are most certainly not just standing here, may indeed *know* something after their Stockton experience—that the everyday buildings which line and, in many ways, define our lives should not, for the most pragmatic reasons, stand for any less.

STOCKTON STATE COLLEGE, Pomona, New Jersey. Owner: State of New Jersey, Department of Higher Education—Clifford A. Goldman, Treasurer, State of New Jersey; Ralph A. Dungan, Chancellor, Department of Higher Education; S. Leonard DiDonato, Director, Division of Building and Construction. Architect: Geddes Brecher Qualls Cunningham—Robert L. Geddes and Warren W. Cunningham, partners in charge; M. Neville Epstein and Hamilton Ross, associates. Engineers: David Bloom, Inc., Jackson and Moreland (structural); Vinokur-Pace Engineering Services, Inc., Jackson Moreland (mechanical, electrical). Contractor: Costanza Contracting Co.



A house frame with sea lions supporting cross beam and ridge pole, carved by Quatsino Hanson of the Kwakiutl tribe of Vancouver Island. Courtesy of the Museum of Anthropology, University of British Columbia

SPACES FOR ANTHROPOLOGICAL ART

The recently completed Museum of Anthropology for the University of British Columbia in Vancouver was designed to effectively display such splendid Northwest Coast Indian artifacts as the longhouse frame shown above and overleaf. The posts, cross beam and ridgepole of this primitive form (shown in situ before its relocation in the museum) were carved from giant cedars by a Kwakiutl tribesman and sewn together through slanted awl holes so that no sign of the joining appears on the surface. The precast posts and precast, post-tensioned beams of the museum (left), inspired by the primitive house frame, were tied together by invisible bolts. The technologically sophisticated artistic descendant of the Kwakiutl Indian house frame sculptor is Arthur Erickson, architect of the new museum.

Erickson has revealed that his decision to recall the primitive structure for the primary form for his building was not a conscious one. He became aware of what he had done only after the building began to assume its final shape on the drawing board. In designing the museum, his conscious concerns were the basic ones common to all his work—considerations of site, light, cadence and space. The placement of the building on the site and the over-all landscape design was conceived as a metaphor of a Northwest Coast Indian village. The museum has large areas of glass wall and skylights to open it up toward the pale, evanescent, mist-filled light of the region. And the cadence and dimensions of its spaces were designed to contain powerful art which placed in a less carefully differentiated and scaled grouping might have been too overbearing to be endured. Among the Indian tribes whose work is included in the museum, the Kwakiutls were said to have been vigorous and zestful, but also megalomaniac and paranoid. The totemic animals they carved on their cedar poles and house frames symbolized the gods to whom they attributed the hostile and demonic sides of their own natures and of their world as it reflected themselves. Erickson's building, in a remarkable way, gives each of these images enough space to itself to enhance its own particular terrifying force.—*Mildred F. Schmertz*



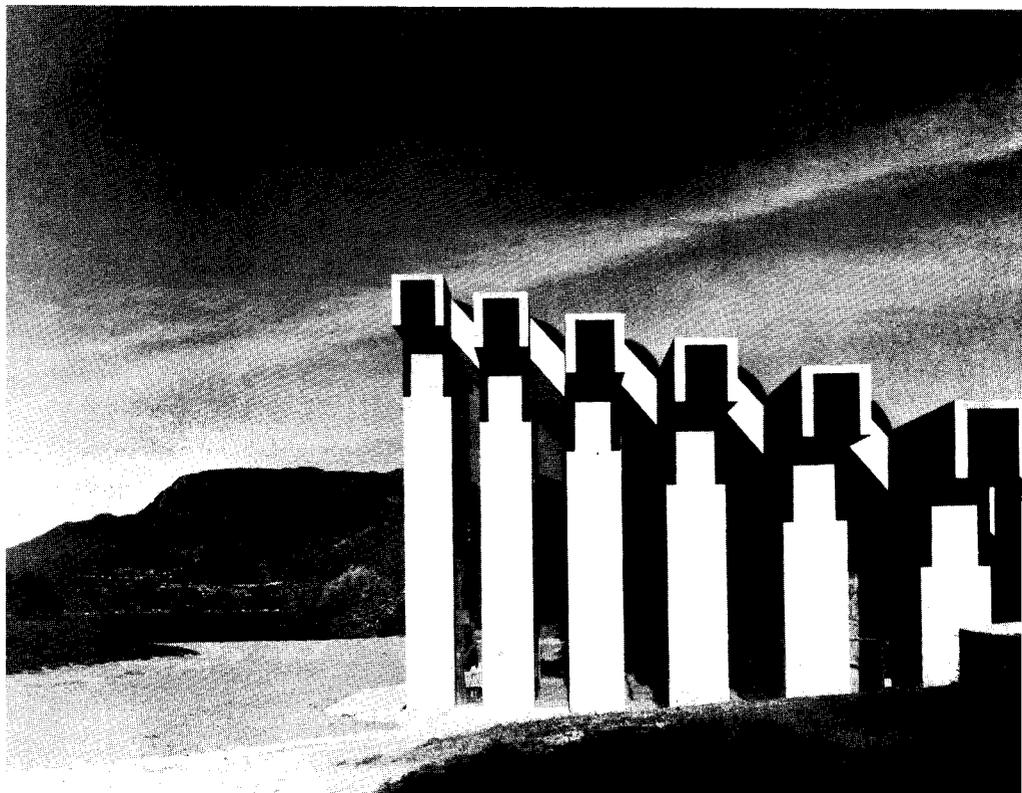
The Museum of Anthropology of the University of British Columbia showing the great hall facing the shore.



Response to the land

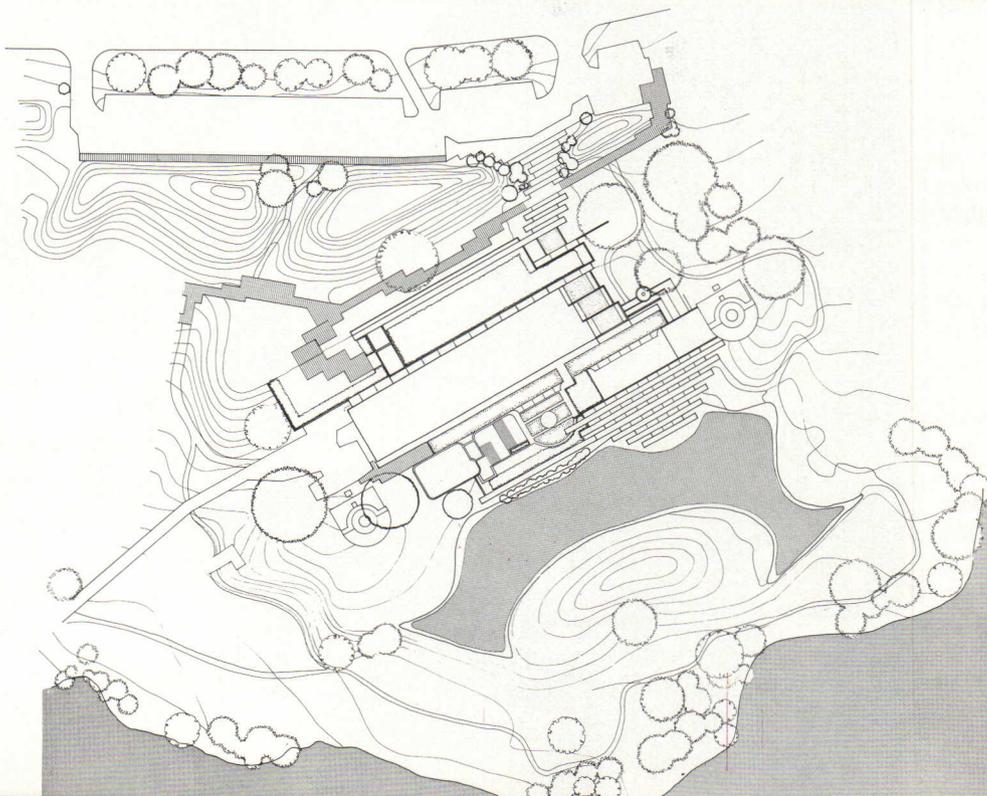
The museum is built upon a cliff edge within the campus of the University of British Columbia and overlooks the Strait of Georgia and the North Shore mountains. An artificial lake (site plan opposite page) will be built between the edge of the building and the cliff edge in such a way that, as seen from within the exhibition space, it will simulate an inlet of the sea as it appears to merge with the waters of the Strait below. Thus, when the lake is finished, a setting will be created metaphorically similar to the sites of the old Northwest Coast Indian villages, which were all located on the beaches between the two main sources of food—the sea in front and the forest behind. In the old villages, the totem poles stood close to the forests between the village longhouses and the beach. Carved with birds, bears, fish, serpents and other creatures of land and water, these totem poles cast their magic over the villagers' hunting and fishing expeditions. Those poles and village longhouses in the museum's collection that are in good enough condition to remain outdoors will be arranged in a manner approximating the traditional setting of house and pole—at the line of conjunction between forest and sea. Showing the typical village this way and surrounding it with ethnobotanically significant flora will be an important anthropological statement of the museum. Two Indian cultures and eventually possibly three will thus be displayed in village groupings.

Quarter-scale replicas of all of the massive carvings were arranged on the site before the building enclosure was determined. Most of the poles had to be enclosed in a controlled atmosphere to be preserved. With the decision to place the lake on the lower half of the site, the creation of an approach to it downward through a ramped hall of massive carvings was a natural consequence. The highly restrained "classical" carvings of the Haida tribe are arranged to one side of the ramp within the building, the great line of poles emerging out-





Simon Scott photos



The museum has been shaped primarily as a container for the massive totems and longhouse frames brought in from remote Northwest Coast villages. Most of these had to be enclosed in a controlled atmosphere in order to preserve them. As the last poles to be found in the region, they are extremely valuable. A man-made lake will fill the now bare foreground in the photo above. As the site plan indicates, the lake will be located between the building and a cliff which plunges down to the sea. Parking and pedestrian access are at the opposite side of the building.



Eberhard Otto, for "Architecture as cultural expression,"
artscanada, October/November 1976

continued from page 104

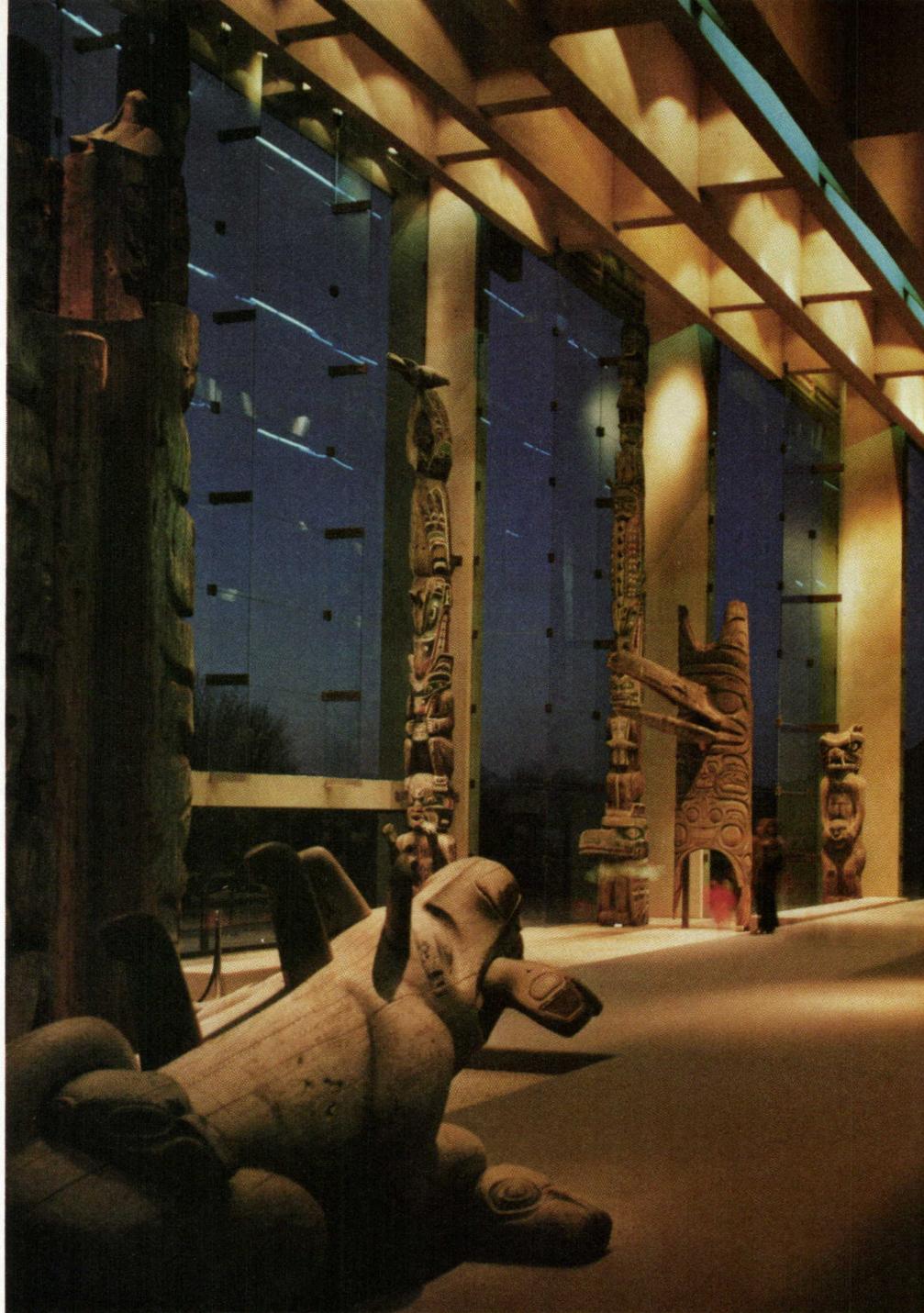
of-doors along the edge of the proposed lake as can be seen to the right in the photograph (page 105). The theatrical, flamboyant and powerful carvings of the Kwakiutl march to the sea down the opposite side of the ramp. Two of those sturdy enough to be displayed outside appear to the left of the photograph. Eventually these awesome, giant colonnades of totems will visually connect with their tribal villages reconstructed on either side of the lake. Thus an important lesson will be emphatically taught—the fact that the Kwakiutl and the Haidas were two distinct cultures—the Doric and Corinthian of the Northwest Coast.

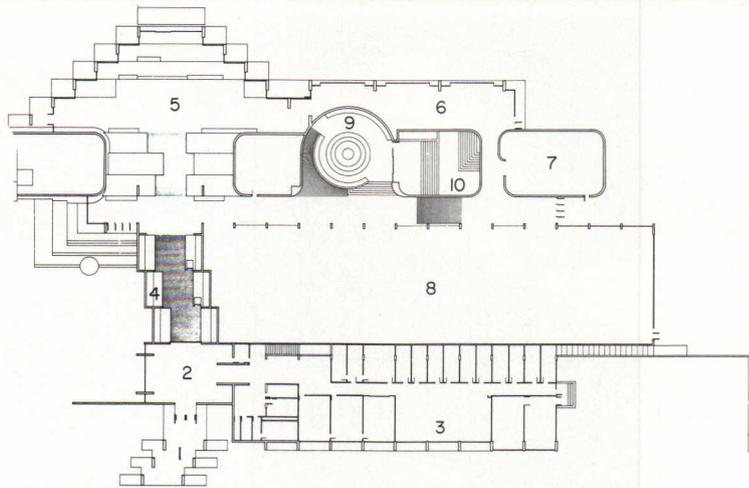
Considering the light

Erickson has written: "I have been anxious to find, wherever I build, the right response to light. The Northwest Coast is a particularly difficult area with its watery lights, which are capable of soft and subtle moods. The Coast demands transparency in buildings, or skylights bathing walls with a gentle introspective light, or water reflection to bring the sky's brightness onto the earth's dark surfaces." The new museum is as transparent as function and structure allow it to be. Bands of double-glazed, barrel vaulted skylights bring daylight to the displays, and the great hall has a suspended glass wall 45 feet high. The artificial lighting system blends unobtrusively with the structure and the exhibits (photos opposite).

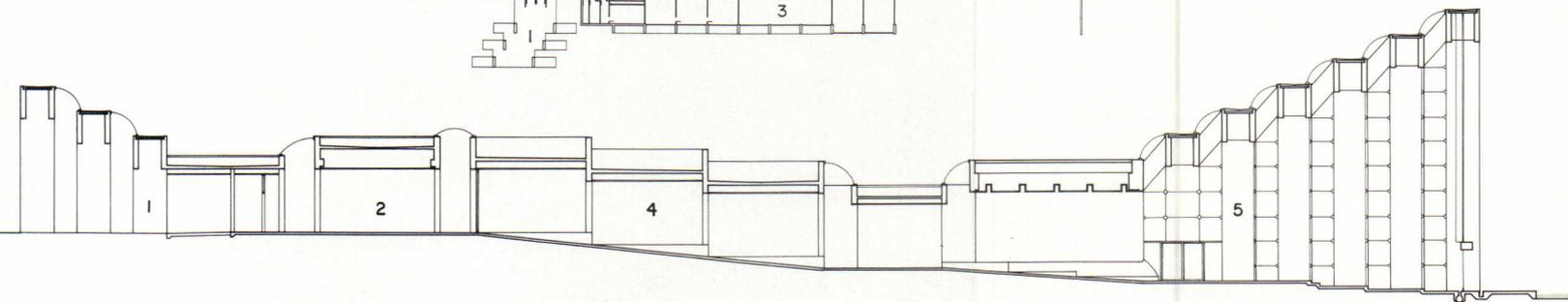
Rhythm, cadence and space

The enclosure of the great hall of the museum followed the preliminary layout of the carvings. The hall itself is the climax of a spatial sequence which proceeds along an asymmetrical path beginning at the main entrance (above). In this sequence spaces do not begin or end abruptly. They seem to come into focus and then dissipate. Off the entrance lobby three small rooms, skylit only, display as an introduction carvings from the three main climatic regions—the Nootka of the south coast, the





The entry (opposite page top) sets forth for the first time the building's basic structural theme—a cadence of concrete channels and posts which recall the primitive frames of the Northwest Coast Indian longhouse. The photographs above and at left are of the great hall. Shown on the plan and section are: (1) the entry; (2) lobby; (3) offices/seminar rooms; (4) ramped gallery; (5) great hall; (6) small object storage area; (7) theater; (8) visible storage area; (9) lounge; (10) outdoor court.





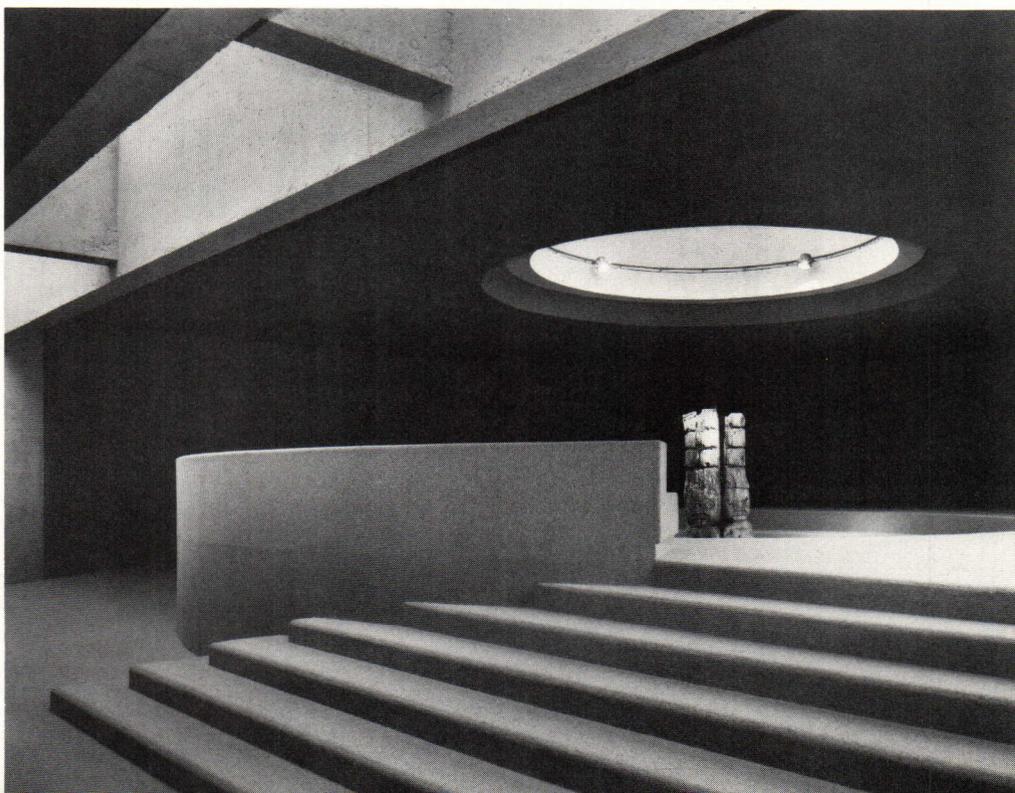
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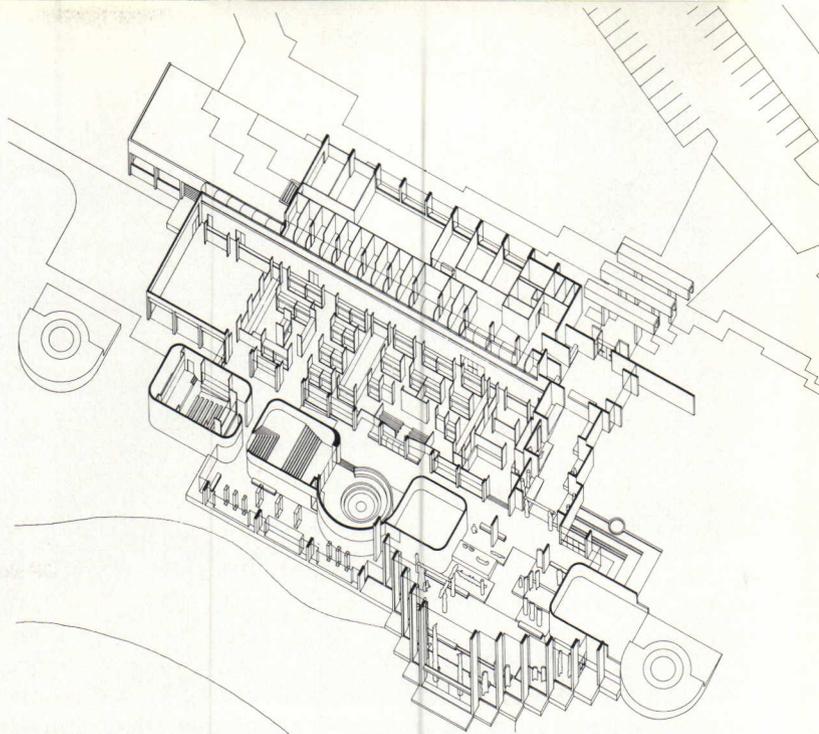
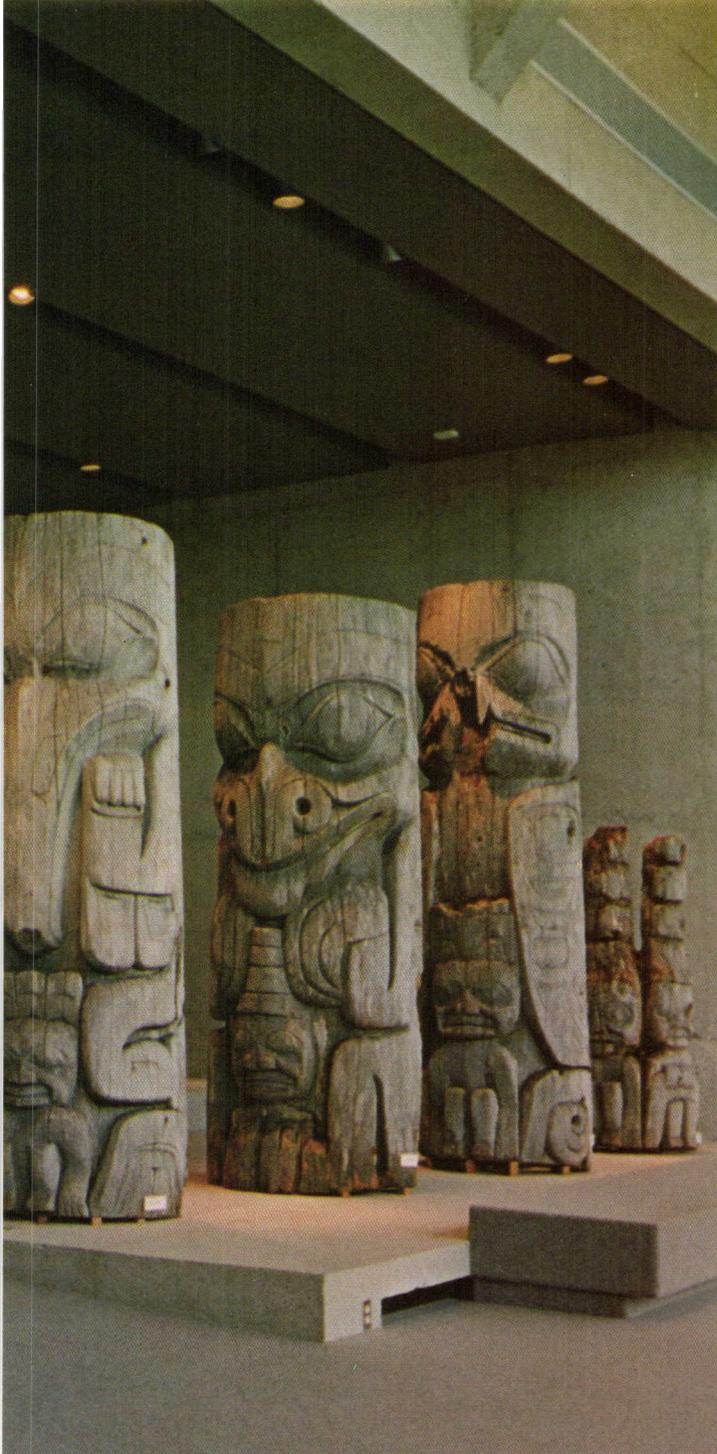
Kwakiutl of the middle region and the Haida of the northern region. These are located on either side of the down ramp (shown above). At the base of the ramp a longhouse frame becomes the gate to the great hall where the carvings range from eight feet to 45 feet in height. Spatially the hall expands outward and upward to the view of the sea and distant mountains by means of concrete frames. These range from low wide spans of over 100 feet to tall narrow spans of only 40 feet. The concrete channels are as deep as the concrete piers are wide and the dimensions of all are identical regardless of the span of each channel. Thus Erickson disregards the maxim that the dimensions of the structural elements should reflect the forces carried. He points out that neither the Greeks nor the Northwest Indians, among many cultures which could be similarly cited, were bound by this canon, and he believes that contemporary architects are too restricted by it.

Structure materials and cost

The building is constructed of a warm tone, lightly sandblasted concrete, both poured in place and precast. The concrete is carried through to the interior and with the grey carpet and dark painted plaster board ceiling forms the major interior finish. Fire-resistant wood soffits are used in the lobby and small galleries. Carpet is applied to the walls and benches used in the lounge and elsewhere. The office and laboratory spaces have white painted plaster board walls and built-in furniture. The total project cost in Canadian dollars will be \$4.8 million. The building cost \$3.1 million.

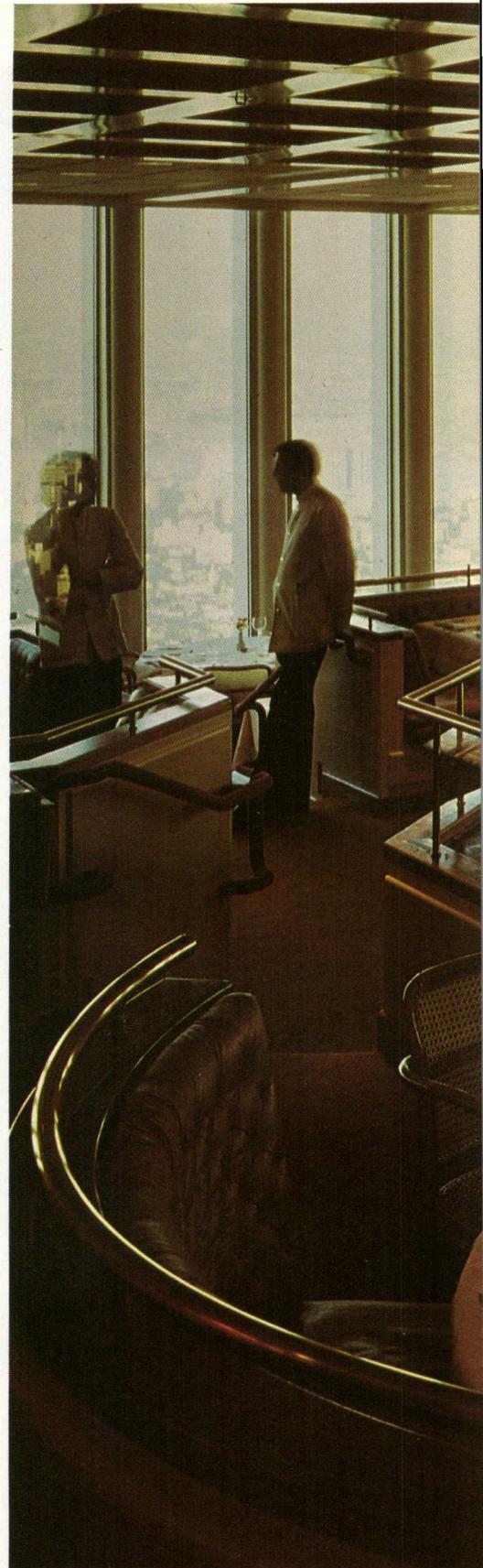
MUSEUM OF ANTHROPOLOGY, Vancouver, British Columbia, Canada. Owner: *University of British Columbia*. Architects: *Arthur Erickson Architects*. Consultants: *Bogue Babicki and Associates Ltd.* (structural); *Mechanical Consultants Western Ltd.* (mechanical); *W.T. Haggert & Co. Ltd.* (electrical); *Hopping, Kovach, Grinnell Design Consultants* (interiors); *Cornelia Oberlander* (landscape). General contractor: *Grimwood Construction Ltd.*





The site has several concrete bunkers left over from World War II which were too expensive to remove. Three of them appear in the isometric (above top) and two form the neck of the entrance into the great hall. One of these has very cleverly been made to form the circular lounge of the museum (photo bottom left). The former gun mounting will be the base for a new carving being made by the Haida artist Bill Reid. The barrel vaulted skylights (partially visible in the photo right and overleaf) are of single-glazed bronze acrylic sheet in anodized aluminum frames. Other skylights are double-glazed, pressure-formed, and ribless 14-foot-diameter domes. Large spaces like the great hall are lit with incandescent spotlights which concentrate the light on the exhibits. At night, concealed fluorescent fixtures wash the concrete beams with a diffuse light.





From the moment a party arrives at *Windows*, the people are treated to a visual feast that in its way is as breathtaking as the view of the harbor and city spread out below. After an elevator trip that covers the 1300-foot vertical lift in 58 seconds, diners are received in a golden reception room (shown later), then enter a crystalline gallery (previous page) in which photo-murals of New York and great pieces of semi-precious stone from around the world are reflected and re-reflected from glass arches and mirrors on the walls, floor, and ceiling. In this space, images are so kaleidoscopic that for

some the walk is like a trip through space; for others, a walk across a bridge defined only by the golden carpet. The gallery gradually widens, lighted at the far end by a luminous mass of color—which proves to be (when you arrive there) light from windows shining through the bottles stacked in the back bar. From there, is but a few steps down to tables along “The Windows” (photos above).

As the plan overleaf will show, virtually all of the perimeter space is given over to table space; and, conversely, no one dines without a view. But that is only the beginning step in



Platner's design concept of making each table—as nearly as possible—"the best seat in the house." People who come to Windows on the World "expect a special occasion; they expect a special place." Platner's skill in creating that "special place"—for each of 1000 diners—is evident in all of the photos; but perhaps best expressed in the photos above of the main dining room, which seats between 300 and 350.

The principle involved is a simple one: Create relatively small intimate spaces amidst what is, in fact, a very large area by changes

in level and by enclosures that say "this space is special." To begin with, the main dining room—the largest open space—is divided into three spaces because it was positioned at the corner sharing the best night-time views up-town to the towers of New York, and to the east, overlooking the striking tracery of the lights on the East River bridges and the ship traffic on the river far below.

Throughout the spaces, further division is created by many changes of level. To give everyone a view, the tables are terraced up in steps away from the windows; and there are

even changes of level within the terraces. (The given ceiling height is 12 feet.) Finally, as the photos show, there is a rich variety of dividing enclosures separating the tables, all in fine materials and carefully detailed. Typical of the thought given by Platner to make each seat that "best in the house": the narrow strip of mirror set into the back of each banquette gives every diner not facing a window an eye-level glimpse of the view, and also catches some of the light and glitter and movement in the room—reinforcing the luminous quality of the space and multiplying the images.



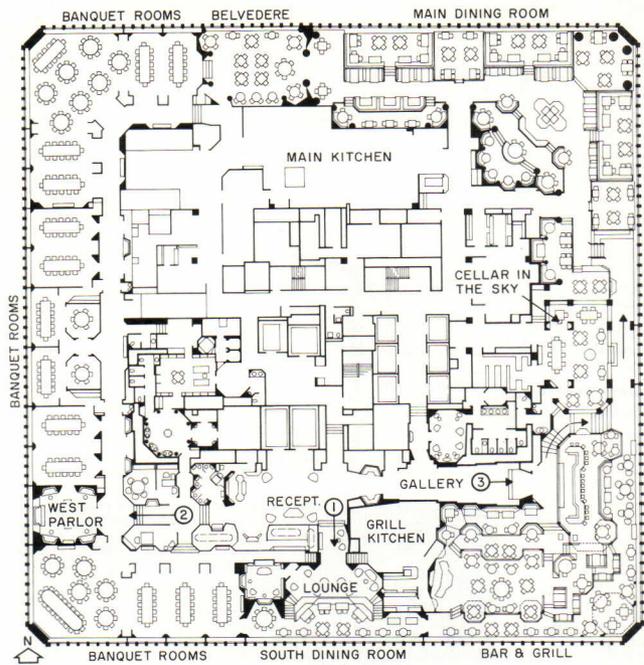
For all of the richness in detail and finishes, in plan *Windows on the World* is as carefully and functionally organized as an industrial plant. Upon arrival at the reception area, visitors, who are typically anxious to see the view, can take a moment to step up into the Statue of Liberty Lounge (arrow 1 in plan) which offers a spectacular panorama of New York Harbor. By raising the lounge close to the ceiling, Platner not only created a particularly mind-boggling downward view, but gave the small lounge a great sense of importance, created a strong vertical separation between

lounge and the south dining room some eight steps below (second photo from top, at right) and (more mundanely) created space beneath the lounge for a small dishwashing room which serves the separate grill kitchen.

Having had their first glimpse, visitors then move to their tables. Those attending a banquet move through a short hallway (arrow 2) to the West Parlor (photo next page). The Parlor, one of only two perimeter areas not given over to tables, serves as a reception area for the bank of banquet rooms, seating nearly 400 in total. The banquet rooms, with seating

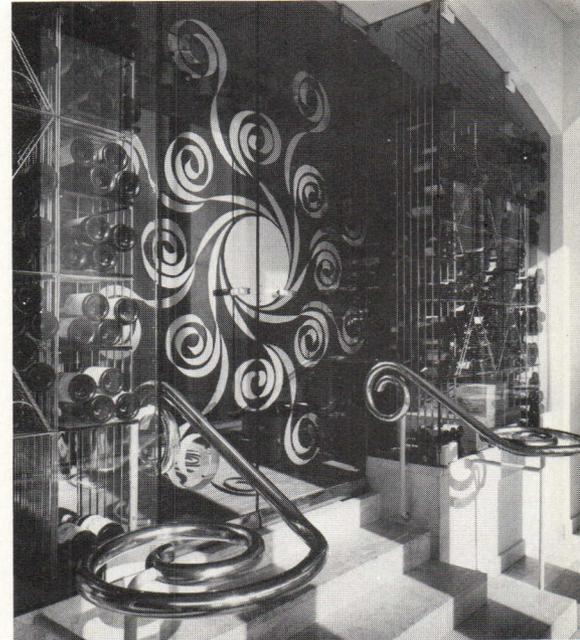
for as few as six to eight or as many as 150, stretch along all of the west wall overlooking the Hudson River, and extend around the corners into the south and north walls.

Those to be seated in the grill or the main dining room have a longer walk—and Platner's plan not only makes that walk (arrow 3 on plan) an experience in itself, but minimizes any distraction or sense of bustle for those already at their place. Visitors walk through the beautiful glass gallery described earlier and pictured on page 111 and the photo top right. Those to be seated in the bar or grill turn right



The Belvedere (opposite) is an elegant room, which can be used for private parties, opened to the banquet space (beyond the iris painting), or opened to the main dining room via the glass doors in the foreground. The special detailing includes the deeply sculptured ceiling, very private alcoves at the four corners, a general gold tone throughout that works well with the strong flat north light, and is accented by the gold leaf pattern on both sides of the entry door and the columns covered with gold-glazed and deeply arched ceramic tile.

The plan is described below.

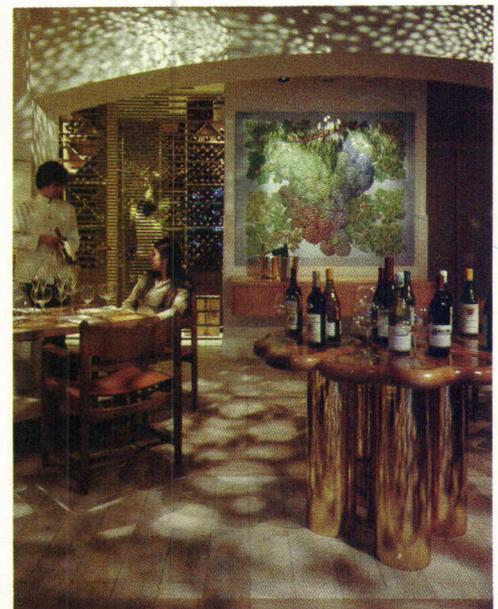


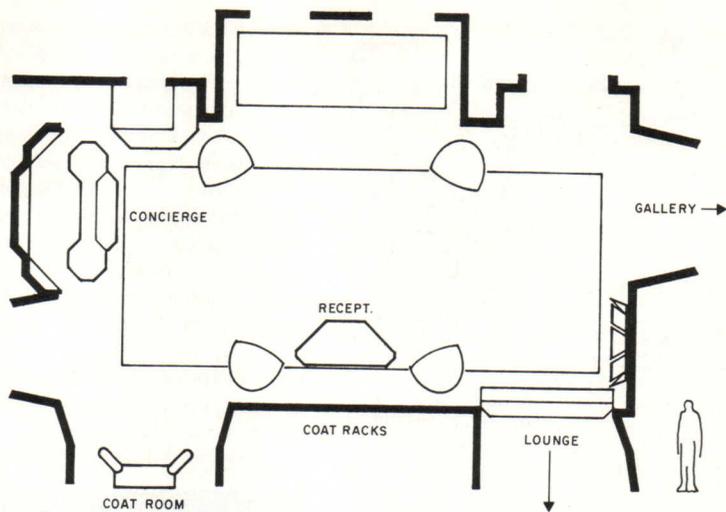
at the end of the gallery, then move down banks of steps to the various terraced levels of that space at the southeast corner of the building. Those moving to the main dining room move left at the end of the gallery. Since it is, from that point, still a considerable walk to the dining room, Platner's plan offers the visitors another visual treat—a walk along the east windows with their view of the East River bridges far below.

That stretch of "window walk" creates the only interior dining space—the Cellar in the Sky—and it received a very special treatment

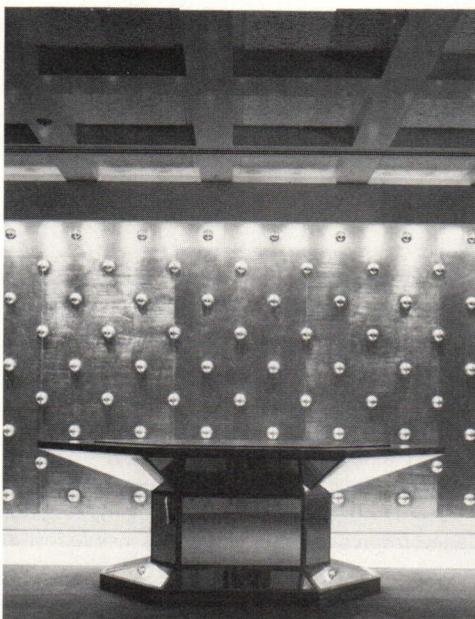
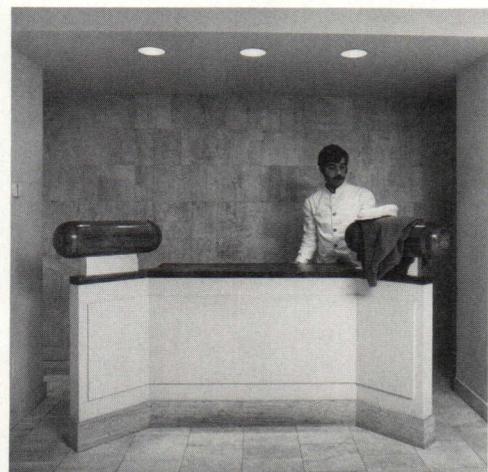
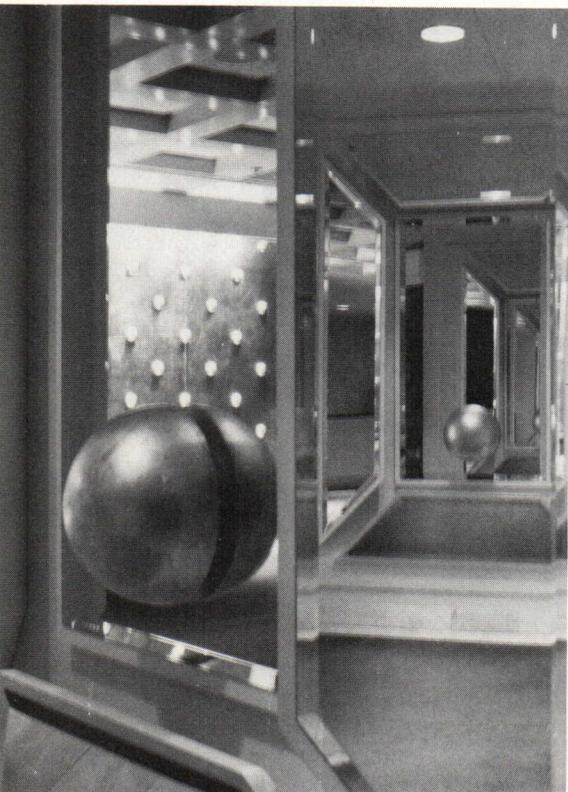
of its own (photos just above). Its entrance is announced with a flourish of brass handrails, which continues onto the gold leaf of the glass doors. Within, deeply arched ceilings frame glass walls, and those walls are lined with the supply of banquet wine in geometric wire racks. The "walls" of bottles offer glimpses of the spaces outside; and give the room an extraordinary light, supplemented by lighting designed to give the dappled effect visible in the photos.

Another "special place" is the Belvedere (photo opposite), described in the caption.





Careful detailing everywhere: At left, the West Parlor, which serves as a reception room for the banquet area. As everywhere, every element in the room from the rug to the lighting fixture was designed by the architect. Below left: a detail in the reception area, beginning the repetitive pattern of reflected and re-reflected images. Below: the concierge's desk and the reception table. At right, the men's room and the coat desk, designed to seem to provide the services of a personal valet. The highly mechanized coat racks are out of sight to each side. Opposite: the bar.



Part of the sense of "special occasion, special place" created at Windows on the World is the sense that everything received careful design attention. And it did. For example, the iris painting (previous spread) covers what, in fact, are quite handsome doors to the banquet rooms; but because it is a painting of flowers—symbol of hospitality—it creates a background for an elegant dining room; whereas doors visible at both ends of the room would have suggested that it was a passageway.

Other evidence of Platner's effort to make everything "special":

The photo at left shows the sculptured table which serves as a reception desk at noon-time when the restaurant is a club; and simply as a decoration at night. It is backed by a gold-leafed wall, on which are gold globes strongly top-lighted. The pointillist pattern established here is repeated everywhere through the restaurant—in the carpet; in the tufting of much of the upholstery, in wool and silk tassels applied to the fabric in the dining alcoves. This consistent decorative element enriches all of the spaces without distracting from the essential architectural forms.



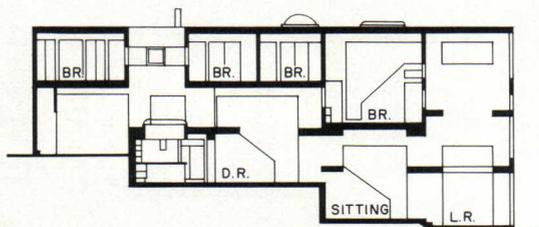
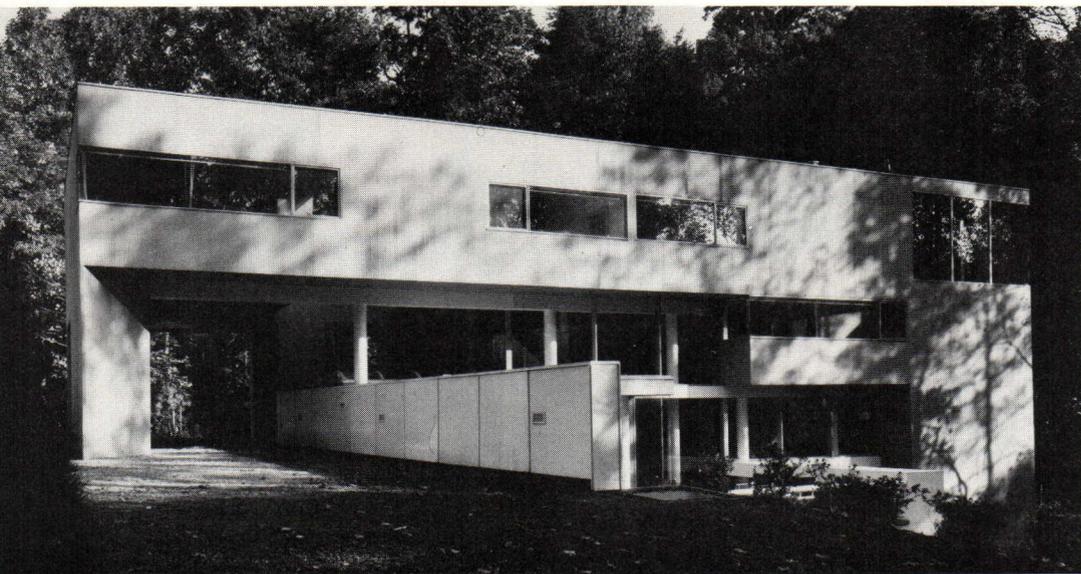
Another strong element: the pattern of the window wall at the Trade Center is of course pervasive—in a pattern of 27 inches of glass to 13 inches of solid wall. In such large spaces, this pattern read, to Platner's eye, "like a picket fence;" and so, at each column, he placed an ivory plastic-laminate half-tube, "creating the effect of an open colonnade without windows."

In the bar (photo above), Platner created another private world, set back from the windows but raised so that everyone shares the view.

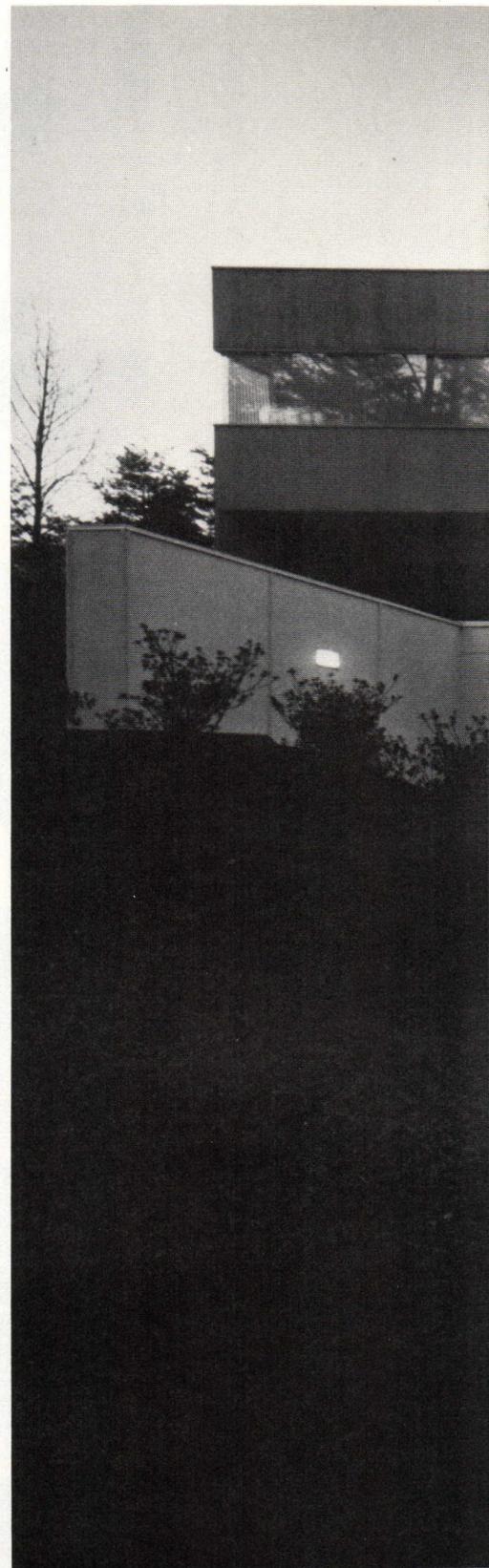
This same design attention is evident everywhere. And the result is that Windows on the World is not just wonderful, but works.

 WINDOWS ON THE WORLD and THE CLUB AT THE WORLD TRADE CENTER, North Tower, World Trade Center, New York City. Architects and designers: Warren Platner Associates Architects—associates of Warren Platner on this project: Robert Brauer, Harvey Kaufman (project architect, design), Jesse Lyons (project architect, construction), Mark Morgaridge, Paul Sargent, Lee Ahlstrom, Gordon Black, Anita Holland-Moritz, Ron Grantham. Consultants: Cini-Grissom Associates (kitchen), Skilling

Helle Christiansen Robertson (structural), Jaros Baum & Bolles (mechanical), Joseph Loring & Associates (electrical), Emery Roth & Son (building code), Vance Jonson (special graphics), Milton Glaser Inc. (menu graphics). Owners: Port Authority of New York and New Jersey. Operators: Inhilco, a subsidiary of Hilton International. Project management: Joseph Baum. All art was conceived or designed by the architect. These artists collaborated in realization of the artwork: Emily Elman, Ross Elmi, Panos Ghikas, Alexandre Georges, Vance Jonson, Susan Leites, Paul Linfante, Fred Werner, Haruo Miyauchi and, from Platner's office, Lee Ahlstrom, Gordon Black, Anita Holland-Moritz, and Harvey Kaufman.



The southern elevation is a complex study of contrasting effects of materials and light and shadow, particularly demonstrated and experienced at night (right). A large circular window in the east elevation (below) is the only non-square form in the house and does add variety, but is perhaps more importantly an unexpected playful element. As an extension of this whimsey, an exposed steel beam crosses through the window.



The 4,000-square-foot house for a family of four is positioned in a natural clearing on a wooded three-acre site in a suburb of Washington, D.C. Terracing the house on the steeply sloping site was a logical solution not only to make best use of the topography, but to meet the client's request that the main living spaces be open and separated only by levels or partial screens and oriented to the south and east with extensive use of glass. Well proportioned overhangs shield the glass walls in the summer, and trees near the house filter the sunlight in the spring and fall but permit winter sunlight to



stream into the house. An outstretched wall of storage cabinets screens the porte-cochere and direct views to the lower portion of the site.

The heart of the design solution is the deliberate separation of spatial functions between the lower, terraced levels housing the "public" spaces—the living, sitting, and dining rooms; and the kitchen; and the second-story "private" areas—mainly bedrooms. The carefully designed juxtaposition of materials, color and forms create a noticeable separation between these zones—particularly when viewed from the exterior. The main living spaces are

open and flow freely into each other—both horizontally and vertically—as the floor levels and therefore the volumes of space change.

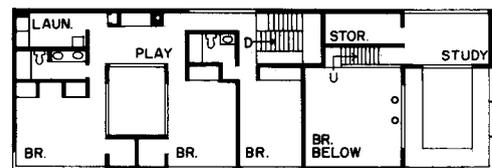
The private areas are enclosed in a rigid rectangle, seemingly suspended overhead, with little transparency and a gray-colored exterior.

The tallest interior space is the living room, which has ground-level windows only on the east but receives a light through clerestory windows on two sides, and the unexpected round window.

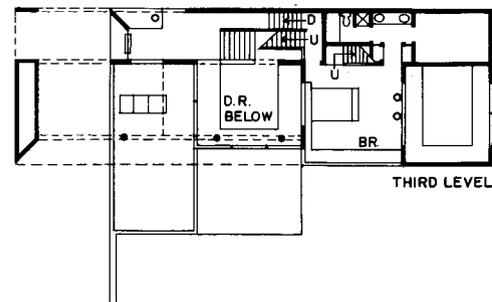
Because of the extensive glass in the wall

(photo left) the structure is supported on that side by steel columns and beams left exposed to maintain the integrity of the openness; the rest of the house is conventional wood-frame construction.

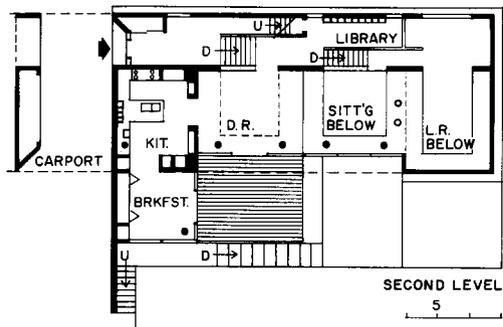
Private residence, Potomac, Maryland. Architects: *Hartman-Cox Architects—David Jones, project assistant*. Engineers: *James M. Cutts & Associates (structural), Ayers-Williams-Dodd (mechanical)*. Interior designs: *Ann Hartman*. Contractor: *Leo T. Thibodeau*.



FOURTH LEVEL

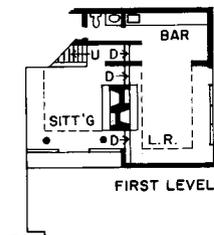


THIRD LEVEL



SECOND LEVEL

5



FIRST LEVEL

The sitting room (left) and the other main living space occupy most of the terraced levels, each separated by only a few steps. The living room can be seen just beyond the sitting room. The spaces are open and flow together, connected by a stairway spine open from the entrance located near the porte-cochère. The dining room (below), one level above the sitting room, has a view through the high-volumed spaces of both the sitting and living rooms. A window bordering the master bedroom looks out to the dining area.



HOUSING THE AGING

There is a massive need for a new building type that is less an institution and more like home.

The living conditions suffered by many people over 65 urgently point toward the need for both construction of better physical facilities *and* more positive attitudes about a national problem. The fast-growing portion of the population that will be pressing their needs on us demands radical change—and better answers. For the design professions, this will mean a re-examination of everything that has been built for the elderly—and it will mean hard work coupled with a search for knowledge.

Below is a brief examination of the current conditions, and where they have been and may lead. On the following pages are examples of the best forms of housing that are now being built, and an account of what a few architects, some of whom designed the examples, are already thinking about the future. Finally, there is an extensively researched article on what the real clients, the aging, think about their current facilities. The results indicate a largely unexplored field in terms of quantity *and* quality.—Charles K. Hoyt

The current statistics on the aging point to a field of construction that could be more promising and more challenging to architects than the Middle East. Toward solutions for what has become an increasingly apparent problem, there has been some rhetoric and very little action in meeting the needs of a steadily growing part of the nation's population. While the 22 million persons now over 65 at present form a relatively large 10 percent of the population, the average life expectancy of everyone alive today is now well above 70, and increasing. Of course, this means that over half of the enormous number of people who are in our currently crowded environment may eventually need and expect some type of housing tailored to specifications that have been little met so far.

Today, there are only some three million units designed specifically for the aged, and these include everything from apartments to intermediate and advanced medical-care facilities. Yet, in New York City alone there are over one million persons over 65, and—according to a study by the National Council on the Aging—a large percentage almost never leave their homes because of physical or psychological reasons.

It is estimated that less than 10 per cent of those aged considered chronically ill are housed in *any* type of suitable long-term-care facility. There are only slightly over one million units for such purposes in the whole country, and only three-quarters of these are qualified by either Medicare or Medicaid as having adequate programs. Last year's 25 per cent increase in the construction of medically related facilities (as reported by F.W. Dodge) may mean that the "catching up" is about to begin. So may the fact that President Carter included demands for better elderly housing among his campaign promises, although nothing has been initiated yet. The pressure is on: The growing numbers of aging are clearly becoming better-informed, better-educated and more vocal in fighting for common goals.

What is wrong with what *is* being built?

Except for the lack of facilities of all kinds, the biggest problem today may be the separation of the sorts of care that an older person can

receive in *any* facility. Not only is this separation confusing to those who may already be confused; it can lead to disaster for exactly those persons who are supposed to be helped. Currently, facilities are generally categorized for those who are fully independent, totally dependent, or partially dependent; apartments, nursing homes or something in between. Thomas Byerts of the Gerontological Society says experts see rough ranges: "It's go-go (ages 65-75), slow-go (75-85) and no-go". The obvious implication is that residents—at a time that they are already having difficulty in adjusting—frequently have to move repeatedly to a different kind of housing, at a time when it is increasingly difficult. Indeed, according to a study by Professor Leon Pastalan at the University of Michigan, changing the environment for persons in advanced old age can quite literally kill them.

There are vast differences between facilities in every category of care. Normally the apartments are managed by non-profit groups, such as churches, which may well have built them under the only currently active Federal program, Section 202, for persons of limited income. Inherent in the often-minimal medical facilities provided by these apartments is the concept that tenants will have to move when they can no longer take care of themselves (as is the case in most of the examples on pages 137-138). The next step is usually a choice between care in non-housekeeping residences that provide communal meals and limited medical aid, or straight to the nursing "home."

About 75 per cent of the nursing homes are run for profit. The remainder are run by non-profit groups and tend to be larger, have better rounded facilities and programs, and larger staffs per patient—but not necessarily more nurses. Because of the rising costs of providing basic services and facilities, nursing homes are getting larger—and often more impersonal. The average now has over 60 patients, while almost a quarter has over 100. There are about 6.5 employees, including four nurses (usually "aides") distributed over an around-the-clock schedule for every 10 patients. The average charge nationally is over \$500 per month, with regional variations reaching around \$750 in the Northeast. But in a Kafka-like situation, charges tend to rise in larger establishments, because of the more elaborate facilities and programs.

Care for those with advanced geriatric problems can lose much of its institutionalized overtones by good physical and social planning—even on a restricting urban site. The Palisade is part of a continuing project which goes a long way toward doing just that

Part of a 12-year-old master plan for the Hebrew Home for the Aged, that is gradually being completed, The Palisades Nursing Home has been designed to accommodate 348 residents, most of whom need long-term care for serious geriatric problems. But the Home as a whole does not segregate those needing care from those who are able-bodied. There is no need for a major change of lifestyle, friends, or surroundings with each change of physical condition. There are three main buildings at the institution, all of which overlook spectacular views of the Hudson River. They are physically linked by a large central terrace (see photos) and by corridors under the terrace. Program participants who may live "off-campus" are linked to the daily social and therapeutic programs by daily transportation.

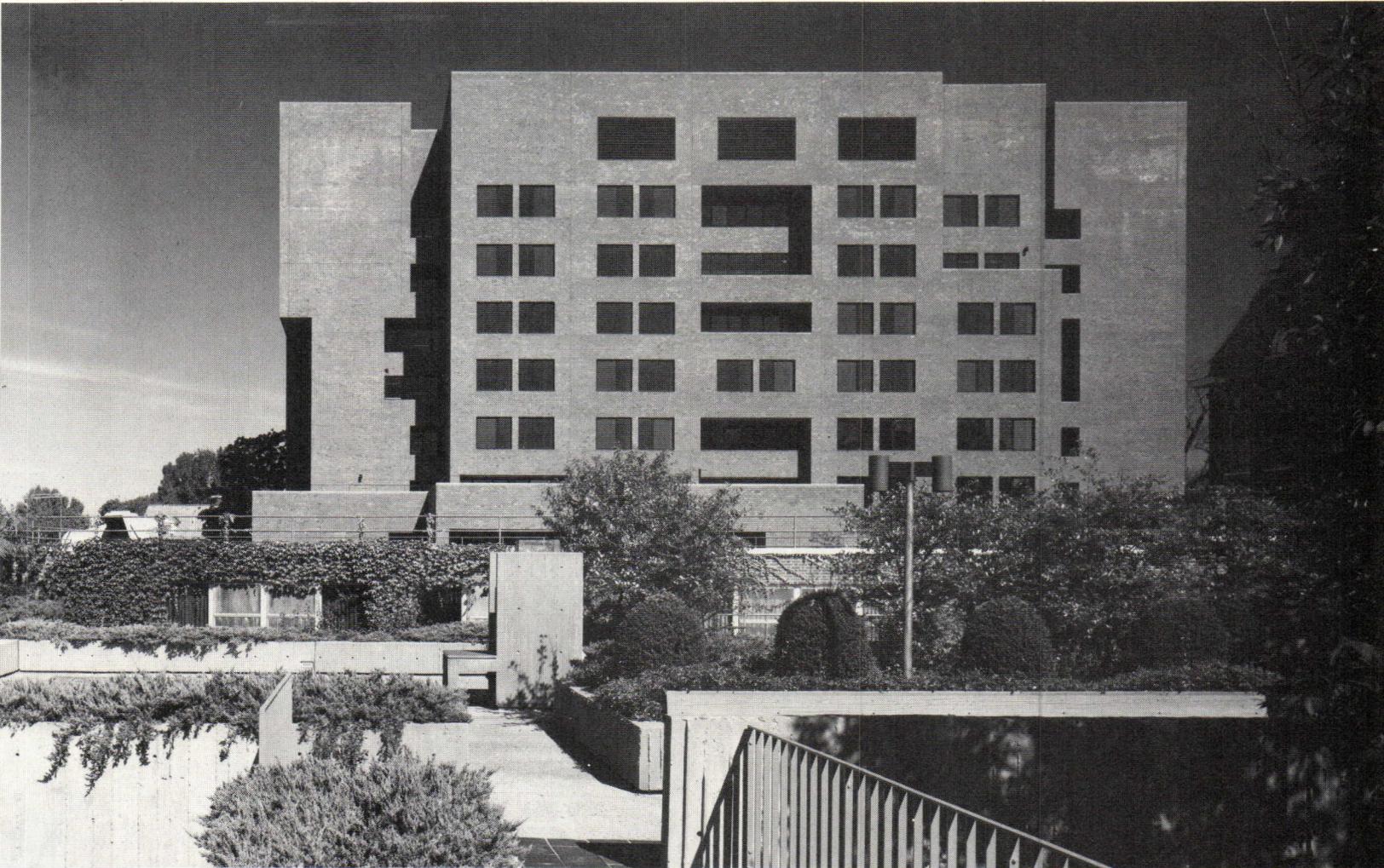
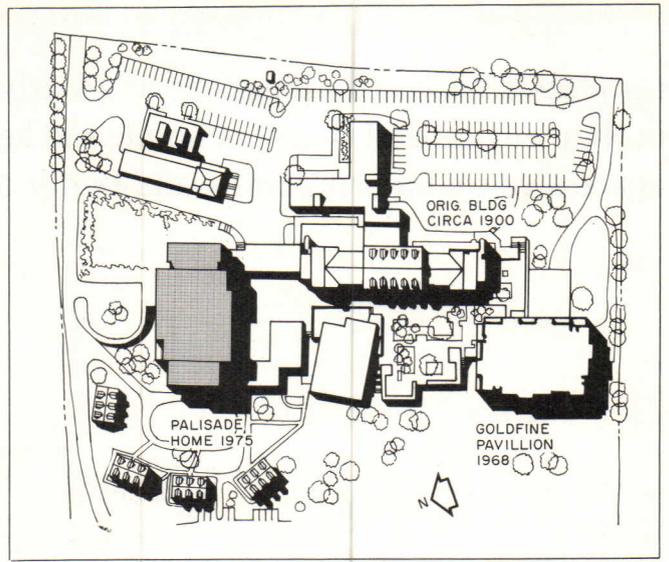
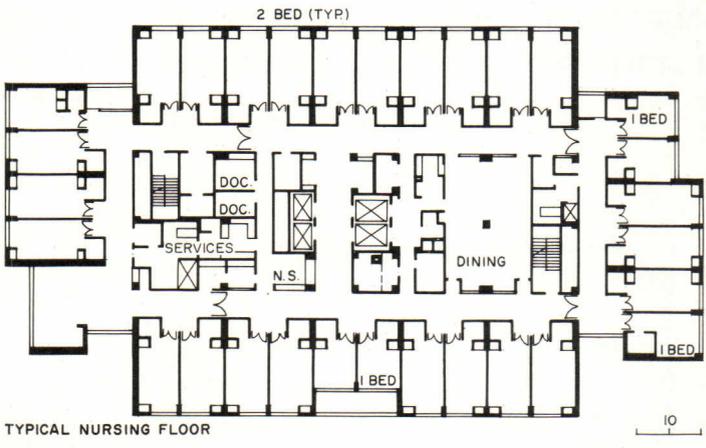
What are the real advantages here? Chief administrator Jacob Reingold is primarily a sociologist, and he has "revolutionary" ideas. One of his primary missions is to maintain the spirit of self motivation that comes from an ability to make choices for a group whose average age is 82. Accordingly, the new building includes (besides a full range of facilities for usual activities) a coffee shop which is convertible into a "night club"; at night, there is entertainment and a bar. Other evidences of the normal life created: there have been marriages between residents, and couples that have chosen to live together.

The new building's eight stories include five for an infirmary, with 34 single and 116 double rooms; and two stories for intermediate care in both single and double rooms (each with a separate sitting room). Extensive medical facilities occupy a large part of the ground floor, and reinforce the concept of life-long care. The new building offered an opportunity to incorporate improvements to re-examined details over Gruzen's earlier Goldfine Pavilion on the same campus.

PALISADE NURSING HOME, New York, New York. Architects: *Gruzen & Partners*—partner-in-charge: *Peter Samton*; director of technology and construction: *Charles Silverman*. Engineers: *Harwood & Gould* (structural); *Batlan & Oxman* (mechanical/electrical). Consultants: *M. Paul Friedberg & Associates* (landscape architects); *Bill Bagnall Associates* (interiors); *Romano-Gatland & Associates* (food). General contractor: *Starrett Brothers & Eken, Inc.*

Nathanial Lieberman photos





Located in an imaginatively handled urban renewal area, this public housing keeps residents

GRUNDY TOWER, BRISTOL, PENNSYLVANIA.
ARCHITECTS LOUIS SAUER ASSOCIATES AND ASSOCIATED ARCHITECT FRANK SCHLESINGER

For those who are fully independent, this apartment tower provides an interesting example of a self-governing community

FLORIDA CHRISTIAN HOME APARTMENTS, JACKSONVILLE, FLORIDA. ARCHITECTS FREEDMAN/CLEMENTS/RUMPEL

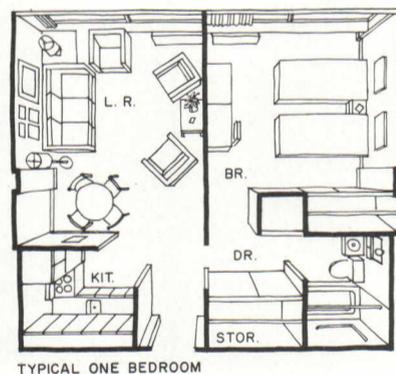
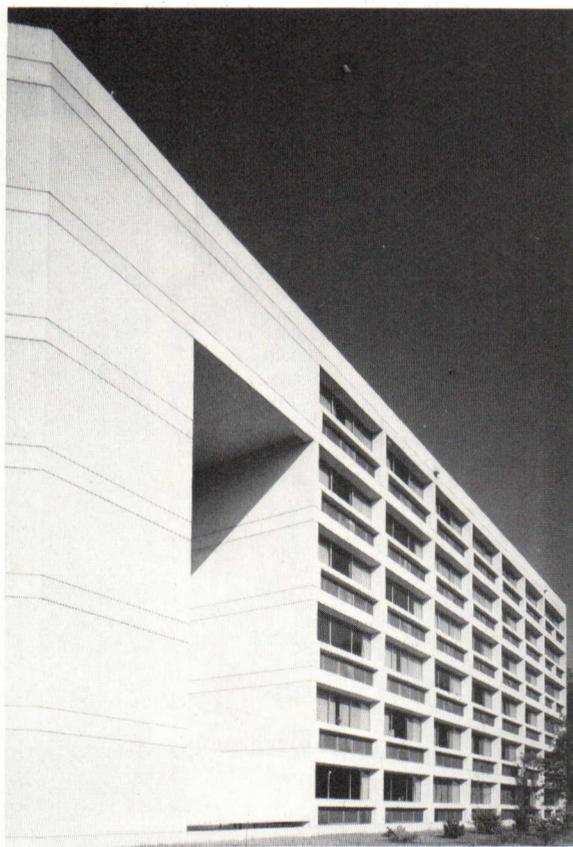
Acknowledging particular lifestyle patterns, this apartment building is like locally popular "luxury-style" developments, but accommodates the needs of a community of elderly in subtle and non-institutionalized ways

Built under HUD's Section 236 program, this first phase of construction contains 180 apartments. With its six-story height and its segmented mass, it represents something in-between a "home-like" image and that of the many new "luxury" high-rises that dot the area. The angled configuration of the wings (and of a proposed addition, bottom of the plan shown below) conforms to a curved site boundary and provides a smaller scale than the building would otherwise have. Types of apartments are separated in respective wings and—on upper floors—occupy the spaces assigned to common uses on the ground floor plan shown here.

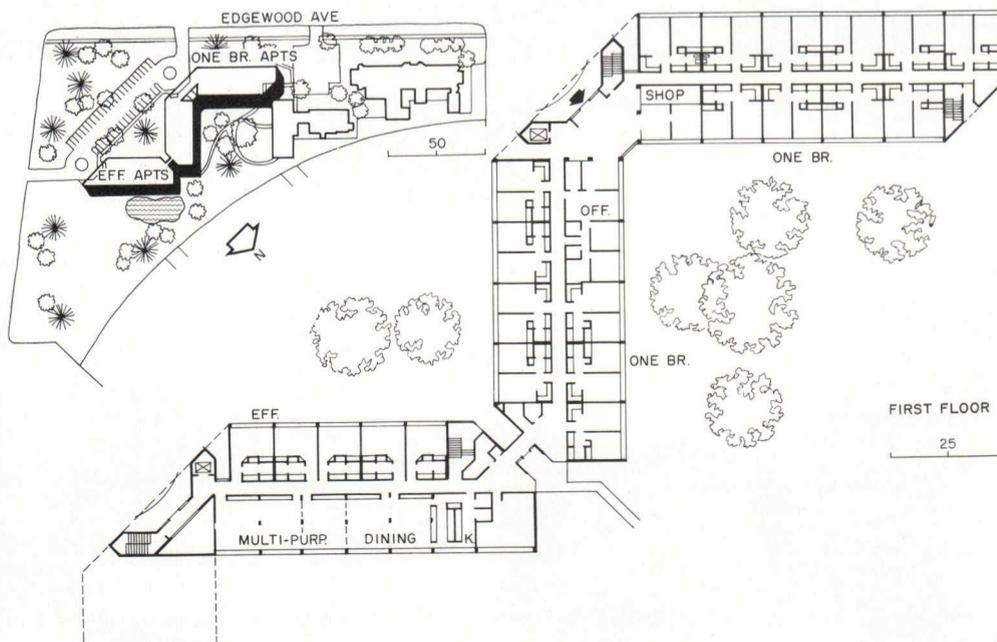
What are the real advantages here? According to architect Peter Rumpel, the FHA 236 financing was not particularly encouraging to the concept of life-long care in a continuing environment. Nor is he certain that the concept is right—when it involves mixing the relatively well with the relatively sick. Still, the 180 apartments are served by a completely separate nursing unit on the grounds, and a planned second stage of construction (dotted lines on the plan) would accommodate persons with more serious geriatric problems. The building's poured-in-place and precast concrete walls are an unusual departure from normal practice in Florida, and add greatly to the strong sculptural appearance.

The greatest advantage here may be that the building meets the expectations of retired middle class persons with limited incomes. Aside from the building's non-institutional appearance, the apartments contain ample dressing, bath and storage facilities, although the units are not large—in keeping with the FHA restrictions. Natural light and views of activities in the corridors are seen upon leaving elevators at each floor, and are among the advantages of the planning of public spaces. The project is within easy walking distance of stores, theaters, churches and public transportation in an urban setting.

THE FLORIDA CHRISTIAN HOME APARTMENTS, Jacksonville, Florida. Owners: *The Christian Church (Disciples of Christ)*. Architects: *Freedman/Clements/Rumpel*—designer: *Peter Rumpel*. Engineers: *H. W. Keister Associates* (structural); *David Bruce Miller* (mechanical/electrical). General contractor: *Wesley of Florida, Inc.*



TYPICAL ONE BEDROOM





- **Management reports:** The analysis of accurate building and equipment operating costs should be of considerable value to building managements.
- **Intangible benefits:** The fact that wide variations in comfort and operating costs are encountered in many existing buildings suggests the virtue of computer-aided control.

The quality of computer optimization depends upon quality of the software

If we don't become bewildered by much of the jargon that has accompanied the development of building automation systems, we can concentrate on the one thing that matters—performance. The competence of a system including a computer becomes limited only by the imagination and engineering expertise of the software design team. Contrariwise, system performance will only be as good as the software.

To date, computer software has been limited largely to monitoring of system performance, miscellaneous alarms, data collection—though additional software routines have been promised by manufacturers. Because the state of the art is constantly changing, what it is at any given time can only be determined by proper specified definition at the time a system is developed, and by careful review of proposals when they are received.

One difficulty with the software developed so far is that it has been designed so it can be used in a variety of building types, which, inevitably, has meant some compromises. With software of this sort it has been possible for development costs to be shared by a broad customer base, thereby reducing the cost to any one customer. The difficulty is that constraints are built into programs in an effort to give them more universal application. This approach works in some instances, but in others, drawbacks result. One simply has to reflect on the differences between mechanical and electrical systems used in similar structures, such as an office building, to recognize the dilemma. Now think about making a computer-driven facility for an office building work for a hospital. It is a serious problem that results in compromises in computer software, and is simply another reason for careful specification and review.

Another drawback of some computer software is that it often is written in assembly language, rather than a higher-level language such as Fortran. While this results in the smallest consumption of computer memory core, it is virtually impossible to have the programs maintained or modified by people not familiar with both the assembly language for the particular computer and the development of the program itself.

The alternative exists of developing custom software for a particular building. This can be done by the automation company or other technical firms that have the in-house expertise on both computers and buildings. It should be understood, however, that custom software can get very expensive. Careful study of the needs of a building, and the areas requiring optimization, is a necessary precursor for development of proper software. An engineering firm that understands what is on the market

and what is needed can probably minimize costs by selecting standard software packages and having them modified for use in a particular project. This hybrid of standard and custom software can be successful (and save money) if the specifier understands the total process.

Automation costs include the control center, the sensors and the computer software

It is difficult to generalize, but if a minimum justifiable system for a building were to include 200 analog, digital and resettable points, the cost for the sensors or devices, the multiplexing cabinets and the coaxial cable connecting these points would be about \$100,000 to \$120,000. The cost of a central control console with central processing unit, teletype, operator's console, and intercom would add between \$30,000 and \$40,000 to that cost, for a base system cost of \$130,000 to \$160,000.

The addition of points beyond this base cost (including interconnection into multiplexing cabinets already installed) would add a per point cost (by function) as follows:

Temperature Indication	\$200 to \$300
Control-point Reset Ability	\$400 to \$550
Start/stop for Equipment	\$400 to \$500
Miscellaneous Digital Points	\$200 to \$300

This provides a basic system. To expand this into a simplified optimization facility with a minimum computer configuration and standard software could add about \$50,000 to \$70,000 more. If, however, a full-blown computer system is used employing bulk storage in the form of disc drive, a larger, more powerful computer, cathode ray tubes, a line printer, and other peripheral devices, the nominal addition of \$50,000 to \$70,000 could become \$150,000 for hardware only. Software costs can vary anywhere from \$40,000 to numbers substantially larger, depending upon the mix of standard and custom programs mandated.

These are all generalities, necessarily, but with an automation system in its ultimate form, first costs can be substantial. Another approach might be to take the cost of the automatic temperature control as 2 to 3 per cent of building cost. Automation could increase that percentage by 1 to 2 percentage points.

These foregoing figures should be recognized as order-of-magnitude costs—only proper study and analysis can determine the costs for an actual building. The economic justification should be maintenance costs—which can be 5 and 10 per cent of the first cost per year—and, of course, energy savings. Determining energy savings also is difficult, but conservative analysis of several projects has indicated that energy savings between 5 and 15 per cent, on an annual basis, can be obtained—with the lower figure almost a certainty. To this should be added labor savings and maintenance and equipment-failure cost deferrals, all readily obtainable. The larger the building, the better the return on investment.

A short summary of the hvac operations that a computer can help optimize

The list of hvac functions that can be subjected to a computer-directed control strategy is quite large, and will vary with the particular building

and the installed systems.

- **Morning Startup Control:** Subroutines for this function dynamically adjust the starting time for all building fans and pumps. The lead time for equipment starting is determined by the space temperature and the temperature of the outdoor air. Virtually all building equipment can be started automatically by computer at the latest possible time to develop comfort conditions at the desired time of day. The shortened time to get the building running both adds to equipment operating life and can save operating energy. Manpower needs are also reduced.

- **Chilled Water Temperature Control:** The least amount of energy required to refrigerate the chilled water in the summer can be achieved by the computer reviewing the building's needs and setting the chilled water temperature at its highest possible value.

- **Outside Air Utilization:** the computer monitors the relative heat of the outdoor air and the return air in the building, and then controls the optimum use of either to reduce the energy consumed by the air-supply systems.

- **Interior System Control:** The monitoring of selected points and control of interior systems will vary with the type of system installed. With a variable-air-volume system, the computer, in summer, should weigh the reduced fan horsepower possible against lower air temperature, increased refrigeration plant operating costs, and proper air distribution. In winter, the air-distribution criterion must be considered only against fan horsepower. For a reheat system, the computer must judge the highest possible system air-discharge temperature to minimize reheat, without sacrificing comfort.

- **Exterior System Adjustment:** One of the most intensive areas of energy consumption in a building is the exterior space, with its fluctuating needs due to varying solar and transmission loads. It is, therefore, space requiring intelligent control. It is also one of the most difficult to control because of the wide variation in systems applied. Accordingly, special software is usually needed to obtain proper results with these systems.

- **Demand Control:** Regular input from electric utility meters, and reduction by shedding electric loads when new monthly peaks are approached were discussed earlier in this article.

- **Refrigeration Plant Monitoring:** Refrigeration machines in summer are substantial energy-consuming devices. By monitoring performance and developing load profiles in easily understandable terms, such as kilowatts per ton or pounds of steam per ton, an operator can be advised as to which machines or combination of machines will most efficiently meet his needs as a function of the immediate requirements.

- **Miscellaneous Functions:** The effort to ensure total system performance and minimize over-all operating costs should ultimately involve virtually all equipment in a building. Control of heating systems, cooling towers, pumping systems, and special fan systems must all be reviewed and regulated to obtain the goals sought. These are areas where, as in the case of the exterior system, custom software is necessary since it is not available as a standard commercial package.

For more information, circle item numbers on Reader Service Inquiry card, pages 223-224.



Technical workstations from Herman Miller

Designed for the working environment of architects, engineers and other design professionals, this panel and panel-hung furniture system is part of the company's expanded "Action Office" line. Advantages include the user's ability to make work stations smaller or larger within minutes. The panel and storage components can be covered in a variety of fabrics, and all units are available in a number of finishes. Included are: a service desk measuring 51 by 84 in. with integral file bins, wide drawers and shelves; a 36-in.-deep work surface that can extend either 48 or 72 in. long; project drawers that ac-

commodate flat drawings of D-size or smaller; a rolled drawing storage unit consisting of elastic webbing that clips to a panel frame and holds drawings vertically; a drawer caddie permitting compact storage with drawers 3, 6 and 9 in. deep; a panel-hung drafting board with a height adjustment, and angle adjustment from zero to 60 degrees; and a panel drawing clip that attaches drawings to panels without tacks, pins or tape. There is also a freestanding drawing board; drawing rack; and a mobile rolled drawing bin. ■ Herman Miller, Inc., Zeeland, Mich.

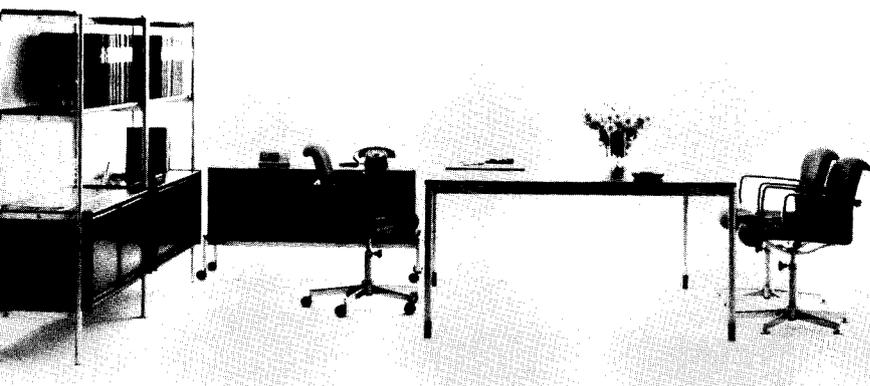
Circle 300 on inquiry card

Office system will be featured at NEOCON

The "Ergonomic II" line of office furniture—which will be shown in the company's new Chicago showroom at NEOCON 9, June 22-25—features a long table that delivers sound to the floor rather than back into the room; a mobile CRT table; projectors; smoked Plexiglas screens; desks and tables in light and dark oak; and a pat-

ented "Press Fit" connecting system that makes it easy to install and remove cabinets. Desk legs are available in either aluminum color or chrome. The new group also includes an electrical raceway system for screens, complementing a power pole. ■ Facit-Addo, Inc., Greenwich, Conn.

Circle 302 on inquiry card



New chair line to be shown at NEOCON 9

Designer Earl Koepke has developed a chair line featuring continuous chrome-plated rod construction, contoured seat and ellipsoidal back. The slender frame wraps over the top of the back. The "Fine Line" series—upholstered in various fabrics—is available with or without

arms. Arm rests are molded black polypropylene. The chair will be shown at NEOCON 9, Chicago, June 22-25, along with the company's task/ambient lighting. ■ GF Business Equipment, Youngstown, Ohio.

Circle 301 on inquiry card
more products on page 153

**Millions of reasons
why our door closer won't
leave you wide open.**



Ruswin 2800 Series door closer. Proven a Grade I closer in a two-million-cycle test, conducted to ANSI specifications by Electrical Testing Laboratories, Inc., an independent organization.

Ever-enduring cast iron alloy body assures reliability.

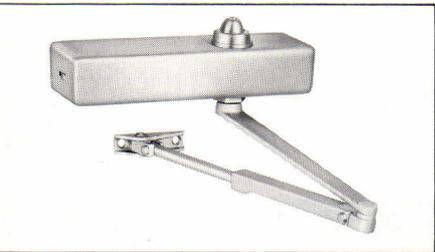
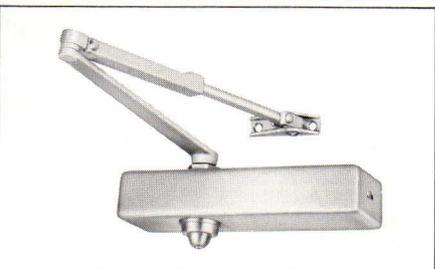
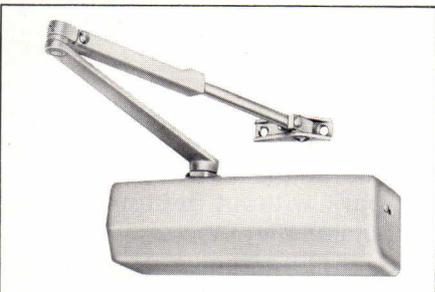


HARDWARE DIVISION, EMHART INDUSTRIES, INC.
BERLIN, CONNECTICUT 06037



Two million cycles of testing to tough ANSI specs prove the reliability of the Russwin 2800 Series door closer.

A continuous, 2 million cycle test, conducted by Electrical Testing Laboratories, Inc., documents the dependable design and performance of the Russwin 2800 Series door closer.



Tested to ANSI specification A156.4-1972, the closer was door-mounted under a static load and actuated every 4 to 6 seconds over an eight month period. In post-cycling, static tests, it functioned flawlessly in every area of operation: range of checking control; adjustable closing speed; closing force; closing efficiency and cylinder operations. Qualified in every respect as an ANSI Grade I door closer. Ever-enduring cast iron alloy body.

On institutional building projects, specify the Russwin 2800 Series door closer... the closer that made the grade. Write for more details on the complete Russwin line of dependable door closers.



HARDWARE DIVISION, EMHART INDUSTRIES, INC.
BERLIN, CONNECTICUT 06037

For more data, circle 61 on inquiry card

For information, circle item numbers on Reader-Service Inquiry card, pages 223-224.

COATINGS / Selection charts providing quick determination of proper coating products for many types of interior and exterior surfaces are included in this painting systems catalog. Descriptions give performance information, drying times, film characteristics, surface preparation and priming instructions, and other pertinent data about each product. Also provided are surface burning results on flame spread, fuel contributed, and smoke developed as determined by standard testing methods. OSHA colors are available in products for industrial application. ■ The Sherwin-Williams Co., Cleveland, Ohio.

Circle 400 on inquiry card

PLASTIC SOLAR COLLECTOR COVERS / A 10-page technical bulletin presents both available data—from manufacturers and research facilities—and current problems involving the use of translucent plastic as covers for flat plate solar collectors. The material uses tables and graphs on radiant energy transmittance and reflectance, as well as overall solar and diffuse transmittance, to compare various grades of fiber glass-plastic sheets with clear float glass. Problem areas involving high-temperature units, exposure to aqueous fluids, wind loads, and heat distortion of the plastic panels are discussed in the bulletin. ■ Filon, Div. Vistron Corp., Hawthorne, Calif.

Circle 401 on inquiry card

FOOD SERVICE UNIT / The *Circl-Serv* food service system, a stainless steel "lazy susan" that constantly revolves through the kitchen, for restocking, and out again, is described in an illustrated brochure. Standard size models are 8-, 12-, 18-, and 23-ft in diameter. ■ B/W Metals Co., Fairfield, Ohio.

Circle 402 on inquiry card

OFFICE EQUIPMENT / Hundreds of steel equipment, office and shop furniture items are described in a 20-page condensed catalog. Featured are details on redesigned modular drawers which provide convenient small parts storage. These mount behind shelving uprights, allowing the use of sliding or swinging doors for lock-and-key security. Also described are flammable liquid storage cabinets. ■ Lyon Metal Products, Inc., Aurora, Ill.

Circle 403 on inquiry card

INDOOR/OUTDOOR LETTERING / Seventeen complete *Plexiglas* alphabets, in letter heights from ¼- through 10-in., are displayed on background grids for size and layout comparison in an eight-page catalog. Letters are available in four standard colors; two-tone finishes for indoor use only; and metallic finish for both indoor and outdoor use. Symbols such as arrows, stars, etc., are also shown. ■ West-On Letters, Inc., Los Angeles, Calif.

Circle 404 on inquiry card

DRYING ROOM CONVEYOR / An illustrated brochure describes an overhead track conveyor designed to simplify the storage, drying and retrieval of athletic uniforms. Assembled from stock components, the enclosed track and suspended clothes tree system is said to be easily adaptable to any locker/drying room layout. The manually-operated conveyor promotes air-circulation drying of uniforms and equipment of all types; the unit is lockable. ■ Richards-Wilcox, Aurora, Ill.

Circle 405 on inquiry card

WALL PANEL SYSTEM / An architectural bulletin describes how *Struct-O-Wall* framing system and *Stonehenge* architectural masonry panels were used in a suburban branch bank building. Color photos show the wall mounting system during and after installation. ■ Johns-Manville, Denver, Colo.

Circle 406 on inquiry card

BUILDING MANAGEMENT SYSTEM / The "SMS-500C" is a computerized multiplex control system for management of such building functions as energy consumption, card access to secured areas, fire prevention, mechanical systems operation, and life safety. An illustrated brochure explains the unit's ability to make intelligent decisions based on the multiple parameters programmed into the system by each customer. Component options such as closed circuit TV, CRT message displays, and intercom/door controls are also described. ■ Sentinel Electronics Corp., St. Paul, Minn.

Circle 407 on inquiry card

HOSPITAL ISOLATING EQUIPMENT / A 52-page bulletin is intended to be a comprehensive survey covering the planning and design of critical patient care systems, for use by hospital administrators, architects, engineers, and electrical contractors. Discussed are the need for hospital isolating systems, the causes and prevention of electrical hazards, the principles of grounding and isolating equipment, and a design and maintenance guide. ■ Square D Co., Oshkosh, Wis.

Circle 408 on inquiry card

ELECTRIC FURNACES / These product bulletins describe specialized *Sun Dial* electric furnaces for offices, commercial buildings and large homes. Units with capacities of from 9 through 49 kw—some with built-in cooling coils—are presented. ■ Square D Co., Lexington, Ky.

Circle 409 on inquiry card

STEEL BUILDING SYSTEMS / Illustrated product brochures describe long bay structural systems with capabilities for column-free spaces up to 50-ft sq; and ribbed panel 26-gauge steel wall systems. Wall panels are factory painted with *Starcote* color finishes, guaranteed up to ten years against chipping, cracking, chalking or peeling. ■ Star Mfg. Co., Oklahoma City, Okla.

Circle 410 on inquiry card

MATERIALS STORAGE EQUIPMENT / A "Development Guide" illustrates how the *Unicell* system of storage and work components can be used to improve work flow and supply management within the framework of constantly changing hospital requirements. The brochure explains how *Unicell*, which can be wall-hung or used free-standing or mobile, may be incorporated into an exchange system to eliminate routine ordering and the continuous replacement of supplies and equipment within health care facilities, schools, etc. ■ Monitor Products, Div. of Comerco, Inc., Tacoma, Wash.

Circle 411 on inquiry card

LABORATORY FURNITURE / A catalog includes photographs of various furniture styles and arrangements installed in industrial, medical and educational laboratories. Three design lines cover a range of budget and facility needs: plastic laminate, traditional oak, and birch wood construction. A selection of sinks, fume hoods, service fittings and other accessories is available to complete each installation. ■ Conco Industries, Inc., West Haven, Conn.

Circle 412 on inquiry card

LIGHTING FIXTURES / A 32-page catalog supplement presents lighting designs by George Nelson, a mini-arc lamp, and many imported glass fixtures; all are additions to this manufacturer's current collection of ceiling, wall, table and floor lamps. ■ Koch + Lowy, Long Island City, N.Y.

Circle 413 on inquiry card

more literature on page 163



Open plan goes natural in a vast array of coordinated colors at neocon 9.

Nature is man's model of visual perfection. Ever changing, never changing. For 1977, Haworth suggests that man rediscover his natural surroundings. And bring back the familiar harmony he finds into the places where he lives and works. The earthier shades of brown and gray. The deeper tones of green and violet and burgundy and orange. The subdued, pleasing hues composed by nature to enhance the serenity man aspires to.

For 1977, Haworth re-introduces the UniGroup™ interiors system. Clothed in a vast array of coordinated colors to please the eye, soothe the mind and serve the purpose.

Naturally.

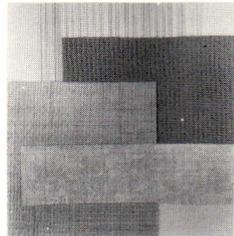
HAWORTH™

HOLLAND, MICHIGAN 49423

New natural colors. The innovative ERA-1 pre-wired panel.
All at the grand opening of Haworth's new 9th floor Merchandise Mart showroom. NEOCON 9, June 22-24, Chicago.

For more data, circle 67 on inquiry card

WALLCOVERING / *Vicrtique* textured wallcovering, backed with nonwoven fabric, is said to duplicate the design effect of heavy-weight wallcoverings with much less weight. All four patterns are soft to the touch, with a variety of colors in each style. *Vicrtique* is tear-resistant; punctured areas cannot be increased in size by deliberate tearing across the web. The wallcovering is suggested for cracked walls or irregular surfaces. ■ L. E. Carpenter and Co., Wharton, N.J.



Circle 325 on inquiry card

CLEAN ROOM PANELS / Designed specifically to meet USDA requirements for meat cutting, food processing and other clean room areas, these fiber glass-reinforced polyester panels are available in five colors: white, yellow, blue, green, and beige. The FRP panels are said not to rot, stain, dent, rust, corrode or splinter, even when steam cleaned. The wall comes as a complete system: panels, PVC harmonizing moldings, adhesive, caulking, and installation instructions. The panels are 3/23-in. thick, 48-in. wide, and 8- or 10-ft in length. ■ Marlite Div., Masonite Corp., Dover, Ohio.



Circle 326 on inquiry card

WHEELCHAIR DOORS / The *Touch-Open* door permits a handicapped person to move independently through doorways without assistance or the use of electric eye or other mechanical operators. The full-thickness, flexible rubber door allows a wheelchair-bound user to bump-open the door with the wheelchair and move safely through. *Touch-Open* doors have cushioned nosing and transparent vision panels, and are available in a range of colors and plastic facings. ■ Rubbair Door Div., Ayer, Mass.



Circle 327 on inquiry card

DOOR PULLS / A series of four aluminum pulls feature rounded, cornerless surfaces for applications where safety regulations forbid use of sharp corners. The pulls have a clear, matte anodized finish; grooved thumb area provides a sure grip. Both finger and hand grip sizes are available, and overall lengths are 1 3/8-, 2 1/2-, 3 3/8-, and 4 1/8-in. ■ Southco, Inc., Concordville, Pa.



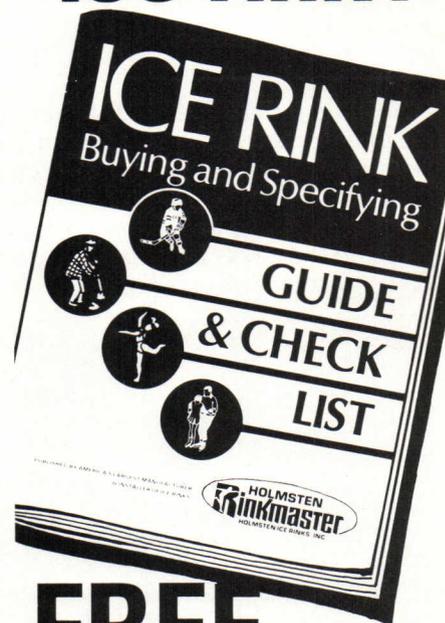
Circle 328 on inquiry card

INDOOR/OUTDOOR CARPET / Alternating rows of one wide and four narrow ridges give a surface texture to *Dura Ridge* indoor/outdoor carpeting for commercial and residential applications. The carpet is made of *Hercu-lon* by the *Dyna-Lok* non-woven process, and is available in eight colors in 12-ft widths. Carpet is backed with high-density foam rubber. ■ Needle-Craft Industries, Dalton, Ga.



Circle 329 on inquiry card
more products on page 161

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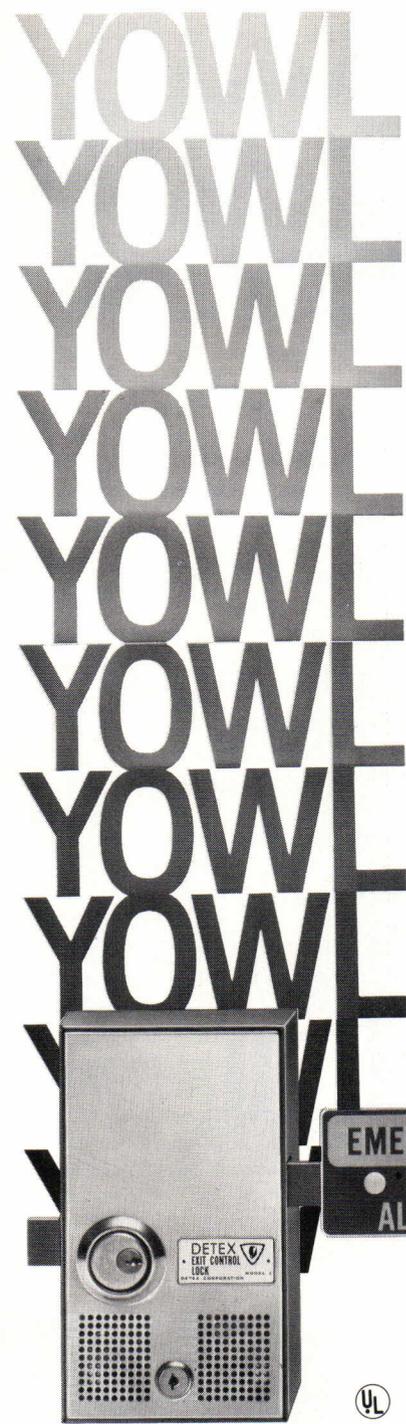
If you are planning a new rink... or modernizing a present ice skating facility... **this guide will save you time and money.**

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The Manager is ahead because the Amarlite thermally improved curtain walls,

designed to prevent heat transfer; keep the building evenly comfortable. Which means they reduce day-to-day heating and cooling operating costs, reduce interior climate system adjustments, and reduce tenant complaints to a bare minimum.

The Tenants are ahead because they're totally comfortable. Warm all winter and cool all summer since Amarlite's continuous thermal spacers isolate the curtain wall from interior to exterior, providing a highly efficient thermal barrier.

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For more data, circle 73 on inquiry card

FOAM SPRAYING GUIDE / A booklet presents design considerations and application procedures for spray-applied urethane and isocyanurate foam as it relates to outdoor service vessels. ■ Urethane Foam Contractors Assn., Dayton, Ohio.

Circle 414 on inquiry card

WALL MURALS / Murals and repeat patterns in the "Escape to Paradise" collection are shown in four-color room settings. Each photo, utilizing one colorway, is accompanied by color shots of the mural's miniatures in all available stock colorways. Information is given on transparent and metallic inks, custom colors and unusual grounds. ■ Jack Denst Designs, Inc., Chicago, Ill.

Circle 415 on inquiry card

PORCELAIN ENAMEL COLORS / Intended as an aid to architects in the selection of porcelain enamel colors, a brochure depicts 16 "NatureTone" (matte) and 19 conventional (semi-gloss) colors. The booklet also recommends steps to take in specifying both color and gloss for porcelain enamels, and lists the principal quality assurance tests used. ■ Porcelain Enamel Institute, Arlington, Va.

Circle 416 on inquiry card

FLOOR COVERING INSTALLATION / Divided into sections by installation techniques, this architect's guide fully explains the materials and procedures needed to specify a given job. The booklet also discusses the major carpet backings, pad types, adhesives, carpet strip and mouldings available, with recommended uses for each. ■ Roberts Consolidated Industries, City of Industry, Calif.

Circle 417 on inquiry card

CEILING SUSPENSION SYSTEMS / A 20-page product brochure shows full-color installation photographs of the manufacturer's complete line of acoustical ceiling grid suspension systems. Included are details on *Snaplock 2+2*, which offers upward or downward plenum access in a single system, and the *Geminaire* integrated system that combines ceiling grid, air delivery, and wall components. Also presented is the *Firesafe* fire-rated grid. ■ Roper Eastern Building Systems, Columbia, Md.

Circle 418 on inquiry card

NOISE-ABSORBING PANELS / Data sheet describes *Cousti-Baffle* quilted panels made of fiber glass encased in vinyl-coated fabric. Noise in a highly reverberant factory area can be controlled by suspending these panels over machinery or work areas. Product information includes random incidence absorption coefficients, flammability test results, and such physical properties as breaking strength, tear strength, and moisture permeability. ■ Ferro Corp., Composites Div., Norwalk, Conn.

Circle 419 on inquiry card

ARCHITECTURAL GLAZING / This full color brochure gives details on *Acrylite SDP* sheet, with integral ribs molded between two exterior skins for high rigidity and light weight. The air cells formed by this process are said to provide excellent thermal insulation at low cost. *Acrylite SDP* acrylic and polycarbonate sheet also has high structural strength and impact resistance; suggested applications include pool enclosures, skylights, greenhouses, sports facilities, etc. ■ CY/RO Industries, Wayne, N.J.

Circle 420 on inquiry card

more literature on page 169

THE Stemwinder

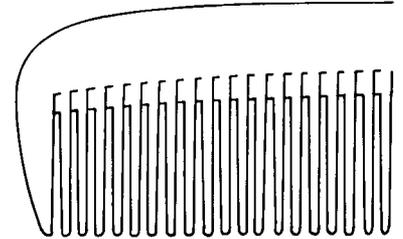
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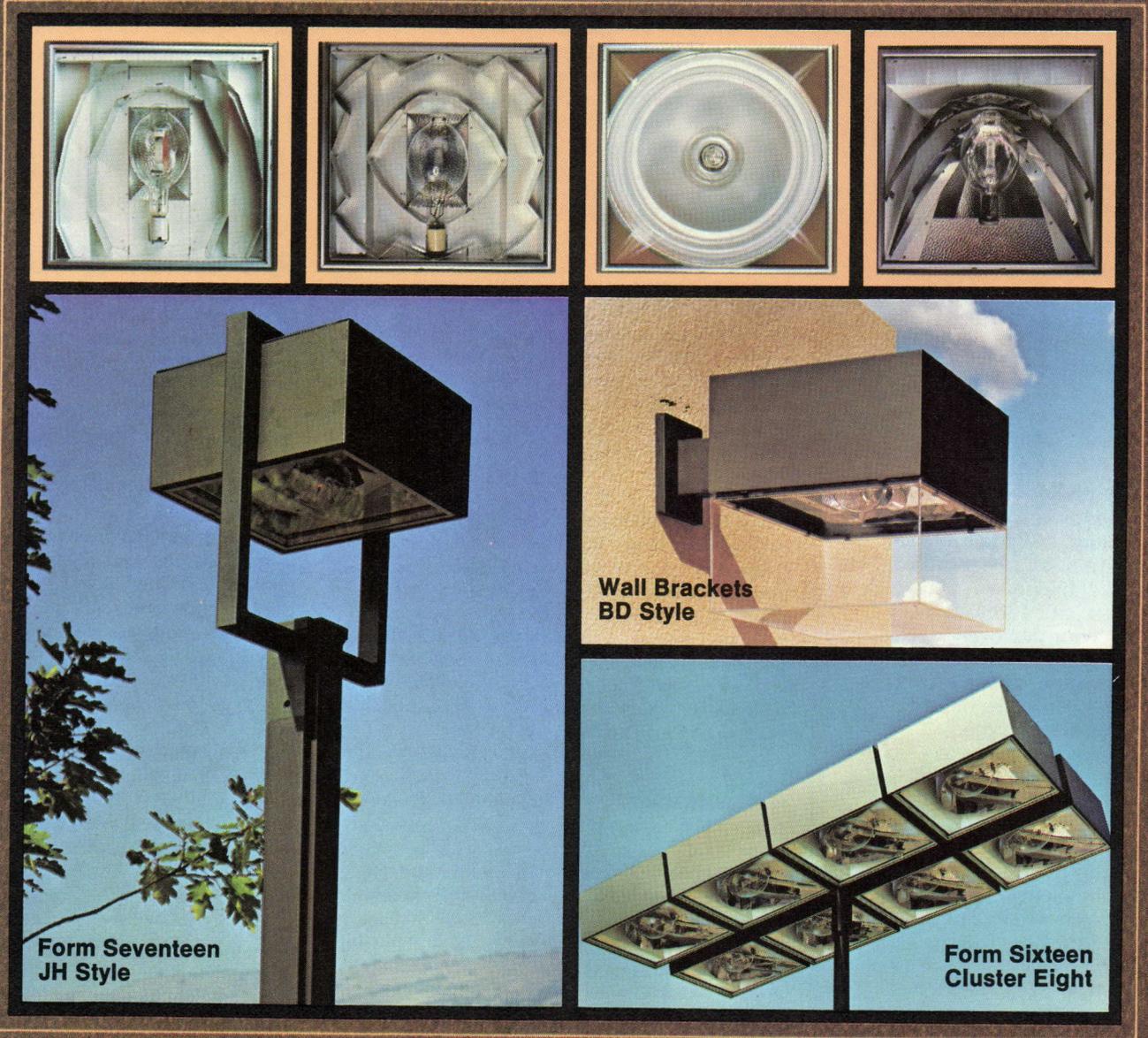
Chester B. Stem, Inc., 2704 Grant Line Road, New Albany, Ind. 47150. Manufacturers and importers, sliced wood and lumber. Fifteen minutes from Louisville, Ky. airport. Telephone (812) 945-6646.



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SECURITY GLAZING / *Insulgard-Isocooustic* glazing units are described in a product brochure as providing thermal insulation and noise abatement coupled with breakage resistant characteristics. The glazing, assembled with *Lexan* and *Plexiglas* sheets, is designed to reduce heating, air conditioning and vandalism-caused replacement costs. *Isocooustic* windows are said to have a Sound Transmission rating of 40; *Insulgard* is available bullet-resistant. ■ Commercial Plastics, Cornwells Heights, Pa.

Circle 421 on inquiry card

PORCELAIN-ON-STEEL PANELS / A variety of interior and exterior applications for porcelain-on-steel panels are shown in a 16-page catalog. Sections cover insulated, energy-saving panels, giving installation instructions and recommended core materials. Uninsulated panels are pictured in use in manufacturing plants, clean rooms, hospital laboratories and elevators. A final section deals with *Vitriform 90*, a panel that can be formed with the porcelain already in it at angles up to 90° without spalling, or cracking. ■ Alliancewall Corp., Wyncote, Pa.

Circle 422 on inquiry card

BUILDING TRIM / A full line of standard extrusions including fascia panels, roof equipment screens, travel-stops and coping are shown in a color brochure. Custom fabricating of heavy gauge aluminum fascia is described. Samples of standard *Porcelguard* finish colors, which carry a 10-year guarantee, are given in the booklet. ■ Fascias Inc., Grand Rapids, Mich.

Circle 423 on inquiry card

ROOF DRAINAGE / Photographs, line drawings, and product data are included in a 40-page catalog on roof drains and accessories. Several large diagrams show typical drainage installations. Roof draining information is given; a map shows maximum rainfall curves for the entire U.S. ■ Josam Mfg. Co., Michigan City, Ind.

Circle 424 on inquiry card

SEALANT BINDER / *Latex 163* is a high-solids acrylic binder for formulating high performance water-based sealants. A product brochure claims that sealants based on *Latex 163* will bond to a variety of substrates without needing a separate primer. Full physical and performance characteristics, including the effect of plasticizers and other agents on *Latex 163*-based sealants, is given. ■ Unich Carbide Corp., New York City.

Circle 425 on inquiry card

ROOFING STUDY / The effects of steel roof deck reflections on a roofing assembly were the subject of industry-sponsored research conducted by the factory Mutual Research Corporation. Copies of the study are now available. ■ Asphalt Roofing Mfg. Assn., New York City.

Circle 426 on inquiry card

HANDRAIL COVERING / *Vinyl-Rail* is an extruded thermoplastic decorative covering for metal and wooden handrails, said to be pleasant to the touch while providing a safe gripping surface. The covering, which can be prefabricated or fitted at the job site, resists abrasions, nicks, scratches and dents. Color catalog shows *Vinyl-Rail* profiles and colors, and describes design considerations, assembly details and installation instructions. ■ Vinyl Plastics, Inc., Sheboygan, Wis.

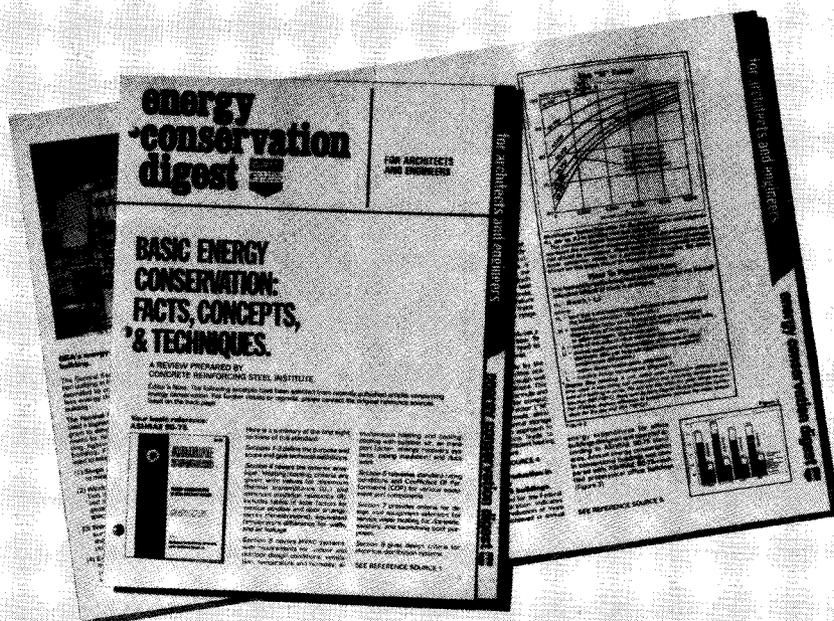
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URGENT QUESTION:

How can we reduce energy consumption in today's buildings?

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New "Energy Conservation Digest" shows ways to conserve energy in your new building. And save money, too.



Here's a free publication you'll find indispensable. The "Energy Conservation Digest," prepared by Concrete Reinforcing Steel Institute, reviews and summarizes current literature for proven ways to save energy.

In "ECD," you'll read about the General Service Administration's energy-conserving building. Discover five practical ways to reduce energy consumption. Find out how

to calculate heat loss. Learn how the natural insulating value of reinforced concrete reduces energy costs. There's also a full list of invaluable references and additional reading.

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For more data, circle 77 on inquiry card

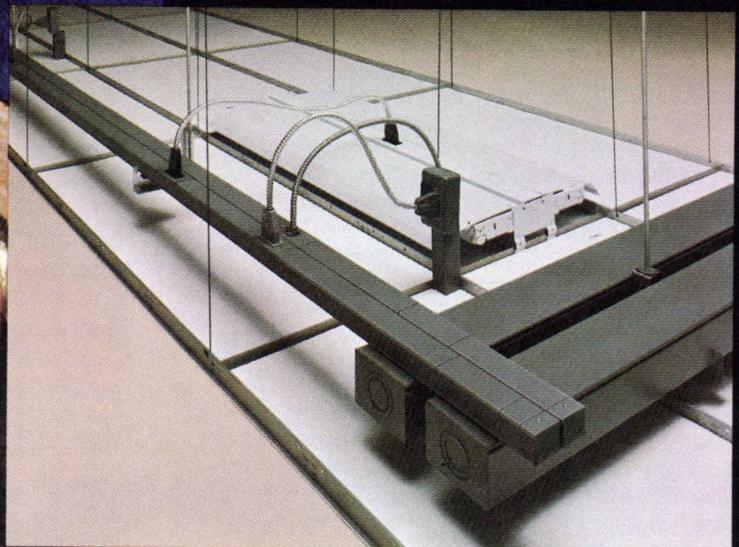
George Blanda puts in a plug for Walkertrak.

We asked George Blanda to help us show you how easy it is to install Walkertrak™ Overhead Raceway. Obviously, George is no wiring pro. But he knows how to put in a plug. And our raceway is just about that easy.

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New associates, promotions

3D announces the appointment of **Thomas P. Hughes** as vice president, interior architecture.

Jonathan B. Lytle and **David W. Stirling** were named associates of CBT/Childs Bertman Tseckares Associates, Inc.

Ewing Cole, Erdman Rizzio Cherry Parsky has named **Robert J. Krause** and **Donald Sullivan** as new partners.

Peter K. Van Riper has been named vice president of Psomas & Associates.

Randolph Volenec has joined the firm of Kirkham, Michael and Associates.

Carroll C. Rudd, AIA has been named vice president of Howard R. Lane, AIA Associates.

Rogers Butler & Burgun have announced the appointment of two new associates of the firm. They are **Peter M. Gumpel AIA** and **Richard C. Clark, AIA**.

Bela Farkas has joined the firm of Frederick Russell Brown and Associates as vice president.

Snell Environmental Group, Inc. announces the appointment of **William J. Bandy** as an associate and **Joseph A. Badra** as project manager.

Smith, Hinchman & Grylls Associates announce the promotion of five members of the firm to the title of associate. They are: **Roy J. Brockert**, **Leo Osmialowski**, **Andrew A. Vazzano**, **David E. Weida** and **John J. Labosky**

Sverdrup & Parcel and Associates, Inc., announce the following promotions: **W. H. Rivers** to president; **C. N. LeTellier** to senior vice president; **W. F. Knapp**, **W. J. Clarke**, **J. E. Gast**, **R. E. Beil** and **J. L. Hack** to vice presidents; **G. R. Pennington** to vice president-manager and **T. E. Wherle** to treasurer.

Kirkham Michael and Associates announce that **Paul J. Watson** has joined the firm as a design architect, and **Anne Bunting** as an interior designer.

Marquis Associates are pleased to announce two new partners: **Phyllis Martin-Vegue** and **James E. Caldwell, Jr.**

EDAW, Inc. is pleased to announce the addition of **Karen Northcutt**, **Brent Daggett** and **Larry Mouri** to the EDWA staff.

Joseph A. Oddo has joined Grage & Associates as partner and executive vice president.

Omniplan Architects is pleased to announce that **Gray G. Henry, AIA** has joined the firm as a principal.

Clyde A. Jackson has joined Gensler and Associates to manage the firm's architectural design projects.

Bernard Johnson Incorporated has announced the promotion of **Ronald W. Kilpatrick** and **William E. Ferro** to vice presidents.

Meyer, Strong & Jones is pleased to announce the appointment of **Thomas R. Marshall** as an associate.

Ellis/Naeyaert Associates, Inc. has appointed **Donald F. Riha, AIA** to director of design group and **Norman P. Bojalad** to controller.

E. Lee Kennedy, AIA has been named managing director to head the newly opened office of Whiting Rogers Butler Burgun.

R. Vic Michiels, Jr. has been named manager of a new Atlanta office of Architects Plus.

Newly appointed director of architectural services for Associated Engineers, Inc. is **Richard Badham**.

Shepley Bulfinch Richardson and Abbott announces that **Geoffrey T. Freeman** has been made an associate of the firm.

Berdell Buckley, director of business development, has been named a partner of The Kling Partnership.

Steven Peters and **Donna Johnson** have been named associates of Pierce•Goodwin•Alexander.

Audrey Herz has been appointed director of project development at Hugh Carter Engineering Corp.

Powers-Willis and Associates announces the appointment of **Roy C. Neuman, AIA**, as partner and executive vice president.

Virgil R. Carter, AIA, and **Harold C. Kallaway** are named vice presidents of Environmental Planning & Research, Inc.

Walter Cunningham is named senior vice president/director of engineering for Diversified Design Disciplines, 3D.

John H. Bryant, AIA, has been appointed to head the School of Architecture at Oklahoma State University.

William A. Feathers has joined Syska & Hennessy as director, development.

continued on page 173

Hushed Beauty



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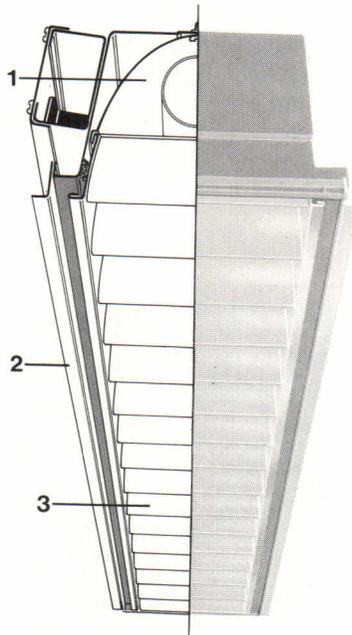
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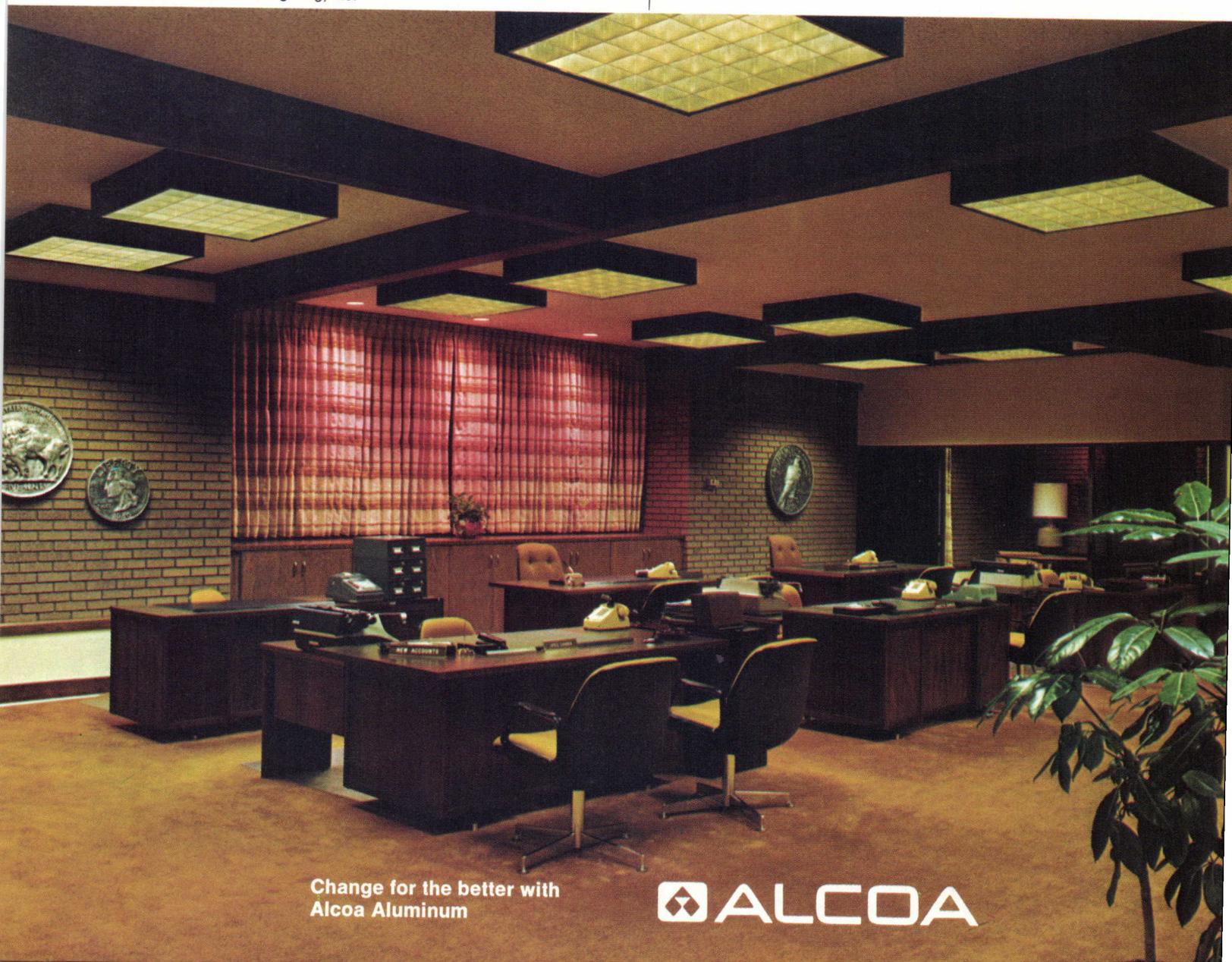


distribution, a properly planned system may require fewer luminaires, resulting in low electrical loadings. Savings in cleaning maintenance are possible also. Parabolic luminaires do not require a lens and the unique design, plus the static-free Coilzak louvers, resists soil and dust accumulation.

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1. One-piece constructed Coilzak reflector with accurately controlled parabolic shape.
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3. Coilzak parabolic baffle assembly.

Photo courtesy of Columbia Lighting, Inc.



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 **ALCOA**

Koster and Associates Architects Inc., of Cleveland are pleased to announce that **David L. Holzheimer** has become a partner.

The architectural and planning firm of Thompson, Hancock, Witte & Associates, Inc., recently appointed **Walter F. Pate** as an associate.

Richard J. Hallinan has been elected a corporate vice president of Combustion Engineering, Inc.

Lee Payne has been appointed Director of the Industrial Design Department in Georgia Tech's College of Architecture.

Wallace J. Toscano, architect, has joined the firm of Karlsberger and Associates of Columbus, Ohio, as director of design.

Richard L. Engler, AIA, has been appointed executive vice president and director of operations of Folse/HDR, the New Orleans, Louisiana, office and justice facilities design center of Henningson, Durham & Richardson.

Gary Bowen has been named a vice president of Bahr Vermeer & Haecker Architects, and is also president-elect of the Omaha Chapter of the American Institute of Architects.

Olga E. Petters has been named a vice president of Caudill Rowlett Scott.

The Environmental Planning and Design Partnership have named **Geoffrey L. Rausch, Jack R. Scholl, John O. Simonds, Philip D. Simonds, C. Richard Hays** and **Paul Dorr Wolfe** partners.

William H. Gantz has been made an associate in the firm of Eugene J. Mackey & Associates, Architects.

James F. Rea has joined the staff of Daniel, Mann Johnston & Mendenhall (DMJM) as manager of airport planning.

Johnson, Johnson & Roy Inc., announce the promotion of two members of the firm to the title of associate. They are: **Stephen W. Schar** and **George Sass**.

Marshall & Brown, AIA, Architects/Engineers/Planners has recently named **Ronald Williams Ford**, as a senior associate.

New addresses

Alper Associates, Inc., consulting engineers, have moved to the Spectrum Professional Office Building in the Bellerive Executive Office Park at Mason Road and Olive Boulevard, St. Louis, Missouri.

Robert G. Hammond Associates, Architect, announce the opening of an office at 414½ Sixth Street, Annapolis, Maryland.

Gensler and Associates, Architects, announce that they have moved to Suite 570, Two Century Plaza, Los Angeles, California.

Harold Wirum & Associates, Architects, announce the relocation of their office to 510 L Street, Suite 400, Anchorage, Alaska.

Robert Green has formed a new design firm under his name, located at 233 Sansome Street, San Francisco, California.

O'Malley & Associates, Inc., have moved to One Mall North, Suite 400, Columbia, Maryland.

Architects and Engineers E&O.

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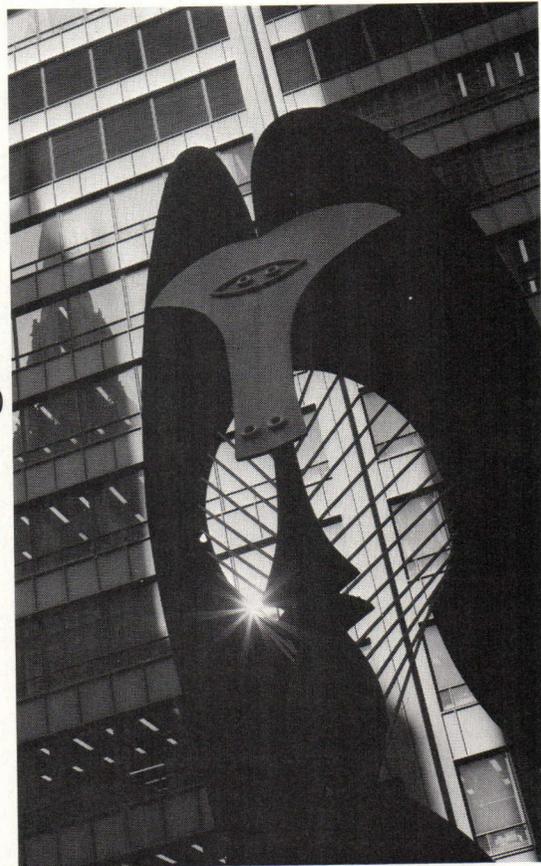
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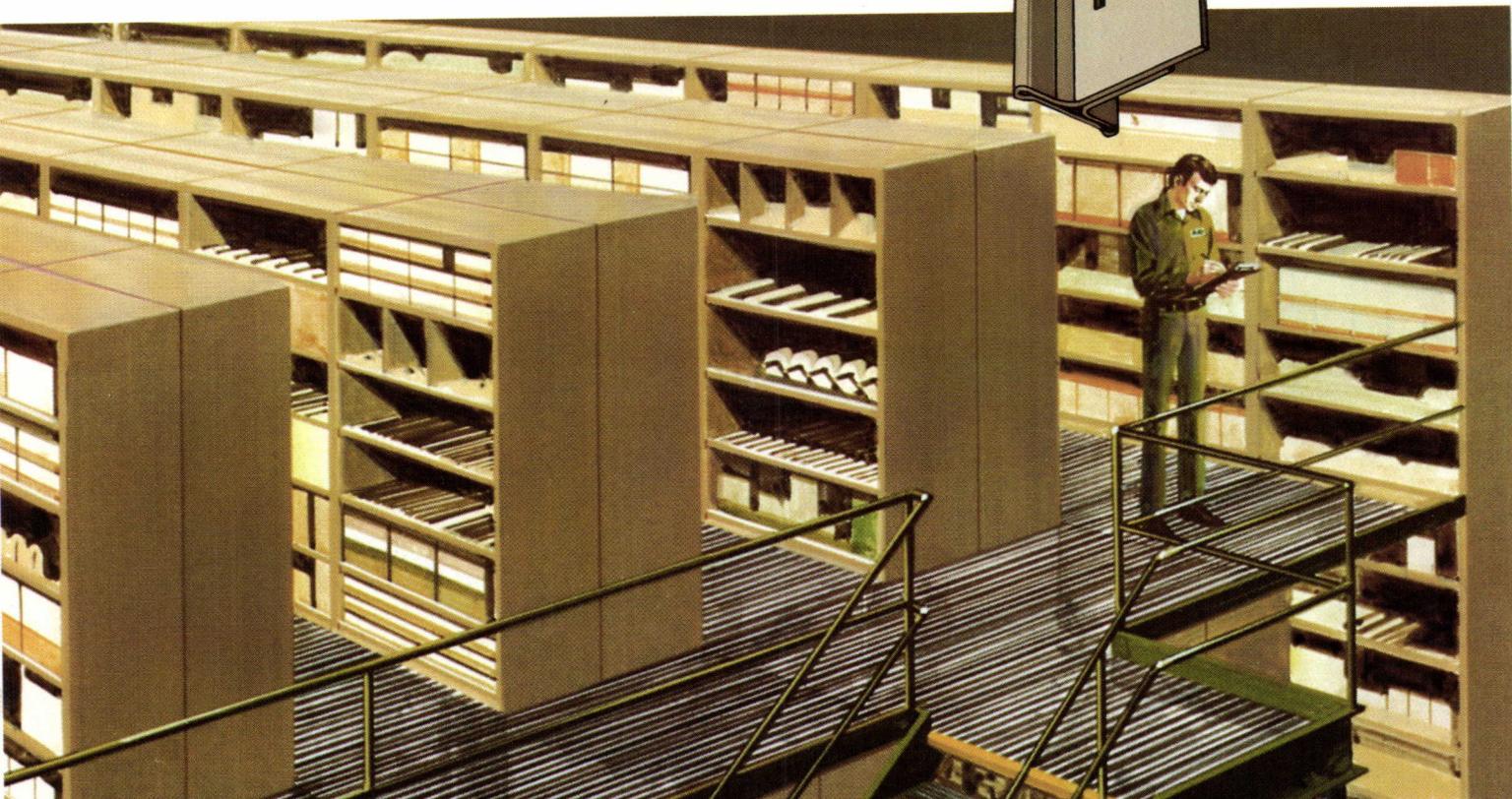
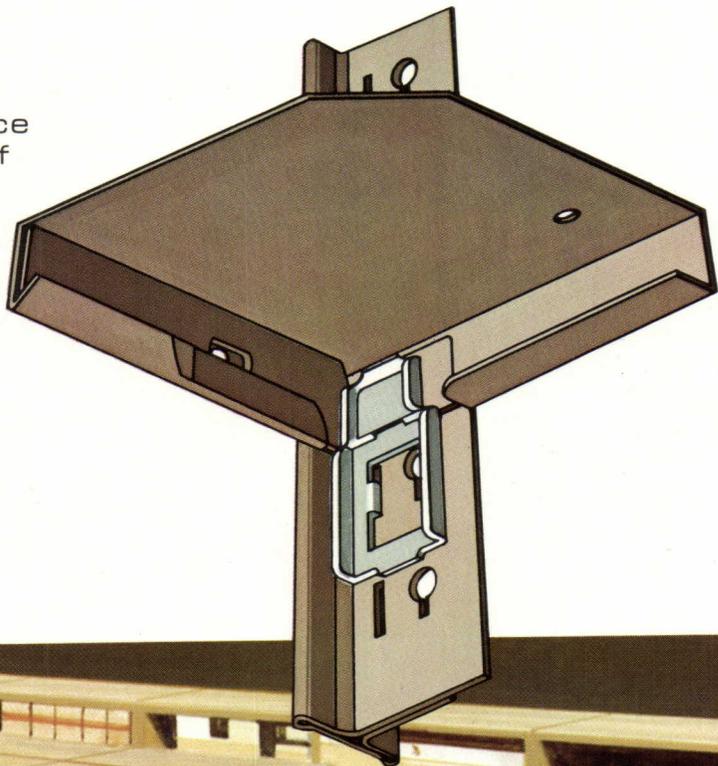
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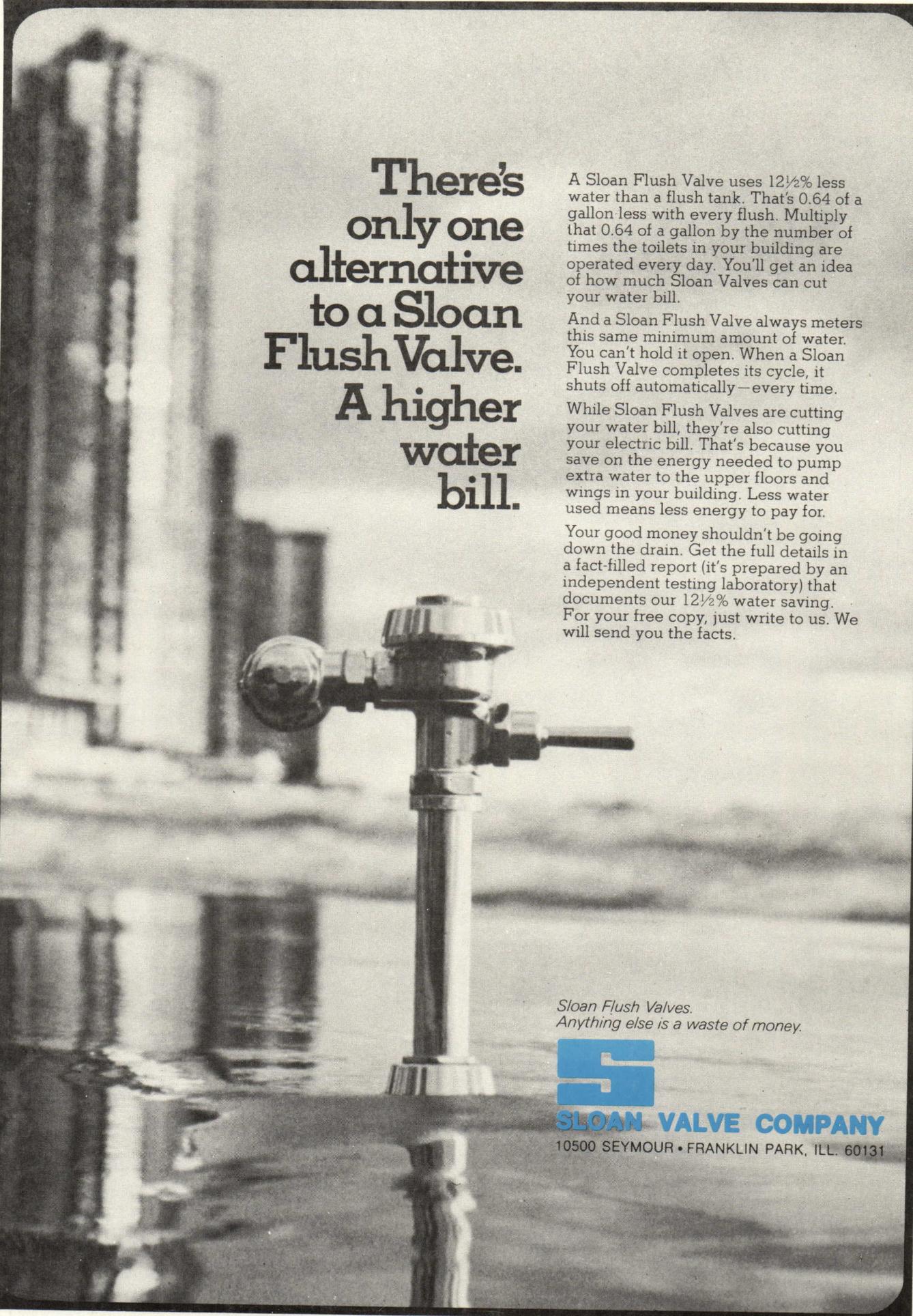
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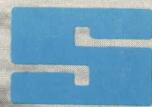
A Sloan Flush Valve uses 12½% less water than a flush tank. That's 0.64 of a gallon less with every flush. Multiply that 0.64 of a gallon by the number of times the toilets in your building are operated every day. You'll get an idea of how much Sloan Valves can cut your water bill.

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