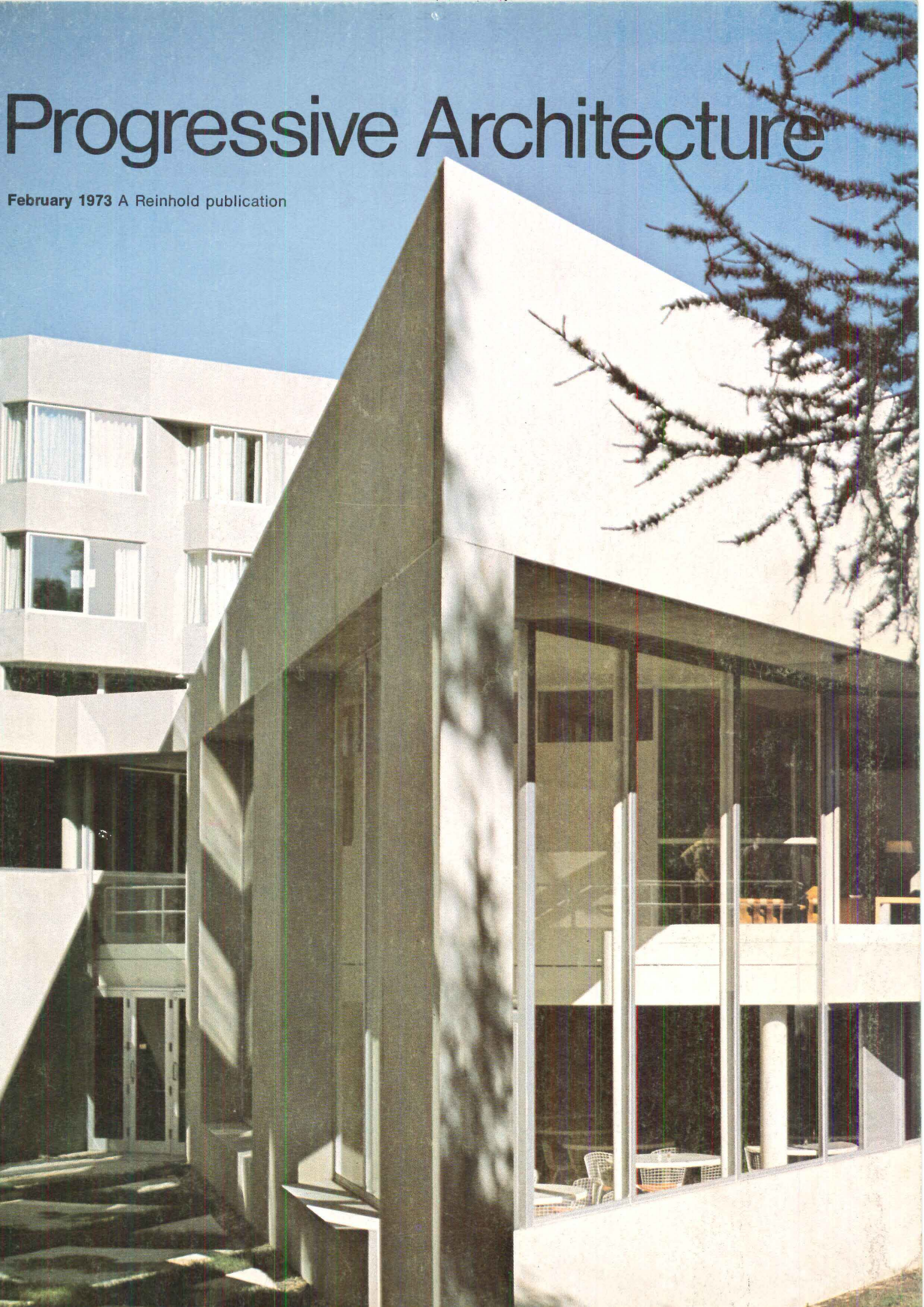
Progressive Architecture

February 1973 A Reinhold publication



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February 1973

Progressive Architecture

52 **The raised box**
The Boise Cascade Home Office, by Skidmore, Owings & Merrill of San Francisco, adds a landscaped urban amenity to downtown Boise, Idaho

56 **Complimenting the past**
Fitting a large dorm into a small college, architects Mitchell/Giurgola related it to existing traditional buildings without compromising design

62 **Conversations with John Andrews Architects**
P/A profiles a Toronto-based firm of nine autonomous partners from six countries who practice as a group rather than as a hierarchy

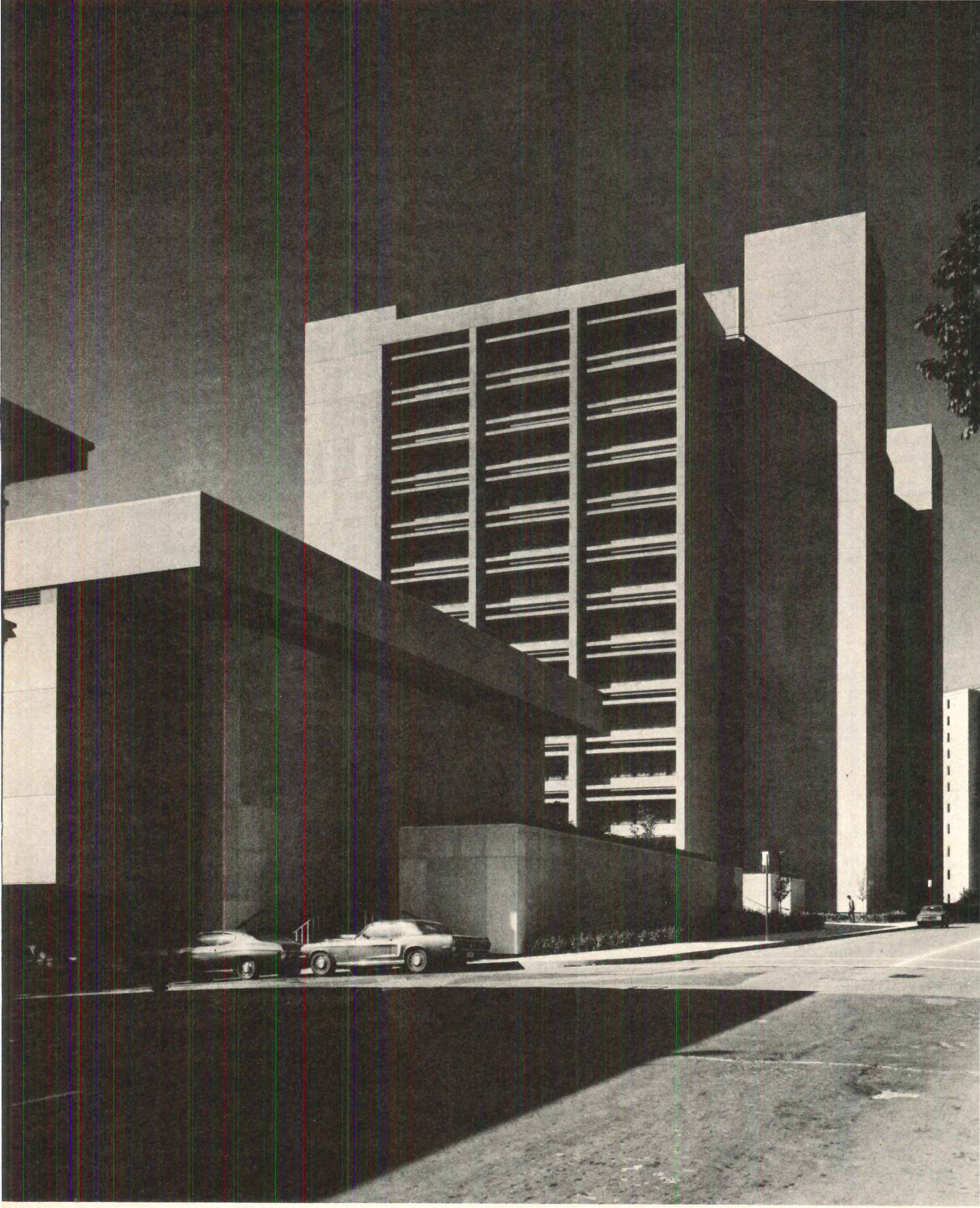
76 **Kansas counterpoints**
Despite exceptionally tight budgets, Schaefer, Schirmer & Associates designed three schools as strong visual additions to the Kansas prairie

82 **Interior design: Towards a pluralist architecture**
A remodeled office in Princeton, N.J. illustrates the theories of Michael Graves, which were analyzed in semantic terms in P/A, Mar. 1972

Departments

6	People in P/A	100	Products and literature
10	Views	108	Books
25	News report	128	Notices
51	Editorial	138	Job mart
94	Environmental engineering	144	Directory of advertisers
96	Specifications clinic	147	Reader service card
98	It's the law		

Cover: Mission Park Residential Houses, Williams College, Williamstown, Mass. (p. 56). Photo: Bonnie Freer.



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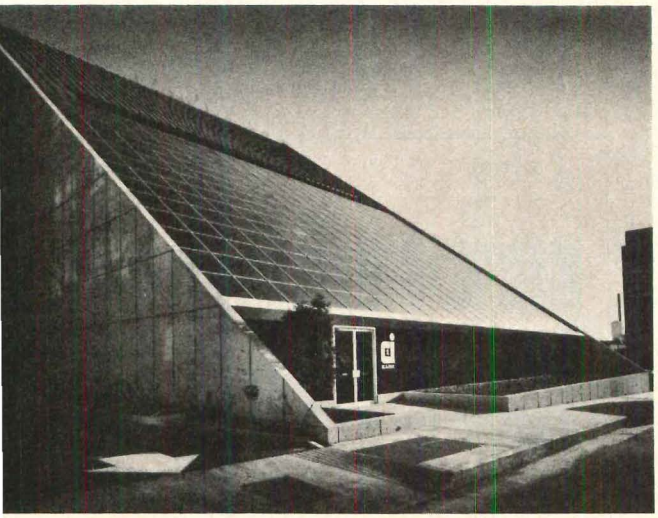

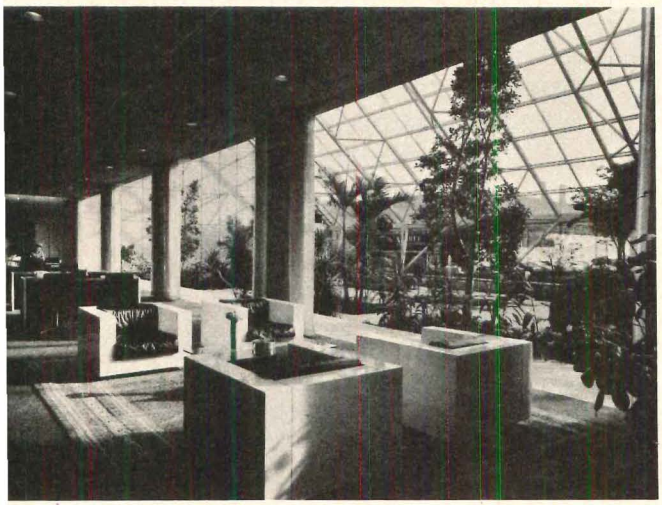

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People in P/A

This month P/A begins a new column, background notes on some of the architects and firms whose work appears inside the issue

Schaefer, Schirmer & Associates, PA
PA in this case stands for Professional Association, the outgrowth of a partnership formed in 1957 by Robert J. Schaefer, now president, and Henry W. Schirmer, now chairman of the board. "Associates" are Daniel S. Kilby, vice president-secretary and John L. Greer vice president-treasurer. Schirmer manages the Topeka office, where he is now involved in planning and designing the Capitol Area Plaza project. Schaefer runs the 25-person main office in Wichita, emphasizing the role of the project managers and preferring commissions that involve total design of the site, building and interiors. Although featured on (p. 76) for its budget-conscious schools, the firm's design reputation is backed by 31 projects chosen for state, regional or national AIA design commendation.

Three of the four principals are graduates of midwestern state universities: Schaefer at Illinois, Schirmer at Michigan and Greer at Kansas; Kilby, also a registered landscape architect, is a Cornell man.

SOM, San Francisco
For the San Francisco office of Skidmore, Owings & Merrill, the Boise Cascade Building (p. 52) is the latest of a series of notable corporate headquarters. Three of their office building projects have won national AIA awards: Tenneco in Houston (Honor, 1969); Weyerhauser in Tacoma (Honor, 1972); Crown Zellerbach (Merit, 1967). Their Marine Midland Headquarters building, now nearing completion, will be the most prominent landmark of downtown Buffalo. Established in 1946, this SOM unit is now housed in another of its own creations, the Alcoa Building. The office has one firm rule: no one is ever singled out for credit; all work is considered as output of the office as a whole.

Mitchell/Giurgola Associates
Mitchell/Giurgola Associates first appeared in P/A in February, 1959, less th a year after its formation, in a news stor showing the Kitty Hawk Visitors Center. More recently, P/A has published the U versity of Pennsylvania Museum Acade Wing (1969), the Design Award Citation (1970) for dormitories at Williams Colle (p. 56) and the Philadelphia United Fund (1971). Two unbuilt projects also made news: the runner-up design in the Boston City Hall Competition (1963), ar the ill-fated winning design for the AIA headquarters in Washington (1965–69).

Erhman B. Mitchell who graduated Summa Cum Laude from the University Pennsylvania served as president of the Pennsylvania Society of Architects in 1 and is now a member of the national AI Board of Directors.

Romaldo Giurgola, also Summa Cum Laude, graduated from the University o Rome and Columbia University. A recip of the Arnold Brunner Award in Architecture, he taught at the University of Pennsylvania before becoming chairma of the department of architecture at Co lumbia, where he is now a professor.

St. John's Baptist Church, Charlotte, N. C. Architect: Wilber, Kendrick, Workman & Warren.
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This is the Broadmoor Hotel in Colorado Springs, Colorado.

As you can see, it's also a picture of some of the 260 Zoneline heating and cooling units in the Broadmoor.

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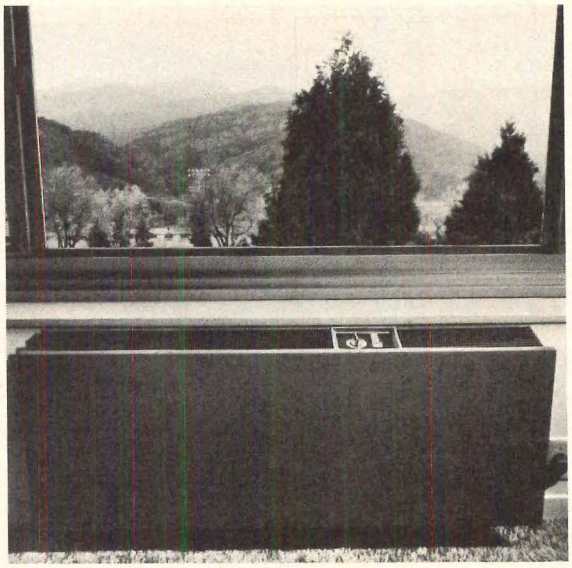


GENERAL ELECTRIC

Views

The future of the past

Congratulations on your superbly amusing, story-telling November cover. I howled, even though I hadn't read the explanation at that point. The air conditioner alone could have carried the picture, but the added touch of the newspaper was pure frosting.

Robert B. Ford
Manager, News Bureau
Carrier Corporation
Syracuse, N.Y.

Churches, too

Religious structures have one quality different from many other building types: church facilities are quite often used for their original purpose. Older churches, especially in downtown locations, have beautiful spaces and fine materials, but sanctuaries that are unsuitable for contemporary worship. Therefore, many churches are struggling, and some are succeeding, along with the many other building types you mention in the November issue, in achieving that delicate balance between preserving the best of the past while adapting to the needs and functions of the present and future.

Edwin C. Lynn
Ipswich, Mass.

(Mr. Lynn is author of *Tired Dragons: Adapting Church Architecture to Changing Needs,* which P/A will review soon. Ed.)

Disrupting a site

To imply that trees and site suffer little disruption by Gunnar Birkerts' design for the IBM Computer Center is absolute nonsense. It's the right building in the wrong place. If Mr. Birkerts did not wish to design a lie, he should have suggested to IBM that it choose a more appropriate site immediately adjacent to Route 1, next to an oil refinery. There it would at least reflect its machine heritage as translated into automobiles, pavement, road signs, storage tanks and distillation towers.

IBM's choice of the Sterling Forest location exhibits a greater degree of fundamental falsehood than any image created by any building as interpreted by any architect. Alvar Aalto, not to mention Frank Lloyd Wright, would cringe. Nevertheles read the article.

Paul Kurm
Staten Island, N.Y.

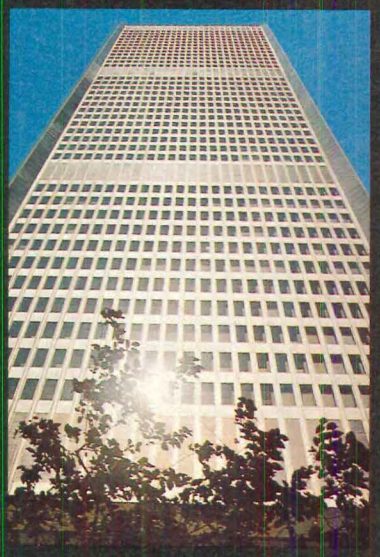
People can help plan

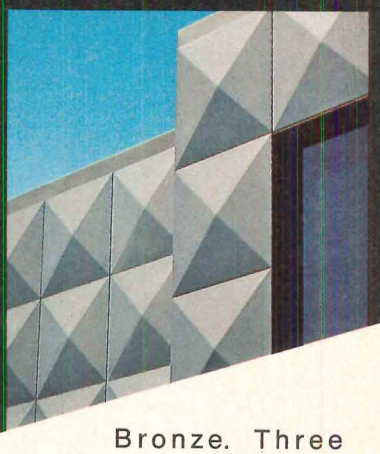
To put the Lockport Workshops (P/A, N 1972, p. 78) a little further into context, I would appreciate it if you could mention that the basis for those workshops and i deed my entire approach at the Cooper Union School of Art & Architecture was new concept of people's participation ir the community planning process devel- oped by Lawrence Halprin & Associates

Since testing these participation tech niques in interdisciplinary workshops ru by Ann and Larry Halprin in 1966 and 19 (P/A, June 1967), and a HUD-funded se in San Francisco and Indianapolis in 19 they have been successfully applied in t field in planning processes in Fort Wort Wilmington, Everett, Wash., and, of course, the related series in Lockport. W are getting into further applications of p ticipatory work in other places, stemmir from the same concepts.

Jim Burns
Lawrence Halprin & Associates
San Francisco

Keep the change.





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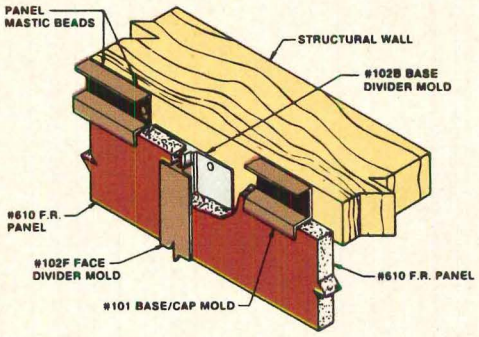

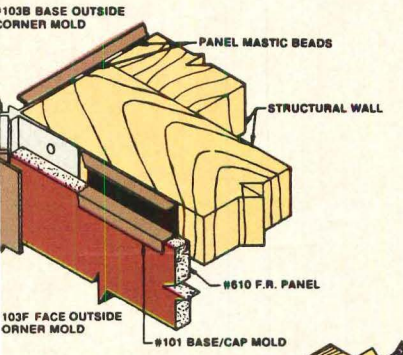

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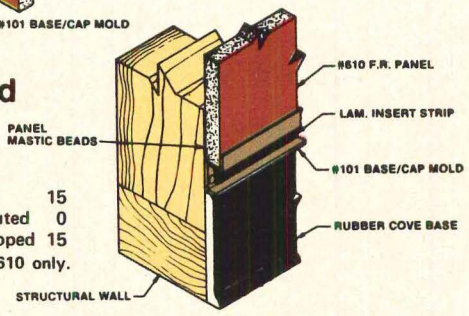

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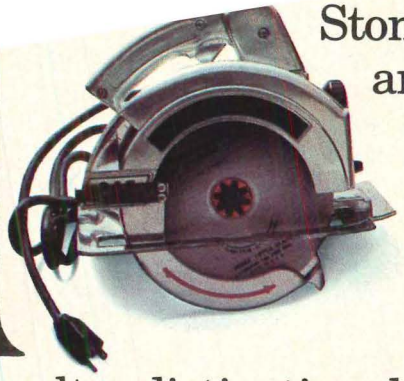

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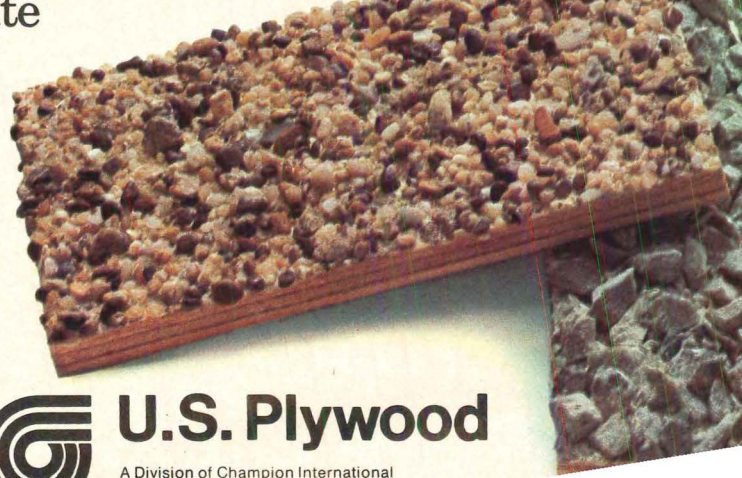

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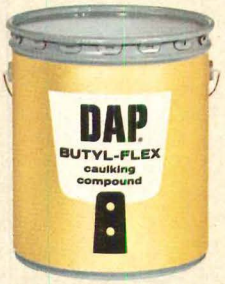

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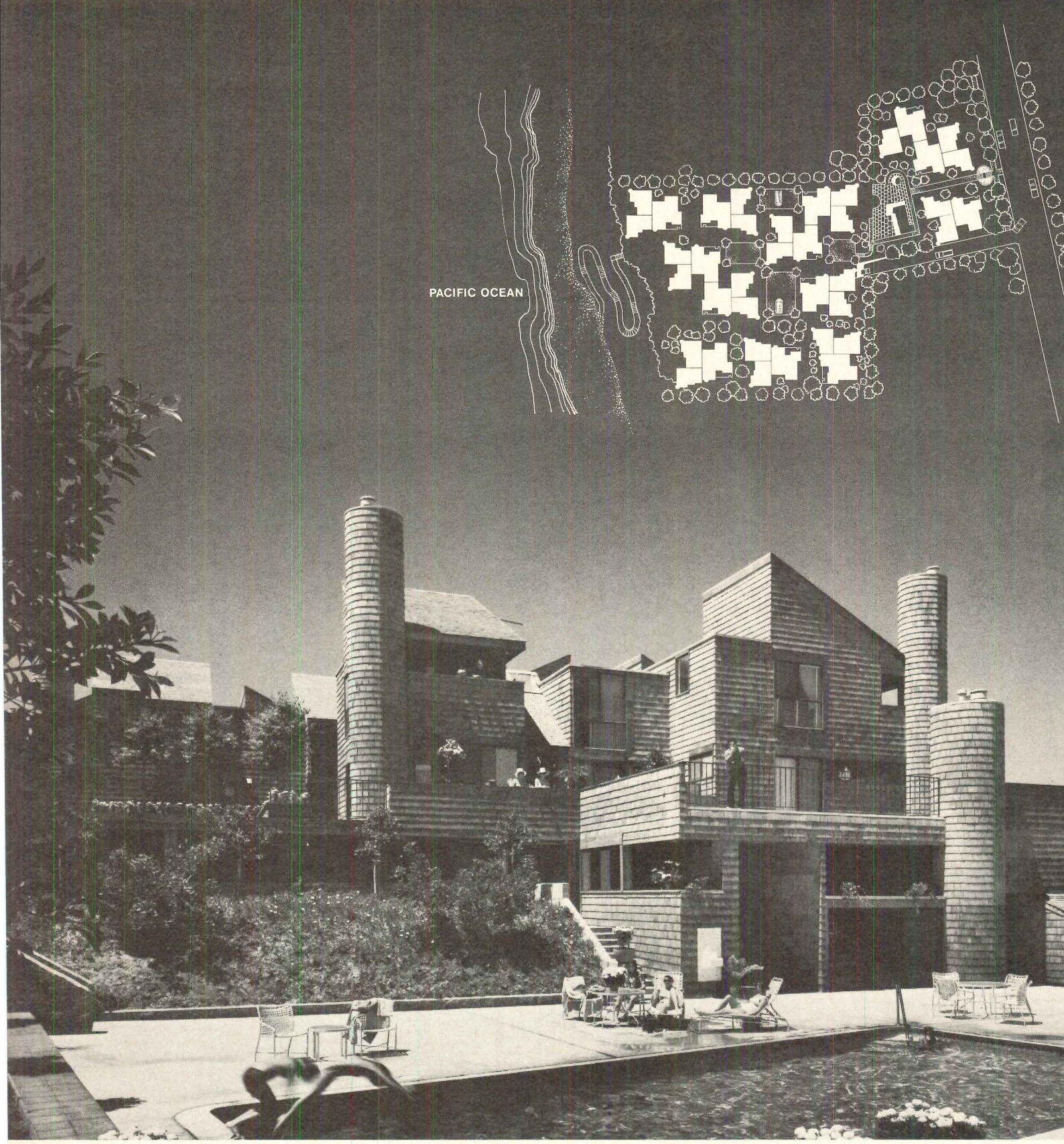

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Contents

Buildings on the way up 26
Personalities 34
Awards 34
Calendar 34
Washington report 44
Architecture west 48
Products 100
Literature 106
Notices 128

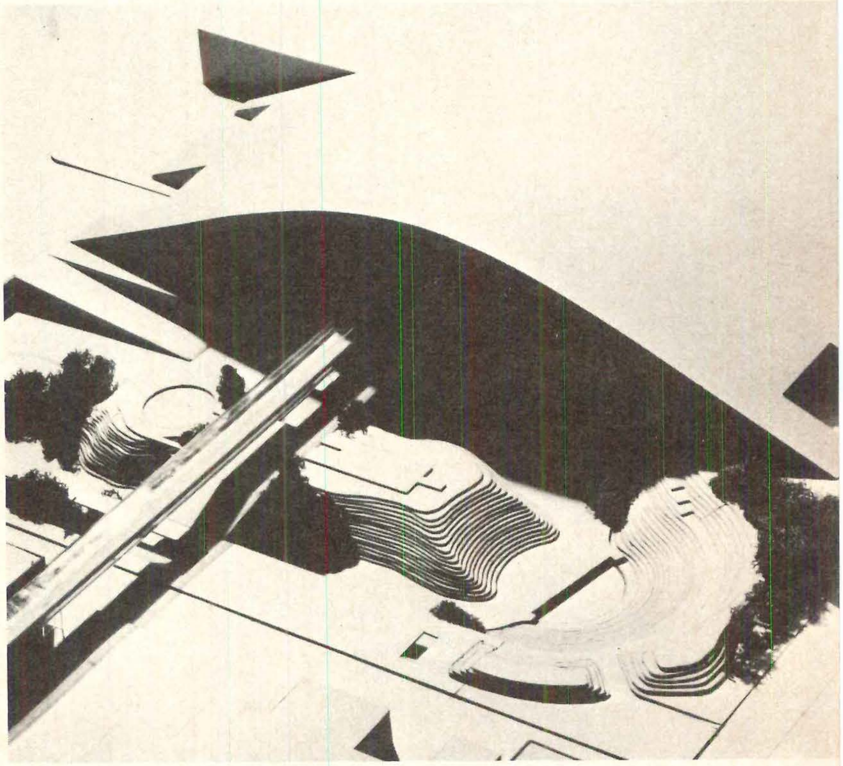
News report

NYC architects win Niagara Falls plaza competition

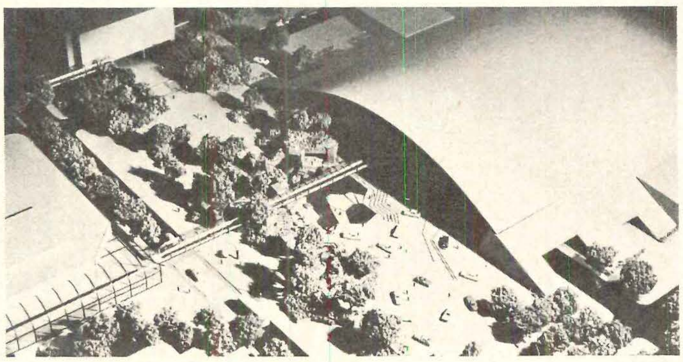
An oval plaza with two islands in the center took first place in the competition for the design of Rainbow Center Plaza in Niagara Falls. Abraham W. Geller, Raimund J. Abraham and Giulano Fiorenzoli are the winning architects; G.A. Hanscomb Partnership is the cost consultant and Shin Oabyashi is the planning consultant. The prize: the commission for the 5-acre plaza just in front of the Niagara Falls International Convention Center, now under construction.

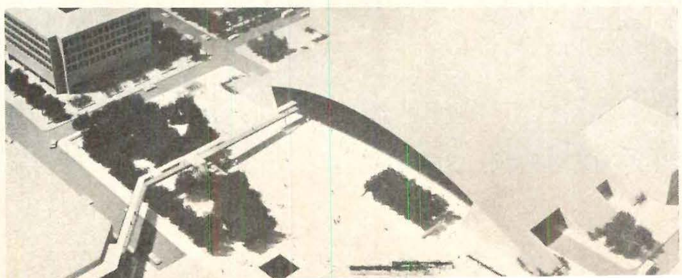
The winning design calls for the plaza to be carved out of the site; the two central islands will be reached by a wide bridge with open and closed display areas. The lower level, framed by carved exposed rock, is set aside for pedestrian areas sheltered from the wind, as well as for restaurants and shops. At the south end of the plaza, more carving—this time for an open amphitheater seating 3000 people.

Second prize went to Dean Abbott, also of New York and third to Tarapata, MacMahon, Paulsen Corp. of Bloomfield Hills, Mich. Jury members were: architects Pietro Belluschi and Benjamin Thompson of Boston, Raymond T. Affleck of Montreal; landscape architect, M. Paul Friedberg of New York and local civic and business leaders Armand J. Castellani, Seymour H. Knox, C. Richard Reese, Mrs. John E. Runals. Beda Zwicker was a nonvoting adviser to the jury.



First, second, third place at Niagara Falls





HOK, Kahn & Jacobs agree to merge

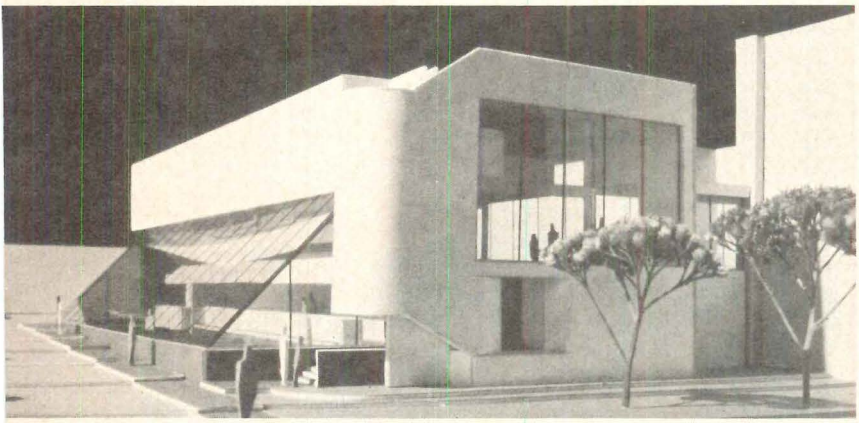
Two long established architectural firms, Kahn & Jacobs in New York City, and Hellmuth, Obata & Kassabaum in St. Louis, have announced an agreement to merge. Their aim, according to a joint statement by Robert Allen Jacobs and George F. Hellmuth, is to strengthen a diversified, balanced national capability, and perhaps to grow through further mergers or acquisitions into other areas of the country.

Ferebee, other AIA officers installed

In ceremonies in Washington, S. Scott Ferebee, Jr. was installed as 1973 president of the American Institute of Architects. Five other AIA officers also took office at the time: Archibald C. Rogers, first vice president and president elect; Louis de Moll, Van B. Bruner and David A. Pugh, vice presidents; and Hilliard T. Smith, Jr., secretary.

A dozen new regional directors were also installed. They [continued on page 28]

Buildings on the way up



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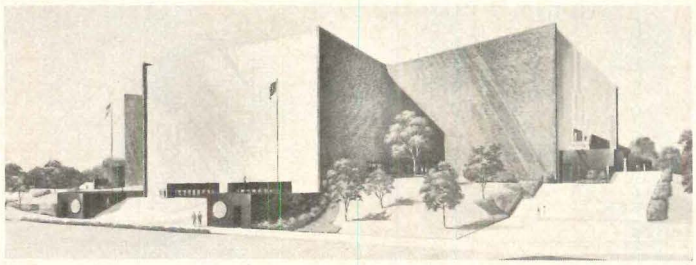

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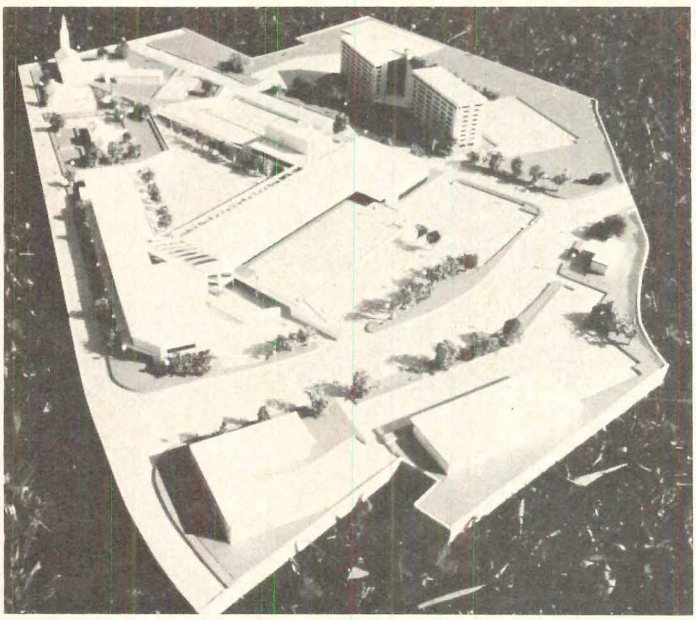

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1 Animal quarters, greenhouse and biology library are included in Washington University Life Sciences Building in St. Louis, designed by Hoffmann-Saur. The two-level library provides 7105 sq ft of space and room for 30,000 volumes; the 3100 sq ft of animal quarters will house small mammals, primates, rabbits, rodents, birds and cold blooded animals; the greenhouse will enclose 1850 sq ft. Cost is put at $713,000 including fees.

2 First phase of a phys ed and health complex at Austin Peay State University, Clarksville, Tenn., will be a health and phys ed building and a convocation center. Classrooms, labs, dressing rooms, rifle and pistol and archery ranges, handball courts and an 8500-seat exhibition area. Initial cost is put at $5 million. Morgan & Isaacs are architects.

3 Avoiding the look of a shopping center and providing the town of East Haven, Conn., with a new "downtown," architect Arthur T. Ballman designed a $12 million project that provides shopping, recreation and entertainment around a central skylit mall. Parking is below street level, and pedestrian circulation is linked with the existing town center. A portion of the parking area can be closed off for town fairs and gatherings.

4 Tallest hotel, not only in Atlanta, but in the world, is the claim for Peachtree Center Plaza, designed by John Portman & Associates. The bronze reflective glass tower will have 1200 rooms; total height will be 70 stories, or 700 ft, including 63-story tower and 7-story base structure. A central court, 7 stories high, will be at the heart of the base structure. Tube on side of cylindrical tower will house glass-enclosed elevators. To be operated by Western International Hotels, Peachtree Center Plaza will include restaurants, ballrooms, retail space and swimming pool. Total development cost will exceed $50 million.

5 Hillside site and stepped-down structure give every space in main academic part of Salanter-Akiba-Riverdale Academy a view of Hudson River. Located in suburban New York City, academy will house 600 students from first to eighth grades on what was formerly the estate of Arturo Toscanini. Chapel is at main entrance to building and forms link between academic area and gymnasium/auditorium. Structure is steel; columns and roof structure are clad with dull metal alloy. Exterior walls are natural finish concrete; glass is gray. Toscanini mansion and several outbuildings are being preserved for administrative use; two 150-year-old copper beeches flank the chapel. Architects are Caudill Rowlett Scott; Engelhardt & Engelhardt are educational consultants.

6 Shaped like a relaxed letter "S," a 10-story hotel and casino designed by H. Stossel & Partners of Sydney, Australia, will offer visitors to Bali an assortment of pleasures. The building will include 415 standard suites, all opening onto terraces, and the usual lobby, restaurants and other services, plus 19,000 sq ft of casino. The building's shape allows a primarily north-to-east orientation for the suites. Also planned are two groups of family units, to be built on either side of the main building. Cost is estimated at $12 million.

7 Saddle-shaped, cable-suspended lightweight steel roof will top 17,500-seat Capital Centre to be built in Largo, Md. The $16 million arena will be home court for a professional basketball team and a new professional ice hockey team, and will provide facilities for a range of other events. The arena floor is 30 ft below grade, 80 ft below the roof; the elongated oval of the arena has a maximum diameter of 400 ft. Architects are the Shaver Partnership; consulting engineers are David Geiger-Horst Berger.

8 Multipurpose is an understatement when applied to a totally enclosed urban environment proposed for Atlanta. Designed by Thompson, Ventulett & Stainback, and named Omni International (it will be built next to The Omni, an indoor sports and entertainment facility by the same architects), the $65 million structure will occupy a 6-acre site. It will include a large hotel, 600,000 sq ft of office space, a 5-level trade pavilion, 10 movie theaters, an indoor-outdoor pool, an ice-skating rink, two tennis courts, shops and restaurants. The 14-story complex also will include an 8-level central court traversed by a 200-ft continuous escalator, reported to be the world's largest.

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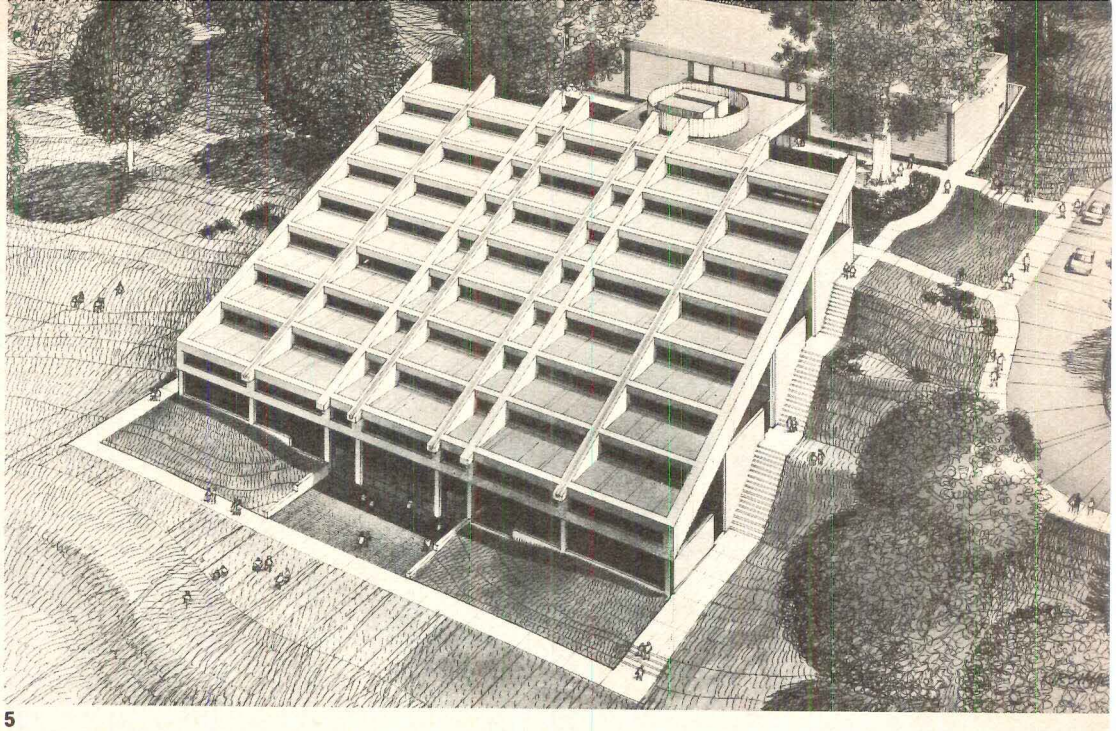

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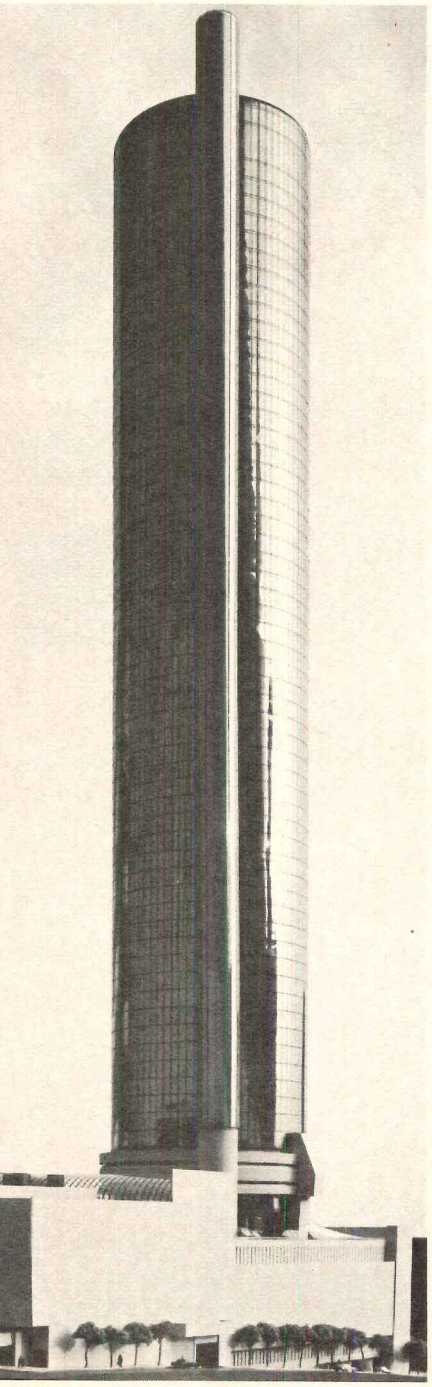

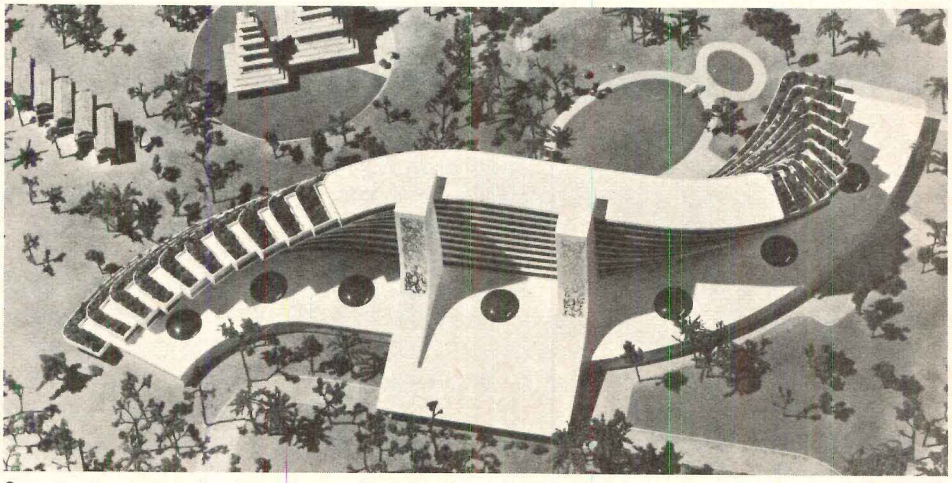

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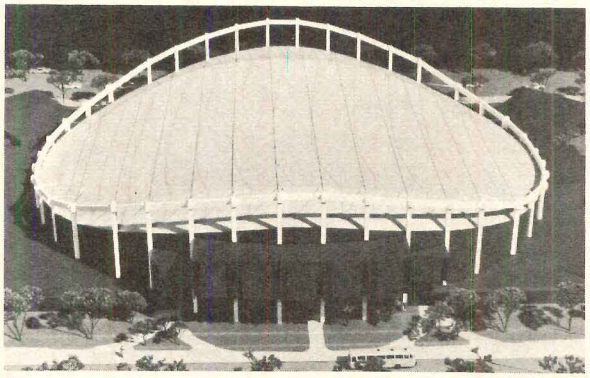

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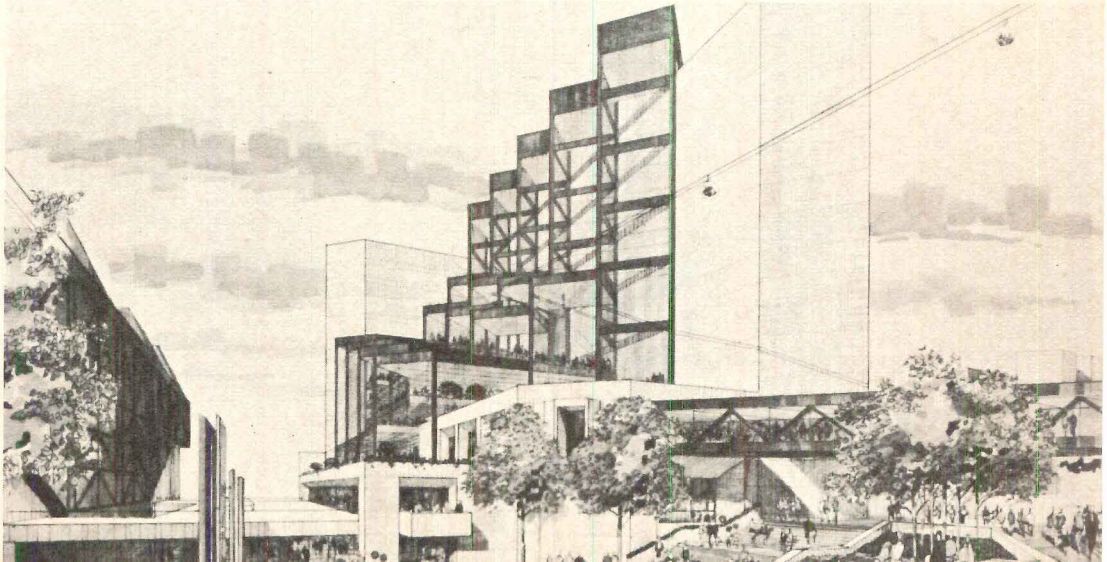

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News report continued from page 25

are: Frank L. Hope, Jr. and Eugene Crawford, California; Herbert E. Duncan, Central States; H. Leslie Walker, Jr., Florida; John S. Hartray, Jr., Illinois; William L. Ensign, Middle Atlantic; Robert A. Burley, New England; Frederick G. Frost, Jr. and Herbert Epstein, New York; Vladimir Ossipoff, Northwest (although he's from Hawaii); Ehrman B. Mitchell, Jr., Pennsylvania; and Thomas A. Bullock, Texas.

AIA, CEC plan sixth Public Affairs Conference

Architects and engineers from across the country will have a chance to meet their senators and congressmen as well as to get the latest word on legislation concerning their professions at the 6th Annual AIA-CEC Public Affairs Conference. The conference is scheduled for March 19–20 at the Mayflower Hotel in Washington, D.C.

Among the topics to be discussed are: eliminating federal competition with private architectural and engineering firms; controlling energy demands; consolidating federal transportation, rural development and urban development programs; a preview of the Omnibus Housing Bill, municipal bonds under tax reform, implications of the Occupational Safety and Health Act; federal involvement in building codes and standards.

Texas boasts country's only state building materials lab

Created by an act of the 1971 session of the Texas Legislature, the state's Building Materials and Systems Testing Laboratory is now in operation, evaluating building materials and systems for local governments, developers, designers, contractors, labor unions, trade associations and manufacturers. According to executive secretary Clayford T. Grimm, it is the only such state facility in the country.

BMSTL, as it's known acronymically, is an operating department of the state's Department of Community Affairs. It takes advantage of the faculties and research facilities of nine state universities, consulting professionals and commercial testing labs as needed.

Government publication to list A-E jobs

One provision in the architecture and engineering services act passed just a short time back calls for the federal government to "publicly announce all requirements for architectural and engineering services." One of the ways to do this is through the Architectural and Engineering Services section of the *Commerce Business Daily;* the publication may carry, during next year, some 5000 or more requests for proposals, covering jobs of all sizes. The listings will include location, size and type of proposed jobs along with other information.

Commerce Business Daily is available from the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. Subscription costs: $55.25 a year for airmail service, $25 a year for regular mail.

CSI to celebrate 25th anniversary in Washington

For 1973, and in honor of its 25th anniversary, the Construction Specifications Institute is bringing it all back home. The annual convention, scheduled for June 25–27, will be held in Washington, D.C.—the Institute's birthplace and the [continued on page 31]

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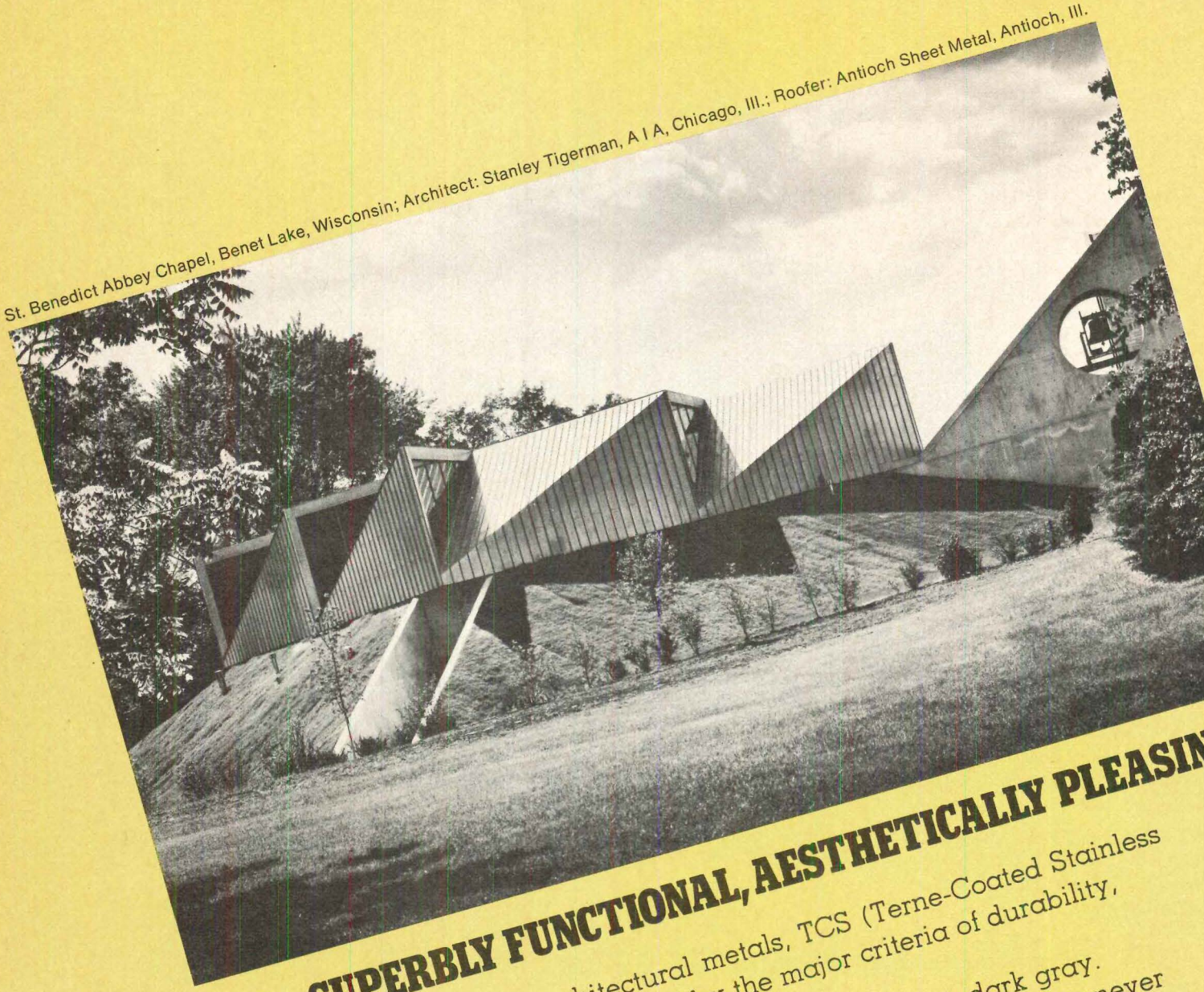
St. Benedict Abbey Chapel, Benet Lake, Wisconsin; Architect: Stanley Tigerman, A I A, Chicago, Ill.; Roofer: Antioch Sheet Metal, Antioch, Ill.



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News report continued from page 28

site of its first convention in 1957. The Sheraton Park Hotel will be the convention site.

To celebrate the founding of the Institute in 1948, the convention program will include a number of events honoring CSI's role in the construction industry; a Silver Anniversary Commemorative Banquet will be held on Sunday, June 24. The technical program will also focus on CSI's role in the industry. It will cover the development of construction communications and related documents, standards, education programs and research and development. Workshop sessions, product exhibits and a full social program will round out the convention.

GSA plans energy lab in form of federal office building

It seems as if the General Services Administration is always building a new federal office building somewhere, so one more isn't the biggest news of the year. But the one planned for Manchester, N.H. is something else again: GSA is making this one an energy conservation demonstration project, and Dubin-Mindell-Bloome Associates (who served as consulting editors for P/A's October 1971 issue on buildings and the environment) have been engaged to prepare an energy conservation program.

The building, which will house the usual range of government agency offices, will be used to monitor, record and provide information on the relative effectiveness of many energy conservation systems. The engineers will study such variables as building configuration, materials, glass-to-wall ratios and thermal insulating values; they will also carefully review some 200 energy conservation ideas and systems. Systems that look like they really will save energy will be studied in detail and recommended for use in the building. The engineers will also suggest a program for running and maintaining the building that will reduce energy needs. Each system and subsystem in the building will be instrumented and monitored.

Coalition warns Nixon on housing curtailment

Prompted by persistent reports that the Nixon administration plans a year and a half moratorium on all housing subsidies, direct and indirect, a coalition of 22 national organizations interested in housing has warned the president of the "catastrophic" human and economic results of such a moratorium. The most immediate impact the coalition said in a letter to the president, would be felt by those who now find it the hardest to obtain decent housing in the present market.

Economically speaking, the loss due to a ban on new housing subsidy activity would run to about $3 billion in housing construction. That would have, the coalition says, an $8 billion impact on the gross national product and involve a loss of one million man-years of employment.

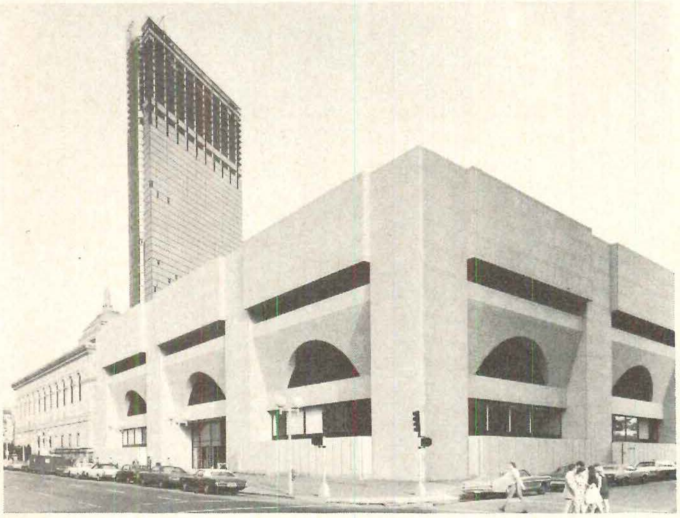
Among the groups signing the letter were the AIA, the Housing Assistance Council, the National Urban Coalition, the National Rural Housing Coalition.

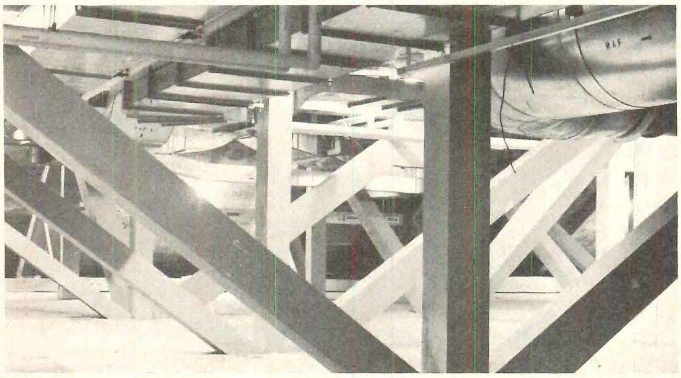
Maryland new community sprays sewage into woods

In 20 years, the new community of St. Charles, in Charles County, Maryland, will probably be a town of 75,000 people; that, at least, is what the developers hope. By that time, the [continued on page 32]

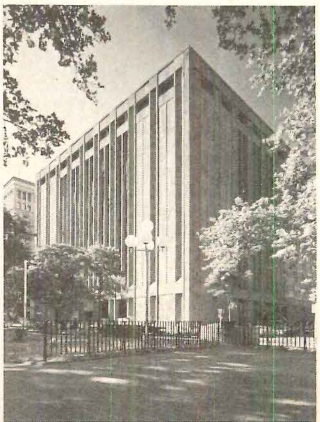
News report continued from page 31

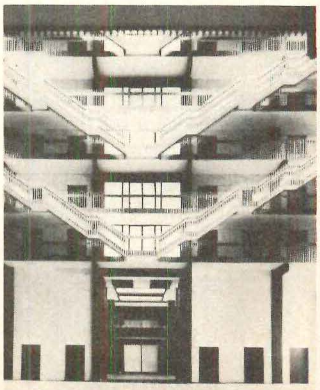
St. Charles: it comes out here





Boston, NYU libraries





sewage from the community will be routed into a major interceptor sewer and then to a treatment plant to be built by the county. In the meantime, however, something has to be done about the approximately 750,000 gallons of effluent a day that comes from the community. The developers, Interstate General Corp., and their consulting engineers, Whitman, Requardt & Associates, chose what may be the oldest, cheapest and most effective way to go about it—nature's own purifying system, with a boost from modern technology—sewage lagoons and spray irrigation.

Sewage from St. Charles' 1500 homes and its two schools flows through sewage lines into a 40-acre system of lagoons near one edge of the site. The first two lagoons are equipped with aeration devices which churn the water and add oxygen to the sewage, thus fostering the growth of organisms which devour the sludge. From the 5-ft-deep aeration lagoons, the waste water is pumped to other lagoons where sunlight and air, along with the ubiquitous bacteria, further clean the water. This treatment, which takes about 40 days, reduces the water's biochemical oxygen demand to about 25 percent of influent, and boosts the dissolved oxygen content from zero to about 60 to 80 percent. After all that, the water is sprayed into nearby woods. The spraying further aerates the effluent, and the porous soil and leaf mulch of the 50 acres of woods acts as one final filter.

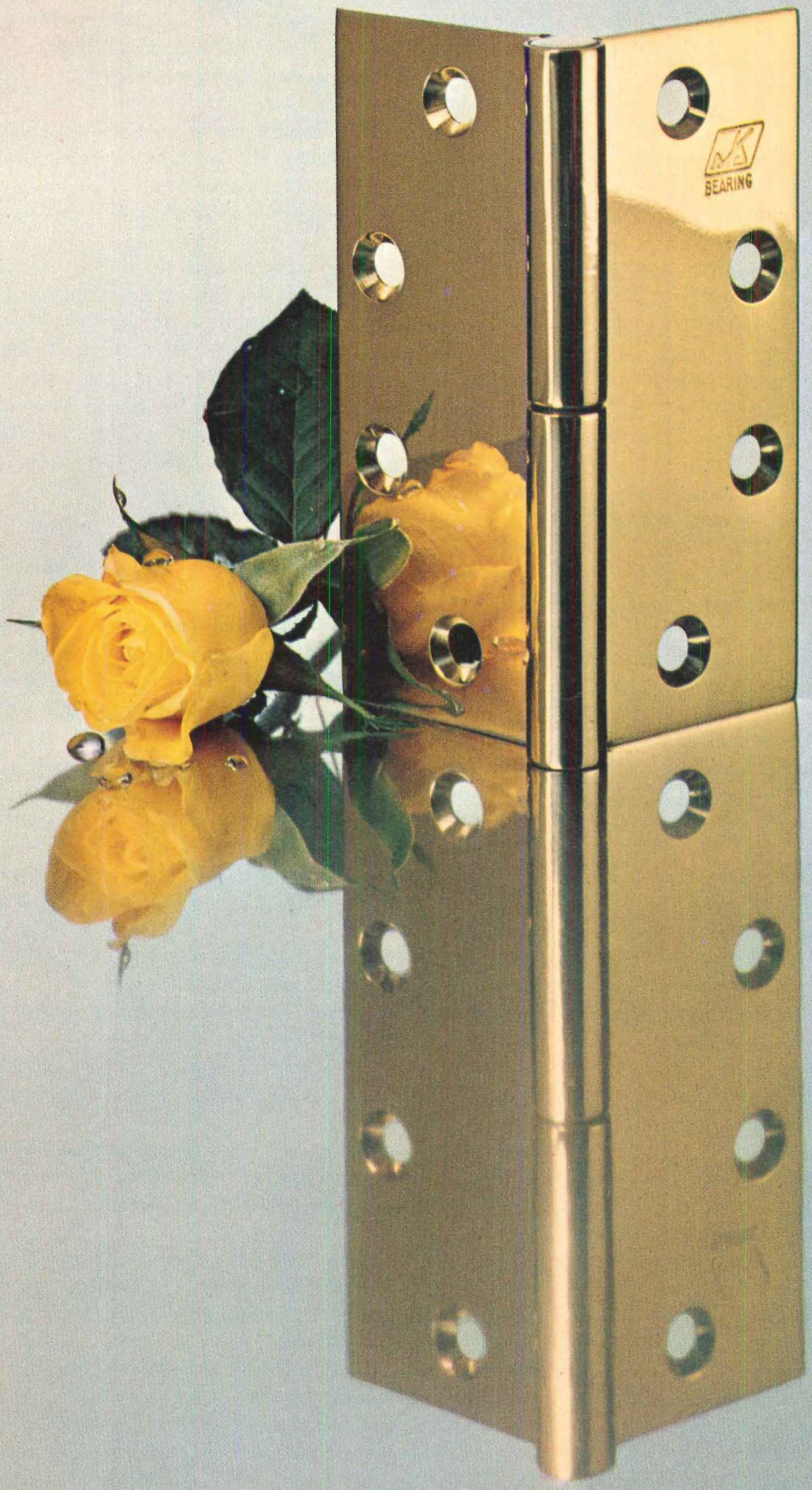
Two libraries by Philip Johnson open

The new addition to the Boston Public Library demands attention as a juxtaposition of monumental 1960s neoclassism against the most refined 1880s Renaissance Revival style. Less obvious to passing architecture buffs is the advanced structural system behind the stone arches, which yields a column-free second-floor reading room about as long as a football field.

Designed by Philip Johnson and Architects Design Group, the $23 million, 10-level addition is about the same size as the stately McKim, Mead & White building next door. But it boasts three times as much usable floor space; one factor is the two floors below ground level, as well as the eight floors plus mezzanine above ground. Another factor is the structure itself. A grid of interconnecting trusses, 16-ft deep, at the seventh, or top floor, provides support for the third through sixth floors, which are hung from the grid. Most of the 42 trusses are supported by steel columns rising from the basement foundation slab; except for four 4-column towers at the center of the building, the columns are at the corners and sides.

Another structural innovation—for a building at least—was the use of orthotropic design (a technique used mainly in highway bridges) for eight pedestrian bridges at the mezzanine level. Orthotropic design has the steel plate bridge deck doing double duty as structural member and walkway surface, allowing shallow depth over long spans.

Another library design by Philip Johnson has been completed, this one the $25 million Elmer Holmes Bobst Library at New York University. Johnson and Richard Foster designed the library and study center as a massive block, clad in red Longmeadow stone, rising abruptly along the south side of Washington Square. Zoning approval was held up for months by community protest over the shadow the structure would cast on the popular park. On the inside, the building was designed as one huge room, with stacks, work areas and read-
[continued on page 34]



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News report continued from page 32

ing spaces opening onto a 12-story atrium. The black, gray and white marble floor, based on Palladio's design for the church of San Giorgio Maggiore in Venice, is surrounded by 12 shimmering tiers of gold-anodized aluminum balcony railings.

Personalities

Wilson V. Binger, Tippetts-Abbett-McCarthy-Stratton, New York City, has been elected president of the American Institute of Consulting Engineers.

Frank Sheridan, O'Connor Associates, Albany, N.Y., has been appointed National Architectural Workshop Chairman for the 97th Annual Meeting of the American Association on Mental Deficiency.

Ted Glasrud, St. Paul, Minn., has been honored by the Minnesota Society of Architects of the American Institute of Architects with a special commendation for "excellence in enriching our man-made environment."

John A. Westman, Albuquerque, N.M., has received the third annual Young Engineer of the Year Award from the National Society of Professional Engineers.

Satoshi Oishi, Edwards & Kelcey, Newark, N.J., has been appointed chairman of the Planning and Zoning Board of Berkeley Heights, N.J.

G. Thomas Williams, Williams-Trebilcock-Whitehead, has been named president of the Pittsburgh Chapter of The American Institute of Architects.

Thomas E. Hamilton, Jr., Owens-Corning Fiberglas Corp., has been elected president of the Acoustical and Insulating Materials Association, Park Ridge, Ill.

Awards

Five New Jersey architectural firms were cited for outstanding design achievement by the New Jersey Society of Architects.

Top honors went to **Geddes Brecher Qualls Cunningham** (classroom, office building and central heating plant, Rutgers, The State University, Newark); **Mahoney & Zvosec** (Ramapo College of N.J., Mahwah Township); **The Grad Partnership** (Wolf Towers, Jersey City); **Ronald Hans Schmidt** (prefabricated multifamily housing prototype, Alpine). Honorable mentions were given to **Geddes Brecher Qualls Cunningham** (Stockton State College, Pomona); **Moore & Yeager** (Rehabilitation-Northampton County Prison, Easton, Pa.).

The Connecticut Society of Architects gave out three awards and two honorable mentions in its Honor Awards Program. The top awards went to **Douglass Orr, deCossy, Winder & Associates** (office and warehouse for Saab Motors, Inc., Orange); **Edward Cherry and Herbert Newman** (Dixwell Community House/Neighborhood Facilities Building, New Haven) (P/A, April 1972, p. 108); and **Carlin, Pozzi & Associates** (Branford Intermediate School). Honorable mentions went to **Gilbert Switzer & Associates** (Matthew Ruoppolo Manor, New Haven) and **John Matthews** (house remodeled for the Matthews family, New Haven).

Six architectural firms won awards in the third biennial awards program for architectural achievement sponsored by the Naval Facilities Engineering Command and the AIA. First Honor Awards were given to **Loebl Schlossman Bennett & Dart** (Service School Barracks, Naval Training Center, Great Lakes, Ill.);

Six Detroit architectural firms won Awards of Excellence in the yearly awards program of the D AIA. Selected for awards were: **Albert Kahn Assoc.** (Thomas Francis Jr. Public Health Building and Class Office Building, both at University of Michigan); **Jack Br. Associates Architects, Inc.** (Vilican-Leman & Associates Building); **Brown/Steele/Bos, Inc.** (Lavery Residence); Sm **Hinchman & Grylls Associates, Inc.** (Health Sciences Center, University of Louisville and Bethesda Hospital North); **Christopher Wzacny & Associates, Inc.** and planners **Parkins/Rogers & Associates, Inc.** (Bay City Riverfront North Environmental Design Study); and **Rossen/Neuman Associates** (Pine Knob Music Theatre).

Stevens & Wilkinson (Bachelor Officer Quarters and Mess, Naval Supply Corps School, Athens, Ga.); **Gilboy, Stauffer, Giombetti, Skibinski & Davies** (Gamma Ray Facility, Naval Ordnance Laboratory, White Oak, Md.); and **Delawie, Macy & Henderson** (addition to Thompson Medical Library, Navy Hospital, San Diego, Calif.). Awards of Merit went to: **Mackinlay/Winnacker/McNeil AIA & Associates** (Price Elementary School, Mangilao, Guam) and **Hayes, Seay, Mattern & Mattern** (Chemistry Laboratory, Naval Research Laboratory, Washington, D.C.).

Calendar

Jan. 21–Feb. 18. Exhibit of the Italian Art & Landscape Foundation Inc., Toledo Museum of Art, Toledo, Ohio.

Feb. 6–9. Twenty-eighth conference of the Reinforced Plastics/Composites Institute, Shoreham Hotel, Washington, D.C.

Feb. 8–10. Eighteenth annual educational conference and seminar of the Ceramic Tile Institute, Disneyland Hotel, Anaheim, Calif.

Feb. 20–22. International Building Exhibition, Automotive Building, Exhibition Park, Toronto, Canada.

Feb. 24–Apr. 22. The Arts and Crafts Movement in America 1876–1916, Art Institute of Chicago.

Mar. 7–8. Lighting conference for manufacturers of mobile homes, General Electric's Lighting Institute, Nela Park, Cleveland, Ohio.

Mar. 12–15. Twenty-fourth National Plant Engineering and Maintenance Show, McCormick Place, Chicago.

Mar. 19–20. Sixth annual AIA-CEC Public Affairs Conference, Mayflower Hotel, Washington, D.C.

Mar. 25–29. Thirty-fifth annual convention of the National Association of Architectural Metal Manufacturers, Royal Sonesta Hotel, New Orleans, La.

Mar. 30–Apr. 29. Exhibit of the Italian Art & Landscape Foundation Inc., Seattle Art Museum, Seattle, Wash.

Apr. 9–12. Design Engineering Show, Civic Center, Philadelphia, Pa.

Apr. 9–12. American Society of Mechanical Engineers design engineering conference, Civic Center, Philadelphia.

Apr. 11–13. Third national conference for the Building Team, Drake Hotel, Chicago.

Apr. 14–May 12. Exhibit of the Italian Art & Landscape Foundation Inc., New Orleans Museum of Art.

Apr. 15–18. Fourth international conference of the Environmental Design Research Association, College of Architecture, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

May 7–10. Thirty-first annual technical conference of the Society of Plastics Engineers, Queen Elizabeth Hotel, Montreal, Canada.

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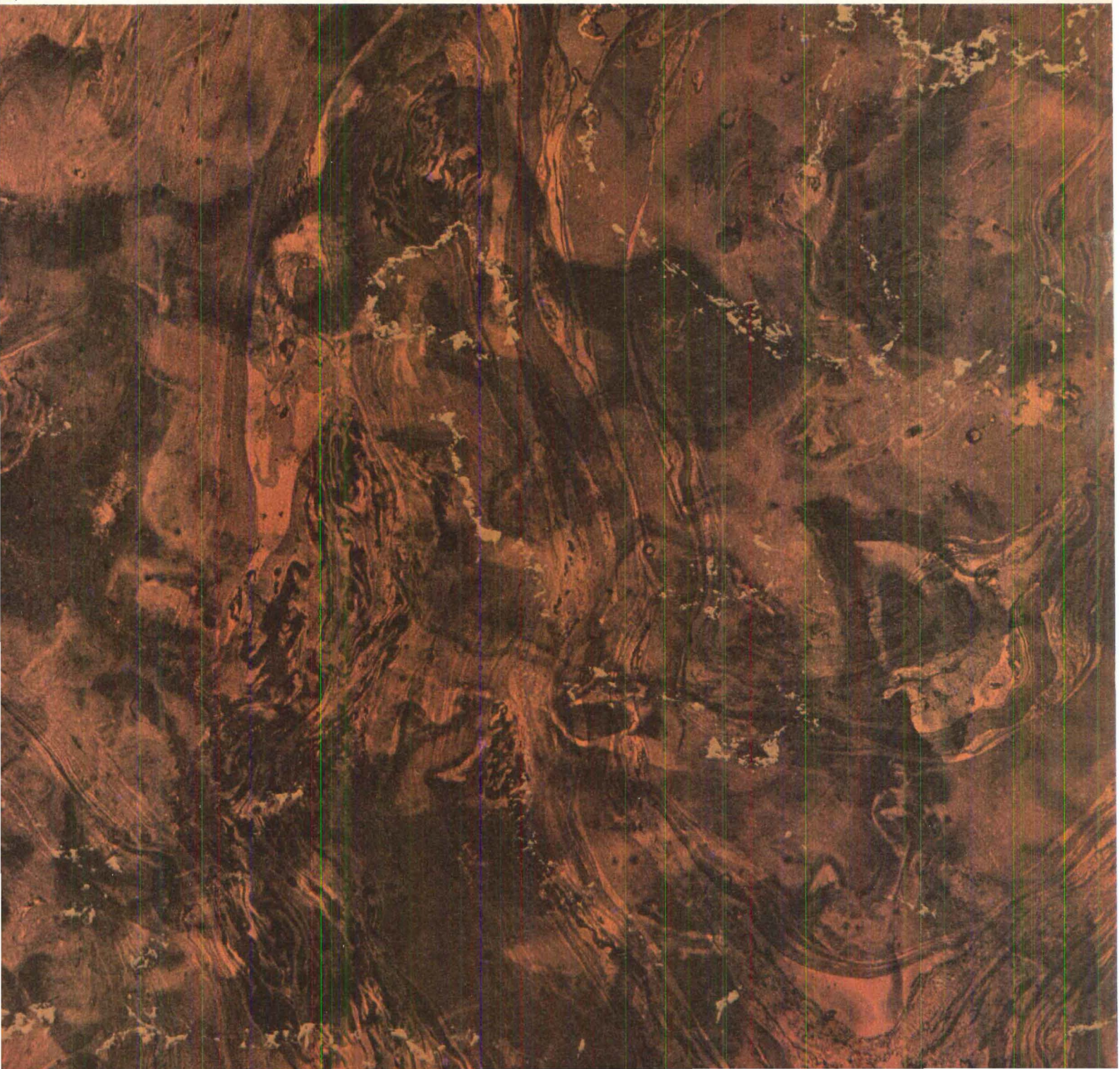

Washington report

Rearranging the cabinet

The rapid changes at the top level of the administration—cabinet and sub-cabinet members—make some things perfectly clear:

So far as the president is concerned, 1973 will be a year of holding the line on spending and new government activity, and it will be a year in which at least some reorganization will be carried out by presidential directive rather than with congressional approval. There will be no question at all about who is running the show.

It is also perfectly clear that there will continue to be plenty of federal work on the books for architects and design professionals—at least as much, if not more, than in 1972. Even with some cutbacks in new funding, most of the federal agencies concerned with construction have enough money in hand, including carryover from previous fiscal years, to continue at a reasonably high rate of work.

Of course, the substantial changes that have been and apparently will be made will change the manner in which architects do business: a new set of faces and titles are already in place; merging and shifting of internal departmental functions must be checked carefully to keep lines of communications clear and direct.

Reasons for the top-level shifts and new faces:

a. The president needs no window dressing of prominent names in his second term. Indeed, he doesn't want people with their own constituencies who are prone to charge off in their own directions. What he wants, and seems to have gotten, in general, is managerial and technical specialists who will take orders and carry them out.

b. At the second level of federal departments—the under and assistant secretaries, commissioners and administrators—he wants personal loyalists who might finally succeed in getting some substantial hold on the lower bureaucracy. Don't forget that the vast majority of federal workers came into government under two democratic presidents, and many of them have been actively fighting, or foot dragging, against Nixon initiatives. With his own men, many directly from the White House staff, at the operating level, it may be possible to get effective control.

At a few points, the general mold for cabinet staff isn't quite fitted—notably in the appointment of Peter Brennan as secretary of labor. But Brennan has no apparent constituency outside New York City. On lower levels, dismissal of such a nonpolitical figure as Ellis Armstrong from his post as commissioner of reclamation (a professional civil engineer, Armstrong's departure was viewed with some alarm by top societies) can be explained only in terms of personal problems with holdover Interior Secretary Rogers Morton. The same goes for the "resignation" of George Guenther, assistant labor secretary who had charge of the hot-potato Occupational Safety & Health Administration.

But such men as Elliot Richardson (moving from HEW to Defense), new people like James T. Lynn for HUD; Casper Weinberger (who moves from the economic council) to HEW; Claude S. Brinegar (an oil company official best known as a manager and economist) to succeed retiring John Volpe at Transportation; textile executive Frederick Dent at Commerce—are very much in the new mold.

Congressional reaction isn't easily predictable: Generally it seems to be noncommittal as to the people involved, probably because it is a little too early in the political game (with next elections two years away). Any real congressional reaction will come in another way: the already evident attempt to come up with a program of alternatives to any presidential plans, even before the delivery of the annual series of required and other messages to Congress. Another aspect is the obvious renewed attempt to force the executive to spend the money that Congress has set up (as, for instance, the $11.5 billion for water pollution control, vis-a-vis presidential announcement that only $5 billion will be spent in the first three years).

Also of vital importance will be progress of the antitrust suit filed by the Department of Justice against the National Society of Professional Engineers, on ground that NSPE forbids its members to bid on federal projects. The case is the same as that filed against the American Institute of Architects and American Society of Civil Engineers and other professional groups.

But now there's a difference: NSPE has decided to stand and fight, where ASCE and AIA signed "consent decrees" and eliminated prohibitions from their ethical codes. NSPE has employed attorneys (headed by former Assistant Attorney General Lee Loevinger), collected a defense fund, and has the added bolster of the recently passed "Brooks bill" which specifically exempts professionals from bidding requirements. There are indications that Justice wasn't too happy about filing the new action against NSPE—but almost had to do so as a matter of consistency. A decision favoring NSPE would probably mean that other societies could begin moves to reopen or modify their own cases.

Meanwhile, professionals were jockeying for position in administrative matters that would have a large effect on their business:

1 The General Services Administration (which builds and maintains most federal buildings) was holding a series of discussions over means of bringing the structural, mechanical, electrical engineer into a better role on projects. A possibility under discussion: Bring the consulting engineer in at the negotiation stage of the project—along with the architect; another, a contractual provision that would require "value analysis" of designs during the design stages.

2 Professional societies were thinking about nominees as members of the newly designated Technology Assessment Advisory Council—a key organization in the new Office of Technology Assessment. This new agency, authorized by law at the last session, would advise Congress on scientific matters and have powers very similar to those of the General Accounting Office (also a congressional, not an executive agency). Genesis of the new Office is congressional worry that Congress has had no special science advisory staff to counter the huge resources of the executive branch in this area and has had to depend on services of the Library of Congress for its information and scientific backup. The law, as signed by the president, doesn't set up any proportional representation among engineers, architects and other "scientists"; it simply states that appointees should be persons of recognized technical abilities and leadership. Both architects and engineers want representatives of their own professions on the Council. [E.E. Halmos]

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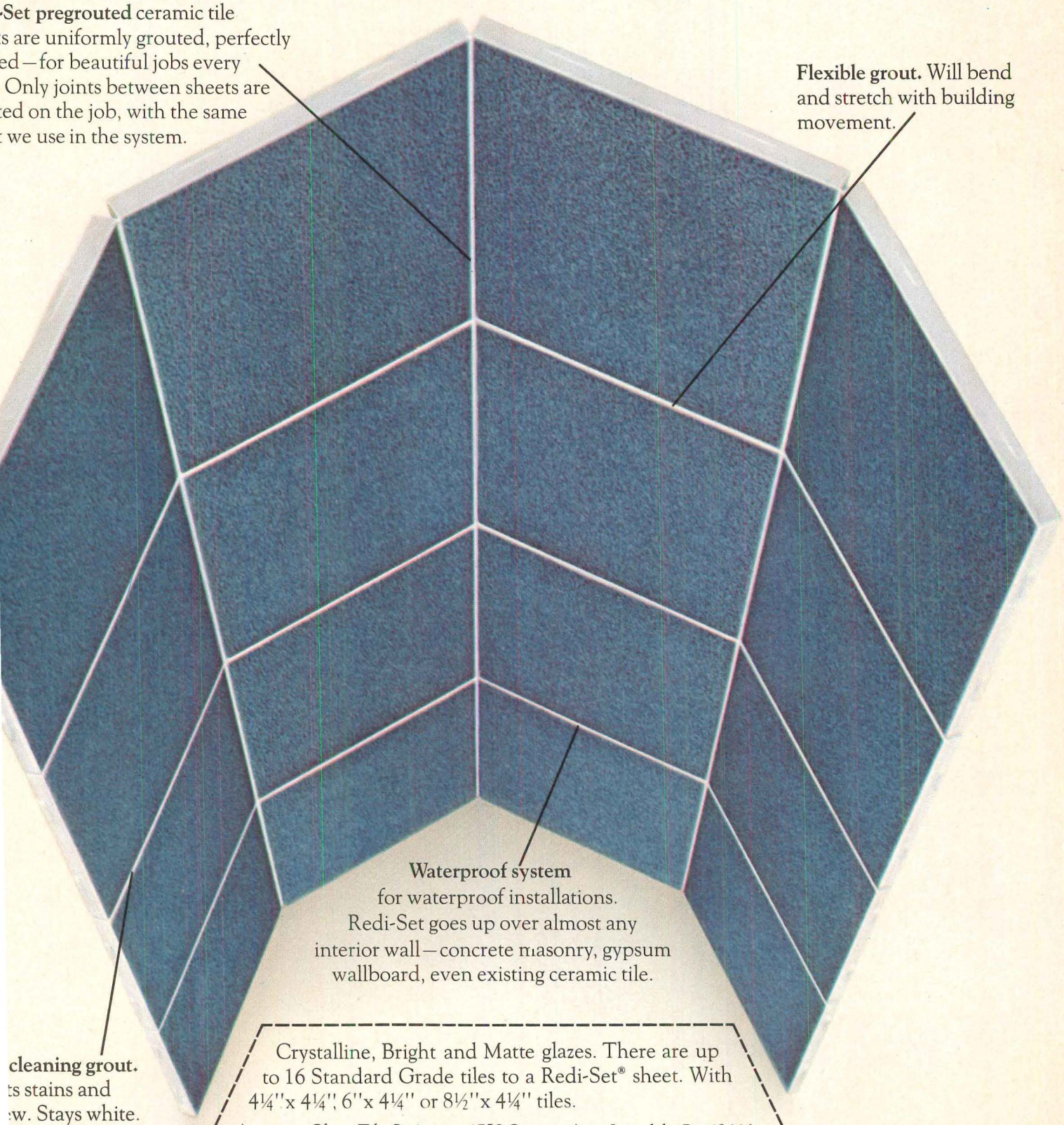

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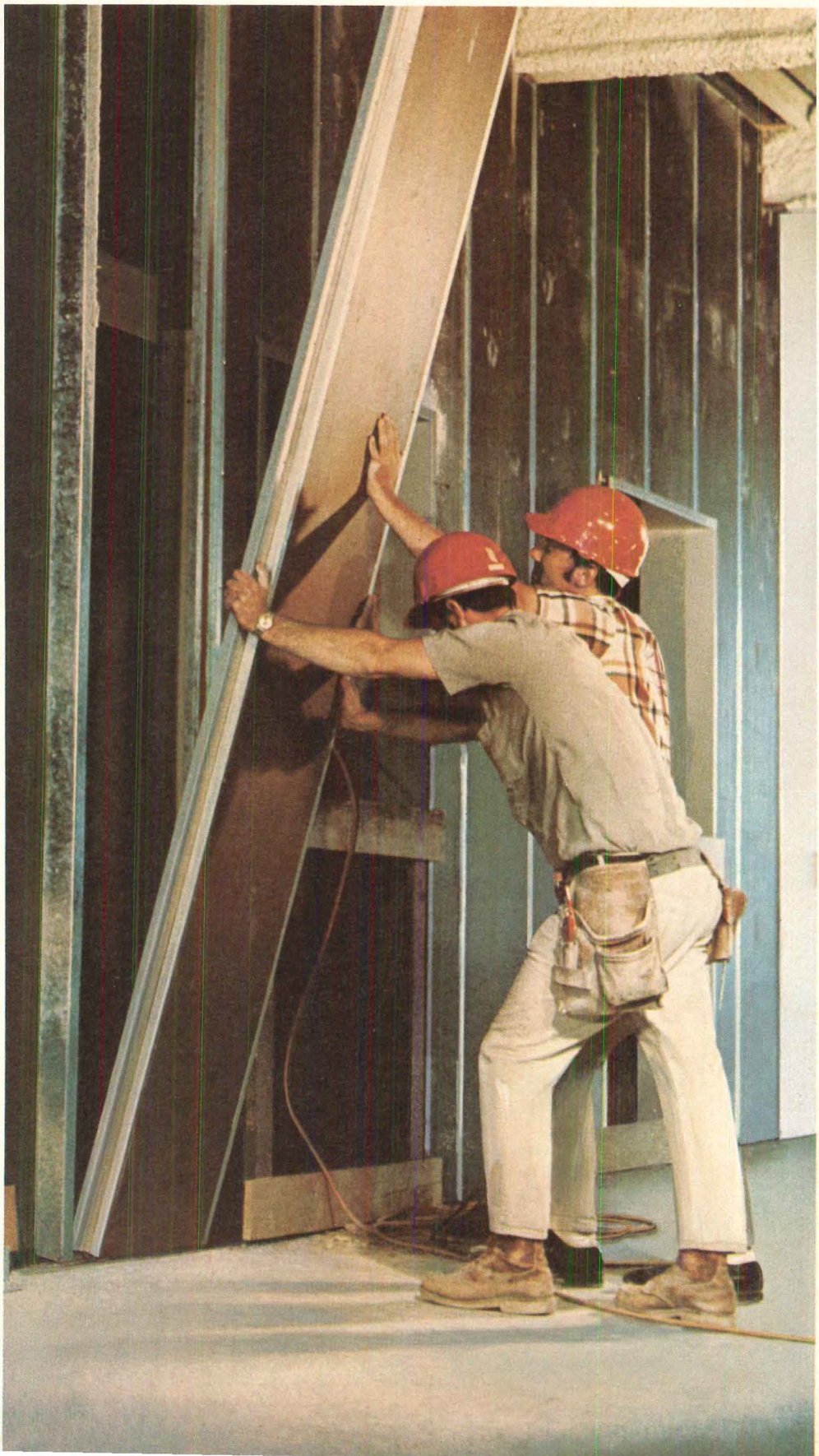

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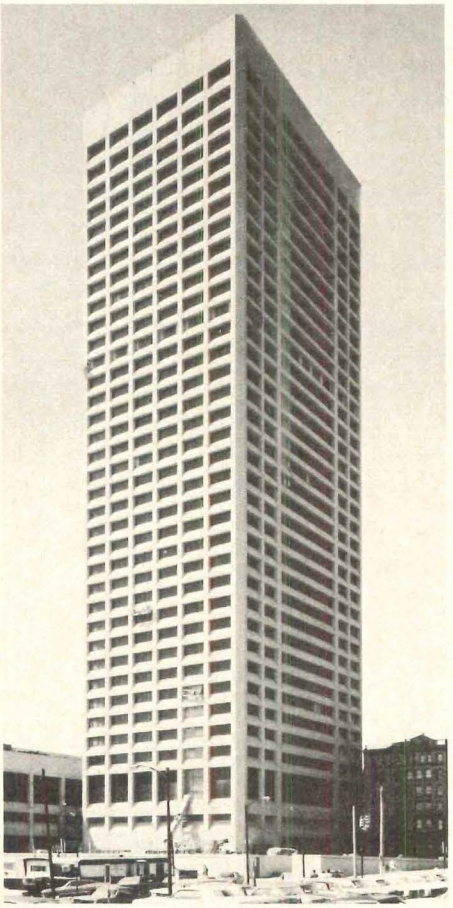

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Architecture west

At the end of the year California cities were still digging out from September's legal twisters. In Los Angeles, the 35 city plans in various stages of development were soon leveled to generalities after the State Supreme Court ruled that land specified in city plans for later acquisition is inverse condemnation. Said the court in the Klopping v. City of Whittier ruling, this deprived the owner of the full use of his property.

The Los Angeles city attorney's office interprets this as meaning that the city must be ready to buy all parcels marked on city planning maps for future condemnation. A member of the planning department predicted back-to-back escrow from now on in.

Hardest hit was the Central City Plan with its long-range stepped development from 1972 to 1990. (P/A July 1972). It was prepared by outside planners Wallace, McHarg, Roberts & Todd after 18 months of study and at a cost of almost $.5 million. The maps and text are now reduced to principles; gone are such distinguishing features as the commercial-residential park near the Convention Center and the industrial park in the produce district. What the City Council Building Committee will now act on is simply a concept plan.

Needed: middle ground

Robert Janovici, attorney in the City Planning Department, said of the decision, "Now we know what we can't do, but not what we can." What is needed, he thinks, is a middle ground between the broad, general and usually meaningless plan and the one so tight it needs a shoe horn to get out of.

Janovici used to float between offices giving opinions on new legislation; now he races. One reason is another State Supreme Court decision in September, this one broadening the environmental quality legislation to apply to private as well as public projects. In the absence of guidelines as to what is meant by a "significant effect" upon the environment, building permits are being issued provisionally in many jurisdictions—all applicants except those whose projects fall into exempt categories sign an acknowledgment that they are proceeding at their own risk. Finally, only the courts can decide who can go ahead. This cooled the interest of lending institutions to such an extent that the volume of building permits fell off sharply in November.

In the first part of December, legislators, conservationists, land developers, contractors and bankers worked out compromise legislation allowing a 120-day moratorium to give state and local agencies time to set guidelines. In the meantime the environmental impact reports required on all sizeable projects are still being written almost in the dark. There are frequent meetings in the architectural offices to discuss the extent to which their projects are affected, and one or more persons are delegated to collect all available information on the legislation.

Writing the impact reports is vastly time consuming, admits Frank Dimster, just elevated in the Pereira office to Director of Architecture and Planning. But, he adds, "We as architects should welcome any legislation which is good insurance for higher standards."

L.S. Storrs, retired former head of the Santa Monica Planning Dept., was drafted by a number of offices to draw up their impact reports. After collecting all the temporary guidelines that had been set up by various jurisdictions, he faced such lack of agreement that he gave up and relied wholly on common sense.

November blew up another storm when five million voters registered their determination to protect the California shoreline all the way back to 1000 ft from the mean high tide line. Most immediately affected were the beach cities. Perry Scott, Santa Monica City Manager, said gloomily that under the language of the Coastal Initiative "no one was qualified."

By mid-December as appointments to the commission which would implement the legislation were being made, it appeared that opponents to the legislation would dominate the commission. Long Beach Mayor Edwin Wade, co-chairman of a citizens' committee which had fought the initiative, justified his efforts to seat two anti-environmentalists on the grounds that "we need good solid businessmen in there."

John H. Zierold, lobbyist for the Sierra Club, wrote in the Los Angeles *Times*: "It now remains to be seen whether those who passed Proposition 20 (Coastal Initiative) will have their victory sustained . . . or whether the same old excesses of patronage will turn over the control of the coastal commissions to the very interests that fought coastal management in the legislature. . . ."

Delays, delays:

Whatever the sympathies of the commission, no one is going to be very happy. By February 1 when their first meeting is held, the backlog of cases will be so gigantic that a five to six months' delay is expected on decisions.

Litigation has already begun. Great Lakes Properties, Inc., whose 100-unit apartment project on Palos Verdes Peninsula was stopped after concrete was poured for the foundations, filed a $705 million cross-complaint to halt 50 other private and public projects. Named as cross-defendants were Los Angeles County, 10 coastal cities and private developers.

The sad part about all the environmental legislation, said architect Kurt Meyer, is the area of uncertainty it creates. "People don't mind proper legislations but not knowing whether you are legal or not can be agonizing."

Also tricky. Planners Pollok & Barrochini piloted a project for Leucadia successfully through the 1971 act requiring planning and zoning maps to agree only to be stopped cold on the Coastal Initiative.

The Gruen office thinks the time was ripe for all this legislation to pop up. "It is part of the general encirclement of the ruthless developer." [Esther McCoy]

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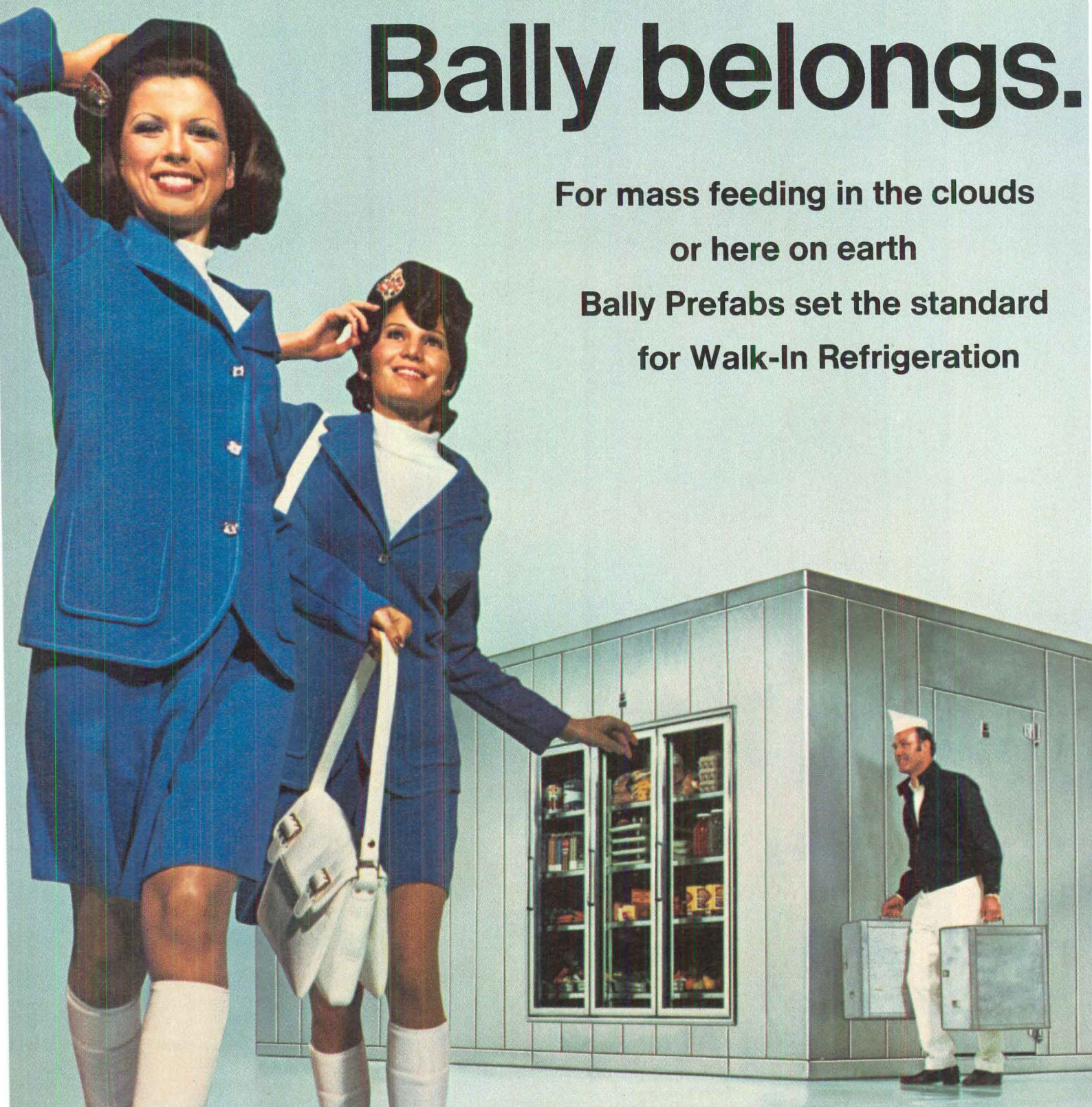

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Progressive Architecture

February 1973

What does Progressive Architecture stand for? We are often asked that—if not in those exact words. And in one way or another we constantly ask the same question ourselves.

A quick inventory of our current attitudes yields a few cardinal principles:

We stand for ecologically sound, socially beneficial allocation of resources—materials, energy and manpower—in reshaping the environment.

We stand for improved methods of practice, of development and of construction that enable the architect to serve society more efficiently.

We stand for heightened social responsibility among architects, both in considering the ultimate justification for work they undertake and in speaking out on public issues.

Then there is architectural design, the traditional mainstay of the architectural journal. P/A has long recognized, of course, that there is more to be learned from the process than from the product and, we now realize, more yet to be learned by discussing process and product together. But, however it is presented, architectural design still fills the major part of P/A's editorial pages—space that it legitimately demands.

Virtually every issue of P/A is a statement of where we stand on architectural design. Once a year, for our Design Awards issue, we invite a jury of distinguished professionals to register their choices; for the jury, we deliberately seek people representing diverse viewpoints—among those that we consider constructive. For the remaining eleven issues, our staff is in effect the jury (and we never accept a subject for publication without a full staff review).

This February issue represents, particularly well, our current viewpoint on architectural design per se—as distinguished, for instance, from the complex puzzle-solving of large-scale hospital design (July 1972) or of preservation efforts (November 1972). The office building by SOM, San Francisco, the interior by Michael Graves, and the dormitories by Mitchell & Giurgola were chosen for publication because we feel they are superb solutions to particular problems, and—beyond that—represent the most promising directions U.S. architects are pursuing today. The profile of the John Andrews office examines a firm recognized worldwide for its precedent-setting design; one purpose of the article is to reveal the fascinating international organization behind the Andrews work, but an equally important point is to show some of the audacious work the firm is turning out on two opposite sides of the globe.

The architecture you see on the following pages is the kind of architecture we stand for. It is an architecture that engages the user's interest fully, that expresses a building's role in society, that recognizes its surroundings and recognizes the possibility of extension and change. We stand for non-monumental architecture, except for those rare situations where monumentality is really called for.

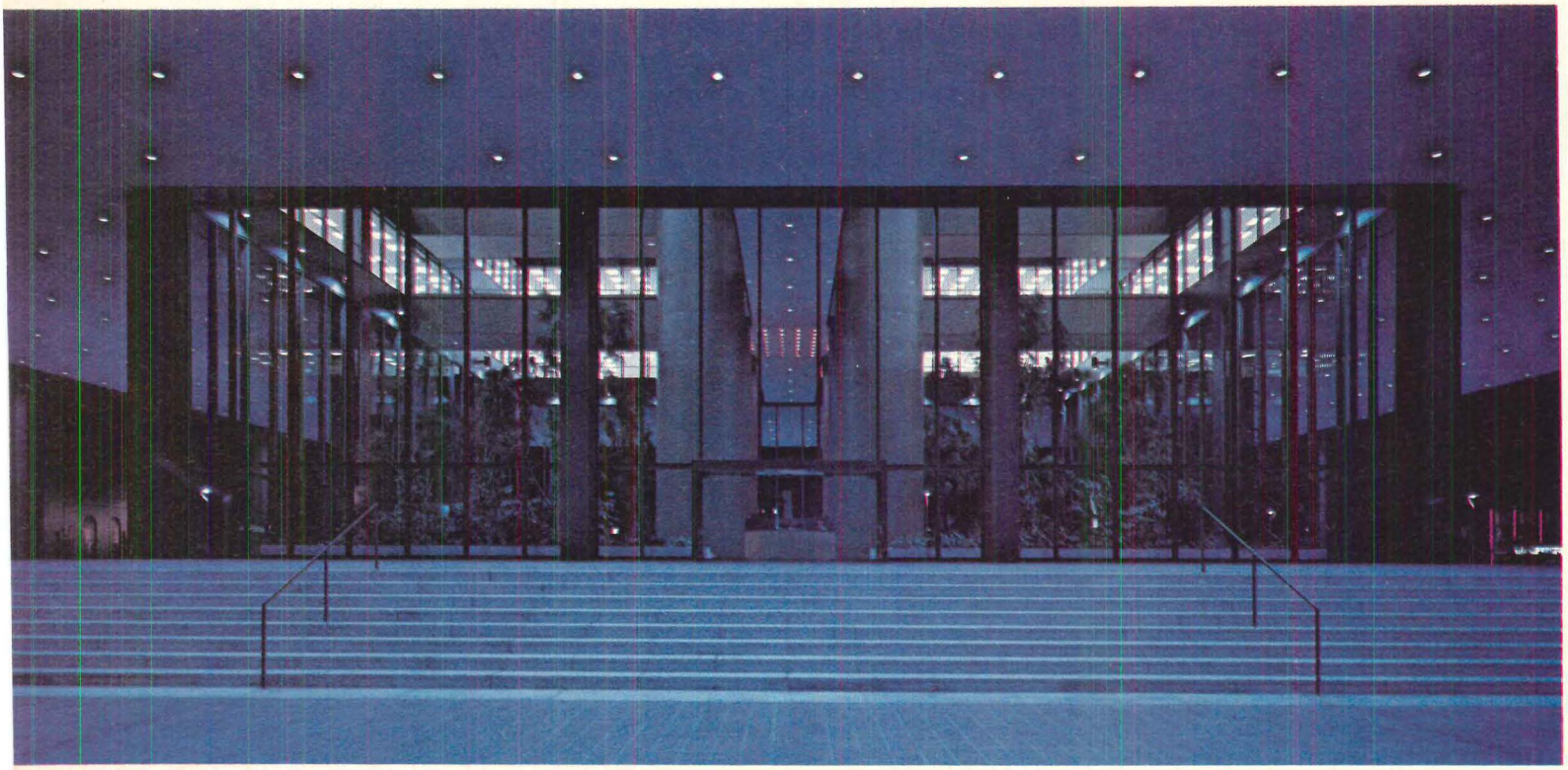
We stand for variety and catholicity, for freedom from dogma (less *can* be more, but only in certain situations), for avoidance of mindless imitation (neoclassicism, 1930s revival), for exploration of the links between architecture, perception and behavior. We admire fine detailing, but only as a means, not as a preoccupation. We endorse the frank exposure of industrial materials and the equally frank use of applied color or pattern (rather than the hypocritical manipulation of "structural" elements) as devices for articulating form and space.

And we stand for architects and designers who remain open to new influences, who are not tied to one familiar, marketable formula, who continually modify and refine their ideas in the light of new challenges. That is what we mean in 1973 (we who are changing too) when we speak of "progressive architecture."

John Morris Dixon

Boise Cascade Home Office, Boise, Idaho

The raised box



Raising the first office floor 40 ft above street level provided loggias on all four sides of an interior glass-enclosed and skylit courtyard.

A compact glass and steel box provides flexible open space for a corporate headquarters, views for employees and a landscaped urban amenity for downtown Boise

Open is the best way to describe the Boise Cascade Home Office. Open at street level to provide pedestrian loggias on all four sides leading to a glass enclosed landscaped court. Open on the exterior to provide views of the plateaus and mountains that surround the city of Boise. Open to the interior court that brings natural light into the five office floors. And open in office plan.

The architects, Skidmore, Owings & Merrill of San Francisco, were involved in the client's decision to build in the not-too-prosperous downtown area rather than retreat to the countryside. The decision to keep a low profile rather than erect a slim tower was also made jointly: SOM preferred not to violate the generally low skyline, and Boise Cascade wanted to "promote horizontal contact among employees, so that people would drop in and exchange information" rather than build a pyramidal organization floor by floor. That decision, plus the fact that it is an owner-occupied building, led rather naturally to open planning. Initial space allocations were generous, allowing for some growth in personnel without disrupting the original design. The size of the headquarters cadre, however, is expected to remain somewhat stable (no divisions are located here) with a design capacity of 1200.

The building, 260 ft square, occupies an entire block. The

Complimenting the past

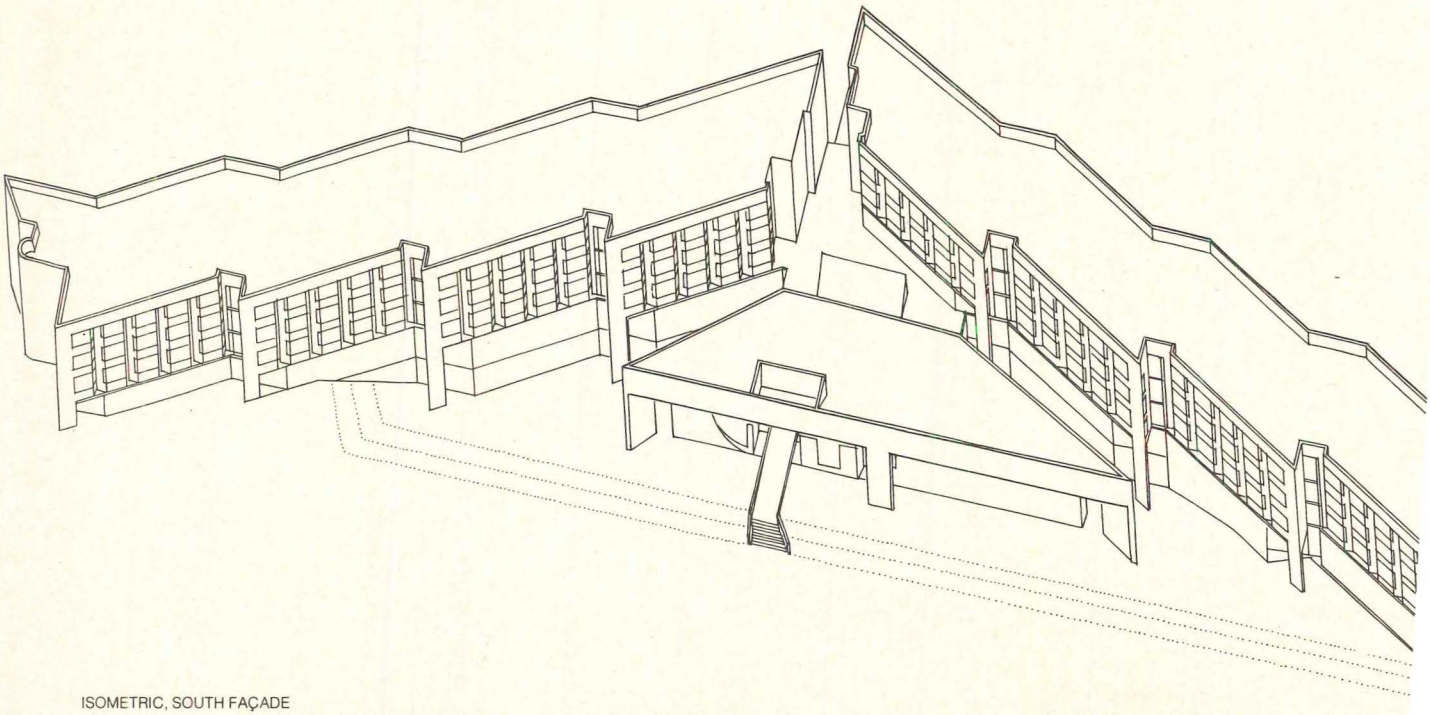
At a small, old New England college, a large, new dormitory respects living patterns that have been established on campus for almost 200 years

There is something strange about Mitchell/Giurgola's new dormitories at Williams College. Designed for 294 co-ed students, the four Mission Park Residential Houses form a sleek, angular five-story structure over 500 feet long that clearly expresses the stepped alignment of its rooms on the outside. In another setting the structure might not be unusual, but on this old New England campus it seems strange that the building relates so well to the others and complements its site so naturally. Here, a particularly striking new structure, without compromising any of its integral stylistic unity, enriches its surroundings even though it is distinctly unlike any buildings around it—in style and plan, in size and materials, and even in siting.

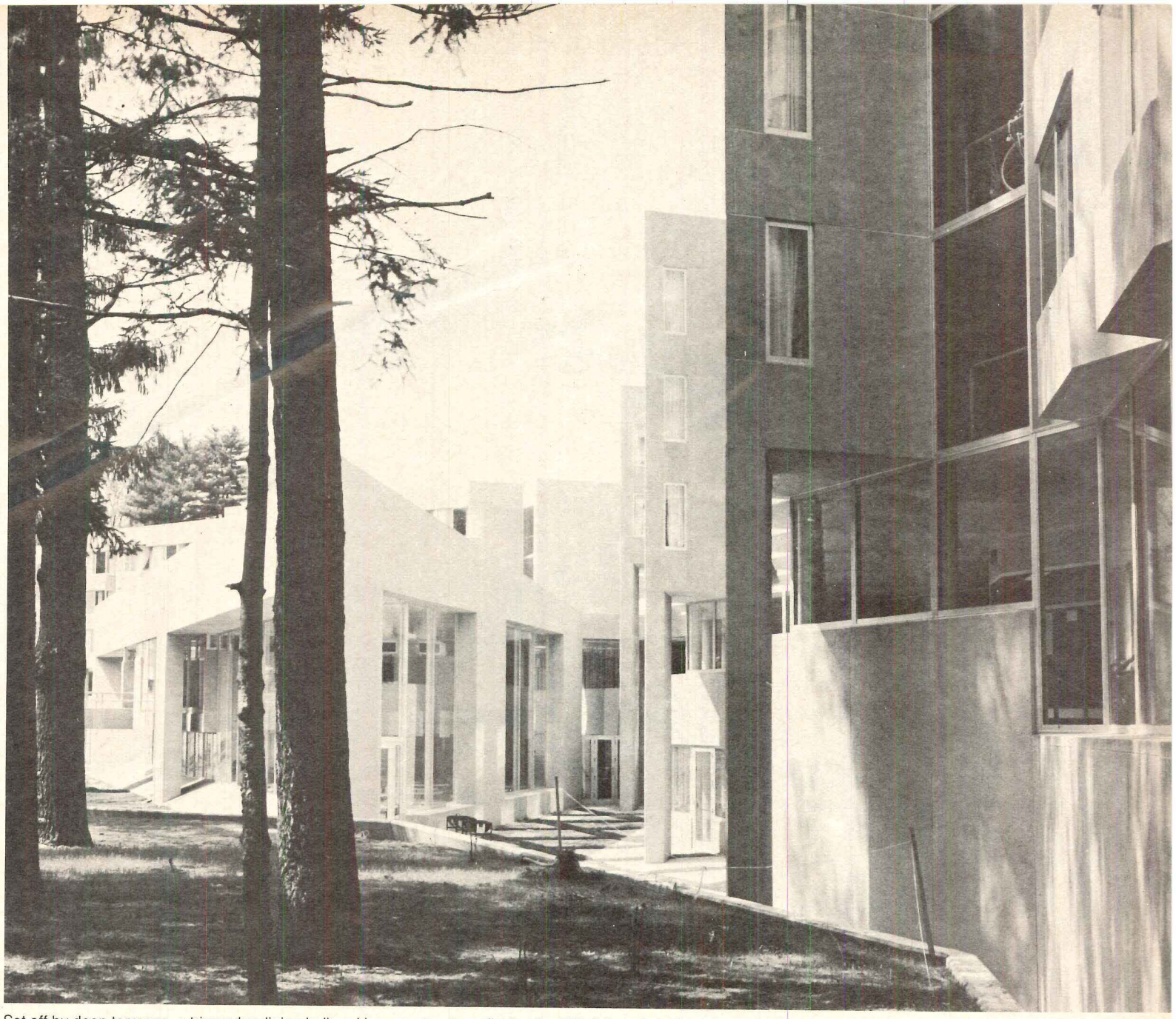
Romaldo Giurgola feels there are three possibilities open to the architect designing within a context of older buildings: make a clean break with the past and design a new building unrelated to its surroundings; make the new harmonize with the old through the use of superficial, cosmetic devices; or, through a more subtle approach, design the new building so that it establishes a dialogue, or sets up an encounter, between the old and the new.

Williams College is high in the Berkshire Hills in the old Massachusetts town of Williamstown where, in 1790, William Free School was established; it became Williams College in 1793. Old Georgian buildings of the free school stand today, but most of the red brick and white frame structures of the late Georgian and Federal styles date from the 19th and earl 20th Centuries. A few others betray their Victorian origins, and a couple date from the Collegiate Gothic craze.

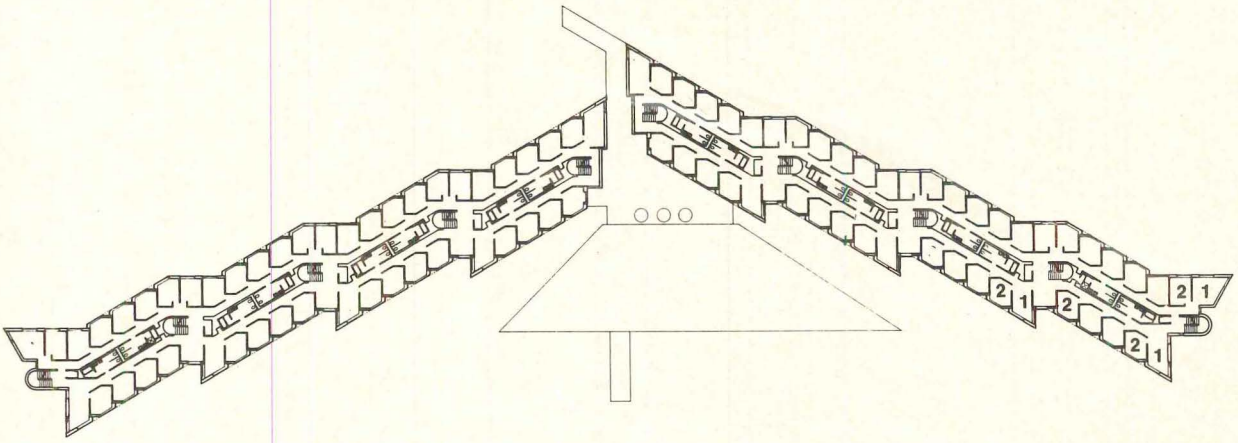
The wooded, gently rolling campus is planned as a walkin place with parks, tree-lined boulevards and walks typical of most old New England schools. Before Mitchell/Giurgola ar rived, the school had selected a site for the new dormitory;



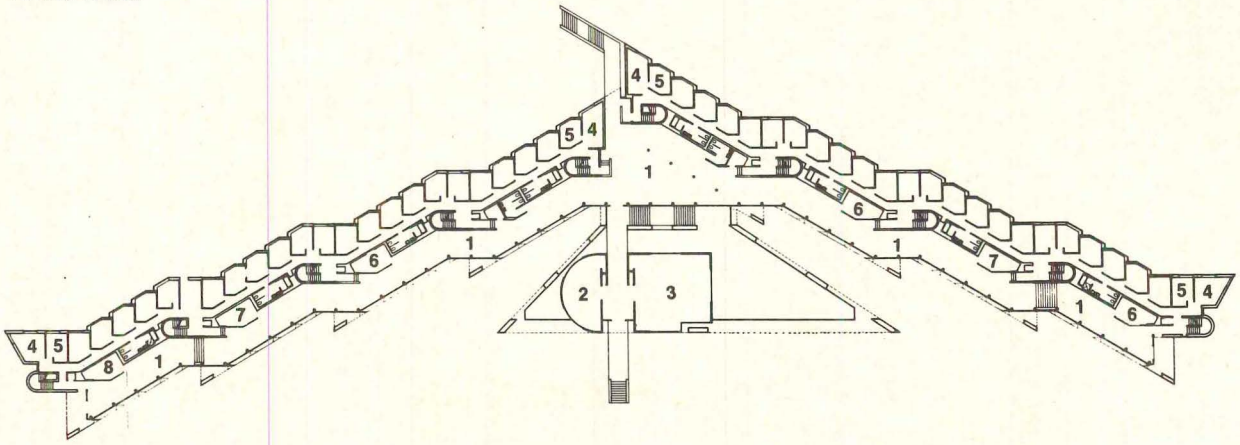
ISOMETRIC, SOUTH FAÇADE



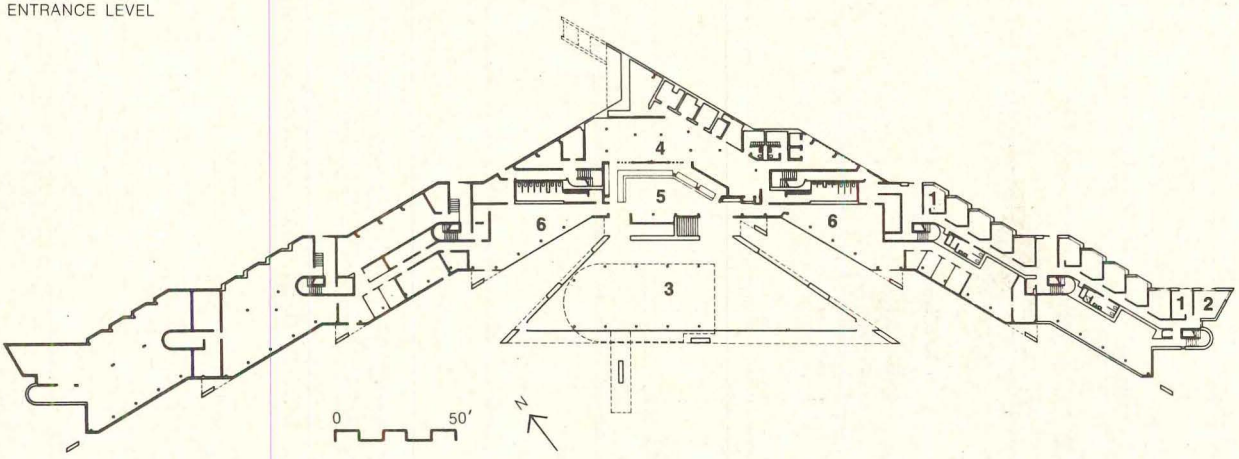
Set off by deep terraces, a triangular dining hall and lounge structure divides the 500-ft front façade of the new Mission Park Residential Houses.



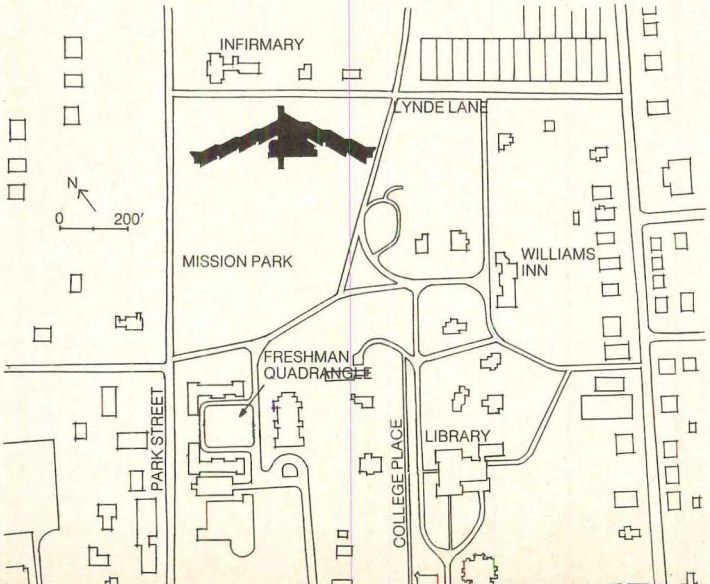
TYPICAL FLOOR



ENTRANCE LEVEL



GROUND LEVEL



Typical floor

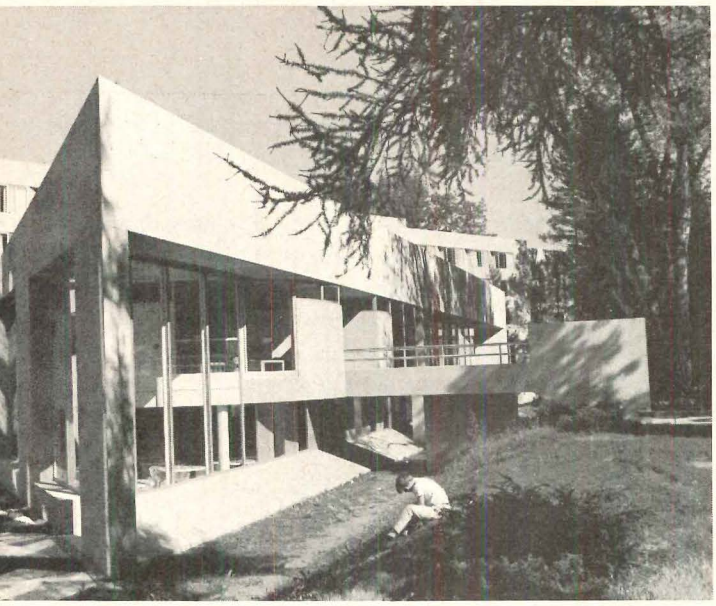
1 Living room
2 Bedroom

Entrance level

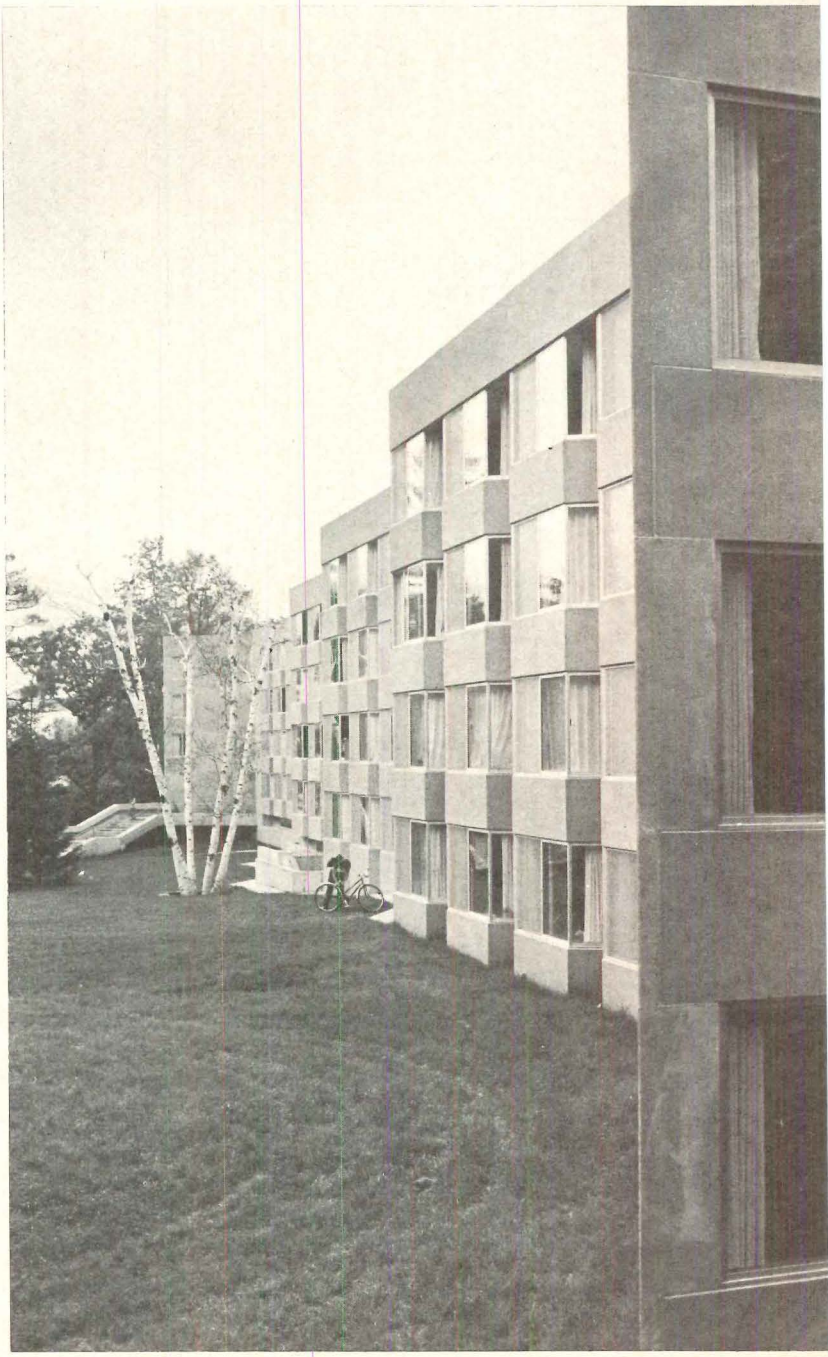
1 Gallery
2 West lounge
3 East lounge
4 Living room
5 Bedroom
6 Television
7 Laundry
8 Television

Ground level

1 Bedroom
2 Living room
3 Dining hall
4 Kitchen
5 Serving area
6 Recreation



A grade-level bridge extends at main entrance through second-level lounges to bedroom wings (above). Rear of building (right) overlooks playing fields.



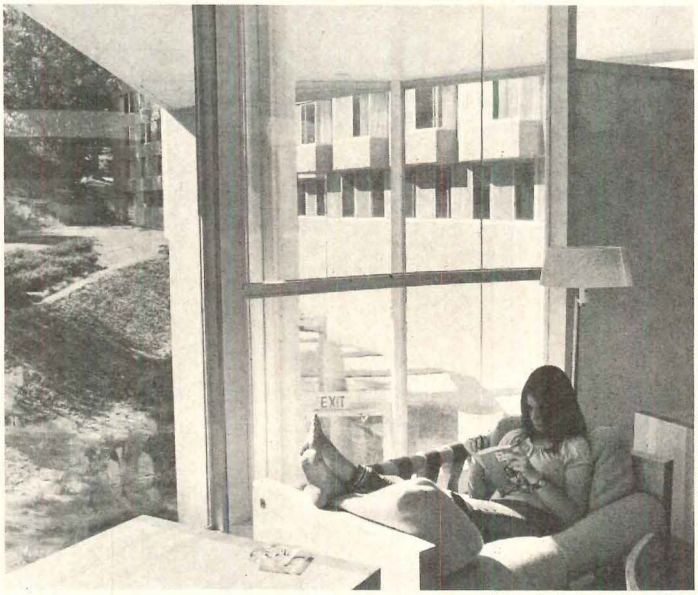
would occupy a prominent position in historic Mission Park where, in 1806, four theology students first formulated plans for the American Foreign Mission Society. When the project won a P/A Design Citation in 1970, the jury commented on the way the building responded to its site, which slopes immediately away from the street and trails off with no real visual termination. They said the site was "the toughest spot for an architect to be in . . . [because it] suggests nothing . . . not a clue from surrounding buildings."

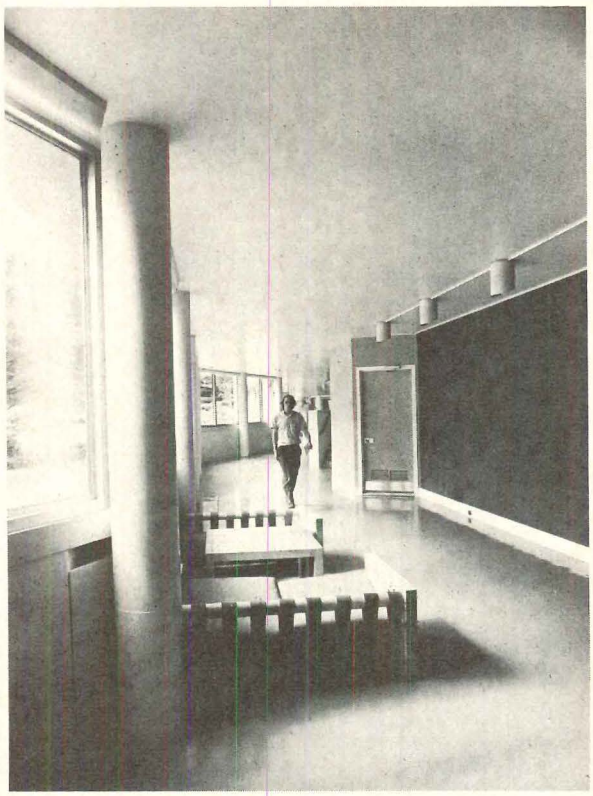
Several devices however, diminish the building's size and scale to make it relate to its surroundings. First, it is placed to the rear and lowest part of the site where it also acts to define both the park and the campus. Then the structure is imbedded in the ground so that only four floors are visible from the front, where the four connected houses are expressed as eight separate, stepped units; each bedroom is articulated with a bay window that de-emphasizes the whole volume while repeating proportions similar to those of the older buildings. In addition, the shape of the building encourages a dialogue with the others nearby as its extended wings seem to reach out to them. Between the wings the triangular dining hall and lounge is set off from the building by deeply penetrating terraces on each side. Here, at the main entrance, a suspended ramp extends out to the ground in one direction; in the other direction it enters at the second-level lounges above the dining hall and continues, suspended, past the dining hall stairs and on to the bedroom wings.

With so much articulation of form, the building could be excessive in appearance, but Dan Perry, who was an associate in charge of the project, explains that when design could become assertive, Mitchell/Giurgola chooses the subtler approach where design is never used for its own sake. Even the floor plan, where so much tension and movement is generated, reveals a deceptively simple solution to a building that is basically a long spine of service facilities and hallways with bedrooms on each side.

The students are openly enthusiastic about the new dormitory. Seeming to forget its size, they like most the privacy it gives, its intimacy and its noninstitutional aspect. One student particularly liked the options for encounters with others, or for no encounters if he chooses. Separate entrances for each house allow students to come and go in privacy, and every four bedrooms is on a private hall with its own living room. Large groups can gather in the lounges, in the television rooms and galleries on the first floor, or in the recreation rooms and dining hall on the ground floor. In the basically white building entrances, stairways and halls are color-keyed to help orient students and to give individuality to each of the houses.

It was important to create a living environment centered around the individual because, at Williams, where the idea of mass student housing has always been eschewed, the old residential houses have been tailored to the individual's needs for almost 200 years. Discussing the new dormitory, one student even said, "it's uncanny how much this place reminds me of the old houses, and I don't know why." [DM]

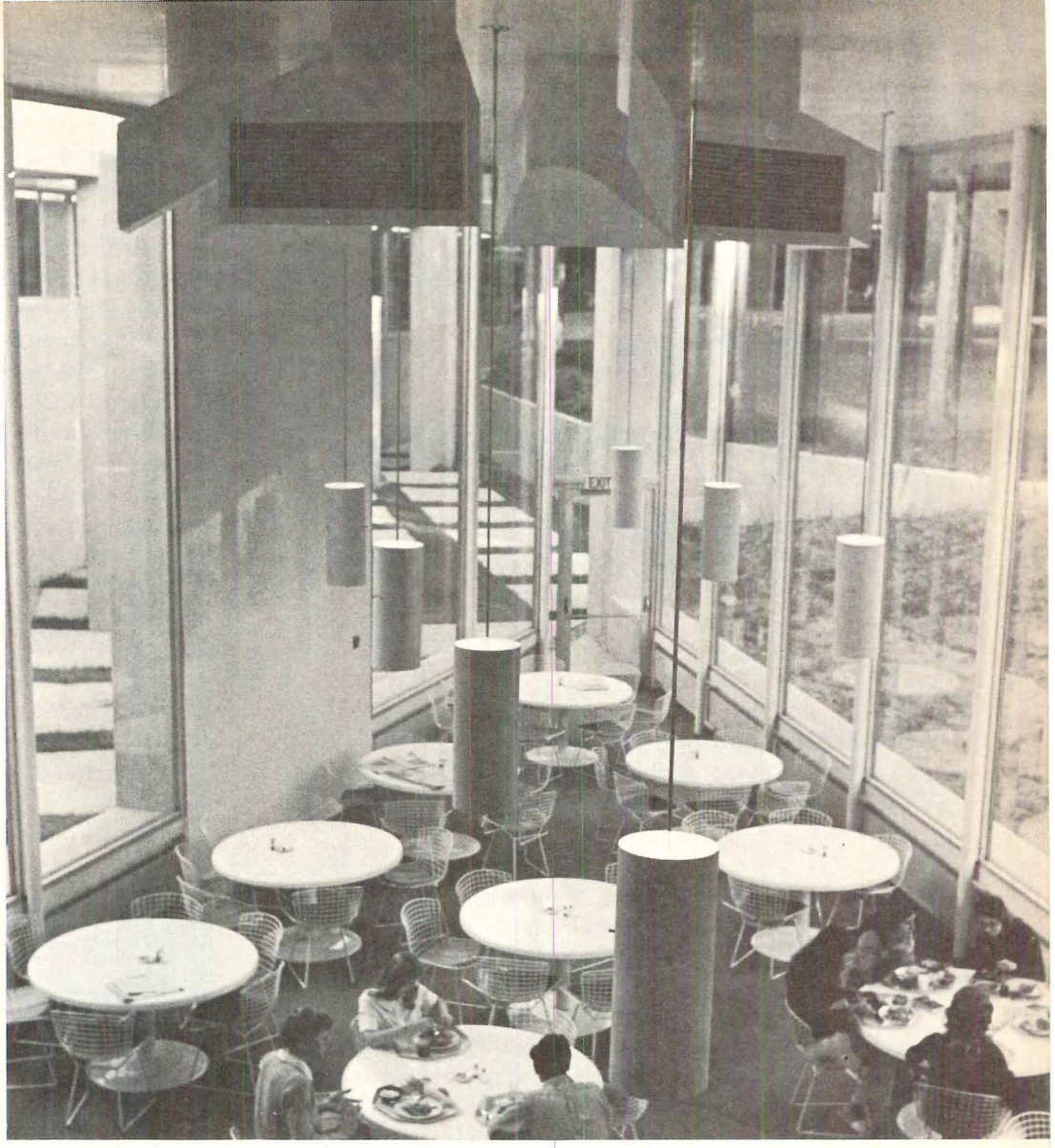




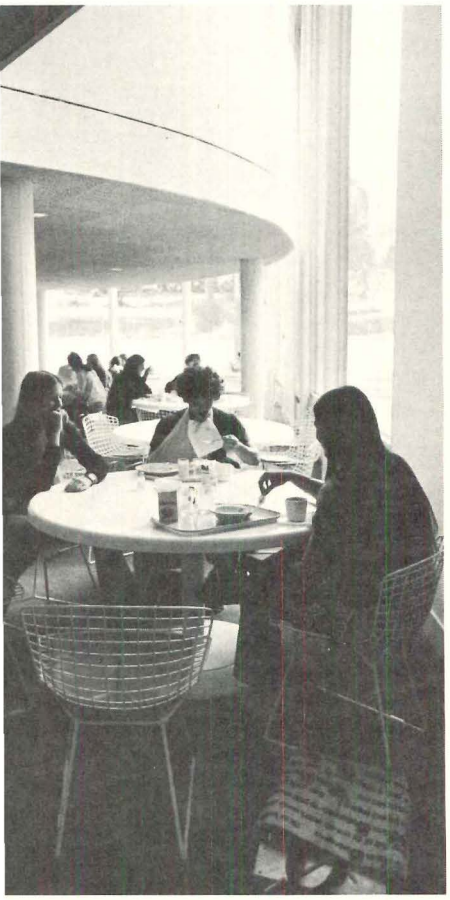
In bedrooms (above), lounges (right) and galleries (below) custom designed birch furnishings contrast with bright accent colors in the white interior.

Data

Project: Mission Park Residential Houses, Williams College, Williamstown, Mass.
Architects: Mitchell/Giurgola Associates Architects; R.M. Kliment and G. Daniel Perry, associates in charge.
Program: additional dormitory facilities, due to increased enrollment, providing 294 private study-bedrooms within one building, for men and women students.
Site: a wooded hillside at the edge of the campus on the northern end of Mission Park, sloping northward away from older red brick and white-painted campus buildings.
Structural system: residential areas are reinforced concrete flat slab on concrete columns; dining hall is structural steel frame with precast concrete panels.
Mechanical system: electric convector and baseboard unit heating; dining hall air conditioned. Automatic Permissive Load Control system defers alternating heating zones to maintain total campus electric load below a preset maximum.
Major materials: precast concrete exterior panels, aluminum exterior window and door frames, insulating glass, drywall partitions.
Cost: $4.6 million, about $40 sq ft, including site work, utilities, built-in equipment and furnishings, excluding loose furniture and fees.
Consultants: Cosentini Associates, consulting engineers (mechanical); David Geiger-Horst Berger, consulting engineers (structural); Lois Sherr, landscape designer; Lella Vignelli/Unimark International, interior designers; Murphy/Lindsey Associates, food facilities consultants.
Client: Williams College, Williamstown, Mass.
Photography: Bonnie Freer; except p. 57, top, Adelaide Giurgola.



From entrance bridge, stairs descend (left) to dining hall where the two-level-high space is partially divided by the entrance-level lounges.



Conversations with the John Andrews Architects

A nine-partner firm with work on two continents is not as big as one might think. The trick? The partners actually do most of the real work

At the recent opening of George Gund Hall, the spectacular new Graduate School of Design building at Harvard University, John Andrews said, "In at least one respect this building is symbolic of our own practice; it houses a variety of disciplines, or interests, under one roof, where constant communication and interaction are encouraged." The John Andrews firm consists of nine equal partners who have come together from Australia, Canada, the U. S., England, Scotland and South Africa; their projects range from the small, single-family house to large institutional complexes, university master planning and the large urban redevelopment projects.

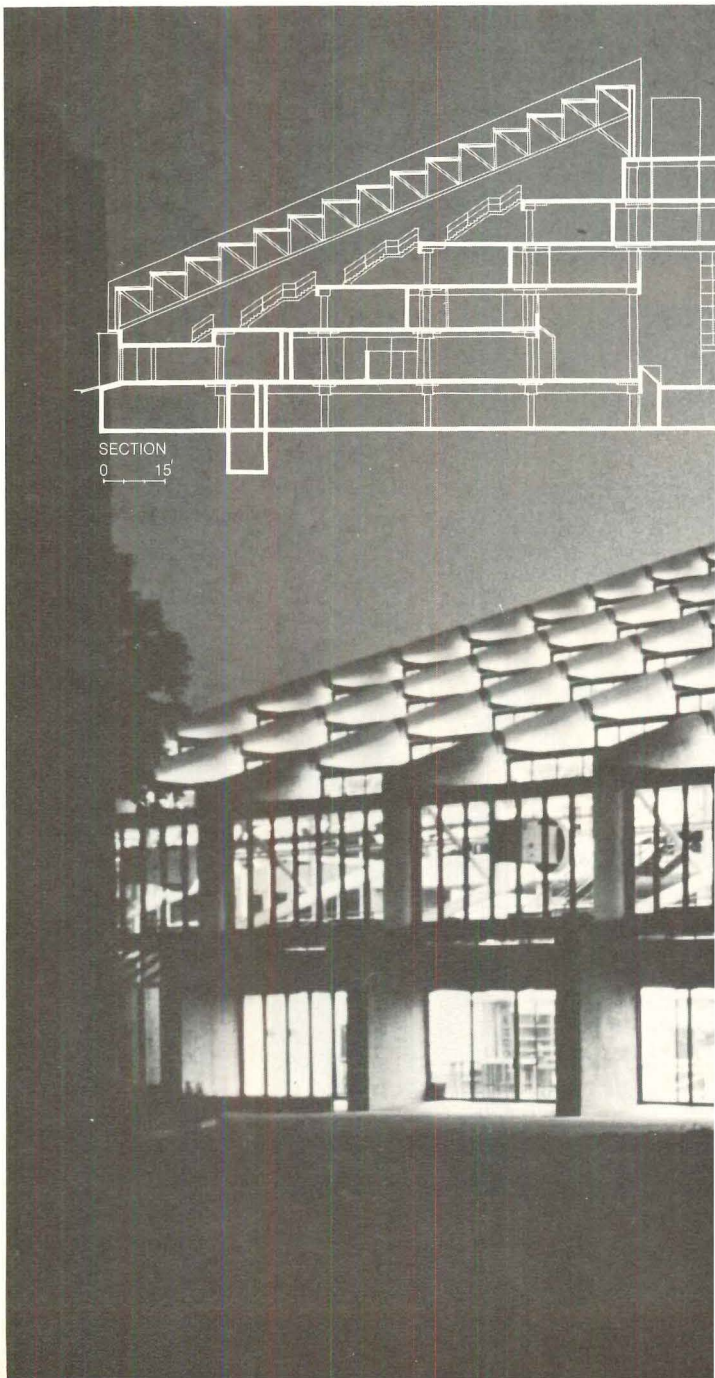
What began over 10 years ago as a one-man Toronto office (where John Andrews worked mainly on kitchen renovations) is now an architectural practice currently involved in major projects in Australia, Canada and the U.S. "It all began," he explains, "while I was a student at Harvard. I got into the Toronto City Hall competition with some fellow students, we placed second, and that's why I came to Toronto in 1958."

The firm attracted wide recognition in 1964 with phase I of Scarborough College, a 400,000-sq-ft megastructure satellite college of the University of Toronto, completed 25 months after the contract was signed. That generated other commissions—the Smith College School of Art, the Sarah Lawrence Science Facilities, the Guelph University student housing—and in 1965 the office began several projects for Montreal's Expo '67. Then, in 1967, they were awarded the Metro Centre commission, with associated architects Webb, Zerafa, Menkes, to plan and program the redevelopment of 200 acres of railway land along the lake adjacent to downtown Toronto. That same year they began work on the now well-known Port of Miami passenger ship terminal, and in 1968 they were asked to design the recently completed George Gund Hall.

"Once those projects got rolling," adds partner Roger Du Toit, "John began experimenting with reorganizing the office in order to cope with them. We started with a set of associates, but basically John controlled the practice. Not long after that, we went into a 10-man partnership (one partner has since left). Everyone in the firm who was acting in a professional capacity, who could carry on a one-to-one relationship with the client, became a partner. This was an innovative thing to do; you could have only 10 people in the firm and they could all be partners. We're not SOM; the biggest staff we've ever had was around 37. If the projects get big the staff gets big, so it's kind of a group of architects really."

"We don't work like most practices," says partner John Simpson, "where the boss goes to the golf club and gets all the work and the other guys do it. Each partner has his projects; there is a one-to-one relationship with the client where one partner is really in control, making all the major decisions related to each project. That person isn't necessarily the one who designs the project, nor is he necessarily the one who actually gets it built; he is the continuous point of reference. If you have the old concept of who the boss is, you won't always get him when you call this office; you'll get the person who is working with you." Andrews adds, however, that "we have our own internal arrangements as to how money is divided, but I'm certainly not a ruling partner in terms of dictating changes. I would speak out, though, if I thought something were wrong, just as I would expect all of the other partners to."

"There are only two sources of differences among the part-



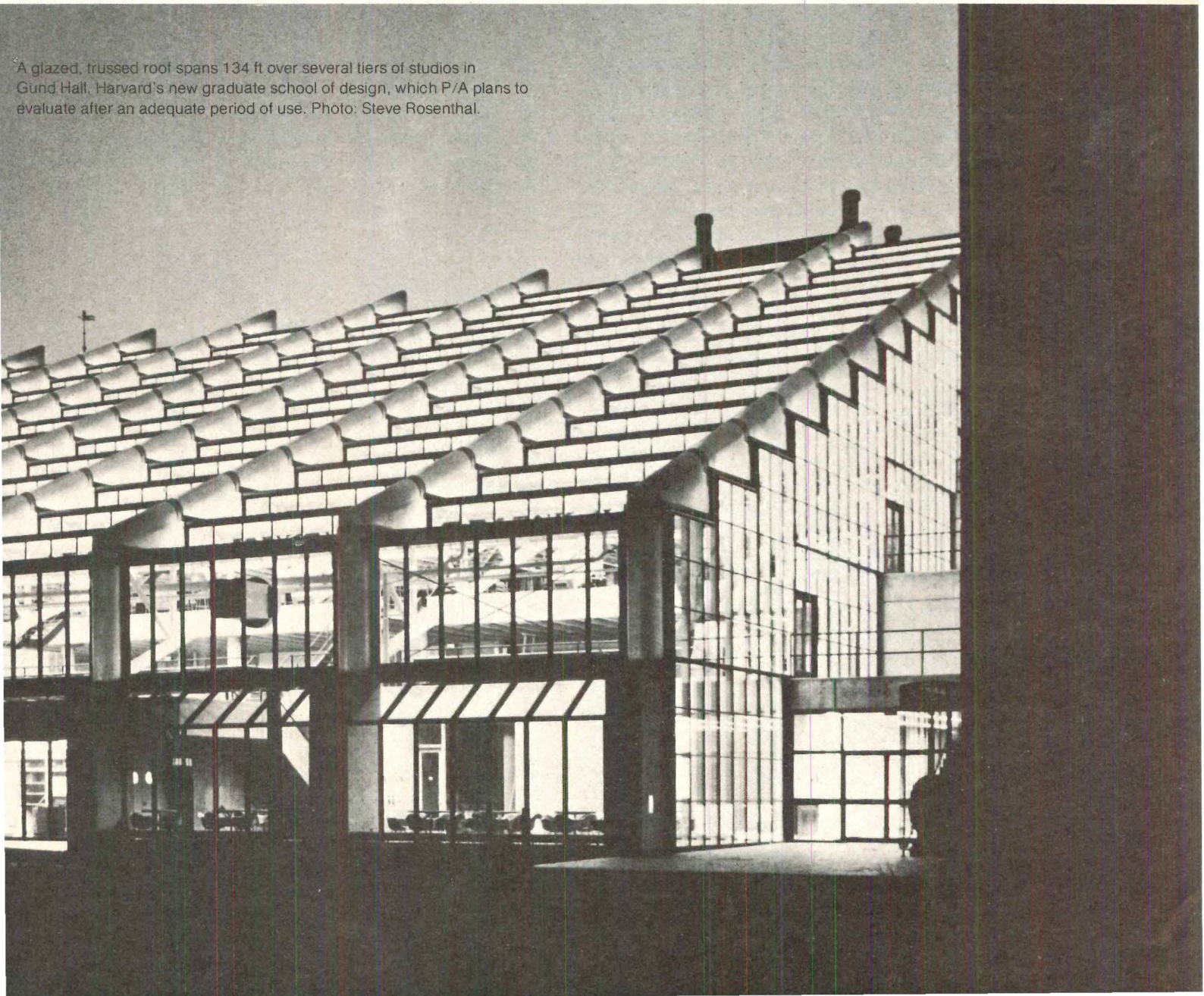
ners," adds Roger Du Toit. "One is influence, and John is one of the most influential partners, but it has nothing to do with power. The other is income, which is related to the area you're involved in, which may be more profitable than others. In a partnership, that normally represents seniority, but with us it means a partner's energies have gone into something and he should get the money out of it. We're taking stock of our diversity; we're setting up an organization now that will run each area efficiently, but within the diversity of the total group. In this new organization, the individual partner will function autonomously within an area suited to his skills and interests. While the areas will be divided by project, by discipline and even by geography, each partner will have the advantage of drawing on the expertise of the others." The partners see the firm evolving into a cooperative, in the truest sense of the word, which could only reinforce their basic approach to architecture.

One of the most important aspects of their approach, as the following projects show, is expressed in an unusual sensitivity to how people use buildings, how pedestrians, cars and other transportation facilities best move through cities, streets and buildings. Their ability to realize these humanizing concepts in physical terms does not come about, however, through uncritical acceptance of the program of every project they take on. When accepting a new commission, the firm examines all of the questions concerning a project. They question whether a project should be built at all, if the client's program is the best way of going about it, or if a completely different approach should be taken. Asking these questions reveals a philosophy, shared by all the partners, that is best reflected in their deep concern for the context within which they are asked to build.

As an example, Du Toit states that "in many situations, especially where you have a big pool of space, such as at a university or some other large institutional complex, there are at least four ways to provide space: better use of existing space through administrative changes, renovation, infill and, finally, building anew. People usually only think of the last, without even considering the previous three, but we go through the whole process before ending up with a building."

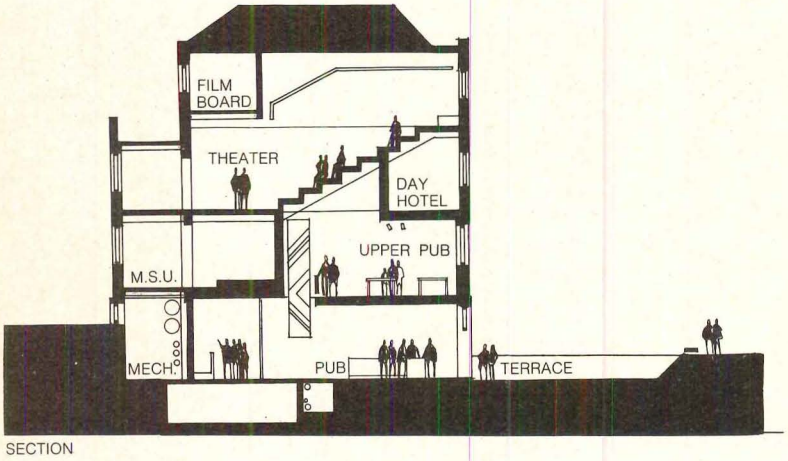
The partners

Australia: John Andrews, John Simpson.
Canada: Roger Du Toit, Edward A. Galanyk, Anthony Parsons, Edward R. Baldwin, William E. Bennet, Lawrence Diamond; Metro Centre Office, Robert Anderson.



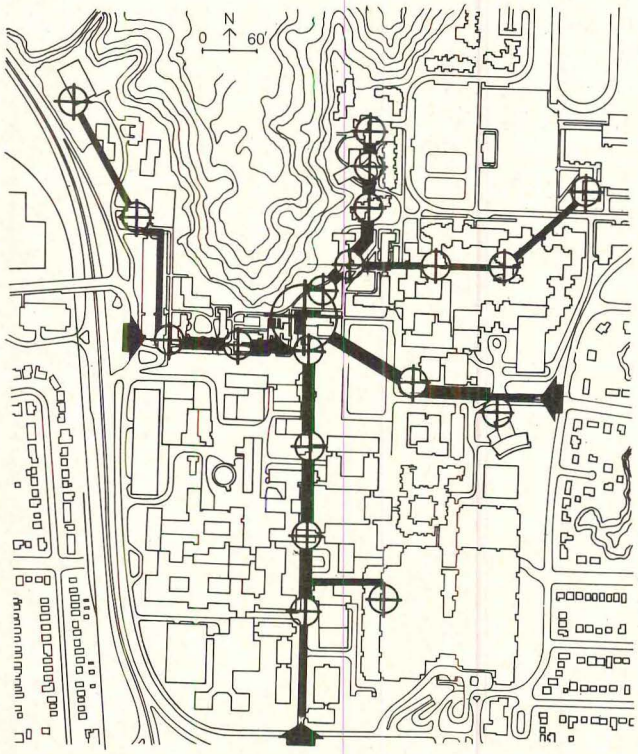
A glazed, trussed roof spans 134 ft over several tiers of studios in Gund Hall, Harvard's new graduate school of design, which P/A plans to evaluate after an adequate period of use. Photo: Steve Rosenthal.

McMaster Student Center: a no-build decision

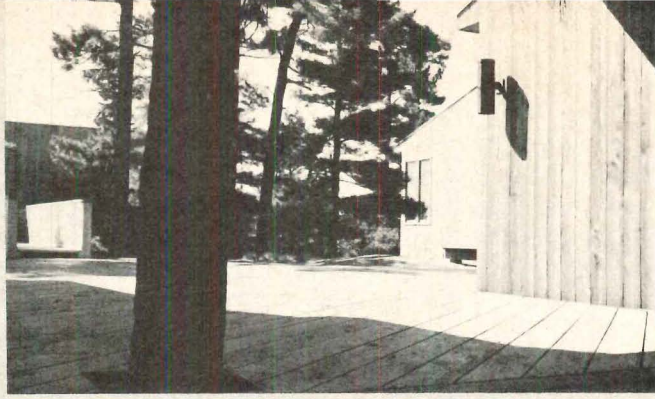


SECTION

The firm did not end up with a building for the "new" student center at McMaster University in Hamilton, Ontario. According to partner William Bennet, "They had a program for a new $6 million student union and hired us as program consultants. We came to the conclusion that the university didn't need a single student center. The campus was already a student center; all kinds of facilities existed, they were just basically disorganized. The central student center could be incorporated in a building that was being vacated; it was very close to the heart of the campus and could be used in conjunction with existing cafeterias, lounges and other facilities if properly coordinated with food services and recreational programs. Ultimately, we were selected as the architects to renovate the old building."

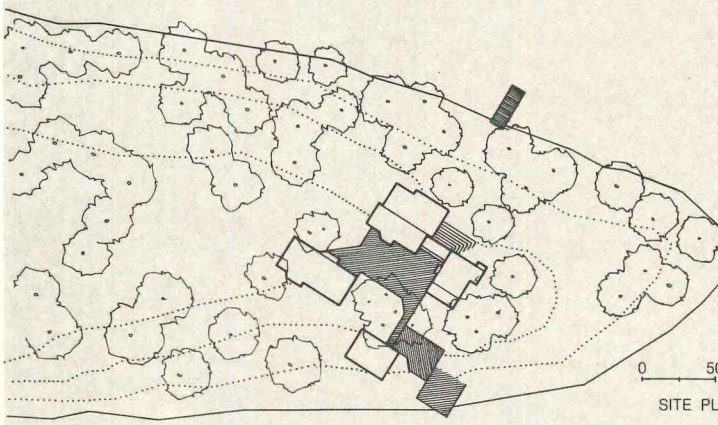


Main circulation paths lead from existing amenities to student center.

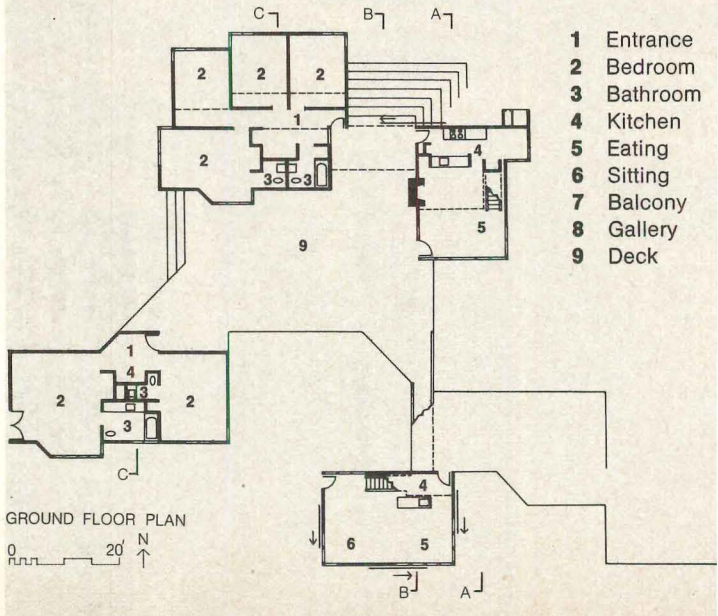


A small summer cottage: renovation and addition

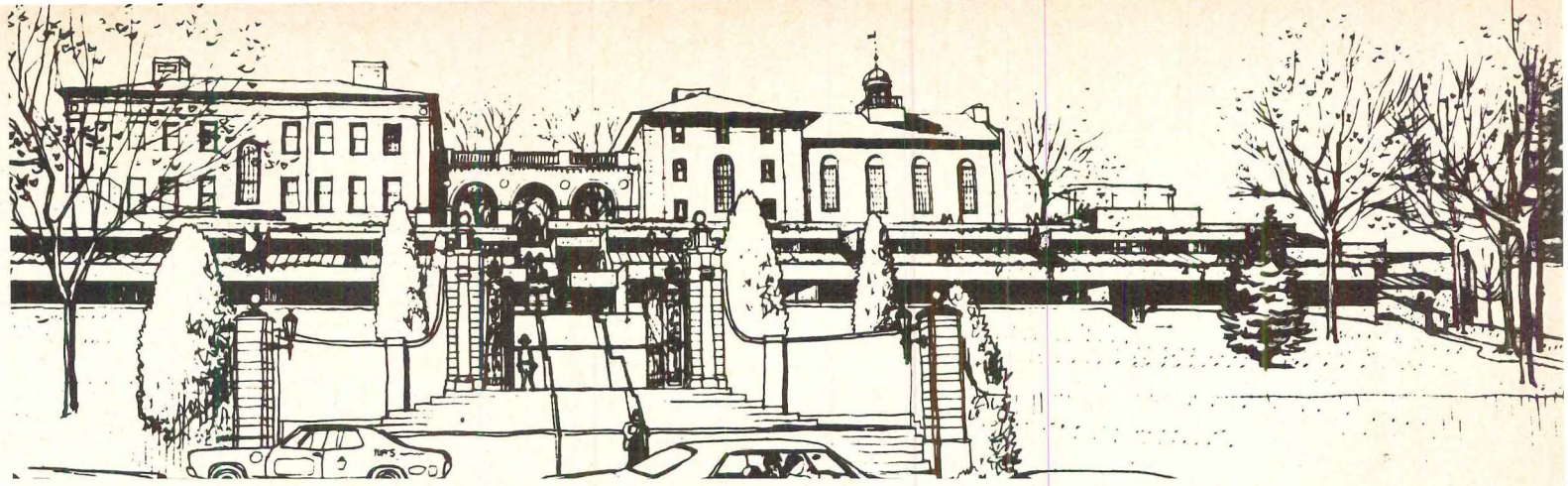
On Georgian Bay at Pointe au Baril, Ontario, the architects built three buildings and renovated an existing one rather than build the new summer house the clients anticipated. "When I first saw the clients," William Bennet says, "they wanted a 'house,' and said they could describe it in 20 minutes. It actually took them two days. For many involved reasons, we ended up with four buildings. There was an existi small cabin that could be used as the kitchen/dining area; protected canopy would connect it to the main sleeping cabin. A guest cabin was built, then we put a screened por down by the lake where the children could be watched, wh could be another dining/living area. Then the whole thing was tied together by a deck. Three things determined build locations: the trees, which we didn't want to remove; the lo tion of the septic tank obviously influenced where other things would go; and the geography of the small peninsula Even though this was on a small scale, we did a thorough gram and site analysis."



SITE PL

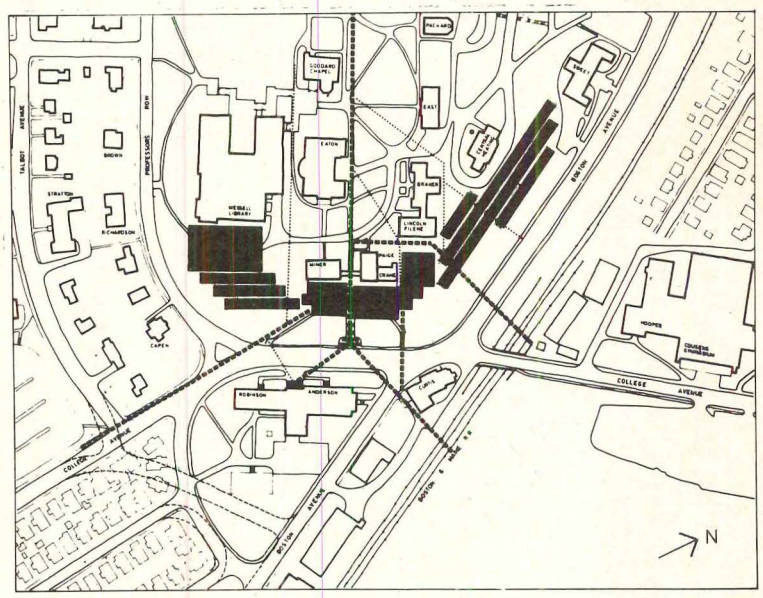


GROUND FLOOR PLAN

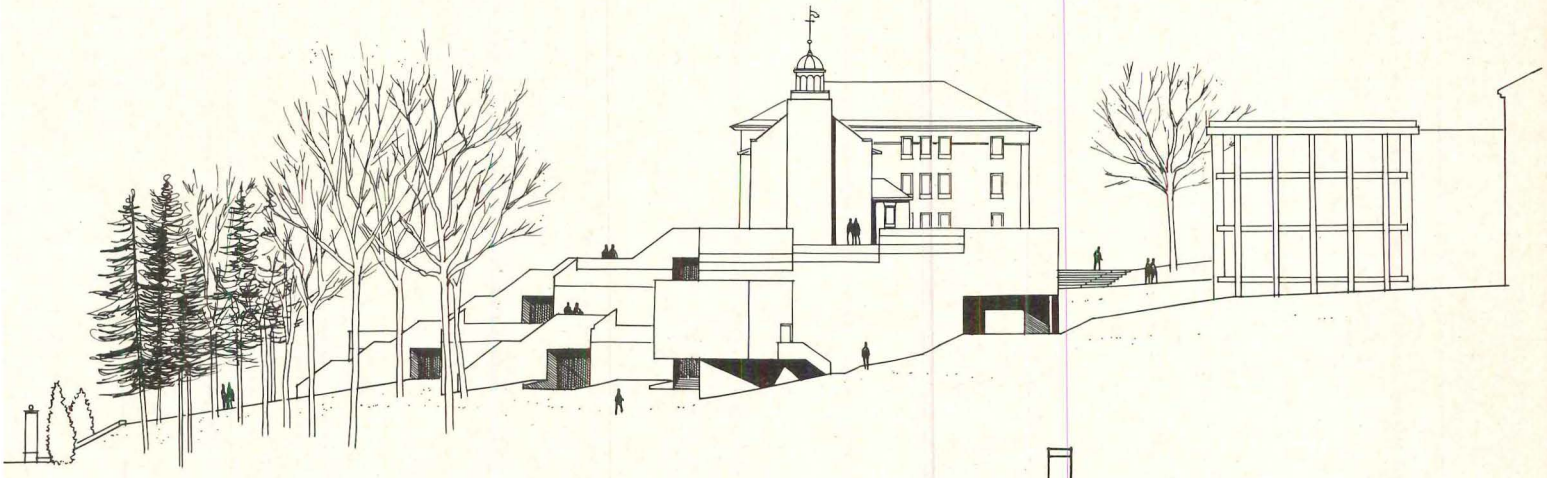


Tufts Behavioral Sciences Building: discreet infill

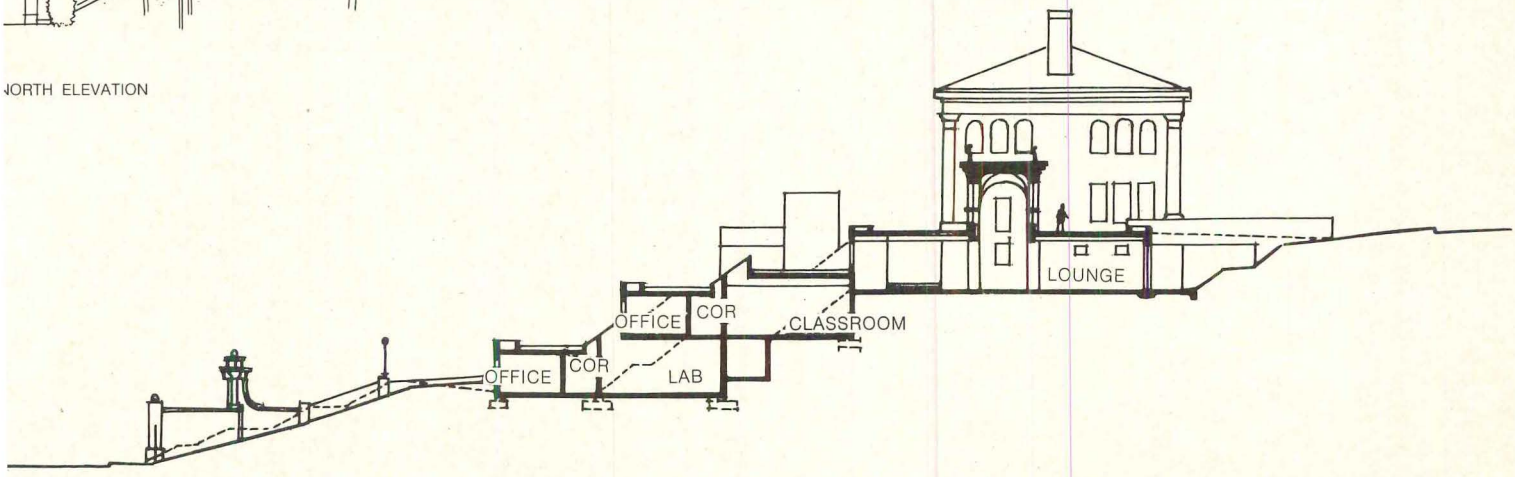
At Tufts University in Medford, Mass., the architects' feasibility student for new classroom space, offices for faculty and graduate students, laboratories and a lecture theater exemplifies their concept of infill building. "Because most of the future growth will occur at the bottom of the hill below the old campus," John Simpson reports, "we convinced the university that the strategic area between the old and future construction would be an ideal place for other new buildings, so we simply went up to and between the old buildings. The university wanted to demolish the beautiful old monumental entrance to the campus, but we restructured it to work in with the new construction. The new building actually becomes sort of a very large staircase, and can grow around the brow of the hill without interfering with the spaces between existing buildings. We located the theater in such a way that it belongs to the campus as well as to the new building, so it could be used independently."



GROWTH

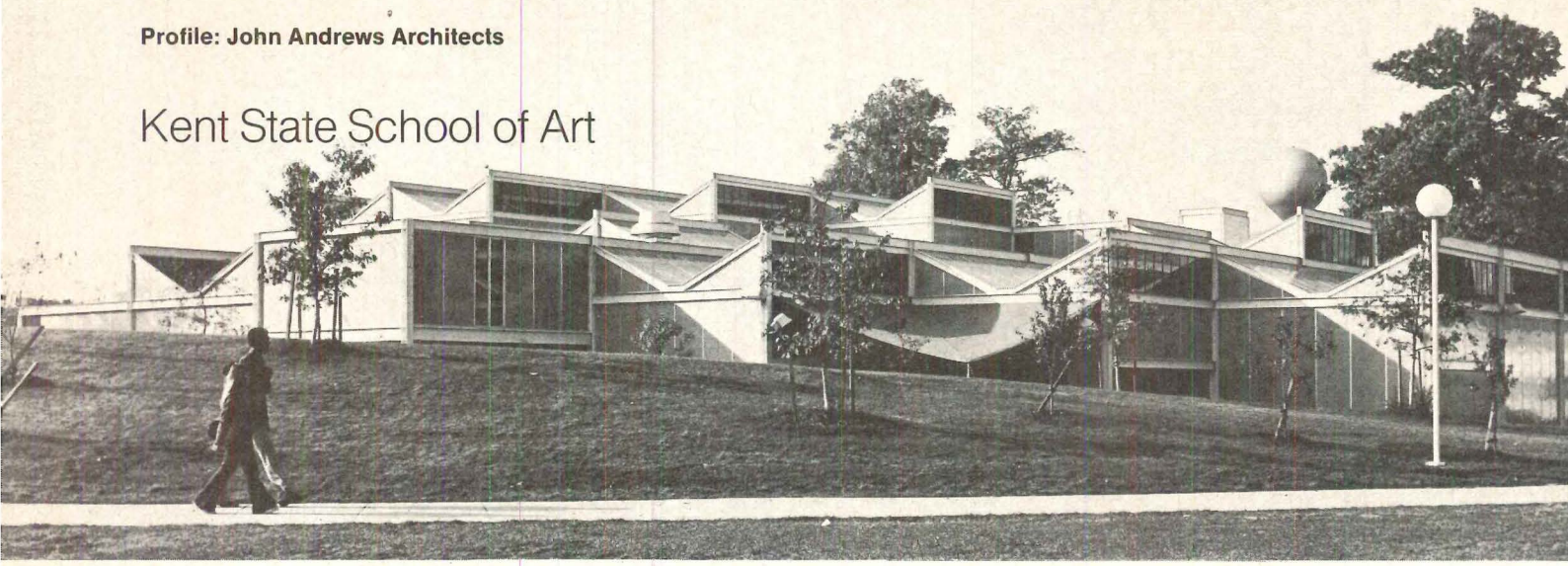


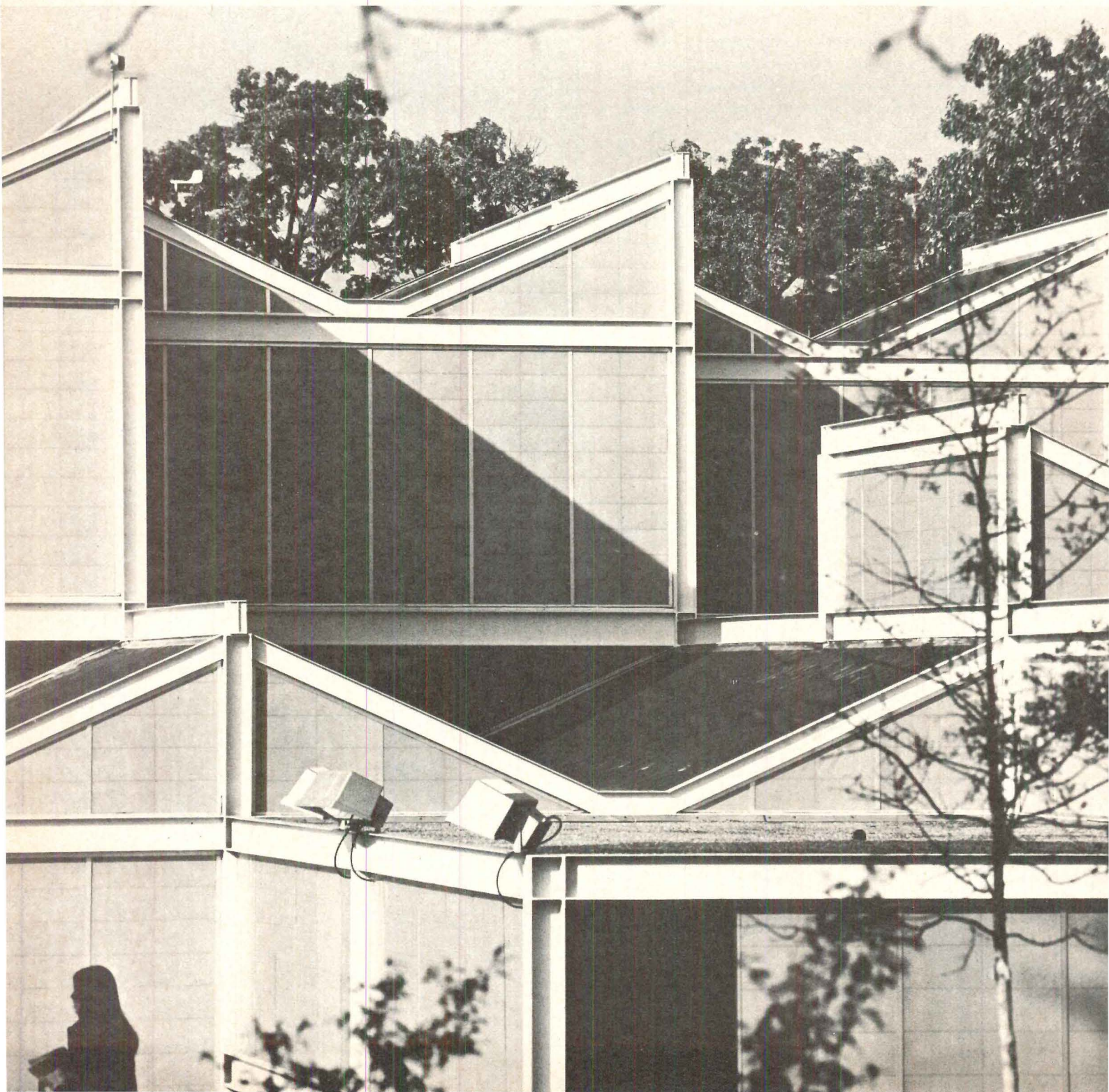
NORTH ELEVATION

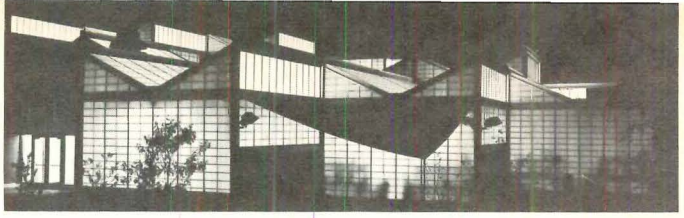


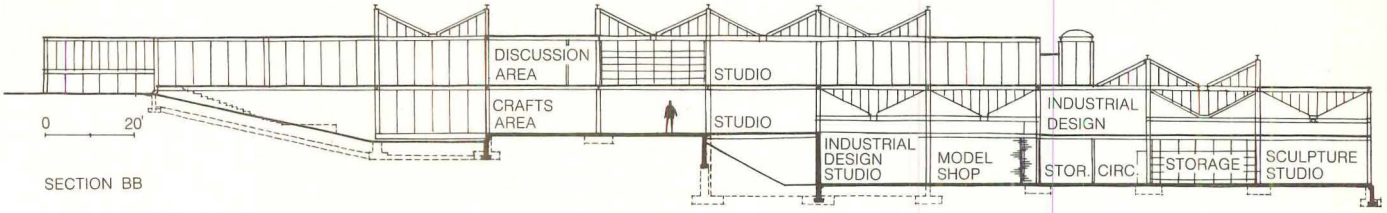
ICAL SECTION

Kent State School of Art









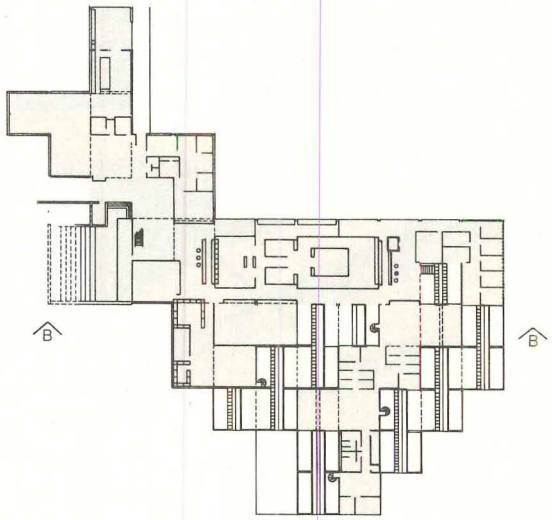
Partner Anthony Parsons talks of the Kent State commission, which came in two years ago: "Their facilities were scattered and inadequate with one sculpture studio in an old gas station the students called 'Lincoln center.' We were asked to program space and to design a new building for one of three possible sites. The school was growing rapidly; they had originally planned for about 45,000 sq ft of new space, but we were able, within the budget, to increase that area by about half. We tried to consolidate as much of the fragmented space as possible, but of course we couldn't get it all into one building—that will have to wait until the second phase. We did, however, locate the new facility next to, and connected to, the old main art building.

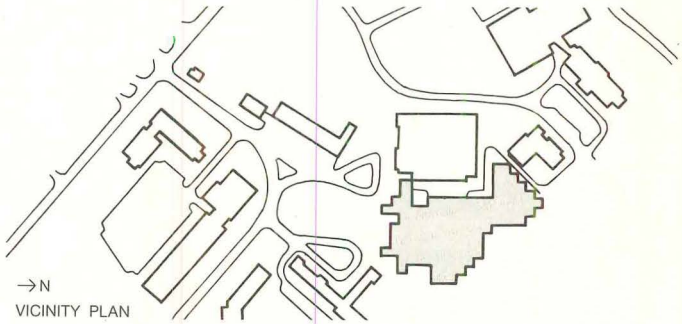
"The campus had been expanding away from town toward a new expressway, so we sited the building on a main circulation line going through the main part of campus toward the town, and extended the pedestrian path directly through the new building. With the building on the perimeter of the commons it also reinforces the commons as a place for students.

"We did numerous studies on low-cost buildings and came out in favor of steel, which was cheaper than concrete partly because Youngstown is nearby. The 25-ft-sq expandable modular bay system can grow in any direction; and to satisfy the north light requirements the grid was laid over the site in a north-south axis. This modular system allowed setbacks that could be used for outdoor spaces. Avoiding trusses saved money; we used a post and beam system where gutters run between the facing skylights on the roof of each module. Inside we used dry wall partitions and off-the-shelf storage units.

"Except for metal doors and some clear glass windows, the entire building is clad in two standard units of *Kalwall,* a prefabricated fiberglass reinforced acrylic panel originally designed as an inexpensive material for church windows. Through varying the pigmentation and the insulating material between the skins, both the light intensity and the color could be controlled.

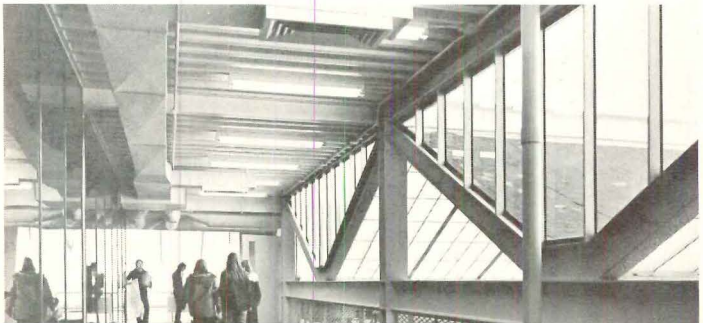
"We started with no special requirements on the air handling, how things went together, how things looked and so on. We didn't do layouts for ducts and stuff like that, we just let it happen. If you leave out the suspended ceiling to make a savings and to really express the mechanics and guts of the building, then it's assinine to work it to death because you put all the money back into making lovelies. The final cost of the building was $29 a sq ft."





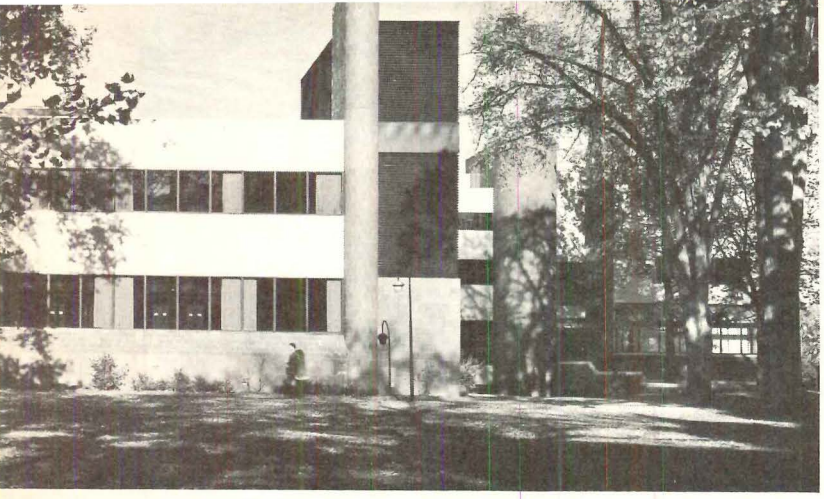
The art school's 25-ft-sq modular bay system can grow in any direction.

Sculpture studio above, second floor hall below; Terrence Shaw, photos.

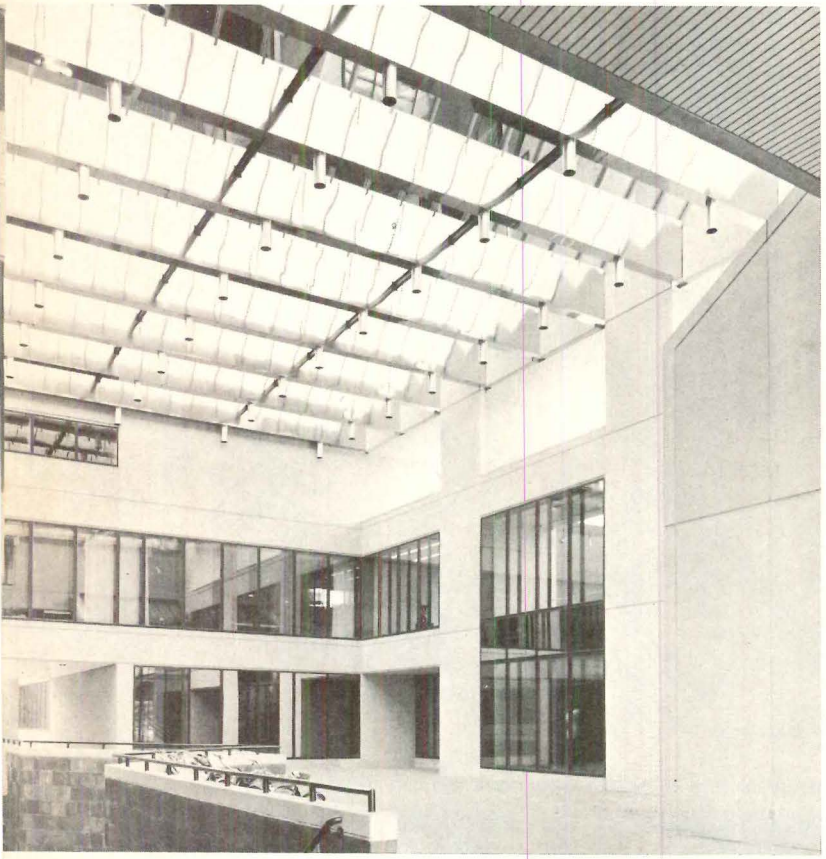


Data

Project: School of Art, Kent State University, Kent, Ohio.
Associate architects: Ross, Yamane Architects.
Structural engineer: R. N. Gensert Associates, Inc.
Mechanical engineer: Pfitzenmaier & Jablonski.
Electrical consultants: V. A. Lombardi Associates.



South façade; Steve Rosenthal photos.

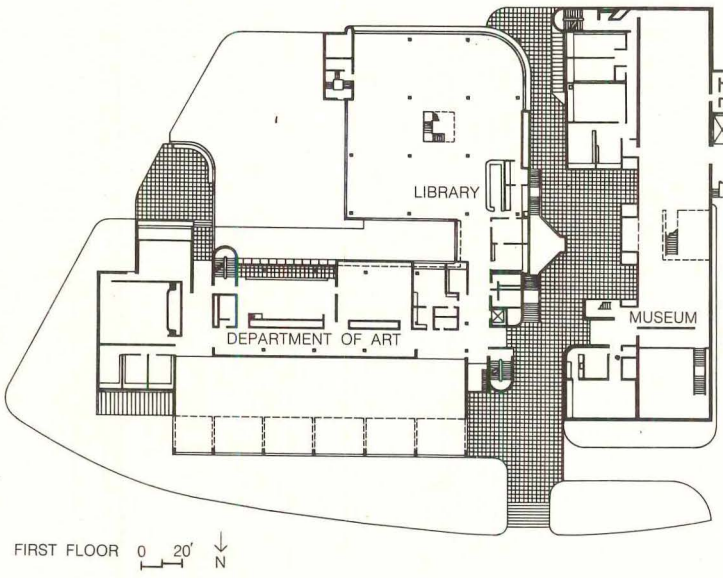


Sculpture court above, museum below.

Profile: John Andrews Architects

Smith College Art Complex

At the Smith College Art Complex in Northampton, Mass., the architects brought a pedestrian path directly through the building. Partner Edward Galanyk explains, "The site selected by the college was on the edge of the campus, which presented a good opportunity to integrate the town and campus in a positive manner. So we placed the sculpture court directly on the circulation route—it becomes the circulation route—between town and campus where it is readily accessible to both students and public. The court is also the main circulation path of the building; from it you go directly to the museum, the teaching spaces and the library. Over the court, the roof is a system of sawtooth skylights supported by steel beams clad in stainless steel. The panes on the north side are clear glass; the mirrored panes on the south pick up the north light and throw it down into the court."



Data

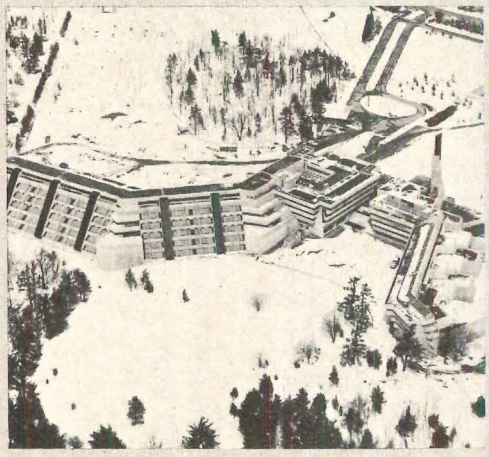
Project: Smith College Art Complex.
Structural engineer: William LeMessurier Associates, Ltd.
Mechanical engineer: Smith & Anderson.
Electrical engineer: Jack Chisvin & Associates.
Landscape architect: Richard Strong Associates.
Cost: $5.2 million.

Scarborough College, phase II

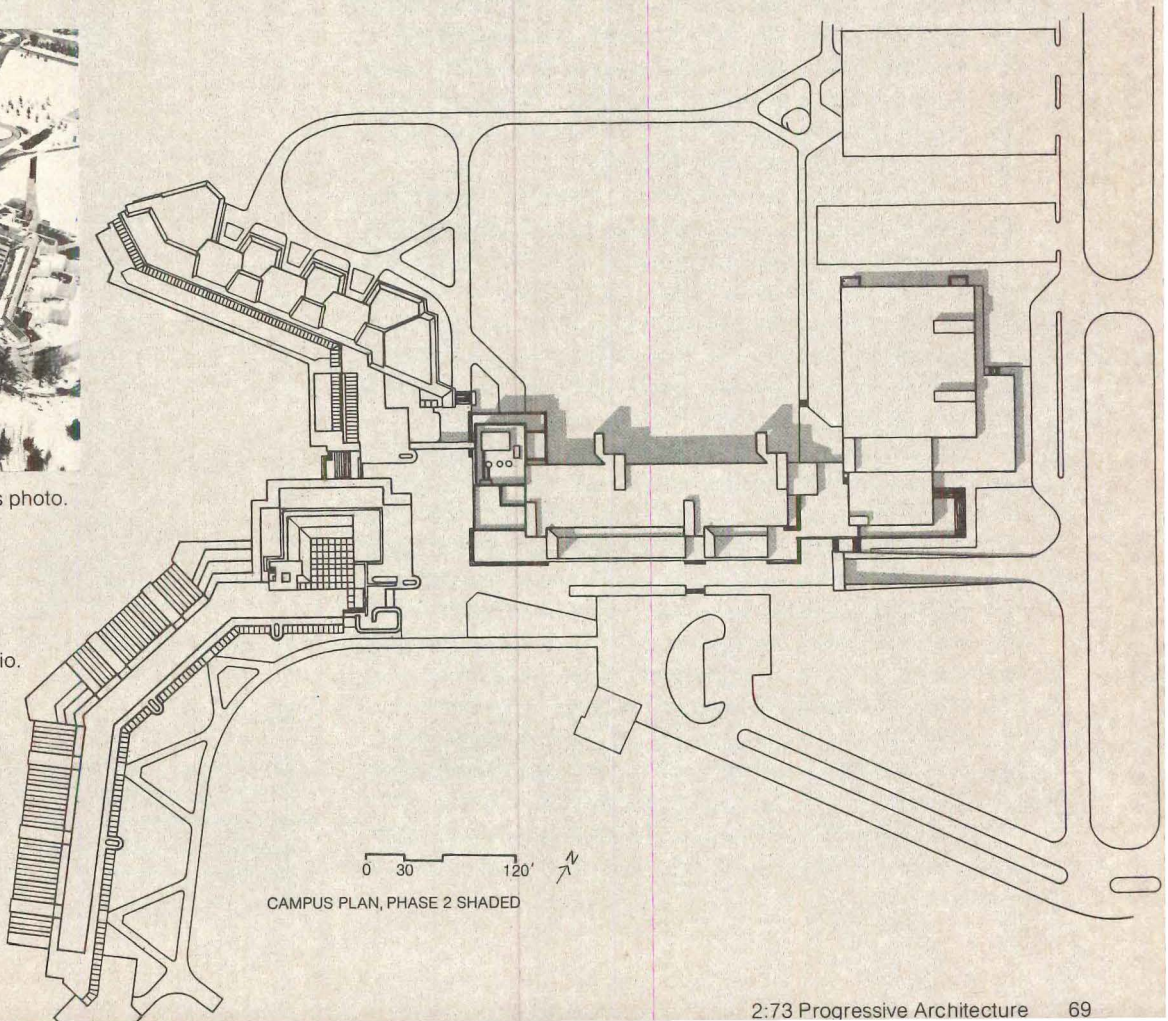
Sited along a bluff, the first-phase, 400,000-sq-ft linear megastructure of Scarborough College is organized around an interior pedestrian concourse. The second phase was originally planned to continue that orientation, but as John Simpson explains, it does not.

"The life of universities is quite changed from what is was five or eight years ago," he says. "Facilities are now recognized as belonging to the community as much as to the school, so we oriented phase II, with its gymnasium, toward the community. A bridge and an underground passage connect the new building to the existing wing. Instead of continuing the linear arms of phase I, facilities are now clustered around the administrative, physical center, which offers more options for moving and isn't just more of the same stuff. By changing the master plan, diverse activities can now be added in many places, and the circulation can simply creep alongside them.

"The materials changed also. Phase II is an extremely raw building, and I think the university made the right decision in spending money on space rather than finishes. Utilities are organized so suspended ceilings are no longer necessary. By locating packaged air-handling units on the roof so that each unit handles a specific area, we were able to add space without compromising the central boiler plant. When more area is added, all we'll do is take hot and cold water, as it were, to the air-handling unit to handle that space."



First phase, completed 1966, John Reeves photo.

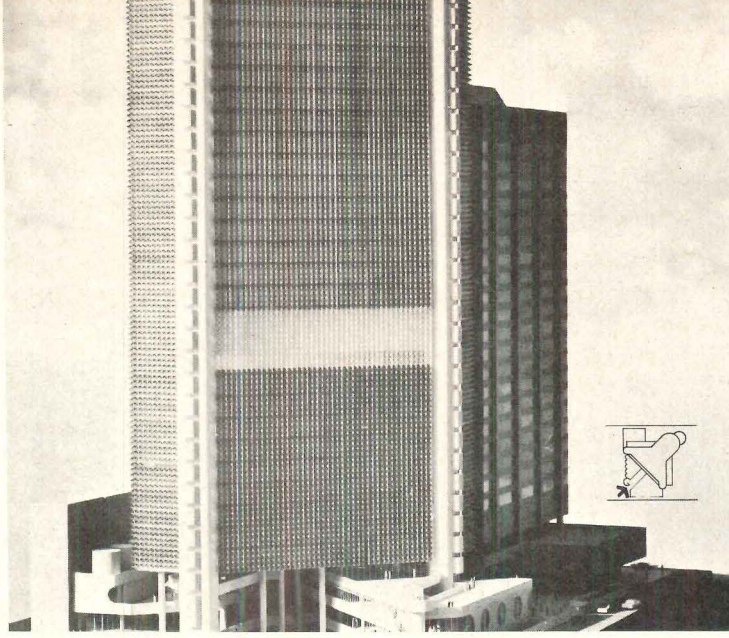


CAMPUS PLAN, PHASE 2 SHADED

Data

Project: Scarborough College Phase II, University of Toronto, Scarborough, Ontario.
Electrical engineer: Jack Shisvin & Associates, Ltd.
Mechanical engineer: R.E. Crossey & Associates, Ltd.
Structural engineer: Seethaler & Bernard
Cost control: Helyar, Vermeulen, Rae & Mauchan.
Area: 171,000 sq ft.
Cost: $4,628,000.

Hooker Tower

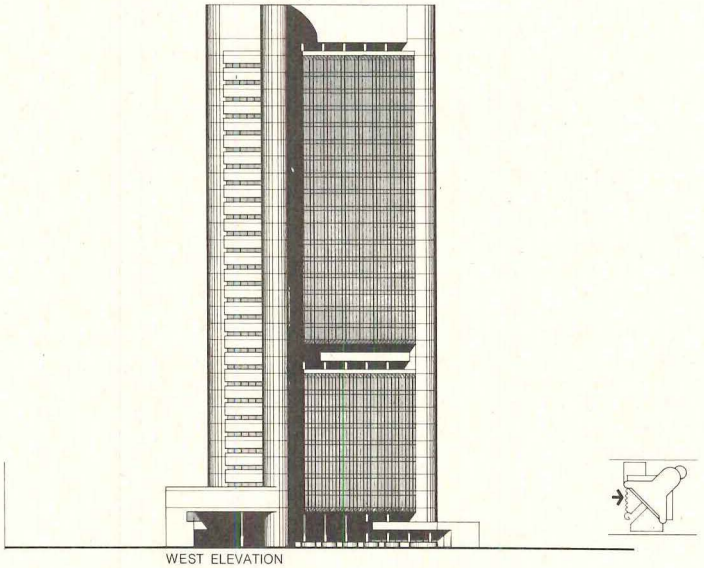


"The interesting thing about Hooker Tower," John Andrews says, "is that it's our first major commercial project. Probably the more fascinating aspect though, is that the real estate, at $400 a sq ft, cost $14 million, and the building will cost $17 million. That's much different from here where you wouldn't pay more than 25 percent of the total cost for the site.

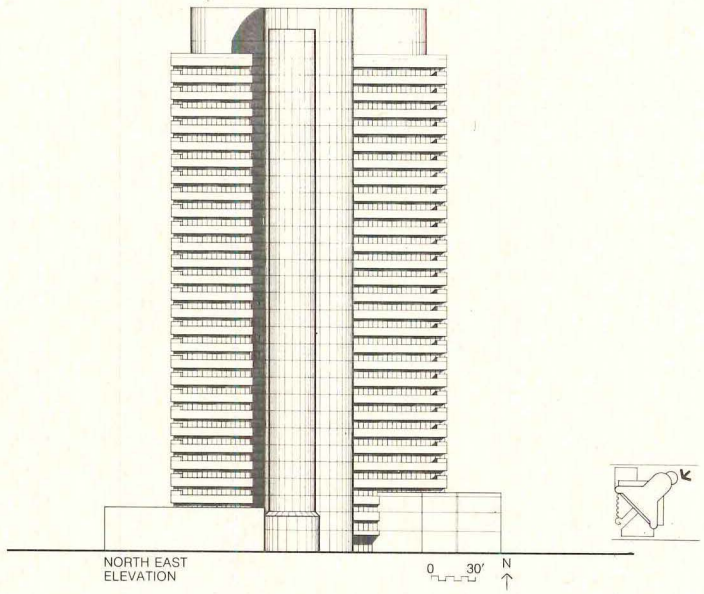
"The building is on the busiest pedestrian intersection in Australia, and we couldn't put a normal office with the usual plaza in an area that was all shops—Sydney is one big shop all over the ground level. The client wanted a regular prestige building with a plaza, but you have your own conscience and you've got to try to do something that's right for the city and at the same time satisfies the developer's demands. We were able to satisfy those needs through the form of the building itself, which keeps the diagonal movement across that site where people come out of the subway and go toward the opposite corner. Also, we wanted to get the sun into the front of the building, and with a diagonal, which makes you tuck the core in the back, we were able to do that.

"In Australia, height is controlled by setbacks, so we were able to take the mean of the façade as the point to calculate the setback; it was just a case of convincing the city to interpret its zoning law that way. We have absolutely maximized the possible coverage in this building; you couldn't get another square foot on this site. By putting the core in the back, the building is 89 percent efficient on open floor space, and a trick like that puts a developer in a very good mood.

"There are fantastic views in Sydney, so everyone wants glass. They also have extremes of temperature in the high range. Everything is fully glazed with incredible mechanical systems sucking out all the hot air, so having put in the glass they then obscure the view with venetian blinds. Dreadful contradictions. We felt they should have something that allows views and keeps the sun off, such as our stainless steel space frame. It is detached about 2 ft from the building, with adjustable, triangular, tinted acrylic louvers fitted into the frame. Between it and the building are stainless steel walkways for the window washers, who are so well protected they don't need to wear belts. The whole thing has 76 miles of 1½ in. stainless steel tube. There are no knuckles—we couldn't afford them—it's done by bending, and it will go up in 26′ x 12′ chunks."

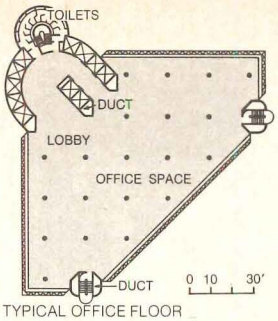


WEST ELEVATION

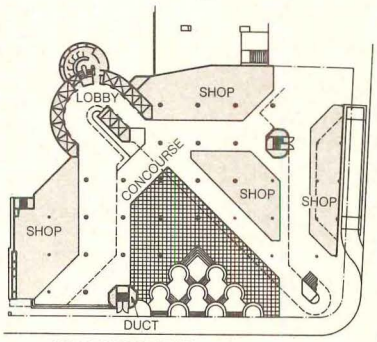


Data

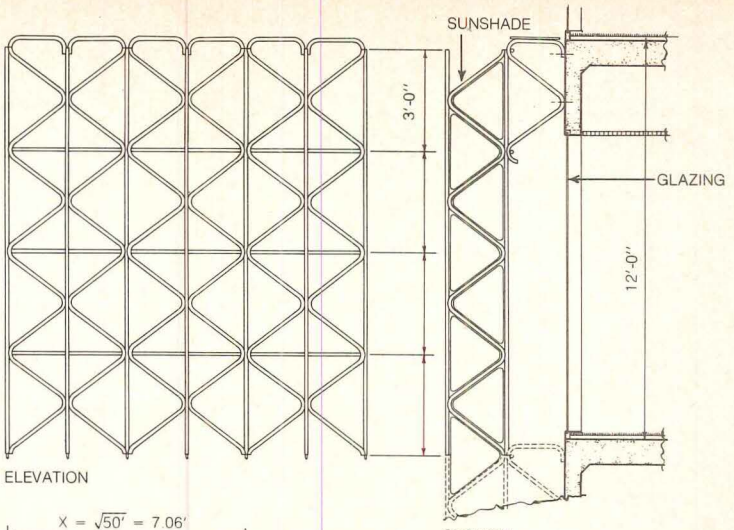
Project: office tower for Hooker Projects, Ltd., Sydney, Australia.
Consulting architect: P. J. Courtney.
Structural engineers: Wargon, Chapman & Associates Pty. Ltd.
Consulting service engineers: D. S. Thomas & Partners.
Quantity surveyors: T. R. Pickering & Associates.
Cost: Aus. $17,021,000.



TYPICAL OFFICE FLOOR

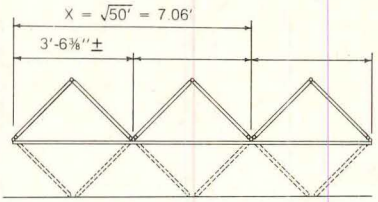


CONCOURSE LEVEL



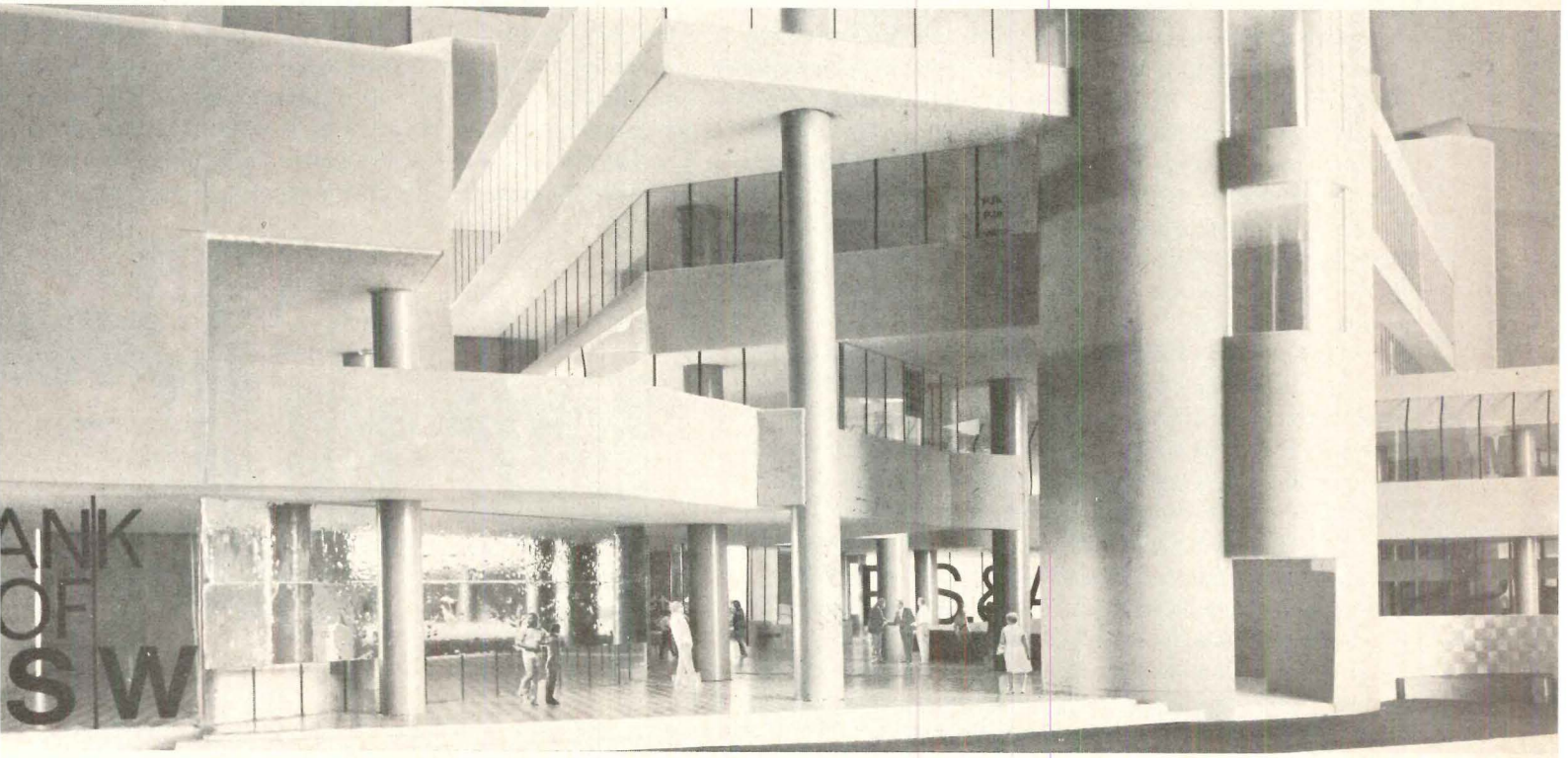
ELEVATION

SECTION

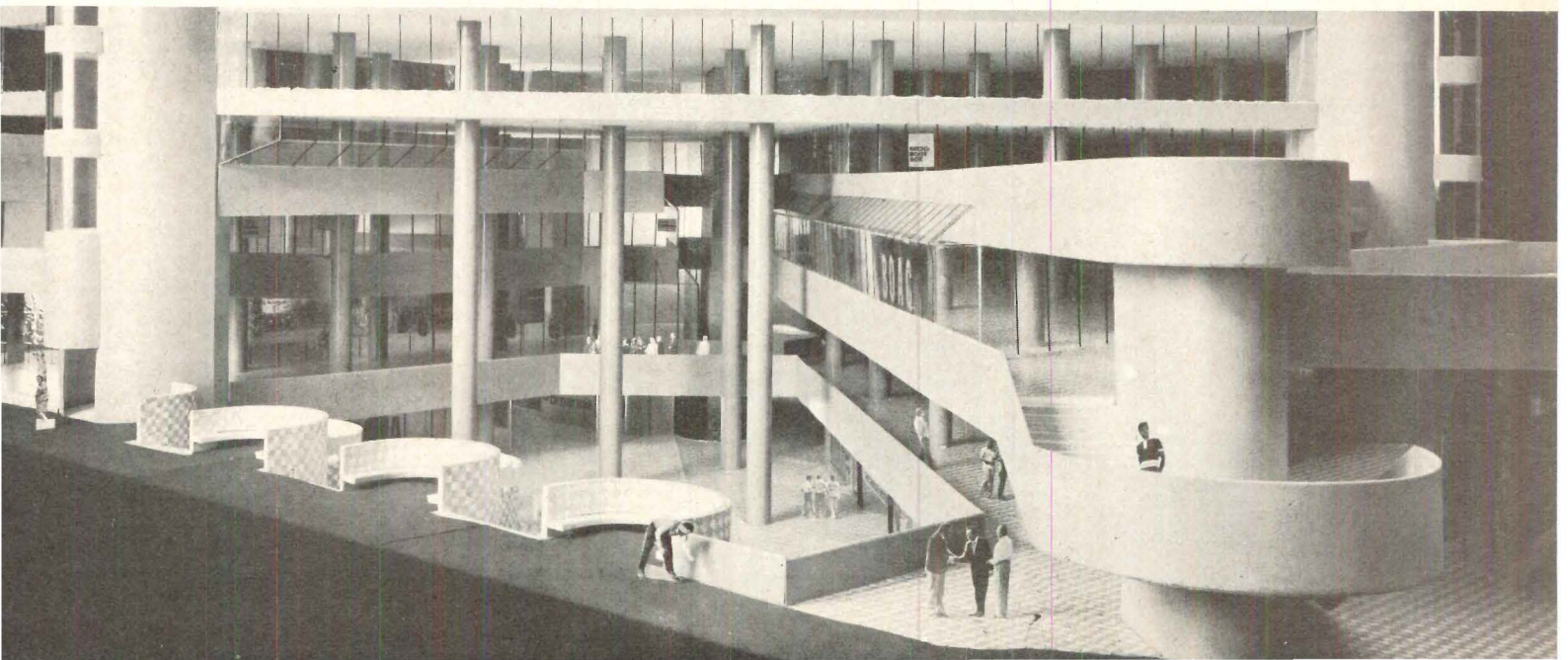


PLAN

SUNSCREEN



A spacious, three-level shopping concourse surrounds and extends into the basement-level plaza. David Moore photos.

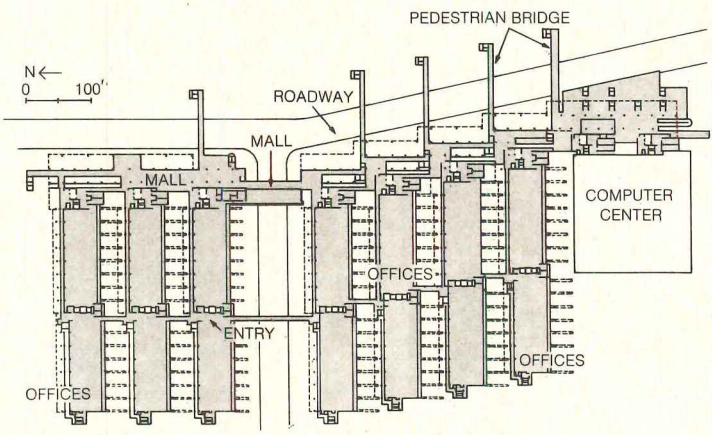


Belconnen Government Office Complex

Belconnen is one of several satellite cities being built on the outskirts of the capital of Australia. The new government office complex will be a series of low, connected buildings totaling 1 million sq ft. "The original brief," John Andrews reports, "was to build five 15-story towers, but we were able to get them to change the program by proving all sorts of things about circulation, expansion and connection, and basically by pushing the idea that if 4000 civil servants will be there for most of the day, then the thing should be able to operate as a microcosm of the city. This was important because there's nothing there now.

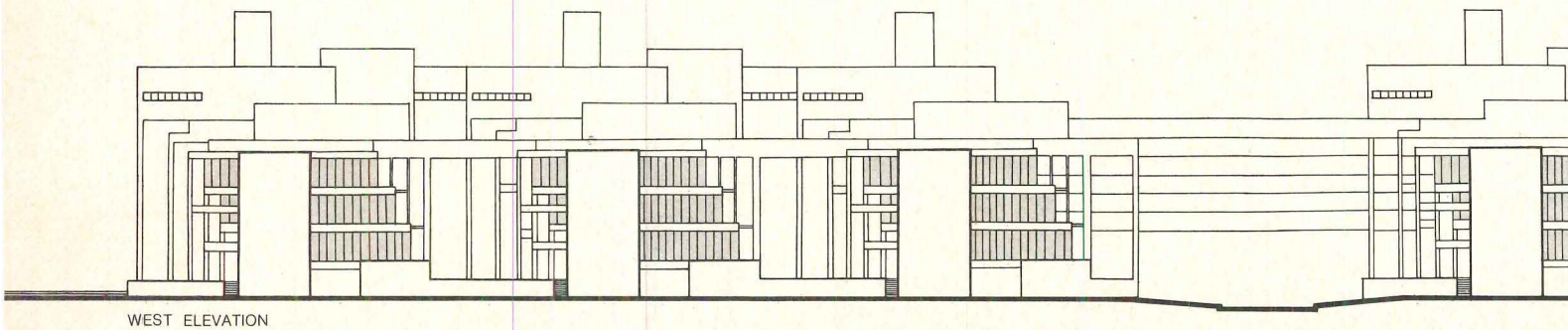
"The complex will set the pattern for future development of the city; in fact, half the length of the main street of Belconnen town center will run through this complex. There is a weather protected shopping mall open 24 hours a day that will run through it, with connections for housing to be built later. None of this was in the scheme for the original towers.

"The complex is super sophisticated in terms of the precast erection technique and precast building techniques. We spent a long time designing a T-beam that would give completely open space for the office landscape. The premanufactured, exposed mechanical systems go along the ends of the T-beams and feed in all under the roof; there is no ceiling. All of the precast members are made on the site: 19 individual precast components go into each of 18,000 8-ton T-beams, all tensioned right at the stress limit. The gallows beams that go across the building weigh 24 tons each, and the contractor has to love them to death because if he doesn't they get cracks and he has to throw them away. The point of them, though, is to open the space. The people who will use the complex are in an office landscape now, but without the amenities that go with it. They're literally wearing green eyeshades, sitting at desks in big, open spaces with little boxes sitting around for the supervisors. We introduced the office landscape idea, which wasn't part of the original program, as a means of upgrading the environment for these people.

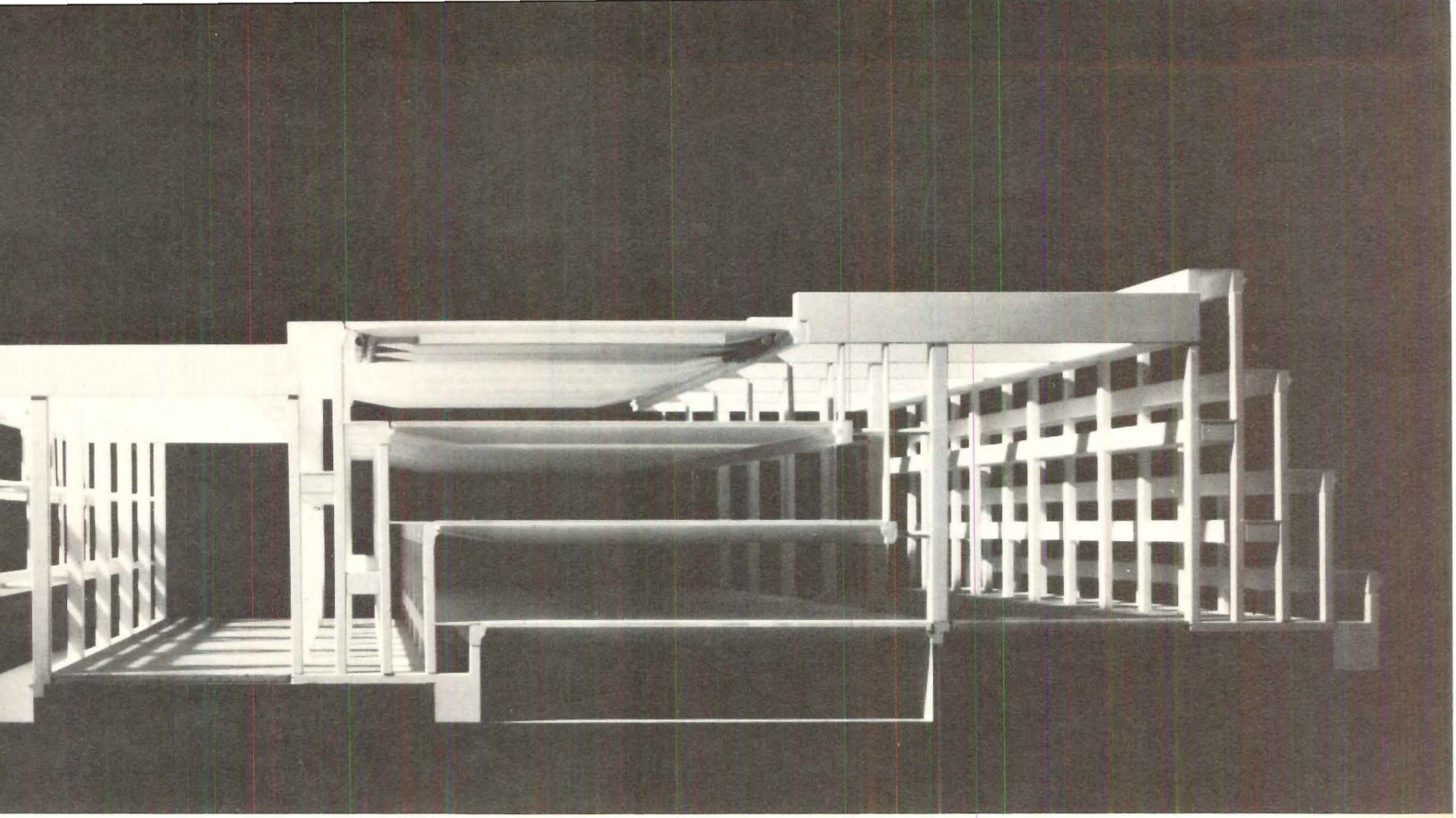


Data

Project: Government Office Complex, Belconnen, National Capital Development Commission, Canberra, Australia.
Electrical and mechanical engineers: D.S. Thomas & Partners.
Structural engineers: P.O. Miller, Milston & Ferris.
Landscape architect: Richard Strong & Associates.
Quantity surveyors: McCredie, Richmond & Johns.
Cost: Aus. $16,000,000.

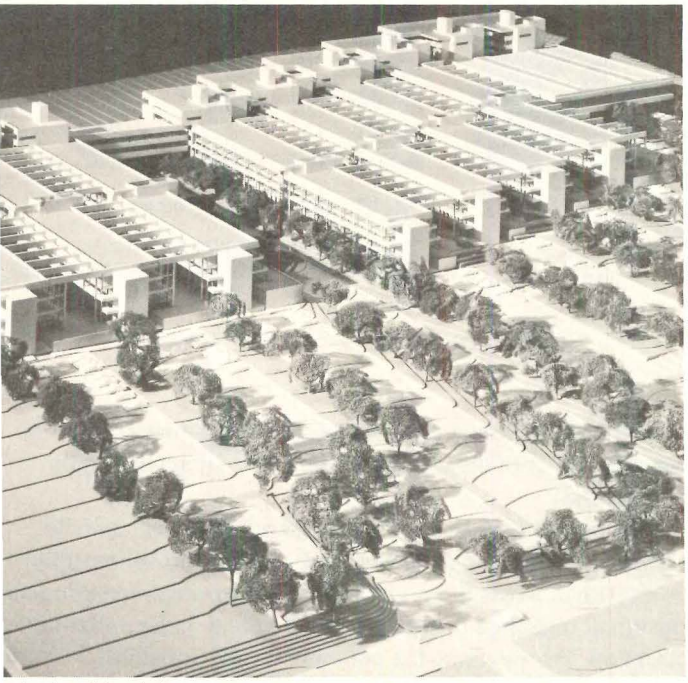


WEST ELEVATION

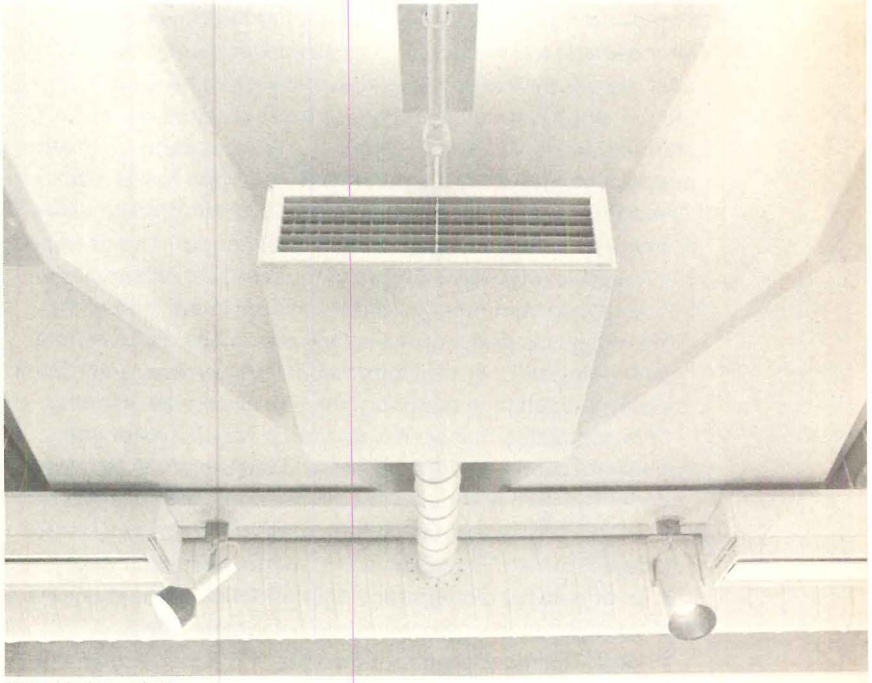


ɔydon Associates, photo.

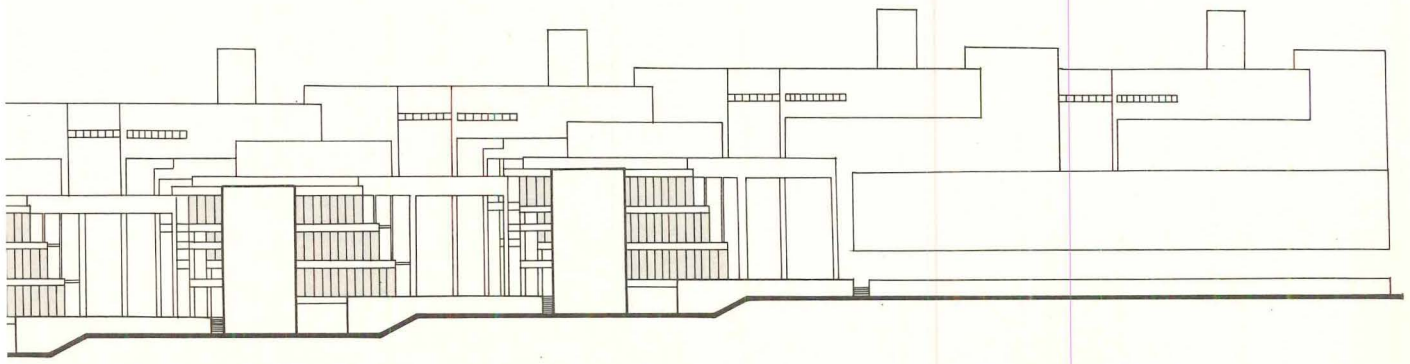
A total of 18,000, 50-ft-long, 8-ton T-beams form Belconnen's structural system. Weighted on one side, and resting on columns on the other, the cantilevered beams are designed to allow installation of mechanical and electrical systems (below) that do not penetrate the structure.



ɔydon Associates, photo.

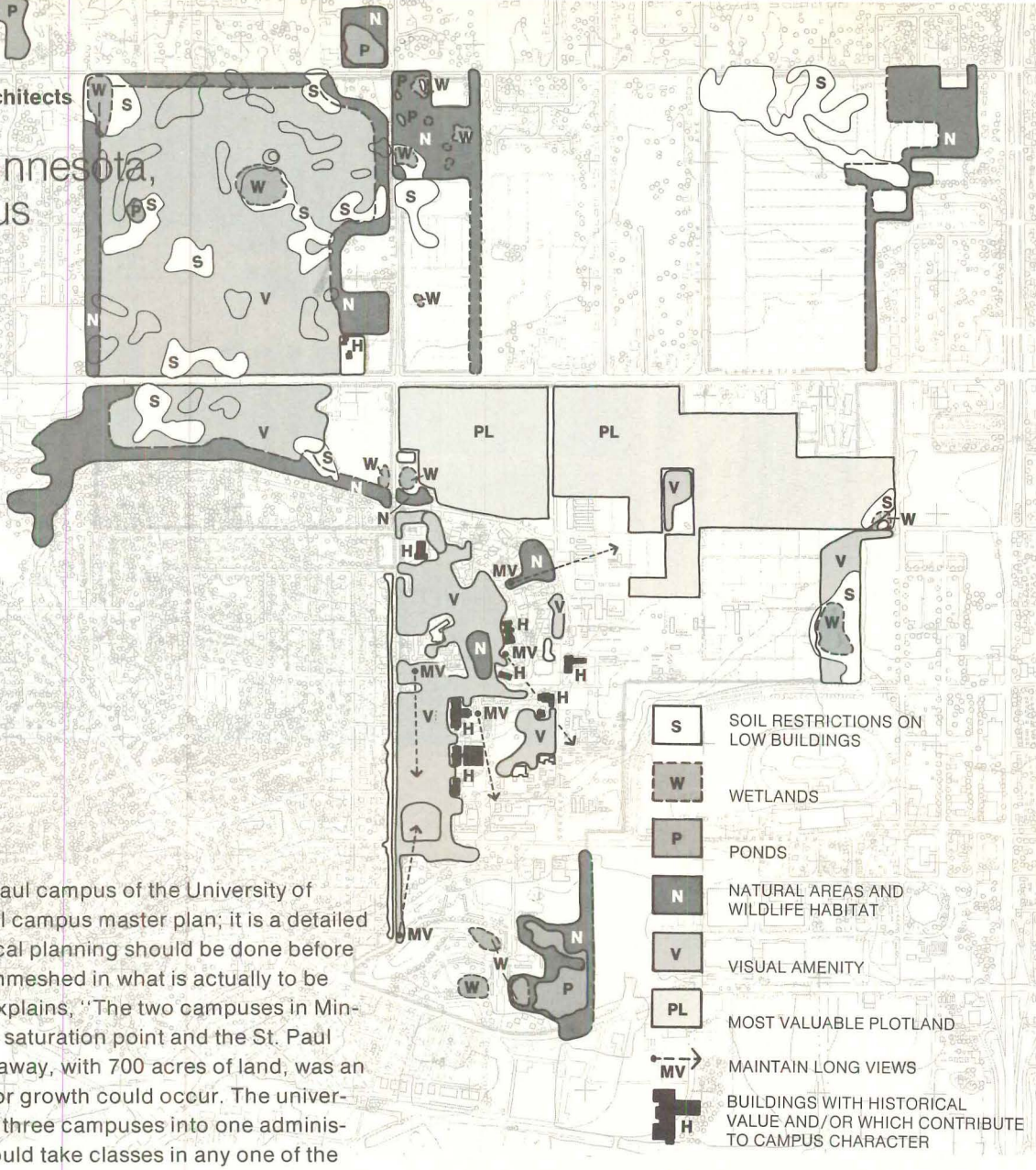


Michael Andrews, photo.



Profile: John Andrews Architects

University of Minnesota, St. Paul Campus



The final, "Don't Build" chart shows where not to build, and why.

The planning for the St. Paul campus of the University of Minnesota is not the usual campus master plan; it is a detailed analysis of how the physical planning should be done before the university becomes enmeshed in what is actually to be planned. Roger Du Toit explains, "The two campuses in Minneapolis had reached the saturation point and the St. Paul Campus, about 2½ miles away, with 700 acres of land, was an obvious place where major growth could occur. The university hoped to integrate all three campuses into one administrative unit so students could take classes in any one of the three, but it was pretty obvious they weren't geared to hire a master planner. They had information everywhere, and hadn't really organized their planning office to cope with planning.

"We suggested that we not go ahead with a master plan, but instead prepare a tactical study to set the terms of reference for the plan and to set out all the issues that needed resolution; and that we organize their information into an understandable format. These two components—a tactical study and an annotated bibliography of information—would ensure that whatever plan was done could be implemented.

"One of the most important aspects of the plan was that it was participatory. We made a graphic inventory that displayed every bit of information about the campus on a map. We then sent out issue analysis sheets saying that any planning problem could be stated as an issue, anyone could state an issue, and it would be our task to resolve those issues in context with the others. So everyone on campus saw what was going on.

"We brought out a set of factors to be considered while planning, which included information on demography, population, program relationships (teaching activities, traffic, etc.), area requirements and locational requirements. We set up task areas where a group of faculty and staff investigated the landscape, natural systems, the service systems, utilities, housing, social concerns, recreation and so on, to lay out what things had to be covered and to try to show that no one was the center of the universe, that other things had to be considered.

"We thought the university should not plan to a specific horizon, but that it should consider an evolving series of horizons. The first was the predictable horizon which included the design of buildings being programmed and those under construction. The next was the planned horizon for about 10 years into the future which mainly dealt with circulation and land use, and finally the horizons for about 30 years into the future that look at what should be considered.

"The last step was to look at the ways the demand for building space could be met, and it was at this time that we set up four guiding principles that we now follow in most of our work: more efficient utilization of existing space, renovation of existing space to new or better purposes, infill between and expansion of existing buildings, and expansion into land used for other purposes. From this, for the long-term needs, we made charts and maps for the planning office to follow which showed areas of potential use for particular needs. The last chart was our 'don't build' drawing, which showed areas that should not be built upon and the reasons why."

downtown Toronto, 200 acres of railway yards will become Metro Centre. Panda Associates, photo.

Metro Centre

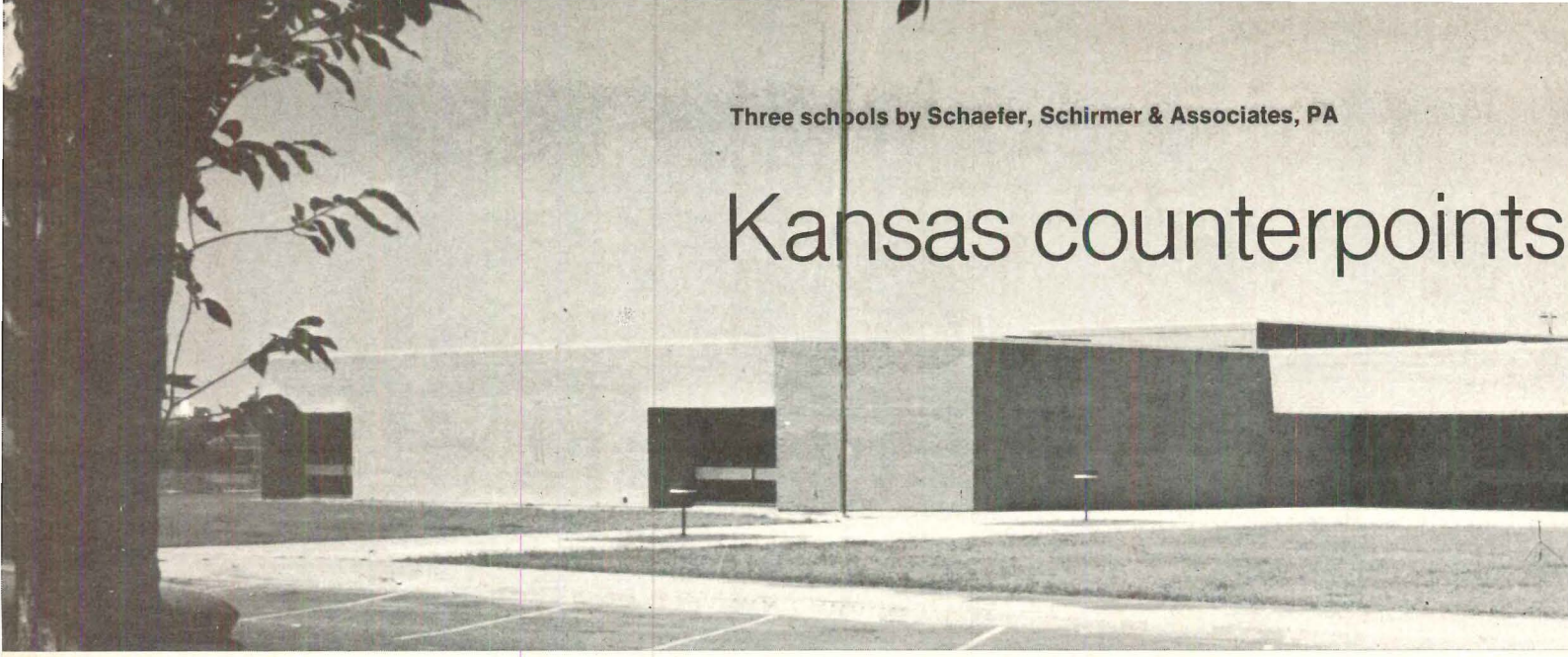
Metro Centre is one of the largest urban developments of its kind in the world. The site comprises 200 acres of prime land now used as railway yards on the perimeter of downtown Toronto facing Lake Ontario. Its design is heavily determined by transportation systems, and incorporates a coordinated, mixed use of housing, office, retail, institutional and open space. As such, the entire complex will include the city's major transportation exchange, approximately 7 million sq ft of integrated office and retail space, 9000 residential units, television studios and a communications tower.

The project came about in 1967 when the two major land holders—the Canadian Pacific and Canadian National Railways—got together and hired developer Stewart Andrews (no relation), who was also the developer for Montreal's Habitat, to organize development of the site. "Although the railways owned most of the site," according to Roger Du Toit, "there were also provincial, federal, metropolitan and city landholdings—a complete mix of land ownership. Stewart Andrews put together a development team, which included us as architects and urban planners in association with architects Webb, Zerafa, Menkes, and also included the land owners. We also got politically organized to involve all the government agencies in the development of the plan. We worked with the developer in taking it through the government agencies, and then set up a separate office under our partner Robert Anderson to do the architecture and continuing planning." Anderson reports, "We're now in working drawings for the tower, which is to be built first, but its design was changed, and we're now working on the new one."

The original tower was to be a three-column mast with offices, studios, observation area and a revolving restaurant on top. In the new drawings the tower has taken the shape, in plan, of a three-pointed, star-shaped column that diminishes in circumference as it rises. Three elevators, two with glazed cabs, will rise up the tower from lobby and information facilities at the lowest level, to television studios and offices, and on to a revolving restaurant and observation post on the top level. With television transmission facilities above that, the structure will be the tallest un-guyed tower in the world.

Data

Project: Metro Centre, CN/CP, Toronto, Ontario.
Associate architects: Webb, Zerafa, Menkes.
Regional planning and market analysis: Murray V. Jones and Associates.
Traffic engineering: Barton-Aschman Associates.
Municipal engineering: Marshall Macklin Monaghan Ltd.
Structural engineers: R.R. Nicolet and Associates.
Mechanical and electrical engineers: Ellard-Wilson Associates.
Municipal council: Rohmer, Cory & Haley.



Three schools by Schaefer, Schirmer & Associates, PA

Kansas counterpoints

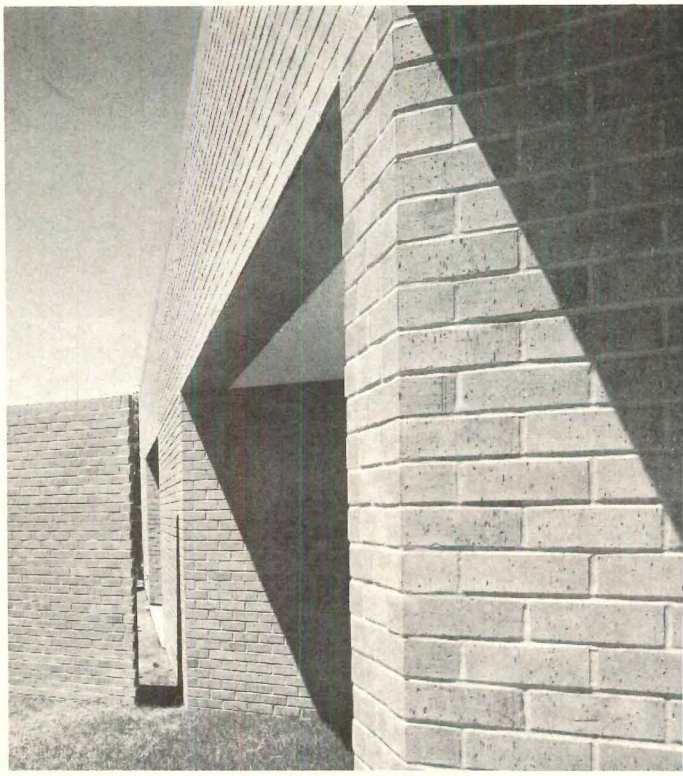
Despite programs that stressed economy, architects for three schools near Wichita combined form and expression to make strong, but sympathetic, design statements

Strong architectural forms are a tradition on the plains—grain elevators, barns, silos, windmills and, in former years, the one-room schoolhouse topped by a belfry. Today, the partners of a Kansas architectural firm believe that, as formal elements, modern consolidated schools can provide strong visual counterpoints to the vast rolling landscape. Three schools by Schaefer, Schirmer & Associates, PA, prove their thesis, yet were built within exceptionally tight budgets.

Two schools, Eisenhower and Kennedy Elementary Schools in Wellington, Kan. were designed and built simultaneously. The school district requested that they be as similar as possible, varying only to fit different enrollments. Teaching areas for all levels except kindergarten are planned around the instructional media centers of both schools. Due to the larger capacity of Eisenhower, however, more area is included for teaching near the IMC. Other facilities are virtually the same in both buildings, as is the open plan teaching concept. Large multipurpose areas serve lunch and assembly needs and minimal satellite kitchens are supplied from the main kitchen at another school. Teaching and administrative areas are carpeted, and both schools are fully air conditioned. Metal deck, open web joists and masonry bearing walls were chosen for their economy—the price of both schools, completed in 1970, was $14.50/sq ft for the general, mechanical and electrical contracts. Although Eisenhower and Kennedy are not monumental in scale, their massing is expressed in clean brick planes, punctuated by deep-cut openings.

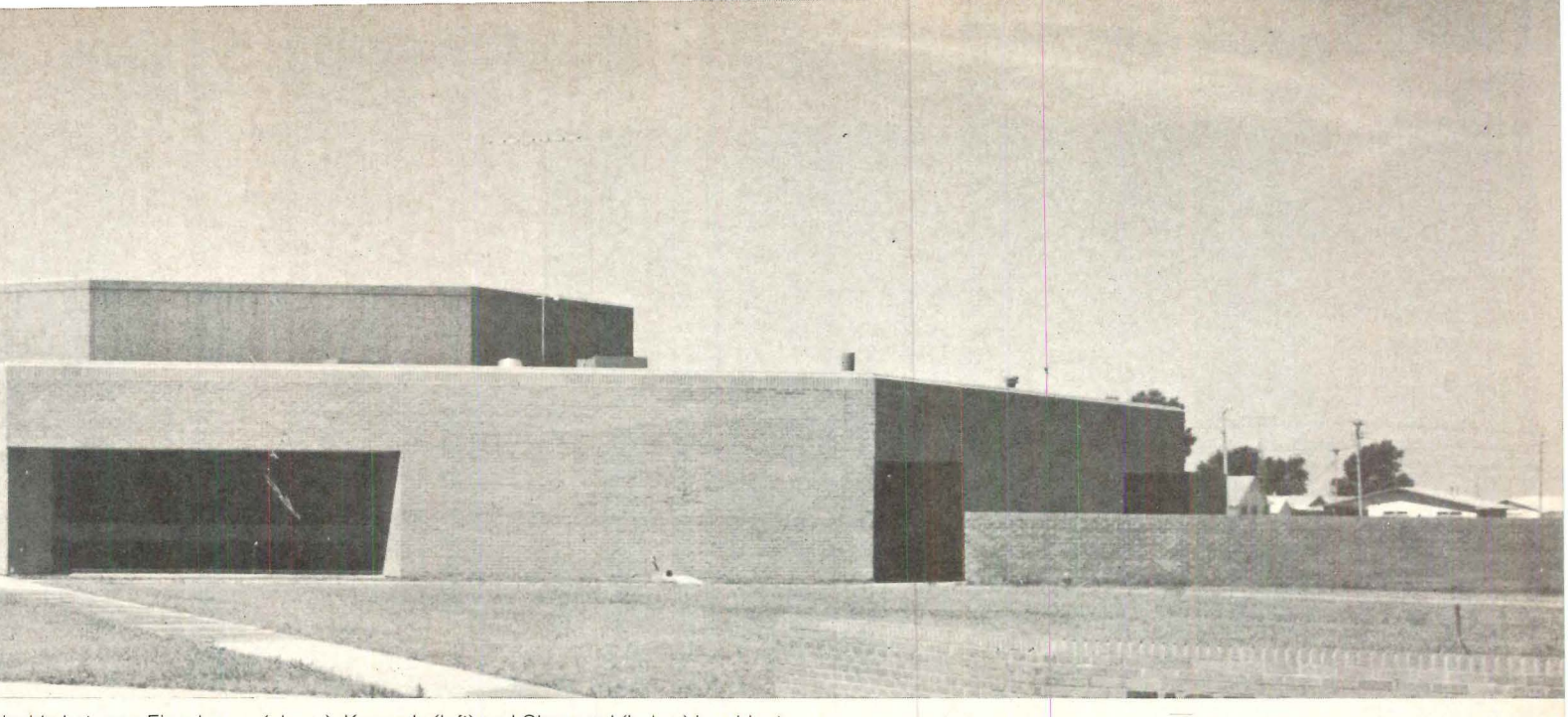
Chaparral High, the third school, shows a clear evolution of design, responding to a larger program for a different age group, on a wide-open rural site. Located almost exactly halfway between the towns of Anthony and Harper, Chaparral had to be more than a high school. The towns both needed meeting, athletic and theater/auditorium facilites. By building those capabilities into Chaparral, the towns could achieve a measure of the shared interests that their children experienced daily.

Land surrounding the 60-acre site is mostly treeless and

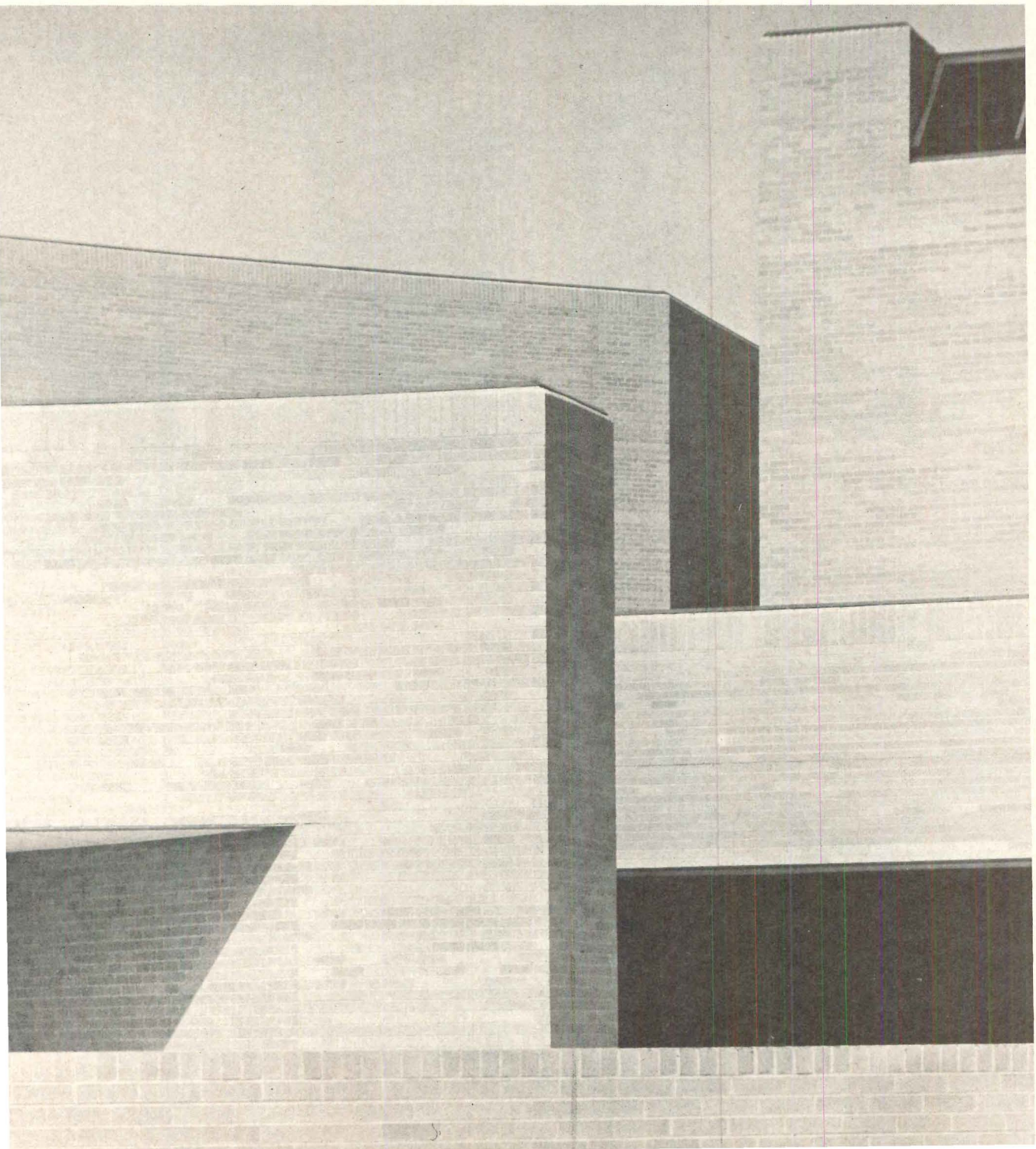


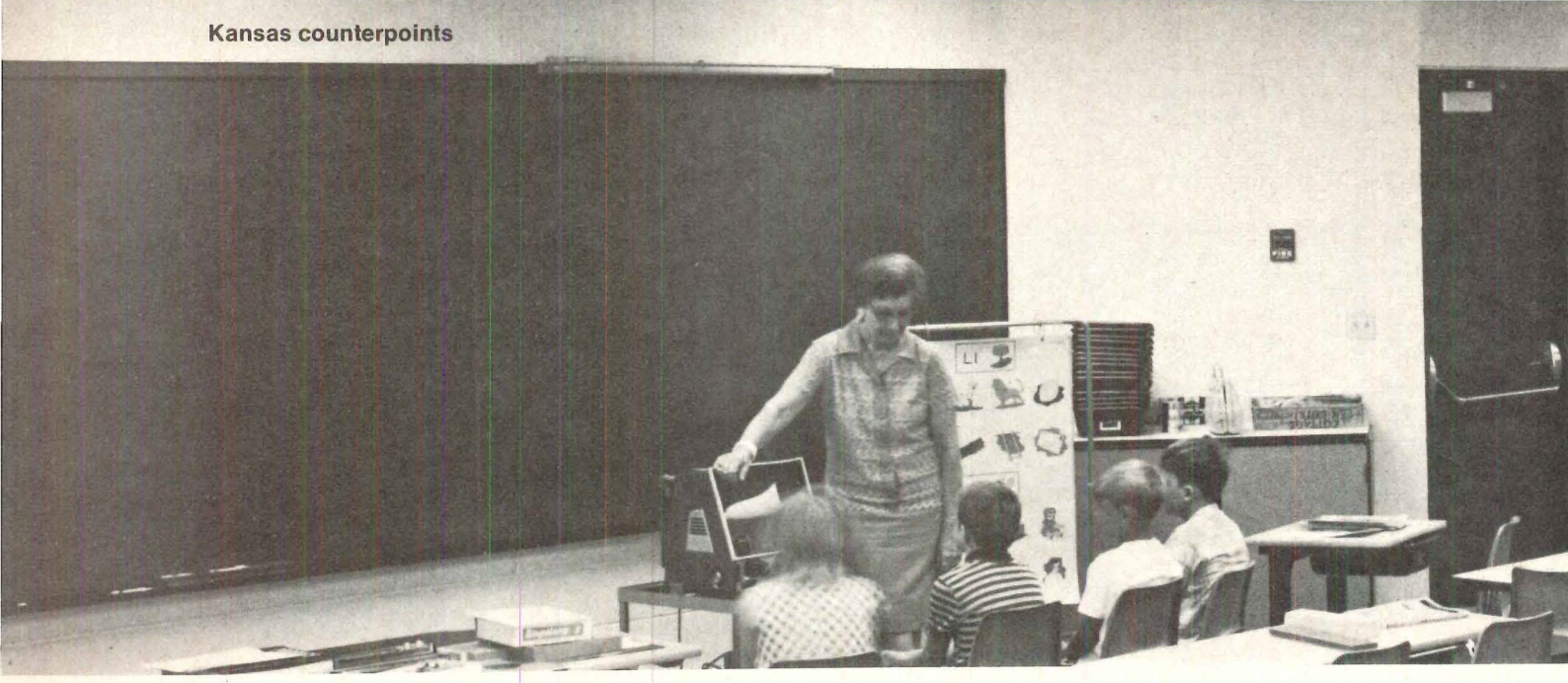
rolling, composed of wheat farms and cattle pastureland. Given the open character of the area, the architects sought t orient school functions around interior areas, with only minimal views of the uninterrupted horizon. Massing again provides an intentional visual contrast, while the warm gray-brown brick relates to the dominant color of the surrounding

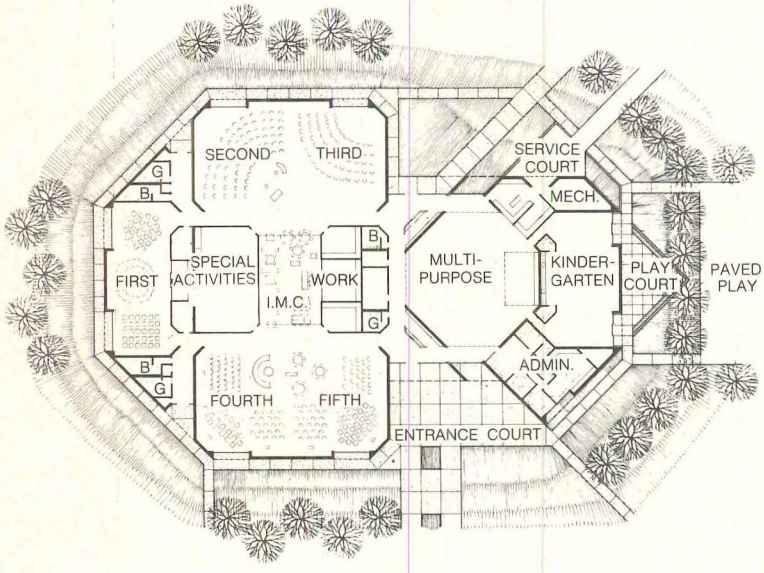
High intensity use areas such as the gymnasium, theater and cafeteria/commons are grouped around a broad street-like entry and corridor with informal seating. The library face an internal open court and draws additional light from high clerestory windows. The courtyard is the center or core for activities less intensive than the laboratory-type classrooms. A connected planetarium located near the science rooms ca be, and is, used by outside groups as well. As in the Wellington schools, Chaparral was designed around economy. Availability of the precast concrete tees and masonry bearin wall materials brought another under-the-budget bid, and Chaparral was built for $15.80/sq ft in 1971. [JM]



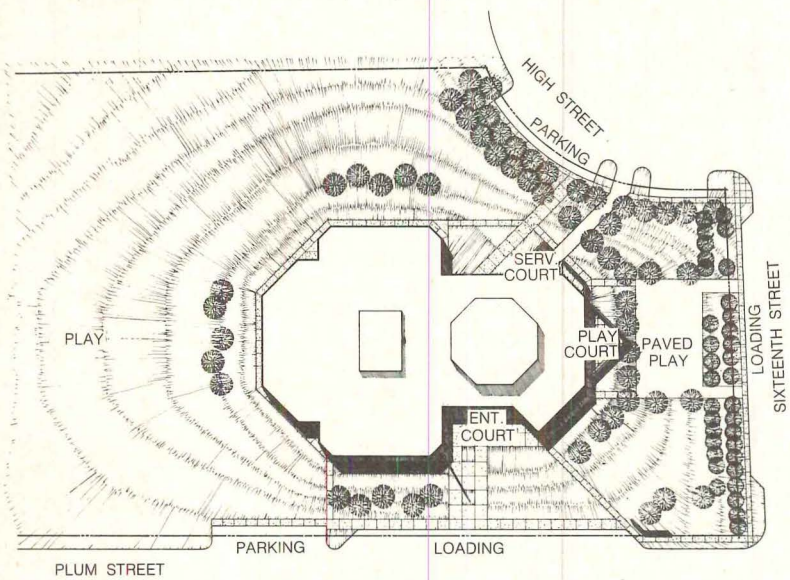
kinship between Eisenhower (above), Kennedy (left) and Chaparral (below) is evident.



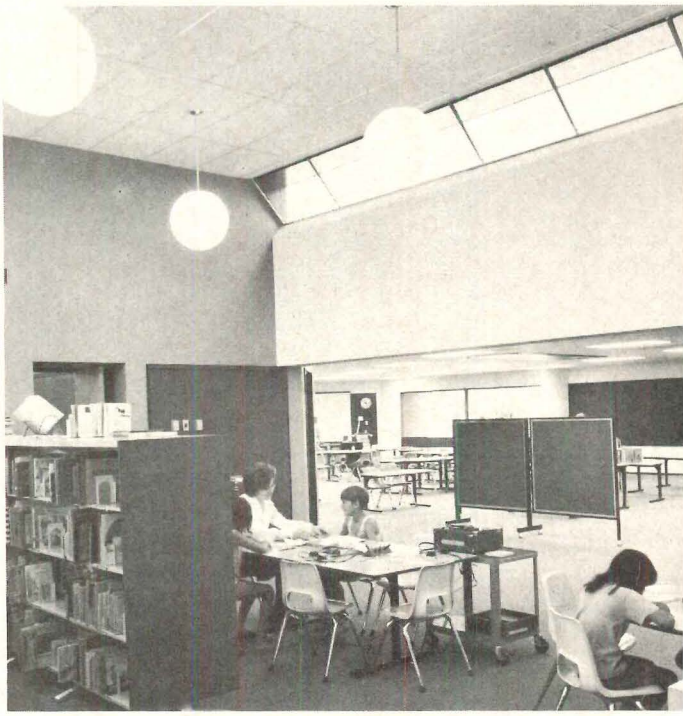




EISENHOWER ELEMENTARY SCHOOL 0 →N 50′



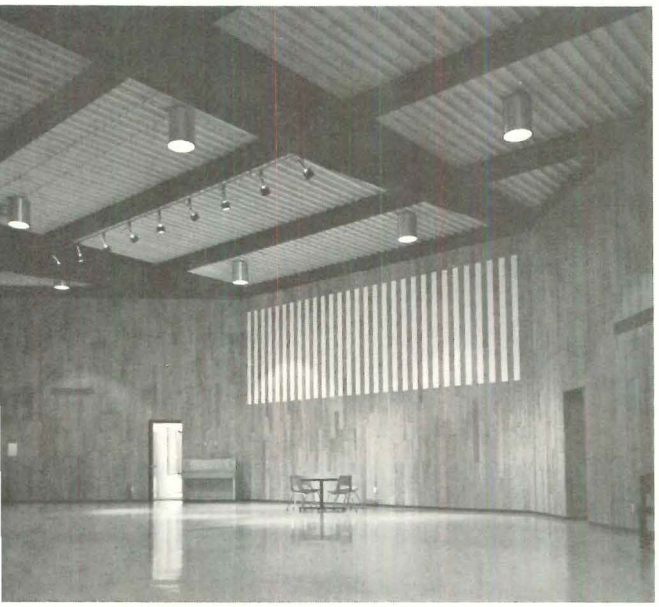
EISENHOWER ELEMENTARY SCHOOL 0 →N 75′



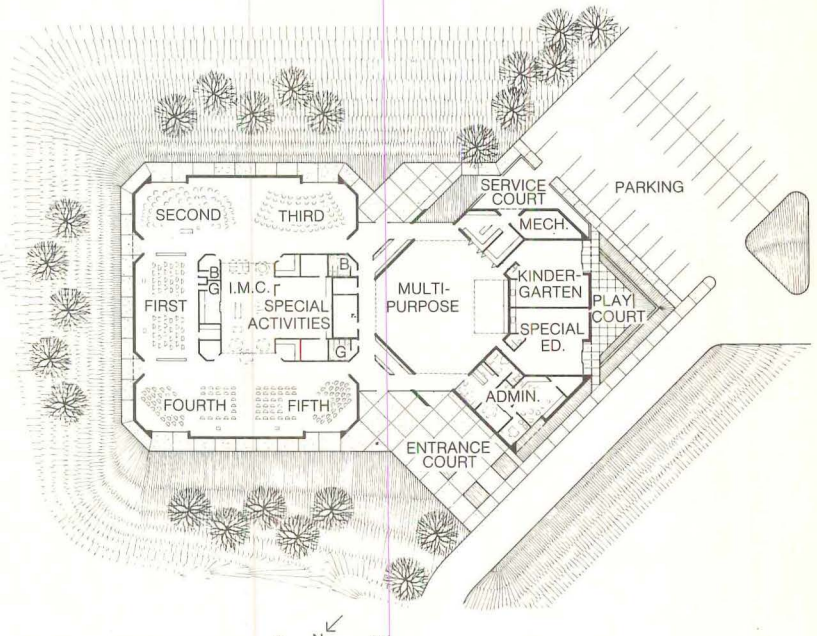
Centrally located media centers serve adjoining open teaching areas.

Data

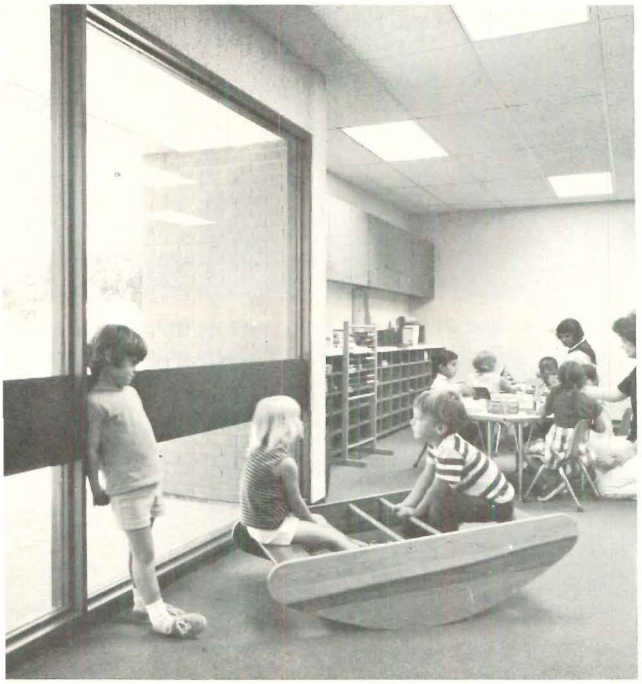
Projects: Eisenhower and Kennedy Elementary schools, Wellington, Kar
Architects: Schaefer, Schirmer & Associates, PA.
Sites: Eisenhower, 10.5 acres in a middle-to-upper income residential area; Kennedy, 7.5 acres in a lower income residential area.
Program: two elementary schools for the same town, to be as similar as differing capacities allow. Eisenhower is designed for 400 students, Kennedy for 250.
Structural system: drilled piers and grade beams, masonry bearing wall open web joists and metal deck with concrete slab.
Mechanical system: two-pipe chilled water-hot water system, air syster with air handling units in multipurpose rooms and offices, unit ventilators in classrooms.
Major materials: brick and exposed block walls, gypsum board partition and wood paneled multipurpose room walls, 2x4 lay-in board ceiling, carpet and resilient tile floors.
Costs: $855,223 for both schools, includes general, mechanical and electrical contracts ($14.50/sq ft).
Consultants: all engineering by Schaefer, Schirmer & Associates, PA.
Photography: Joel Strasser.



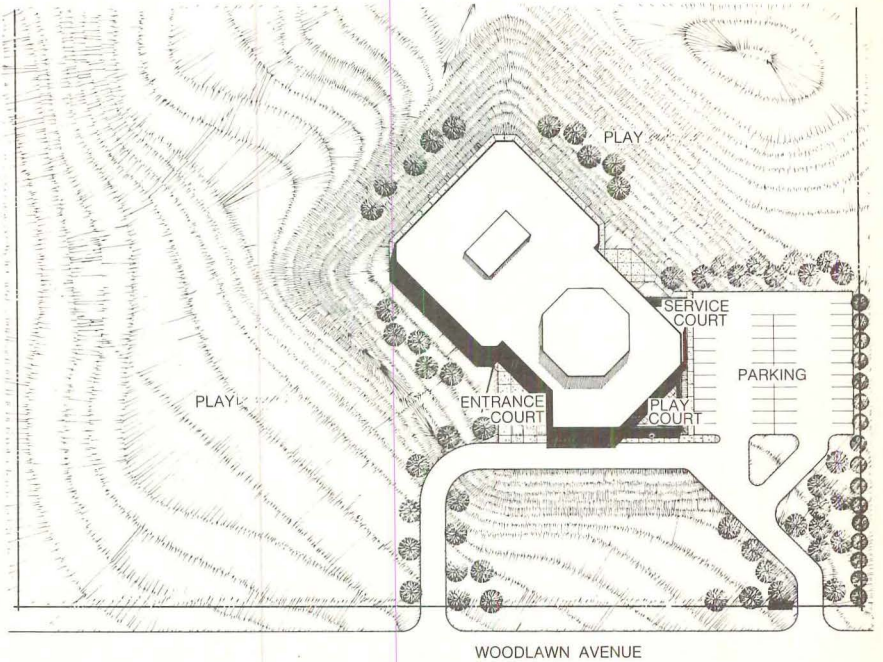
ltipurpose room with wood walls serves for both eating and activities.



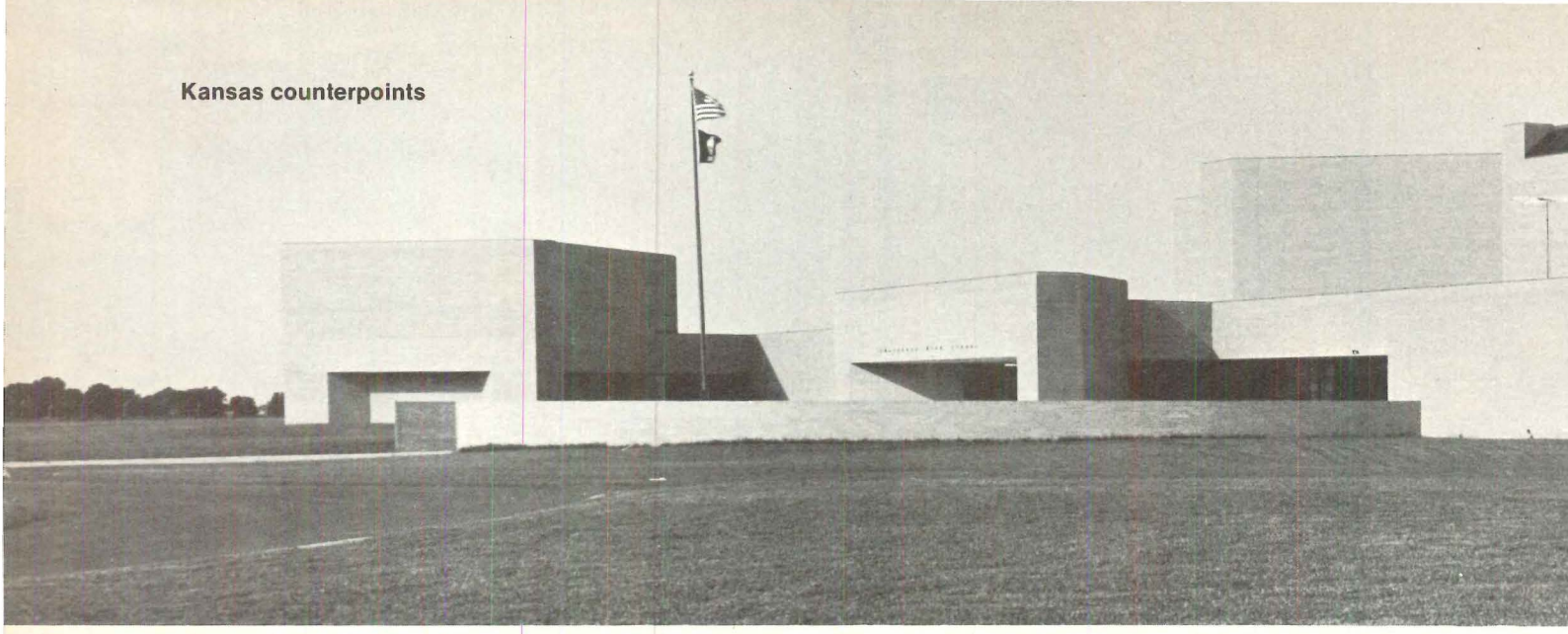
KENNEDY ELEMENTARY SCHOOL



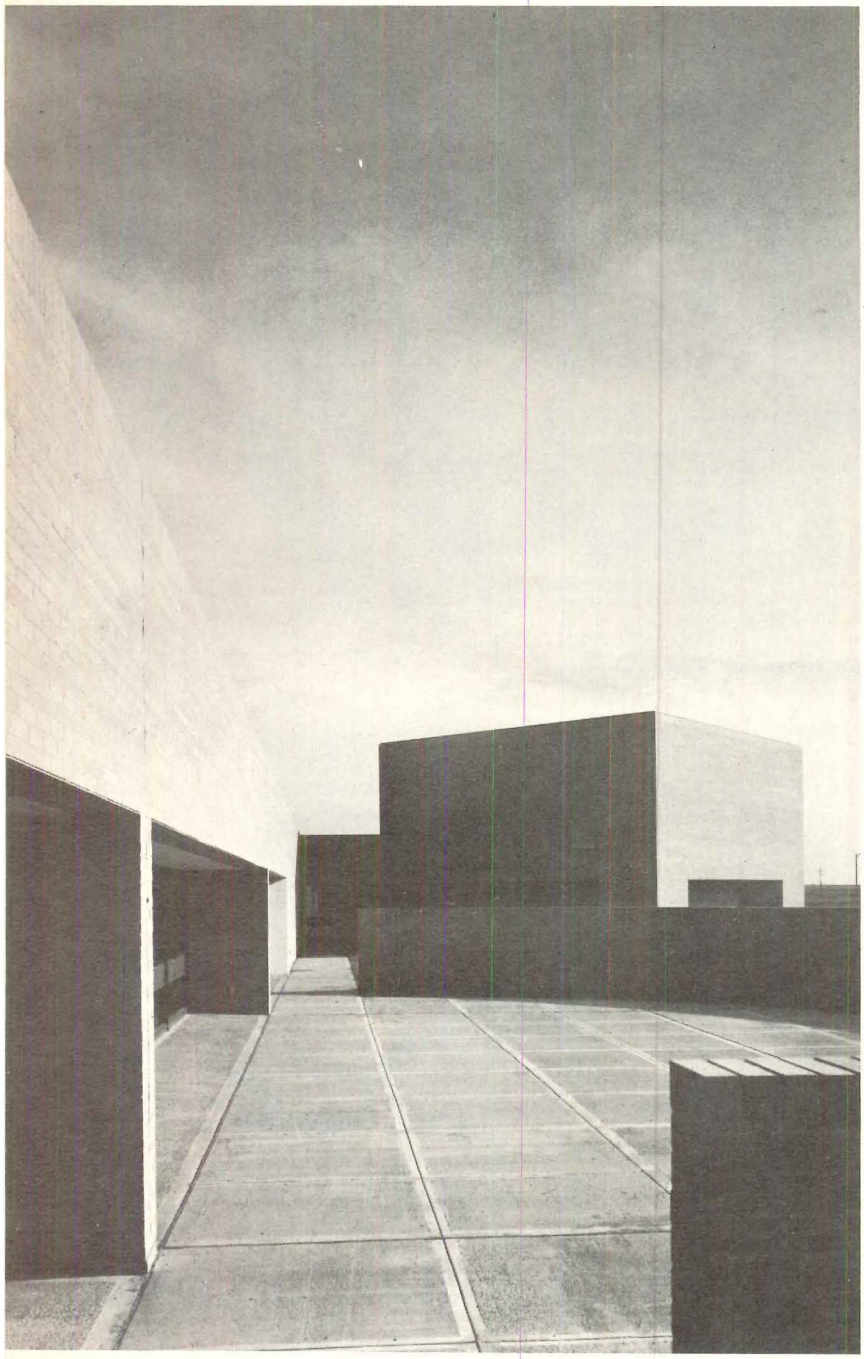
k glass, deep overhangs and air conditioning control the Kansas sun.



KENNEDY ELEMENTARY SCHOOL



Chaparral's massing (above) makes it an assertive prairie landmark.

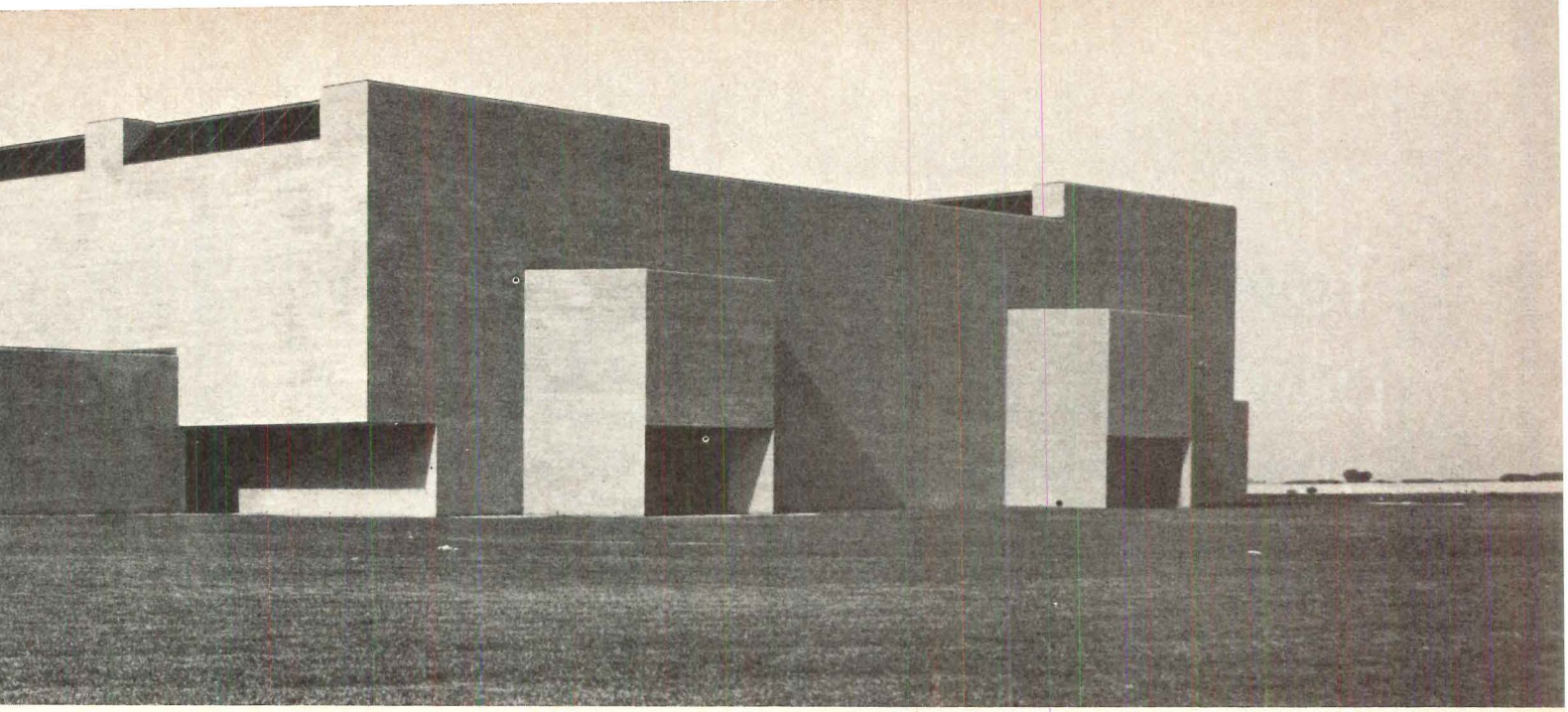


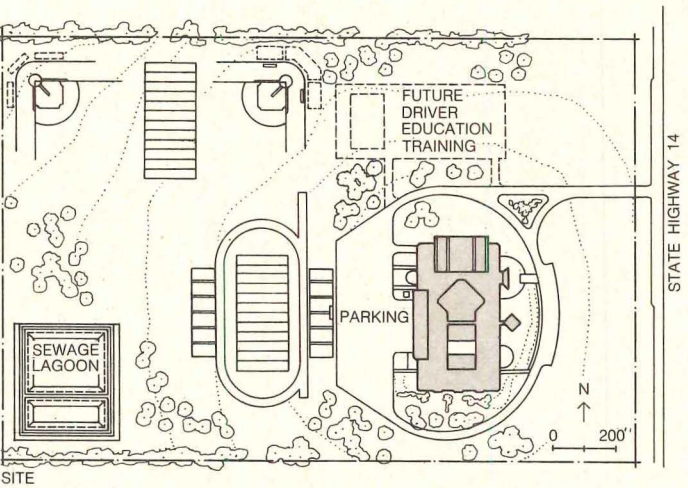
Home economics courtyard, with the school planetarium beyond.

Main student street leads from the entry to the student commons.

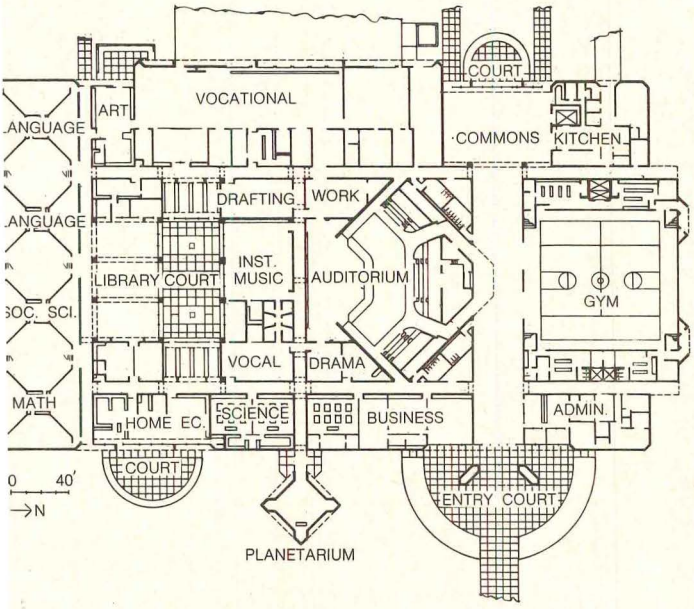
Class teaching spaces are oriented inward, opening onto carpeted corri

The auditorium/theater can be subdivided with folding partitions.





SITE
CHAPARRAL HIGH SCHOOL




Library draws light from sloped clerestory and an exterior courtyard.

ata

oject: Chaparral High School, Anthony-Harper, Kan.
chitects: Schaefer, Schirmer & Associates, PA.
te: 60 acres of gently rolling farmland with no trees, surrounded by neat fields and pastures, five miles from both towns.
ogram: new high school to serve two towns, with facilities for town eetings and entertainment. School population is 600 students, and the e also contains a 3000-seat track and football field, a three-acre wage lagoon and parking combined with a driver training course.
ructural system: poured concrete foundation on spread footings, asonry bearing walls and precast concrete double tees on all roof areas cept the gym and theater. Steel trusses and joists span those areas.

Mechanical system: boilers, with forced air heating and cooling.
Major materials: concrete and steel structure, brick and exposed concrete block walls, composition tile, terrazzo and carpeted floors and acoustic tile ceilings with exposed and painted concrete tees.
Costs: $2,117,614 ($15.80/sq ft exclusive of land, landscaping, fees and furnishings).
Consultants: structural, Professional Engineering Consultants; acoustical, Bolt, Beranek & Newman, Inc.; mechanical, food service and interiors, Schaefer, Schirmer & Associates, PA.
Photography: Joel Strasser.

Towards a pluralist architecture

Peter Carl

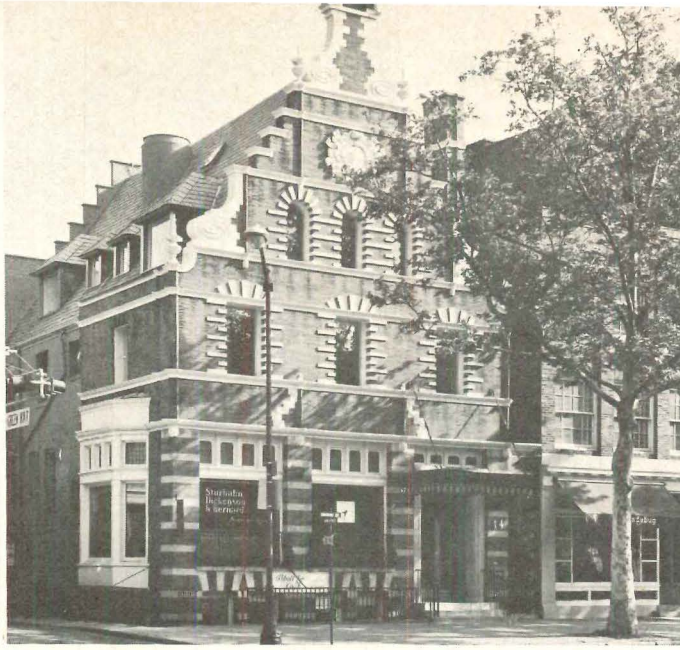
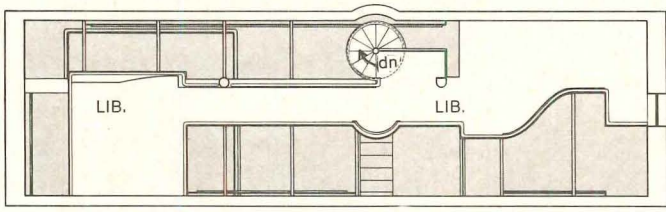
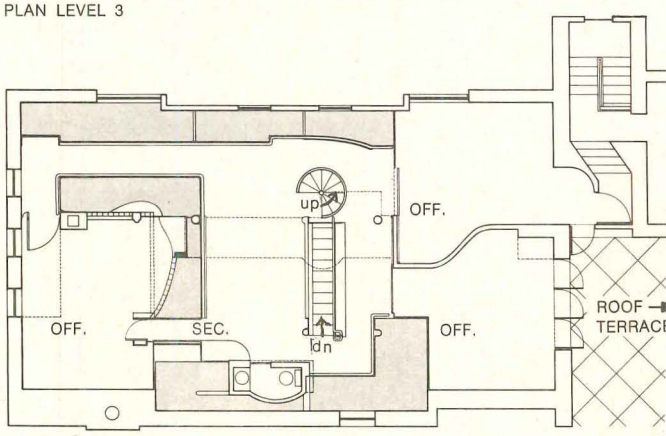


Photo: Laurin McCracken

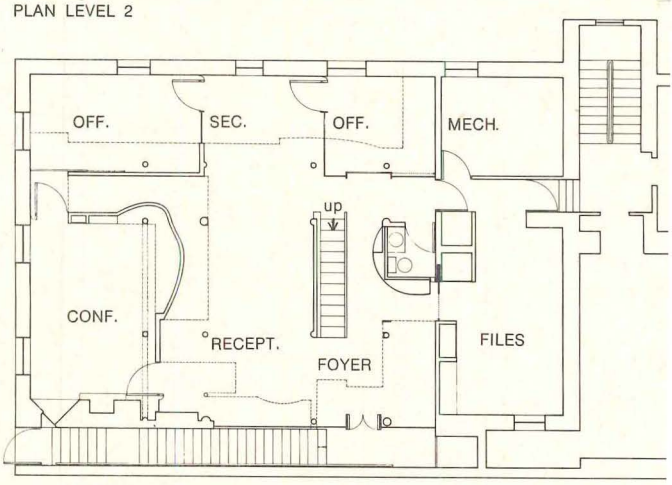
Existing building (above). Second level of office as seen from entry (right



PLAN LEVEL 3

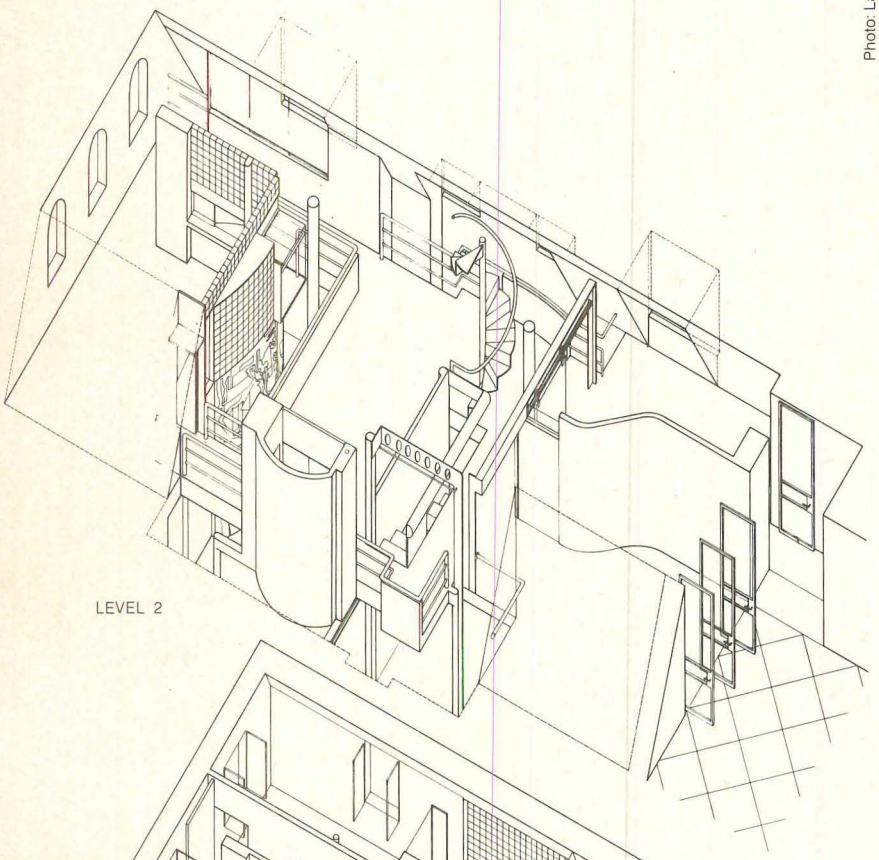


PLAN LEVEL 2

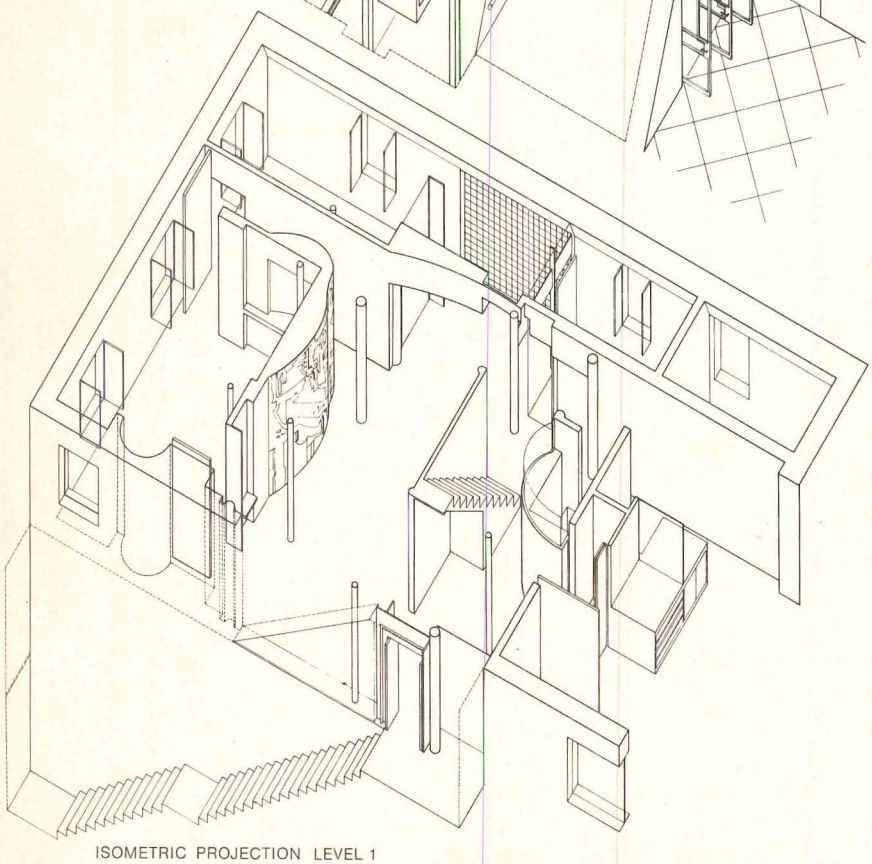


PLAN LEVEL 1

0 5′ → N



LEVEL 2



ISOMETRIC PROJECTION LEVEL 1

Author: Peter Carl received his B.A. in architecture from Princeton and is currently working towards a masters degree at the same university. He has lectured and worked with Michael Graves over the last five years.

The work of architect Michael Graves, analyzed in semantic terms, appeared in an article "On reading architecture" (P/A, Mar. 1972). This discussion of the Gunwyn office explores the intent, process and frame of reference for design decisions in Graves' work

When the venture capital firm of Gunwyn Ventures, moved from Wall Street to Princeton, N.J., they acquired a well-executed piece of 1890s neo-architecture and decided to adopt an open office arrangement. While the first floor of the three-story building was occupied by an insurance company that could not be disturbed, Gunwyn decided to renovate the upper floors completely for their offices. Following plans by architect Michael Graves, major sections of the structure between the second floor and the roof were removed, and an independent column and beam assembly was erected within the resulting two-story-plus-attic space.

Graves recognized a number of overlaid symmetries and asymmetries in the existing building (photo above). The symmetrical south façade is primary, establishing the dominant axis as north-south. The east-west load bearing walls, supporting the steeply pitched roof, reinforce this primary axis. The stairs to the first level of the office begin at the edge of the south façade in a space between the building and the adjacent structure and end halfway into the depth of the office perpendicular to the major north-south axis. As the west façade is also exposed, a minor axial relationship is established with respect to this minor facade and the point of entry from the stairwell. The resolution of these conflicts of symmetry provides the basis for order in the scheme.

The client's needs are straightforward: within this spatial context an open plan must accommodate private activities without disrupting the overall reading of open space. The of-

fice is distributed hierarchically along the main axis. The complexity of the solution, however, might appear to be out of scale with the endeavor. Where, for instance, are the Functionalist demands for efficiency and simplicity? Where are the benefits of modern snap-together technology? Through what process of logic—if not the merely ornamental or decorative—does such a variegated configuration evolve?

The pluralist approach

The assumptions of the Functionalist ethic are so generally accepted that one understands the design process as being reductive rather than elaborative. After the initial analytic and empiric stages of design, subsequent decisions are based on a moral imperative involving economies of effort, distance, money or energy. Additionally an ideal fit between form and function is thought to exist. The resulting work can at best articulate these principles of efficiency, and can at worst emerge as decoration of the various components. While judgments made under a reductivist ethic tend towards a single concept or order, elaborative design decisions respond to a more pluralistic concept of order: the work aspires to address the full range of imaginative perception. Traditional functional arguments are seen to be only part of the complete conception. Even the most mundane pragmatic activities are understood in the imagination.

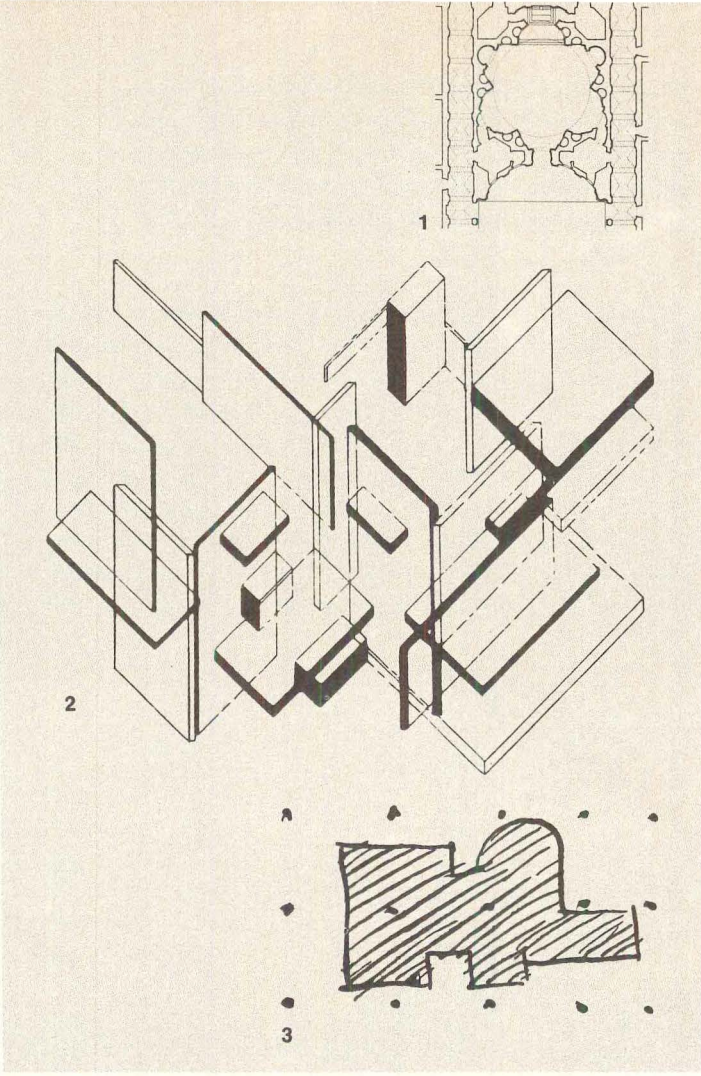
The economies of a work organized under elaborative principles are economies of meaning; and it is these that engage the spectator in his daily perceptual analysis of the configuration. For example, the enclosive privacy of a bathroom, with its polished surfaces and several activities involved with water, exhibits a psychological presence that transcends the purely sanitary and enters into the ritualistic.

It is an assumption of the pluralist position that experience is cumulative, existence multifocus: man tends to see himself as an actor in many simultaneous plays, and is probably incapable of a singular description of his world and therefore of himself. The responsibility of the architect is to achieve such a degree of resolution in his composition that particular themes and gestures are understood to be part of a pervasive spatial—and therefore experiential—logic.

Homogeneity and the grid

Mircea Eliade writes in *The Sacred and the Profane,* "For religious man, space is not homogenous; he experiences interruptions, breaks in it; some parts of space are qualitatively different from others . . . it is the break effected in space that allows the world to be constituted, because it reveals the fixed point, the central axis for all future orientation."[1] This fixed point corresponds to "sacred" space; that which is not sacred corresponds to "profane" space (fig. 1). Of crucial importance to such a spatial understanding is what Eliade terms the "solution of continuity" between the sacred and profane realms; most often it is in the form of a portal or entry sequence. "Sacred/profane" is not necessarily religious, but refers to the distinctions between man/nature, private/public and in general between order/chaos.

This fundamental distinction has prevailed for centuries as the dominant description of man's relationship to his universe, but as the cultural base shifts gradually from religion to science revisions begin to occur. Where once a requirement existed for exclusion from the chaotic realm, there is at this period in history the imperative for inclusion, for identification with the chaotic realm and with the scientific suggestion of universal order. In the post-industrial growth of cities the continuum in which man exists—that from which he extracts his individual identity—is no longer nature but the society itself.

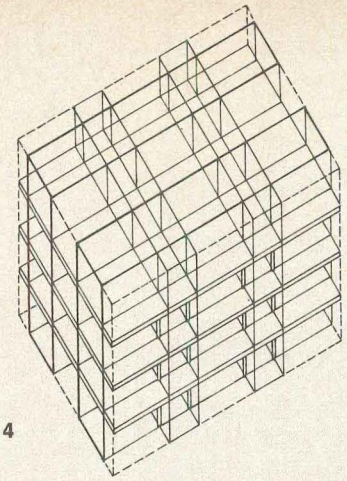


An architecture was developed in the first half of the 20th Century that permitted simultaneous interaction of both realms. In effect, the solution of continuity lost its connective role and became, instead, a fundamental principle of order: previously explicit distinctions of private/public, for example, became blurred with subtle gradations of meaning. Sophisticated spatial concepts referring to simultaneity and interpenetration appeared (fig. 2). The most significant among these for our present purposes is the *plan libre* of Le Corbusier (fig. 3). The importance of this invention is two-fold: the use of gridded and layered space as a contextual device, and the nature of subsequent spatial gestures on those terms.

Simply put, the grid is the device used to establish a homogenous framework (fig. 4). It takes advantage of the realization that alignment in space is a phenomenon to which even the most casual observer attaches some importance. Thus, the visitor to Le Corbusier's villa at Garches is made aware of a layering of the space by the alternate alignments of solid and void with the columnar grid. As a result, space is given a dimensional reality as an incremental extension of the grid both vertically and horizontally.

Grid, frame and deep and shallow space

For Graves, the establishment of the grid involves align-



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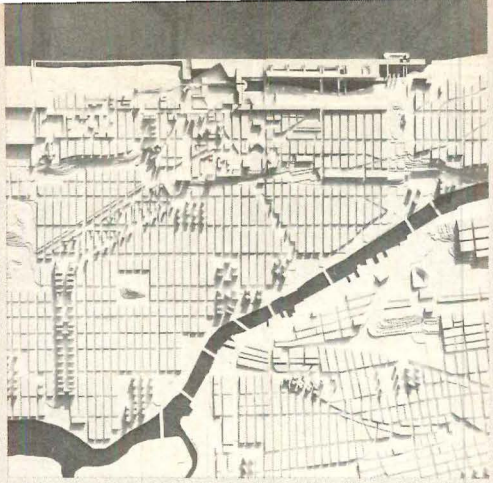
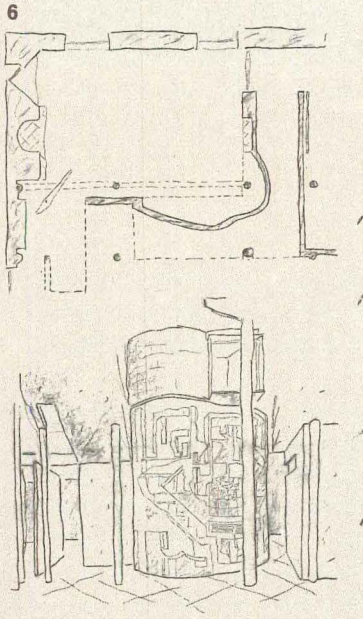


6

1 San Ivo, Rome; Borromini 1642.
2 Theo Van Doesburg, *Principles of Neo-Plastic Art.*
3 Plan. Villa at Carthage by Le Corbusier.
4 Conceptual drawing of the homogeneous framework.
5 Section, San Ivo.
6 Project for exhibition, "The New City" by Peter Eisenman and Michael Graves.
7 Detail plan and section, Gunwyn Office
8 Hadrian's Villa, drawing by Michael Graves



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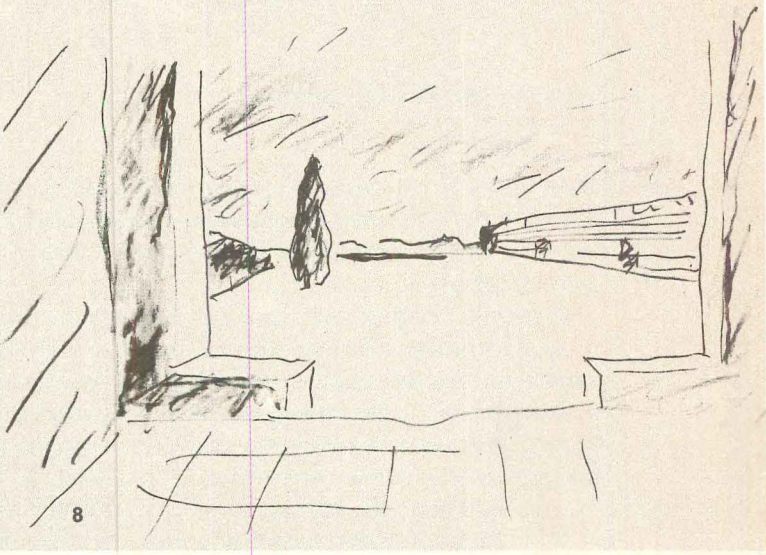


8

ment at all scales, achieving extreme intensity at critical junctures such as entry. Just prior to entering the Gunwyn office, one's attention is arrested by a number of rather large-scale forces, acting simultaneously and with equal strength. The effect is so acute that one hesitates momentarily before proceeding. As at the entries to many baroque churches, there is a tension between two primary axes of vision: one horizontal along an ordered perspective to the altar, the other up and ahead to a celestial realm that is imprecise, of a different scalar order, emotive (fig. 5). Where the baroque achieved this complexity through various devices of illusion (domes, vaults, cornices, ceiling patterns, light and paintings), Graves' work uses quite nonillusory spatial regions, perceived as a complex layering of polychromed lines and planes viewed on the oblique. The effect of indefinite space is intensified by the efforts one must make to organize it all against the tilted ceiling plane.

This three-dimensional complexity is heightened, however, by the opposite effect: the same space is also understood as shallow or even flat. This effect is produced by the activity of foreground framing elements which isolate complex regions of space behind them: the indeterminate array of linear intersections and planes appears to recompose itself within the frame as a shallow space. The sensation is of an insistent foreground frontality, comprising the full depth of the space. Secondary and tertiary façades are also perceived within the depth of the vision, and the space seems to fluctuate between a thin surface or pattern and a three-dimensional structure of indeterminate extension.

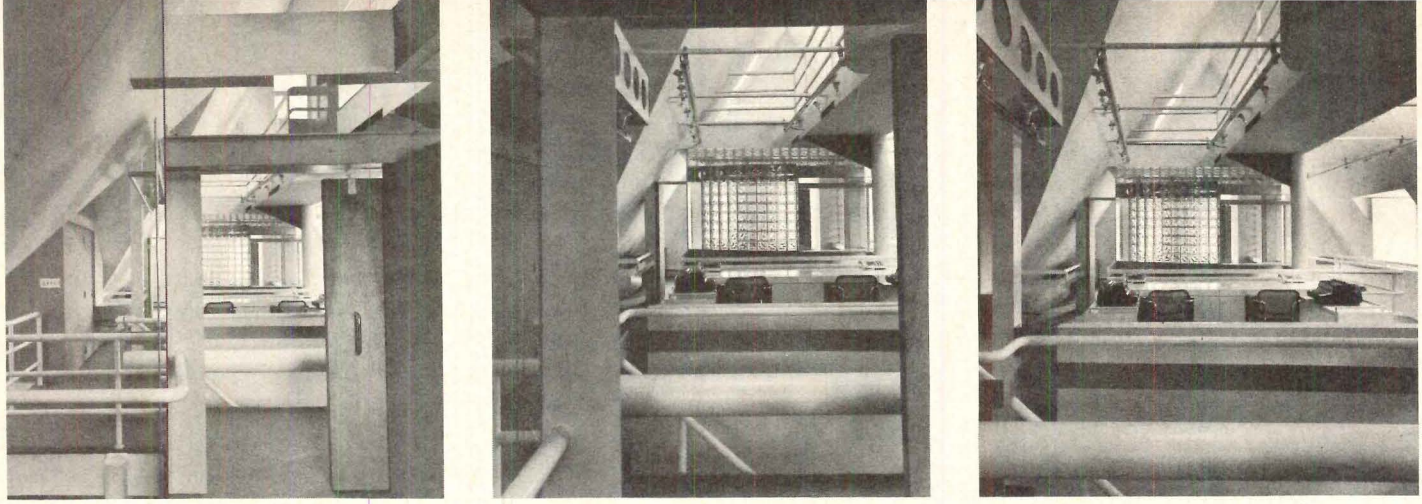
Graves has given the traditional background activity of these gridding elements a foreground, object importance, and they possess a strongly independent role in establishing the spatial argument.

The significance of such an ambiguity is that it calls into question the very foundations of spatial perception. William Empson, in *Seven Types of Ambiguity,* notes that in accepting a new syntax "a plausible grammar is picked up at the same time as the words it orders. . ." He compares the experience to the disconcerting effect met when what one took for a wall turns out to be the sea: "you at first see nothing, are for a short time puzzled as with a blur, and then see differently. . . ."[2]

At Gunwyn, each entry portal is the mechanism by which the background is perceived as shallow. Passing through it resolves the ambiguity; the transition of one image to the next corresponds to a transition in understanding. The sensation of transition is no longer simply a matter of passage between two discrete points, but rearrangement of one's understanding of the whole configuration. Location is not to be understood merely as specification of position, but rather as a matter of experiential determination of spatial circumstances. Transitory conditions are as meaningful as are static ones.

Location in the grid

In the *plan libre* the grid is the means by which homogeneous space becomes a contextual presence. In one sense, the grid merely represents an ordering of the chaotic realm to provide a counterform for that realm (fig. 6). It also provides the basis for making gestures of specificity, of particularity, of sacredness. When such a gesture obeys the incremental order of the grid, it serves to endow that increment



Ambiguities in understanding space as pattern and space as volume are resolved as the spectator moves through the portal framing elements.

Towards a pluralist architecture

with particular meaning. Ideally, the interdependence of grid and gesture is such that there is no distinction between the two: what is gesture, and therefore particular, is also grid, and therefore general.

The one major gesture of enclosure in the Gunwyn office, the curved wall at the south end of the structure, is a local statement of privacy relative to the local characteristics of the continuum (fig. 7). From the concave side there is a primary sensation of enclosure. From the convex side, however, things are not nearly so explicit; its understanding as a totem, as a discrete, rotund column of space, is called in question by its obvious and very strong activity in the grid. Irregular roundness is difficult to appreciate in elevation. Within a rectilinear grid, its convexities and concavities tend to assume primary and secondary readings of orthogonal and oblique, although a sense of its overall surface unity and object identification—as an alien form in the grid—is never lost. In this role, it operates with elements of the grid as a wall in defining the space. This reading exists in very real tension with its object, totem reading.

This sort of three-dimensional figure-field ambiguity, whereby solid (built form) and void (occupied space) compete for dominance, raises some interesting questions concerning spatial understanding (photo above). When a void has acquired an independent activity of its own, the spectator's role as passive observer has been subverted and he must now determine what is subject (context) and what is object. The meaning of the grid at this point then becomes in part the experience of locating oneself in terms of a space whose final reading is a matter of private intention on the part of the spectator.

Observing the curvilinear stucco wall, one's natural associations with thick masonry walls promote a reading of solidity, of mass. However, in the context of a rectilinear grid, this curve may also seem to be imprecise, insubstantial. Graves paints a mural on this surface, capitalizing upon its innate ambivalence. Considering the totemic understanding of this wall, he has made the subject of this mural a recapitulation of the themes addressed in the architecture. The grid upon which the mural is organized, however, coincides with that of the structural grid, extending the space beyond the surface of the wall. The viewer must resolve questions of extension and intermediacy within the depth of the mural. Under those circumstances, the curved wall dematerializes altogether; that which is most solid is simultaneously that which is most ephemeral (fig. 7).

Cubism and subject notation in the grid

The synthetic period of Cubism, appearing historically just prior to the *plan libre,* provided painters a unique method of ordering a visual configuration. The terms of its argument involved edge contour, generally flat colorshapes, an understanding of the oblique in terms of spatial orientation, and a quite shallow, conceptualized space. The nature of the abstraction was such that quite complex psychological themes could be treated on their own terms, without resorting to pictorial techniques. On these terms the visual field is constructed as the conceptual framework of the argument.

If the grid can be seen to establish the three-dimensional visual field in architectural circumstances and the gestures within it be seen to possess the simplicity of contour and degree of abstraction of Cubist notation, then the perceptual realm can be specified. While frontal encounter, ambiguities of subject orientation, and depth are common to both paintings and architecture, architecture does not aspire to be painting; rather, it strives to achieve a similar synthesis of subject matter and experience. Where, in baroque times, ceilings might be made to be seen as celestial vaults, the entire spatial realm is now understood to possess a referential aspect.

The metaphorical landscape

The basic shell of the building, which provided little view to the outside, and the interior requirements for privacy in an open plan produced a thematic tension that can be extended to more fundamental oppositions between exposure/protection and to the relationship of man and nature. The specific referential environment of the office, and therefore the thematic motive of the visual field or grid, became the natural landscape. The implication then that the interior bay window mounted in the curved wall looks outside is fulfilled.

Certain forms recall configurations of the natural landscape. Some soffits are cloudlike and others are seen as sky-plane. A curvilinear bathroom, for example, was painted to suggest a cloud in order to "float" this private activity in the grid. Other soffits were left white—the ones surrounding vertical circulation, for example—to indicate the presence of man

Main space on second level looking south towards the interior bay window and private office (right). Blue soffit is third-floor level.

in the landscape. Bright green suggesting foliage in sunlight can be found in several places. The deep blue floor to the left of entry suggests water and therefore a moat. The skylight can be read as a hole in the clouds through which sunlight streams. Yellow is associated with light and with entry by way of reversing the conventional understanding of entry, as region of shadow.

The significance of this landscape to Graves is not only pictorial—the space is not regarded as an abstract diorama. Rather, he believes that most of our fundamental intuitions about such phenomena as ground plane, support, location in space, horizon, exposure, protection, light and shadow, contour are all derived from fundamental experiences in nature. Thus, a tree and hill interrupting the horizon suggest location and begin to modify the landscape as a primal configuration: the tree as columnar, providing a connection from earth to sky; the hill as mass, indicating extent, providing a metaphor for interpreting the earth itself (fig. 8).

The skylight seen as oculus and the bay window aligned with the center window of the façade introduce a fundamental distinction between two conceptual axes of light. The vertical is sacred, celestial, the horizontal is profane, secular. Or similarly, if one recognizes the flesh-colored steel portal assemblies as referring to certain human arrivals and departures as well as to the "frame" of the human, his skeleton, we begin to understand that the landscape is by virtue of its self-sufficiency somewhat more purely psychological in its reference.

To what end?

As the spectator comes to terms with what he experiences, he can begin to identify certain facts about spatial sensations in relation to more purely imaginative or emotive circumstances. If it was necessary to cause the dominant axis of a Christian church to converge on the cross, this gesture corresponded to aspects of mythology or cultural psychology and in turn referred to more fundamental understandings of order. Contemporary understandings of order, founded in scientific description, are somehow separated from the daily sensation of existence in a way that the intuitions of the ancients were not. Part of the difficulty may derive from the extreme technical sophistication required for scientific understanding; but Gaston Bachelard contends, in *The Poetics of Space,* that the reasons are more fundamental; "conceptual language demands reasons for fixation, forces for centralization. . . ." The individual cannot respond to the resulting abstractions, but instinctively confers qualities upon them: "Unexpected adjectives collect about the focal meaning of a noun. A new environment allows the word to enter not only into one's thoughts, but also into one's daydreams. Language dreams. For it is a poetic fact that a dreamer can write of a curve that it is *warm.* Did Bergson not exceed meaning when *he* attributed grace to curves and, no doubt, *inflexibility* to straight lines?"[3]

Such a sensitivity prevents architecture from becoming a monument to the habitual, the predictable, the operational. The imagination confers unexpected adjectives and qualities upon these facts. When the environment raises, by its very form, questions of adjectival description, one's imagination enters into the understanding. The architecture responds.

One recognizes that when Graves causes the space to alter dramatically its personality depending on the visual aspirations of the spectator, he is attentive to imaginative detail. Did Jean-Luc Godard not exceed the concerns of certain French architects when, for the film *Alphaville,* he selected a contemporary hotel, a computer center and a modern swimming pool in Paris as the buildings to represent the city of Alpha 60?

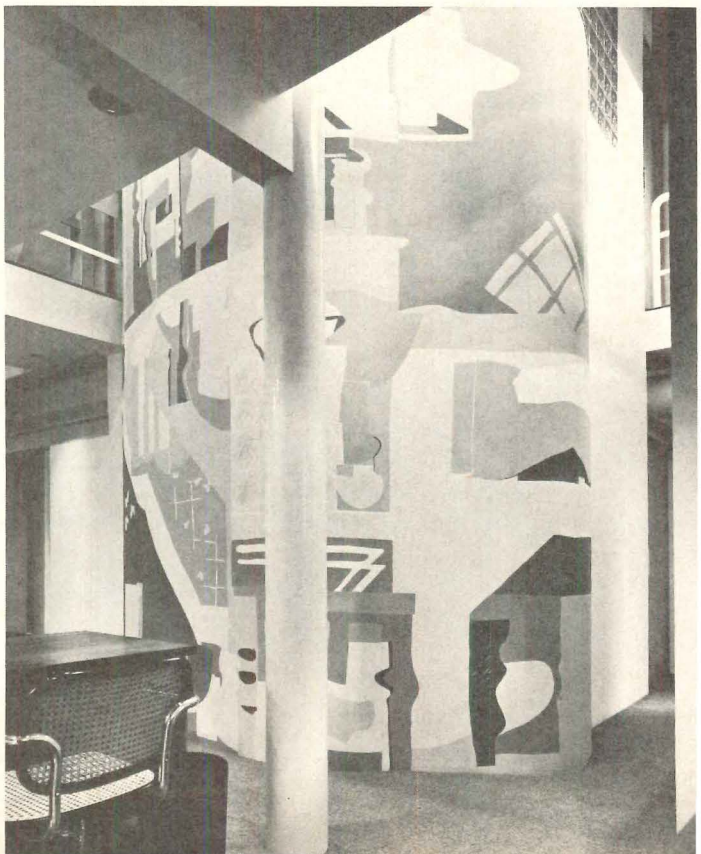
All of Graves' work is similar to the Gunwyn office renovation in that it proceeds to certain general themes, which he finds recurring and fundamental, by way of exploiting the particular and specific aspects of a given problem. In the final analysis, this is the nature of the pluralist synthesis. The homogeneous realm is only in part spatial; it is more properly an experiential continuum derived from the simultaneous perceptions of spatial phenomena in imaginative terms.

In its assumption that architecture can in fact address the psychological components of imaginative experience, the pluralist method addresses the individual, then proceeds to the society. The activity of the grid and the gestures made on its basis give the spectator, whose spatial circumstances now depend in large measure upon his own conscious intentions, an independence from the continuum. The pluralist effort to confront imaginative realities in their full complexity, with its use of metaphoric language, its reintroduction of mythic themes, and its attention to psychological nuance, is an attempt to reintroduce the adjectival description crucial to perceptive experience.

References

1 Mircea Eliade, *The Sacred and the Profane;* Harcourt, Brace and World Inc., New York, 1959.
2 William Empson, *Seven Types of Ambiguity;* New Directions Publishing Corp., New York.
3 Gaston Bachelard, *The Poetics of Space;* Beacon Press, Boston, Mass., 1969.

The mural wall (below) can be read both as working with the grid in enclosing the space and as an object (totem) within a large volume of spac



Data

Project: offices for Gunwyn Ventures and Gund Investment Corporation.
Architect: Michael Graves; Peter Waldman, assistant.
Site: Princeton, N.J.
Structural system: steel frame within existing masonry load-bearing walls.
Mechanical system: exposed central air conditioning, and fin tube radiant heating.
Major materials: polychromed steel, plaster, wood and gypsum board.
Cost: $95,000.
Photography: Norman McGrath, except as noted.

Third-floor level looking south.

Second floor looking north toward two private offices and terrace beyond.

Looking up toward skylight.

Bay window from interior of private office.

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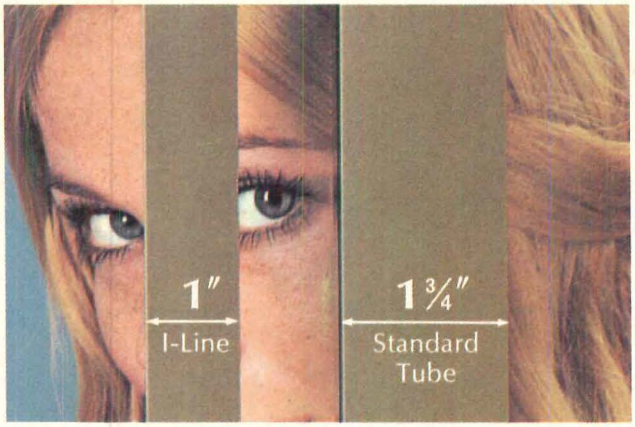

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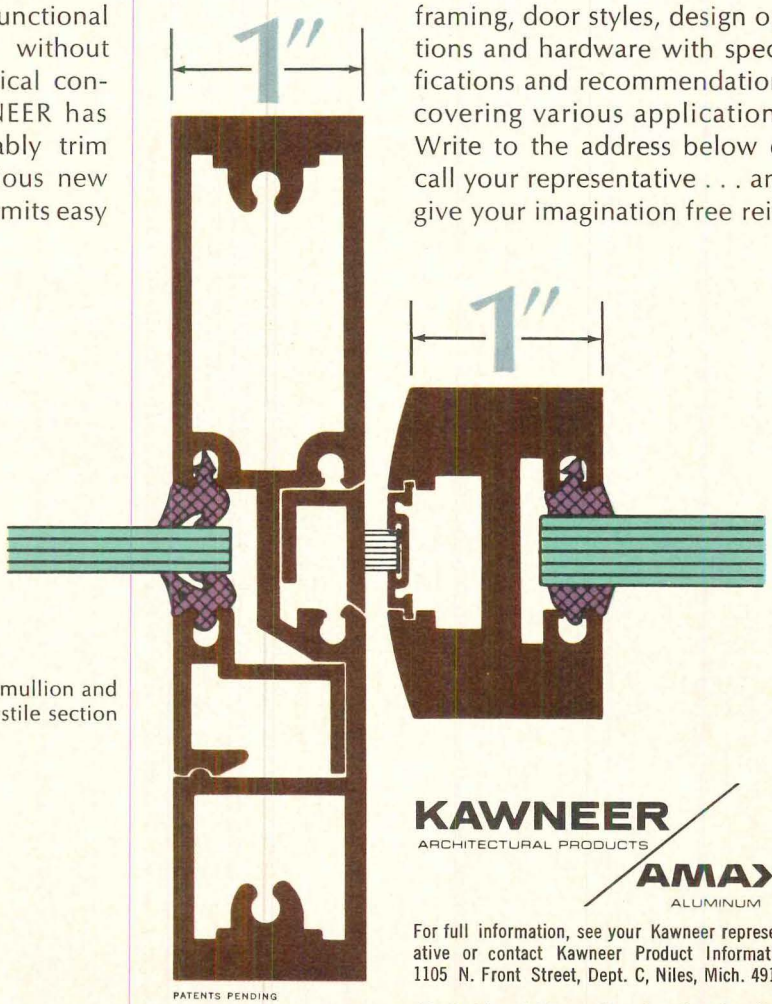

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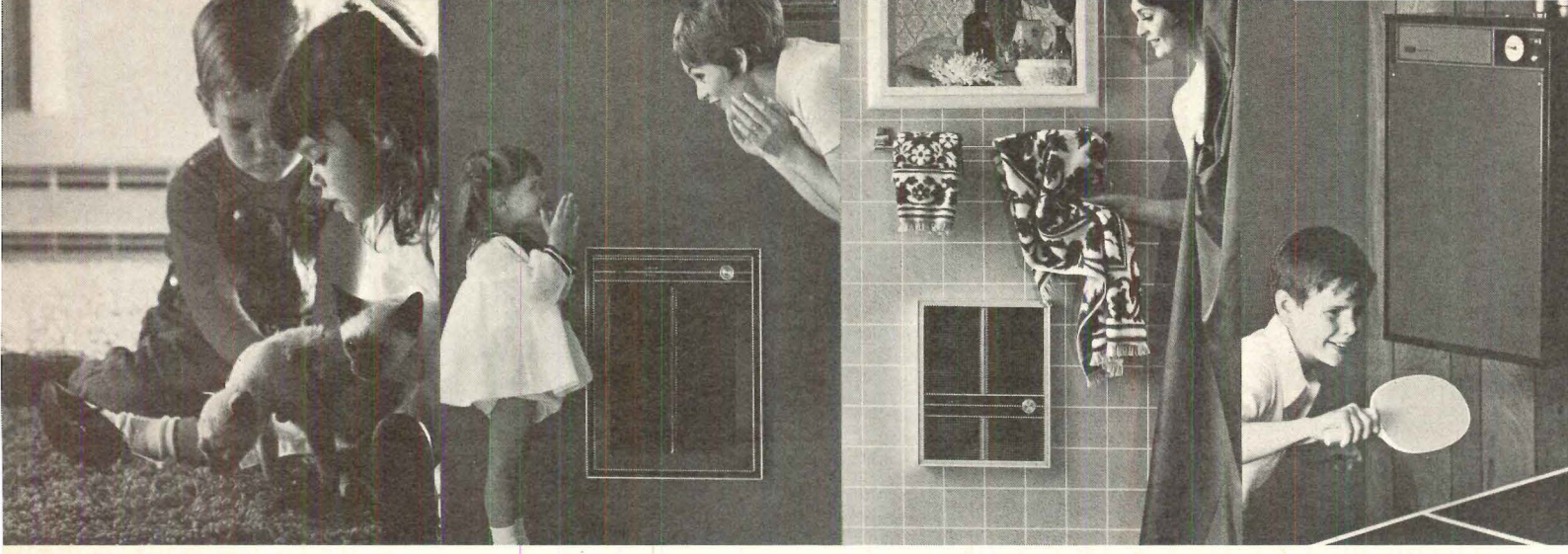

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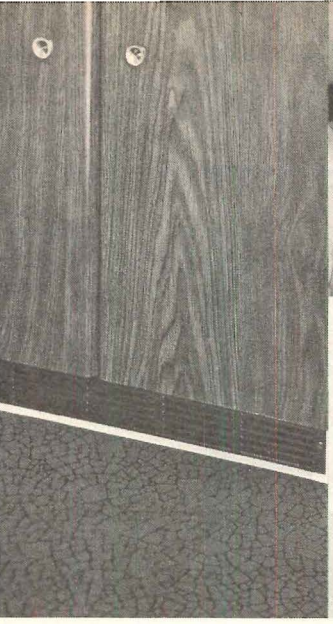

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A computer operates a fountain

Louis T. DeStefano

Using a computer to control the pumps permits creation of various new water patterns and automatic operation of the Lincoln Center fountain

Computers, long used in every area of business and science, are now beginning to be used in the arts, especially to animate visual displays. At New York's Lincoln Center for the Performing Arts, a computer now controls the fountain, a 33-ft pool with three concentric rings of nozzles and a central jet. The height of water from each ring can be varied selectively to produce any number of fountain display sequences. The two inner rings and jet can be varied up to a maximum of 6, 15 and 20 ft respectively, each in four increments, while the outer ring is limited to a single height of 3 ft. For convenience, the rings and jet are designated D, B, A and Alternate A from outer ring to inner jet.

Individual pumps from within the fountain supply water to each ring and jet. The ring heights are controlled by electromechanical valves which regulate the flow of water between the rings and submerged pump valves. The pumps and valves in turn are actuated by a fountain controller. Using a form of relay logic, the controller converts a punched paper tape containing the sequence of desired displays in coded form to a series of corresponding pump and valve commands.

Originally, the development of new display sequences was a tedious four-step process. First, an individual with a thorough understanding of the fountain's capabilities and limitations and with a flair for aesthetics, determined a series of display patterns. This consisted of a verbal description of the status of each ring during each phase of the sequence; for example, D-full, B-off, A-off, Alternate A-off; D-full, B-full, A-off, Alternate A-off, etc. With this description the individual then had to transform the display sequence into its related mechanical functions. These functions include turning pumps on and off, opening and closing valves and initiating sequence pauses. Having completed this step, he would then have to convert each function into its associated paper tape code and punch it by hand in the correct order on to the paper tape.

Although this process was supplemented by a manually operated fountain controller with which the various patterns could be displayed, observed and modified before committing them to tape, the entire procedure was demanding and prone to error.

With the encouragement and cooperation of Arthur Howard and Khristian Nilsen of Lincoln Center, our office was comissioned to transform this antiquated procedure into a computerized one. To simplify representing the status of each ring throughout the display sequence, we developed a display code which consisted of a four-digit number corresponding to the desired heights of the D (outer), B (middle), A (inner) and Alternate A (center) rings. Each digit varied from one to five depending on the height option available for that particular ring. By entering these codes in the desired sequence on specially designed input forms, the entire display was in a convenient format for computer implementation.

Once the coding was properly developed, a study was made of the fountain's limitations. It was important to prevent excessive pump strain caused by rapid turning off and on. Experimentation showed that a minimum of a two-second pause between off/on commands was desirable. In addition, a number of other mechanical constraints required similar pauses when certain ring combinations were displayed.

With these limitations in mind a computer program was developed to convert the display codes into corresponding fountain pump and valve commands. In succession, the program compares each code with the one preceding it to determine what mechanical functions are necessary to effect the desired display. In the event that the desired sequence does not meet the necessary pause criteria, as determined by the fountain's limitations, the program initiates the required delays. A message is also printed telling the program writer that he has been overridden.

The display codes are entered on punched data cards, 16 per card, in the desired order. At present, the program output format provides a columnar tabulation of the sequence numbers with the corresponding pump and valve commands and the paper tape codes to be punched. Although the tapes are still punched by hand, a slight modification to the program will make tape punching possible at the computer's output terminals.

Since adoption of this procedure during the summer of 1972, the number of newly developed display sequences has exceeded all those developed in the previous years for Lincoln Center. The completion of a simplified instruction manual will further enhance display development and lead to a greater interest by less technically oriented individuals.

Author: Louis T. DeStefano is a member of the automation department at Syska & Hennessy, engineers, New York.

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Harold J. Rosen, PE, FCSI

Weather forces and air and water penetration factors that affect a building's façade have been examined with new standards developed for curtain wall design

A symposium on window and wall testing co-sponsored by ASTM, CSI and NBS was held in Nov., with the proceedings to be published by ASTM in a Special Technical Publication next summer. Since the last major symposium conducted by ASTM in 1959, much has been learned about the forces that act on the building façade, such as wind, rain, sunlight and weathering. In addition, ASTM committees have developed and promulgated new test standards for air infiltration, water penetration, structural performance and window hardware performance under loads.

With this information in hand, the designer and specifier can determine the parameters of the forces acting upon a proposed structure. Mock-ups of the design can then be tested to determine whether the structure can withstand the air infiltration and water penetration forces and the structural loads imposed by the calculated wind pressures.

Of considerable importance is an understanding of the nature of wind and how the resultant forces act on building walls. Too often we associate wind loads as acting only in a positive direction as an applied force. Many outdated building codes also reflect this thinking and do not take into account the fact, which has been substantiated by wind tunnel tests and by mounting anemometers on existing structures, that negative pressures on the sides and leeward side of the structure can experience negative loads from 1.5 to 2.5 times the positive pressures exerted by the wind.

In designing a high rise structure, whether it be in the country, at the seashore or in the midst of a congested metropolis, it was recommended by several speakers that scale models of the proposed structure together with surrounding buildings and terrain be tested in a boundary layer wind tunnel. These wind tunnels are designed to simulate the wind flow across the terrain and upon the structure. There has been very close correlation between the data obtained from wind tunnel tests and from data obtained on completed instrumented buildings with respect to the pressures created on the surfaces by the action of wind forces.

Recent information on the forces exerted by winds on buildings has not yet found its way into local building codes. Most codes do not reflect the higher pressures that are exerted at upper levels of the high rise structures nor the pressures due to shape. While wind pressure maps for the U.S. are available from the Weather Bureau and are contained in NAAMM document WL-10-67, interpolation between contours is sometimes difficult. Wind speed records and rainfall data for specific cities can be obtained from the National Weather Records Center, at Asheville, N.C. The National Weather Records Center compiles weather data from all governmental agencies and wind speeds can be obtained at varying heights above ground level. The U.S. Weather Bureau map only shows wind speeds at 30 ft above ground.

One of the concerns voiced by several of the participants in the symposium related to the assurance that window walls designed and tested for the assumed parameters were actually constructed as designed. Since there are case histories of structural damage and water penetration on existing structures, many participants advocated the need for a quality control program that would undertake a more positive inspection of workmanship during the construction phase. There are several areas of building construction where local building codes require controlled inspection of foundations, earth compaction, concrete strengths and structural steel erection. Many participants were of the opinion that a form of quality control during construction would reduce the number of structural failures, glass damage and water infiltration.

The symposium also dwelt on the subject of glass strengths, criteria for lock-strip gaskets, sealant testing and sealant failures, and thermal performance of window walls.

On glass strengths, the discussion was concerned primarily with: the behavior of glass under wind loading conditions and that glass does not perform like other engineering materials such as steel or aluminum; that glass strengths are determined on a statistical basis and that a certain number of lights can experience breakage at full design load; that the term "factor of safety" in glass design is a misnomer and can be misleading; that heat absorbing glass has certain properties which require special attention and detailing to avoid thermal shock and structural damage.

On lock-strip gaskets, another nonengineering material, it is essential that 1) manufacturers develop more data for use when wind loads exceed 50 lbs per sq ft; 2) that testing be done by manufacturers both of gaskets and glass to determine the relation between glass engagement or purchase of the gasket lips on the glass and glass roll-out under pressure.

For those who have an interest in curtain wall design, particularly architects and engineers, it is essential to participate in ASTM, to be active in those committees which develop and promulgate ASTM standards and to contribute to a better understanding and solution of the problems.

Author: Harold J. Rosen is Chief Specifications Writer of Skidmore, Owings & Merrill, New York City.

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The contractor's agreement with the sub

Bernard Tomson and Norman Coplan

This case points out that a contractor cannot withhold payment, or a percentage thereof, from his subcontractors until final approval of a job

As a matter of self-protection, a contractor should seek to write agreements with his subcontractors which are oriented to the contractor's agreement with the owner. In most instances, for example, if the construction contract provides for the owner to retain a particular percentage of the fee until the satisfactory completion of the project, the subcontract will also provide for the same percentage to be retained by the contractor from his subcontractor's fees. It does not necessarily follow, however, under such agreement that the contractor has the right to withhold from his subcontractors the payment of the retained percentage until the contractor has received his retained percentage from the owner. This was pointed out in a recent case (*Cable-Wiedmeyer, Inc.* vs. *Friederich & Sons Co.* 336 N.Y.S.2d 139).

In that action, the plaintiff, (a subcontractor for the installation of kitchen equipment) instituted action against the defendant (a general contractor, for the remodeling of a public school) to recover a claimed balance due for labor and materials furnished on the project. The contract between the general contractor and the subcontractor provided that upon approval of its certificates by the architect and payment by the owner, the contractor would pay to the subcontractor the value of the work done by the subcontractor which had been included in said certificates, less a retained percentage of 10 percent. The contract further provided that the subcontractor would be paid the retained balance within 30 days after the subcontractor's work was finally approved and accepted by the architect and/or when final payment was made to the general contractor by the owner. In defense of the action against it, the general contractor asserted that since the architect had not issued a certificate of completion for the work performed on the project, and the contractor therefore had not received his retained percentage, the subcontractor was not as yet entitled to the monies being withheld by the contractor under the subcontract.

In support of his position, the plaintiff subcontractor established that the architect had, in fact, advised him by letter that although the entire project had not received final approval or acceptance, nor had final payment been made to the general contractor, the lack of such final approval did not involve the subcontractor's kitchen equipment or installation, which work and materials were approved and accepted. The defendant, general contractor, argued that the letter written by the architect to the subcontractor was not legally sufficient to satisfy the terms of the contract, and, further, that by trade custom and usage the general contractor always withholds monies retained from a subcontractor pending final approval and acceptance of the total job.

The court in holding for the subcontractor and requiring payment to the subcontractor, stated:

"There is no reason to resort to trade practices or evidence of custom for an interpretation when the contract is unambiguous. . . . Accepting the defendant's position would seem to lead to anomalous results. It would mean that if a subcontractor's materials or labor were fully and satisfactorily completed, he would nevertheless have to wait for final payment simply because the work or material of another subcontractor or of the general contractor, is unsatisfactory or incomplete. . . . Neither the language of the contract, nor the law requires such a result."

The court further pointed out that the subcontract, by its express terms provides that the subcontractor was to be paid the retained percentage *"after his work is finally approved and accepted by the architect."* The court stated that *"the meaning and intent are quite clear"* as *"the word 'his' refers to the subcontractor, not the general contractor . . . and the meaning may not be changed by an attempt to invoke trade custom."*

The argument of the general contractor that the requirement for final approval as contemplated in the contract was not satisfied by a letter from the architect was also denied by the court.

Although the defendant, general contractor, had pointed out to the court that the monies retained by the owner included the retained percentage payable by the general contractor to the subcontractor, the court apparently did not consider this a basis for denying payment to the subcontractor. Nor did the court deal with the question of whether the owner, since its architect approved the subcontractor's work, should have remitted that portion of the retained percentage as was applicable to said subcontractor's work. The court concerned itself only with the wording of the subcontract stating that if a different result were intended, *"it should have been explicitly spelled out in the contract and the court should not be called upon to engraft that meaning into it."*

Authors: Bernard Tomson is a County Court Judge, Nassau County, N. Y., Hon. AIA. Norman Coplan, Attorney, is Counsel to the New York State Association of Architects Inc., AIA

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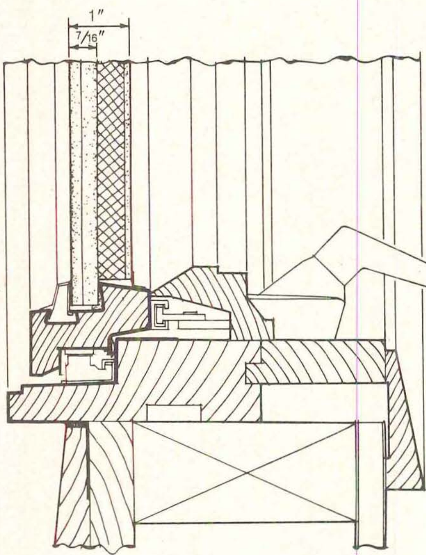
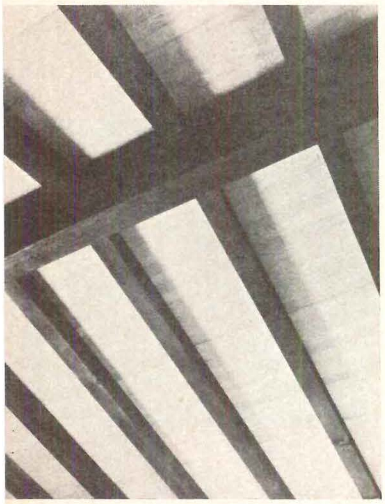
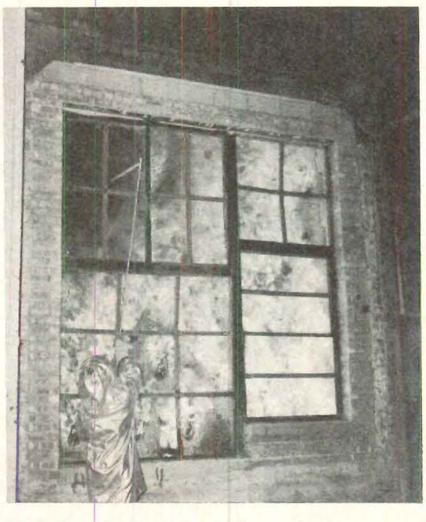
Products and literature

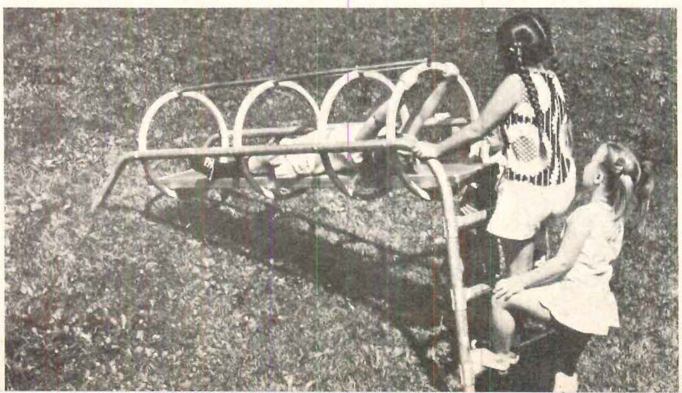


Porcelain panel window


Plywood decking


Steel fire window

Crawl-slide



Porcelain panel window. Insulated porcelain panels can now be set into casement window sashes interchangeable with glass. In one installation, one-third of the 666 operation stock casement windows were glazed with porcelain panels in a yellow-gold color; the remaining windows were fitted with welded insulating glass. The technique allows tenants to control interior spaces by placing windows according to need. The window sash is easily removed from the inside to change from glazed sash to opaque panel by releasing a clip which disconnects the stainless steel sliding hinges. Reportedly no adjustments are necessary for proper fit, operating and locking. Beveled wood nailers set in poured concrete walls are said to set quickly and easily, simplifying window installation. The rigid vinyl cladding on the sash and frames of the window offers low maintenance and weather resistance; the vinyl flange around the frame positions the window and serves as flashing. Andersen Corp.; panels by Mirawall.
Circle 101 on reader service card

Plywood decking. Pope Deck, a Ruff Cut plywood, is suggested for applications for exposed ceiling/floor and ceiling/roof combinations. The back side of the panels can be used for flooring or roofing, leaving a front facing with the look of rough-sawn tongue-and-groove lumber. Faces are available in fir or western red cedar; panels come in ⅝ and ¾ in. thicknesses with shiplapped edges and 1⅛ in. panel in fir face. Pope & Talbot, Inc.
Circle 102 on reader service card

Steel fire window. UL approved Class E automatic-closing steel fire window is designed to offer greater safety against fire as well as more revenue-producing space. Windows come with ¼ in. polished wire glass or ¼ in. obscure wire glass and are factory finished in a variety of architectural colors. The patented automatic closer for the horizontal slider is recessed within the window frame and will operate at a temperature of 160 F. Rusco Industries, Inc.
Circle 103 on reader service card

Foam extrusions. Rigid PVC and styrene foam extrusions provide more bulk than that of standard plastic profile extrusions, with less density and weight. Viewed as a replacement for wood, especially where additional bulk is required and where wood is wasted as a result of routing, machining, finishing or fabricating. The foam extrusions are similar to pine wood in their general feel, workability, resistance to denting and scratching, and other properties. Rigid PVC can be sawed, nailed and run through standard woodworking machinery. Crane Plastics.
Circle 104 on reader service card

Crawl-slide. Indoor-outdoor slide has an open-ring tunnel, is available in both permanent and portable models. When climbing to the top of the slide, the child must grasp the overhead ring to angle himself for descent, encouraging gross motor and coordinative activities. Ring permits children to crawl hand-over-hand up the slide for further play exercise. Solid cast aluminum rings in bright yellow are attached to a six-ft aluminum sliding board; steps and frame are of weather- and wear-resistant galvanized steel. PlayLearn Products.
Circle 105 on reader service card
[continued on page 106]

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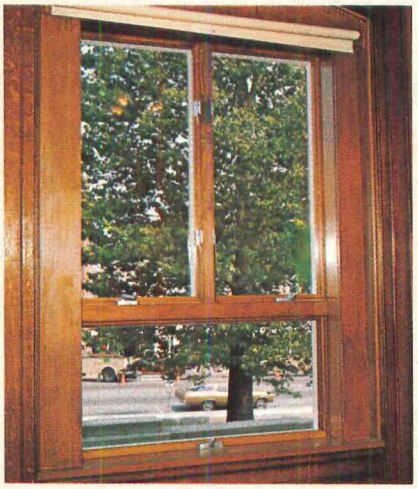

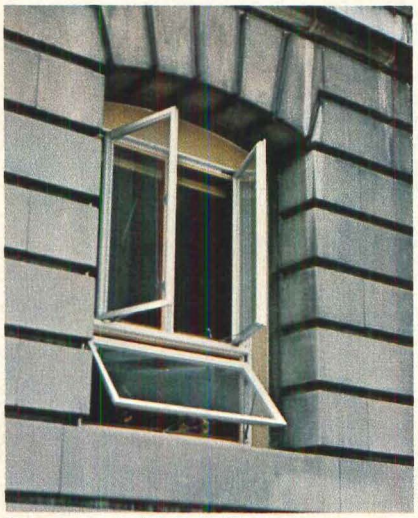

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Consultant: Harold E. Remsburg, P.E., Hardin County Engineer

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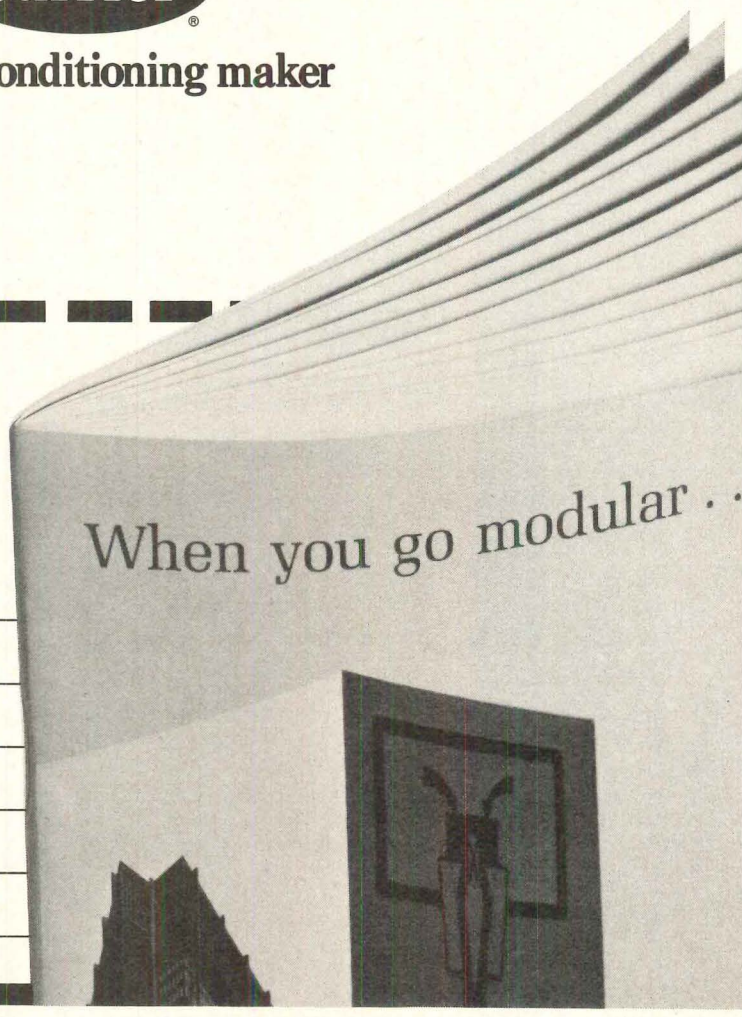

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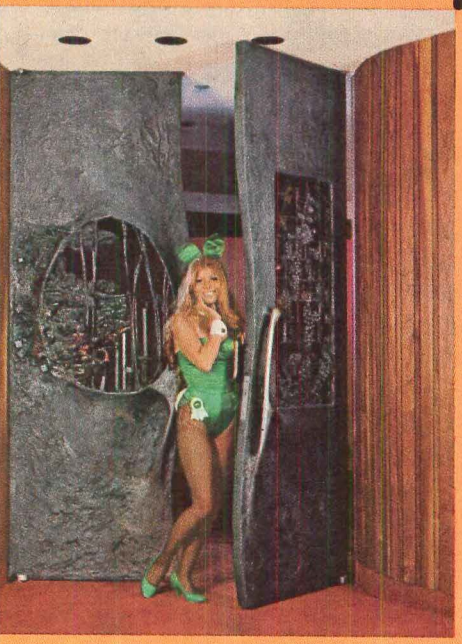

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Products continued from page 100

Night tennis. Lighting for night tennis uses a low-mount system that provides a blanket of light delivering over 55 ft-c to the playing space. Installed 15 ft high—existing fence posts can be used—the glareless lighting ranges from ground to 45 ft high. 15 kw are consumed compared to other systems which generally use up to 25 kw or more to deliver half the foot-candles. Devoe Tennis Systems.
Circle 106 on reader service card

Vicracoustic. Vicratex wall covering mounted on a high density glass fiber sheet and bonded to a thick glass fiber core creates Vicracoustic, a sound-absorbant decorative panel. Used on walls and as free-standing screen, it offers a solution to noise and decorating problems. L.E. Carpenter & Co.
Circle 107 on reader service card

Onyx-like. A flowing, nondirectional onyx-like patterned vinyl is suggested for bathroom vanity application and for kitchen counter top and cabinet areas. Available in blue, green, brown and natural. Ralph Wilson Plastics Co.
Circle 108 on reader service card

Rebar splicing system. Threadbar is a technique for joining heavy reinforcing bars; it consists of a screw-threaded rebar with coupling sleeve and jam-nuts in #11, 14 and 18 sizes. The mechanical butt splice is said to offer reliability, speed and safety advantages; the thread deformations of the bar are practically indestructable and do not require special handling. Mencon Industries, Inc.
Circle 109 on reader service card

Fire sprinkler. Automatic fire sprinkler reportedly goes into action almost twice as fast as any similar device as a result of two heat collector fins assembled to the strut of the sprinkler head. In standard UL air oven tests, for the 135 F temperature rating, the sprinkler showed a 51.9 percent reduction in operating time. Star Sprinkler Corp.
Circle 110 on reader service card

BlocBond. The need for mortar in concrete block construction is eliminated with this Fiberglas reinforced bonding material. Packaged in 80-lb bags, BlocBond is mixed with water in ordinary mortar mixer, then troweled on the interior and exterior surfaces of dry-stacked concrete block walls. Dries to a hard coating that structurally binds the blocks together vertically and laterally. Its makers claim it can reduce construction time as much as 50 percent, offers greater flexural strength than mortared walls, and built-in resistance to water, fire and sound penetration. Recommended for load and nonload bearing walls, both above and below grade. Has code approvals for light construction. Owens-Corning Fiberglas Corp.
Circle 111 on reader service card

Woodlike vinyl. One from a collection of handmade wall-coverings, this is heavy vinyl with a random, deeply grooved strié giving a masonry look. The texture catches light, creating interesting shadows. A planklike wallcovering design is also featured. Available in five colors. Louis W. Bowen, Inc.
Circle 112 on reader service card

Cool table. Through-the-wall air conditioning is built into this table, eliminating the exposed casing. The control panel and air discharge grille are located in the tabletop, leaving adequate room for accessories. Unit provides both heating and cooling without external refrigeration lines, special wiring or ductwork. Reportedly provides quick room cool down, maximum air distribution and is quiet during operation. Can be fitted into an opening in curtain wall construction. Friedrich Refrigerators, Inc.
Circle 113 on reader service card

Literature

Sculptured lanterns. Catalog offers descriptions of a wide variety of lamps. Divided into historic and geographic collections which include Old World, Americana and Contemporary, each collection has 4 to 10 design groups. Fixtures are of cast metal with nonferrous hardware fasteners; hand-rubbed finishes offer the patina of weathered iron, bronze and copper. Hadco Products, Inc.
Circle 114 on reader service card

Slurry wall construction. The slurry wall or slurry trench method of cast in place concrete wall construction is described in this 20-page booklet. Illustrated are several unique foundation requirements where this wall is suitable: congested downtown areas where access is limited; where noise control restrictions are severe; where subsurface obstacles rule out conventional methods. Bencor International.
Circle 115 on reader service card

Security and directions. Turnstiles, railings, posts, gates and accessories are illustrated in this 12-page catalog. Installation instructions for concrete or terrazzo floors, photographs of typical installations and a variety of patented designs are shown. Suggested applications include supermarkets, theaters, libraries as well as other areas requiring traffic and security equipment. Alvarado Manufacturing Co.
Circle 116 on reader service card

Compact furnace. A combination electric-gas central heating-cooling system is described in a short booklet. A compact gas Heat Transfer Module combined with electric cooling, the unit is said to make more efficient use of fuel. The burner, about the size of a water glass, is mounted in the core of a matrix of thousands of small steel balls fused together with oxygen-free copper. Steel tubing is embedded in the matrix, through which a liquid is pumped to carry away the heat. The heated liquid then circulates through a blower coil, forcing heated air into the ductwork. Amana Refrigeration, Inc.
Circle 117 on reader service card

Woodgrain hardboard panels. Twenty-one woodgrain patterns are described in a series of three booklets which include Cabinglow I paneling, offering an economical way to gain the look of hardwood walls; Carriagewood II, forest reproductions; and Treasurewood III, woodgrain panels with a thick protective coating and a hand-rubbed sheen. All paneling has a plastic finish. United States Gypsum Co.
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Fire and building codes

Fire Protection Through Modern Building Codes, *Fourth Edition. New York: American Iron and Steel Institute, 1971. 347 pp. Paperback. $5.*

Reviewed by Everett W. Fowler, former Vice President, Engineering and Safety, of the American Insurance Association, successor to the National Board of Fire Underwriters.

This is a very useful book for architects, structural engineers and other building professionals who are interested in the reasoning behind the fire protection regulations contained in building codes.

In order to understand building code requirements, it is essential to understand the fire protection regulations because they make up a large percentage of the text of any building code and they constitute the primary reason for having a building code.

It must be recognized that this book is the product of the steel industry and therefore deals more particularly with the use of steel in buildings. However, the authors have made an effort to be fair to other products and, in any event, the book is highly useful because steel is used in almost all types of buildings.

The book is made up of two distinct parts. Part I, which discusses the basic facts of building code requirements, will most interest architects, structural engineers and other building professionals. Part II, Building Classification and Fire Protection Regulations, is in form to be used in a building code, and is primarily useful to those concerned with writing building codes.

Part I gives good background material on fire losses in buildings, the way existing building construction and the codes regulating construction are evaluated through insurance gradings of cities and basic concepts in good modern building regulation. The information on each of these matters is brief and to the point. Fire tests are related to building construction; also discussed are hazards presented by various types of occupancies, classification of occupancies, controlling the spread of fire in buildings and from building to building. Details on properties of structural steel and methods for protecting steel against fire damage are excellent, and there is a good discussion of proper exit facilities.

The new edition presents more and better organized information, often in fewer words, than appeared in the previous edition of 1961. The use of the new book for reference purposes is helped by chapter numbers at the head of each page and by well prepared summary paragraphs at the ends of chapters.

A basic concept used throughout the book is that buildings and their occupancies can be classified readily for code purposes by considering that average weights of combustible contents and any combustible construction material present, express numerically the relative degree of combustibility. This idea has been around for a long time and its use as a basic factor in the development of building regulations makes for great simplicity. However, this overlooks an important fact that is actually stated in the book (p. 21): "the extent to which a fire hazard exists within any given portion of a building will depend on the quantity *and kind* of combustible material located within that space," (emphasis added).

Weight does not provide a measure of the *kind* of material. For example, steel as a construction material is definitely noncombustible, but in the form of steel wool with a little oil on it, it is readily combustible. Similarly, thin pieces of wood may highly combustible, but a large size timl of the same species of wood does not b the same way. Also, flammable liquids present a combustibility hazard comple different from wood boards. Many other examples could be cited to show that weight alone is not an adequate measu of relative combustibility.

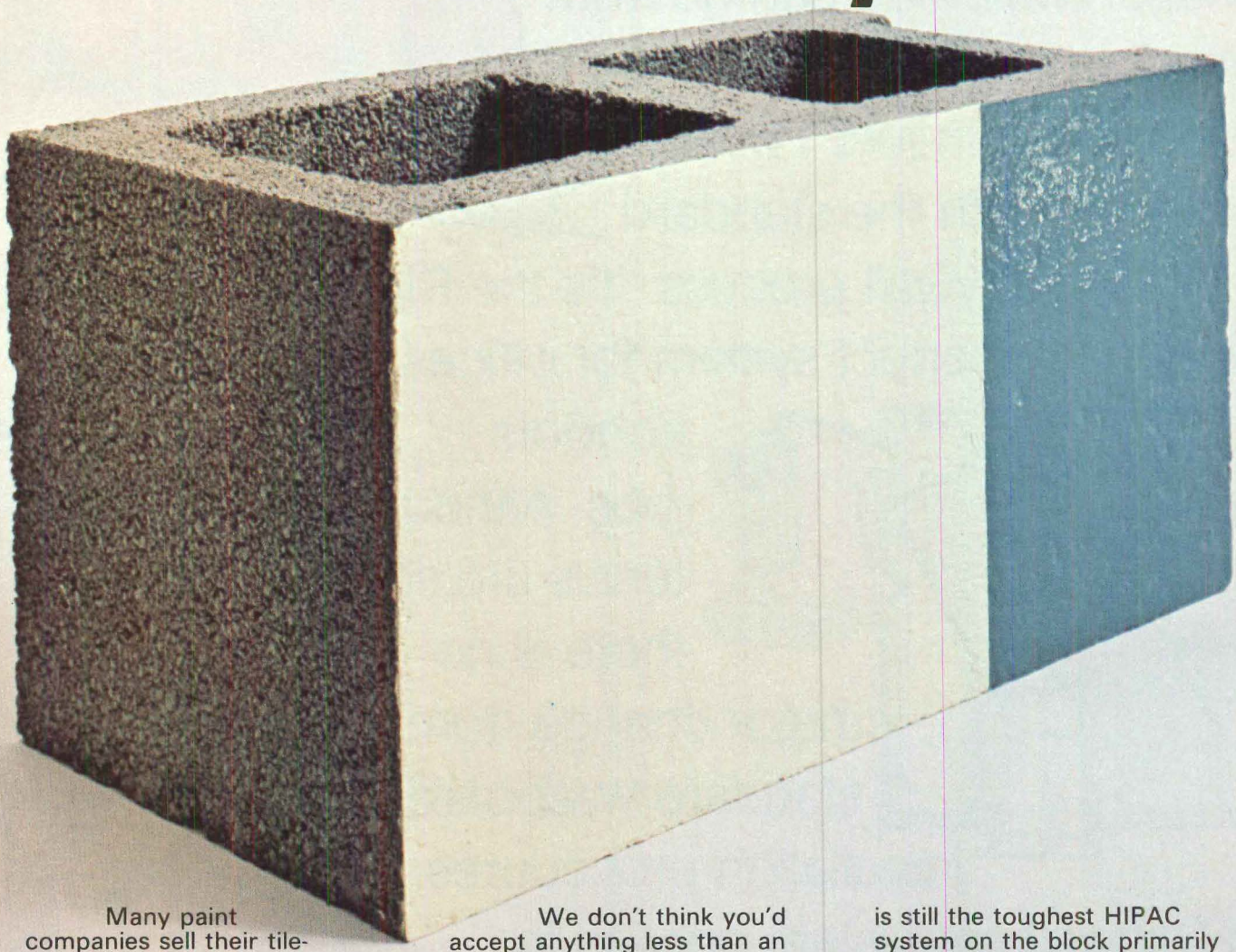
A related matter is the amount of fire sistance needed in the floors of building required for safety considerations to be fire resistive construction. The book ad cates a maximum of 2-hour floors for a occupancy except industrial or storage and without limit as to height or area, e cept for size limitations on buildings ho ing certain of the more hazardous occu pancies. This constitutes a questionabl practice, first, because fire resistance r ings contain no factor of safety; second because workmanship and materials as applied in the field often do not meet th standards used in constructing the test sample; and third, because fire experie casts doubt on the wisdom of reducing present widely used building code requ ment for 3-hour floors in fire resistive construction.

A recent example is the One New Yo Plaza building which supposedly met t New York City building code requireme for 3-hour floors. An office occupancy in this building on August 5, 1970, seve damaged the floor over the fire. How m more serious would the damage and fi fighting problem have been if the floors had met only a 2-hour requirement?

The references to fire walls as found various places in the book overlook on important element of an effective fire w

[continued on page 114]

What other paint companies don't tell you about their low cost tile-like systems.



Many paint companies sell their tile-like systems cheaper than we do.

That sounds like a good deal for you. But is it?

Topcoats, no matter what they're made of, are largely based on performance specifications. Things like gloss, impact, abrasion, chemical and stain resistance.

But it does matter what the base coat's made of. We still use an epoxy filler. And we think that's where the competition's price difference is.

We don't think you'd accept anything less than an epoxy filler that contributes to the total tile-like system. A filler that resists 250 pounds of hydrostatic pressure. A filler that locks to concrete and becomes an integral part of a substrate and the topcoat instead of just another surface. A filler that seals as well as fills, and provides a pinhole-free surface. And gives the topcoat a nice, even sheen.

Glid-Tile® polyester-epoxy is still the toughest HIPAC system on the block primarily because of its epoxy-type block filler. It's the two-coat system that meets Federal Specification No. TT-C-001226.

Glidden doesn't believe in cutting corners. And we don't think you do, either.

Glidden

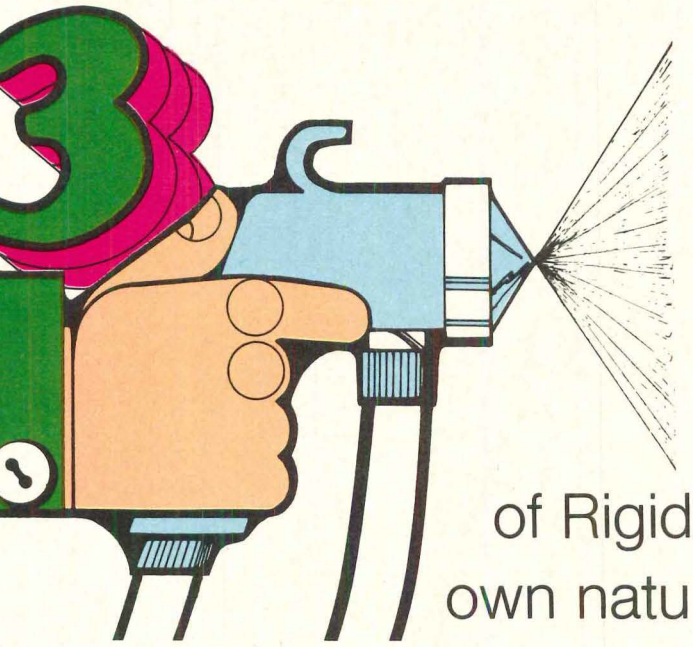
SCM GLIDDEN COATINGS & RESINS
SCM CORPORATION, CLEVELAND, OHIO 44115

Circle No. 342, on Reader Service Card

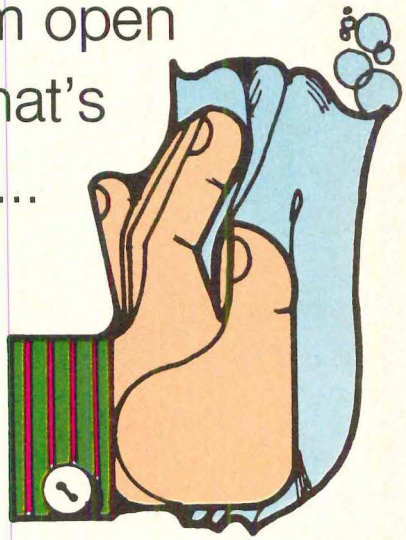
Now there's a faster and better way in wall/ceiling construction: the Rigidwall Gypsum System.

Celotex research has created a new wall/ceiling system that is 3 times faster than conventional drywall. You can go from open framing to finished monolithic surface in just 1½ days, compared with the standard week-long drywall process. It's the Rigidwall* Gypsum System, the perfect system for offices...apartments... schools . . . and other large jobs. Although Rigidwall materials are slightly different, there is no major change from standard wallboard installation procedures.

1. Rigidwall panels are applied to framing by conventional methods. 2. Joints are covered with Rigidwall reinforcing mesh embedded in one coat of Rigidwall joint compound. The glass fiber mesh enables the



compound to work through and form a tighter bond with the wallboard. Drying time for the fast-setting compound is approximately one hour. 3. Spray on *one* coat of Rigidwall coating—tinted or in its own natural white that requires no ecorating. Surface dries in approximately 1½ hours... nd that's it. In 1½ days you've gone from open aming to a completely finished interior that's eady for trim moldings, cabinets, fixtures... nd early occupancy. Rigidwall is a low- iaintenance material. It's tough and dur- ble. The washable finish will retain its ye-appeal, even after countless scrub- ings. For more information on the Rigidwall Gypsum ystem, see your Celotex representative or write to he Celotex Corporation, P. O. Box 22602, ampa, Florida 33622.



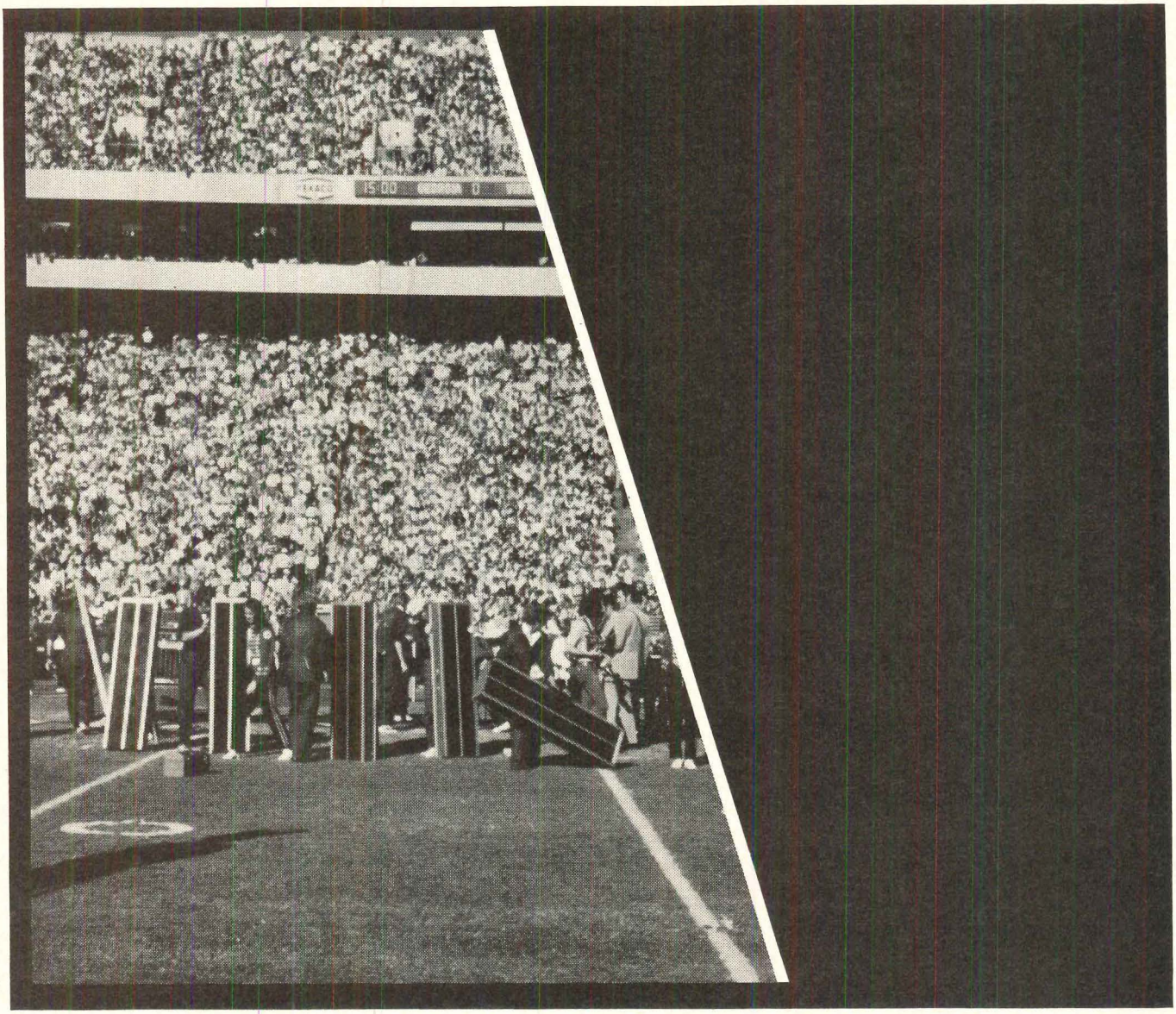
Celotex*
BUILDING PRODUCTS

Celotex understands the man who builds.

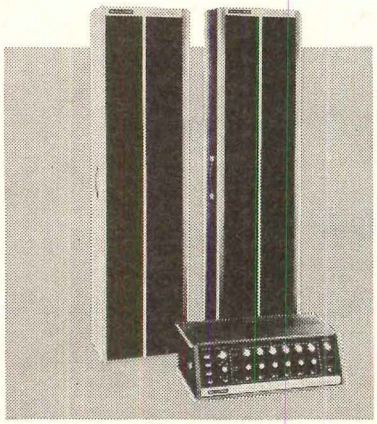
A subsidiary of the Jim Walter Corporation

idwall System is presently released for shipment in the following states only: Arkansas, Connecticut, Delaware, Kansas, iisiana, Maryland, Massachusetts, Missouri, New Jersey, New York, Oklahoma, Pennsylvania, Rhode Island, nessee (County of Shelby only), Texas, Virginia and West Virginia.

*Trademark



The soundman cometh.



Despite its formidable penetrating power and clear sound, the Vocal Master is *totally portable.* And for the scores of churches, schools, corporations, hotels and night clubs that have already made Vocal Master their choice to meet their P.A. needs, that portability has given them the flexibility of several sound systems. The Vocal Master can easily be moved to where it's needed... from classroom to lunchroom, from pulpit to parking lot, from auditorium to gymnasium to stadium. It can be transported in a station wagon, and can be stored overnight under lock and key. It's versatile, reliable, affordable and easy to operate, even by non-experts. It's the go-everywhere, do-everything sound system for the 70's!

Shure Brothers Inc.
222 Hartrey Ave., Evanston, Ill. 60204
In Canada: A. C. Simmonds & Sons Ltd., Willowdale, Ont.

SHURE

Nevamar introduces Natural Cork ...real cork in a laminate.

Another breakthrough from Nevamar. Because what you may have thought was a cork look-alike is actually *real* cork. Honest, right-from-the-tree. Nevamar has found the secret of putting a thin veneer of cork under its tough melamine surface. You see all the colortones, all the natural pattern . . . feel the soft texture. But remember, it's still a Nevamar high-pressure plastic laminate. It meets or exceeds *all* N.E.M.A. standards. Call on the toll-free Nevamar HOT LINE for a sample: 800-638-4380. Or write: Nevamar Division, Exxon Chemical Company U.S.A., Odenton, Maryland 21113. Exclusive new Natural Cork proves you're right to think of Nevamar as the laminate leader . . . as the uncommon plastic laminate.

EXXON CHEMICALS

EXXON CHEMICAL COMPANY U.S.A.
Odenton, Maryland 21113

Books continued from page 108

namely, its stability under fire conditions. A wall that divides a large area building permitting the portion on each side of the wall to be treated as if it were a separate building (called a fire wall) must have structural stability under fire conditions to allow collapse of the construction on either side without collapse of the wall.

A marked departure from generally accepted practice is the combining of ordinary construction (masonry walls with wood floors) and wood frame construction into one construction class called "unprotected combustible construction." Such a change seems to be unjustified by present experience, and without substantial backing from other agencies in this country.

A number of other facts of lesser importance also could be criticized. However, despite its faults, the book contains much useful information and has much to commend it.

The Digester System of Waste Treatment and Disposal. *Associated Naval Architects, 1861 S.E. 17th St., Fort Lauderdale, Fla 33316. 41 pp, $2.*

Reviewed by William J. McGuinness. reviewer is a partner in the firm of McGuinness & Duncan, Engineers, anc is adjunct professor on the Faculty of A chitecture at the Old Westbury Campus New York Tech.

Among the many startling features of Buckminster Fuller's 1920 Dymaxion House was its scheme to process its ov sewage and garbage to relieve the burc on external treatment facilities and to re claim their fuel value to satisfy the powe requirements of the house. Although th fuel value so reclaimed would now be n imal for today's heavy power demands, truly amazing that, after four decades, t principle of immediate and proximate s age treatment may solve two of our mo difficult problems: pollution of our natu waterways and the skyrocketing of the mand for pure water.

Sewage has never been a very popul discussion topic. Even less chic is the topic of body wastes and toilet tissue. A delicate avoidance of these subjects ha permitted the growth of a great monste that could do us in. Specifically, in the nonindustrial but residential regions of large cities, *combined* sewers receive t very toxic body wastes and join them w the more innocuous effluent of bathing and laundering. Municipal treatment p can hardly cope with this witch's brew. times of heavy rainfall, the further increased burden on these combined (st *and* sanitary) sewers is so great due to storm runoff that much of this polluted ture is diverted directly out to waterwa bypassing the treatment process entire In 1966 an assembled report by public works officials throughout the nation v published in "Engineering News Reco It established the fact that in 12 of our heavily populated states the cost of co recting this situation by separating sa and storm sewers would exceed one b dollars in each state. The digging wou fantastic.

Associated Naval Architects may ha better idea. These consultants have re searched and approved certain manu tured products and relatively new processes that comprise:

1 A "digester" toilet that employs a ing culture and internal aeration in an odorless process requiring very little v supply and *no* discharge to a sewer.

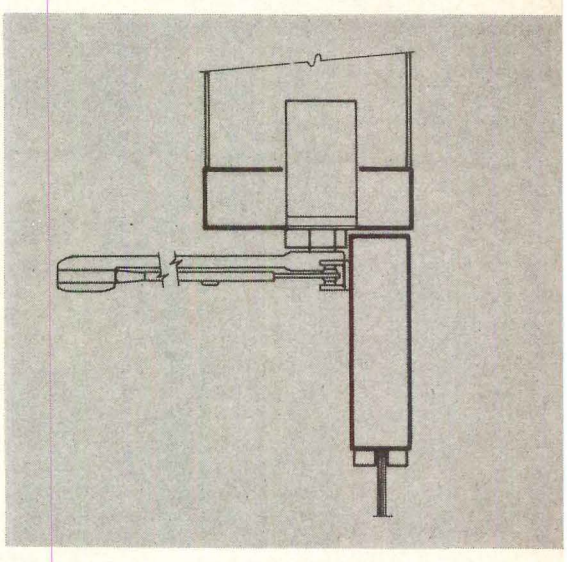
2 The recycling of other nontoilet fl wastes for water re-use including its u

[continued on page 120]

Aloha High School, Portland, Oregon
Architects: Hewlett, Jamison & Atkinson, Portland

DOORWAY NOTES . . .

GLASS-PANELLED CUSTOM DOORS REQUIRE FULL CONTROL OF OPENING AND CLOSING SWINGS. CONCEALED CLOSERS ANSWER THE NEED FOR OUT-OF-SIGHT CONTROL AGAINST ABUSIVE TRAFFIC AND UNUSUAL DRAFT CONDITIONS. LCN ALLOWS THE WIDEST CHOICE OF CLOSERS. CATALOG ON REQUEST. SWEET'S, SEC. 8.



LCN 5010 Series closers provide the necessary concealed door control. General speed, latch speed and spring power all adjustable. Hydraulic back check standard.

LCN

LCN CLOSERS, Princeton, Illinois 61356

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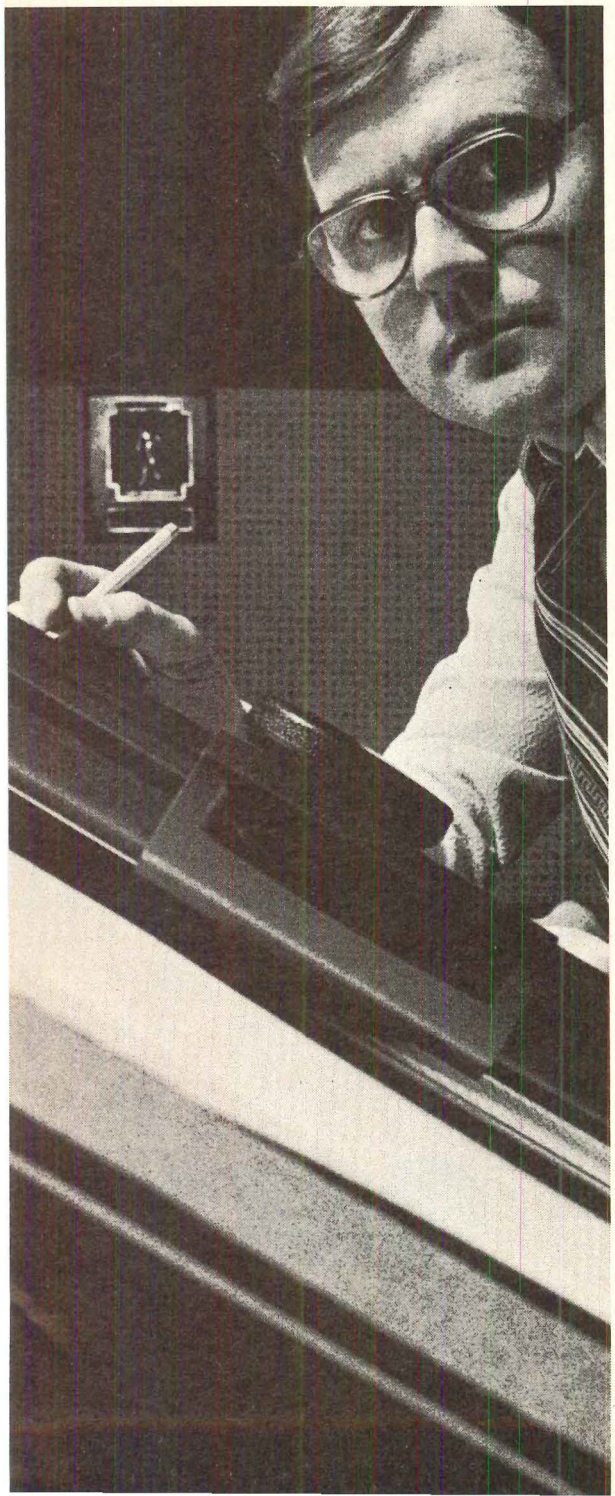
What you want is what you get.



Whether it's original drafting film or a reproduction you want to change, Du Pont's complete line of CRONAFLEX® drafting and reproduction films is designed to meet your drafting needs.

You want to use the same drafting technique whether you're working on original or reproduction film. With Du Pont CRONAFLEX films, you can. Lines show up sharp and clear against the clean, pleasant whiteness of the carefully engineered surface. And you can make multiple erasures without damaging that surface.

The tough polyester base of all Du Pont films resists damage from handling and aging in storage, so the films are easy to handle and work on even if drawings are old.

Because the Du Pont line is so complete, your reproduction people can provide clean, sharp reproductions, same size, reduced or enlarged, on the same fine drafting surface as the original. And your reproductions come back fast because all Du Pont films can be automatically processed. You choose either conventional or moist-erasable wash-off reproductions.

For free samples and more information on what you get from Du Pont reproduction and drafting films, write: Du Pont Company, Photo Products, N-23296, Wilmington, Delaware 19898.

DU PONT REG. U.S. PAT. OFF CRONAFLEX® Engineering Reproduction Films

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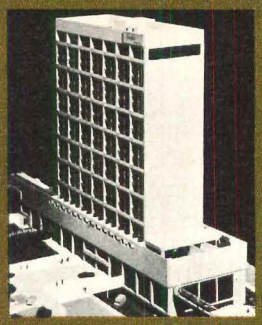
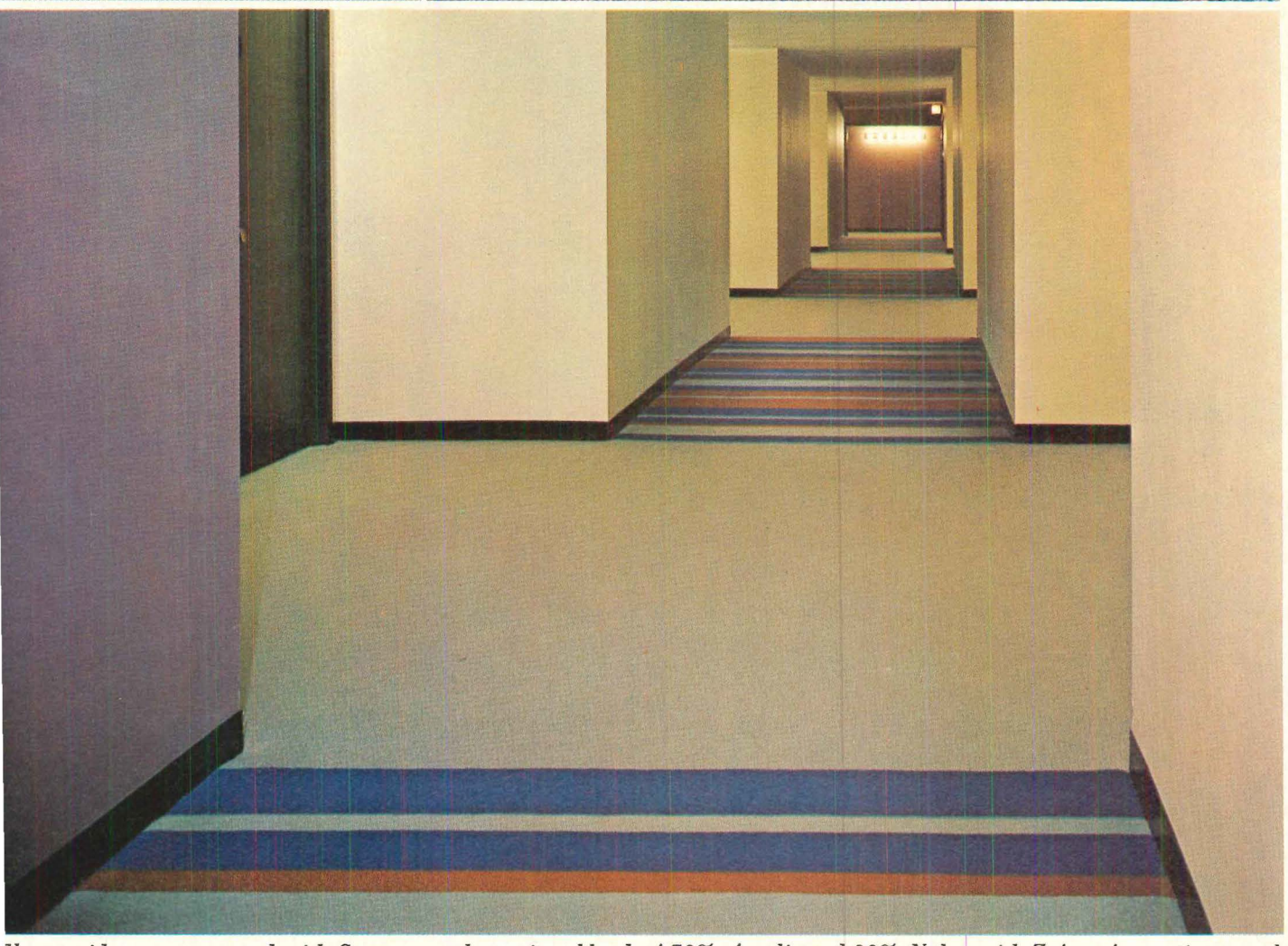


One of the attractive bedrooms carpeted in Patcraft's 100% continuous filament nylon with tight heat set to assure texture retention and long life.



The corridors are carpeted with Stereo . . . the optima blend of 70% Acrylic and 30% Nylon with Zefstat for static control.

Stouffer's Chooses Patcraft Carpet!

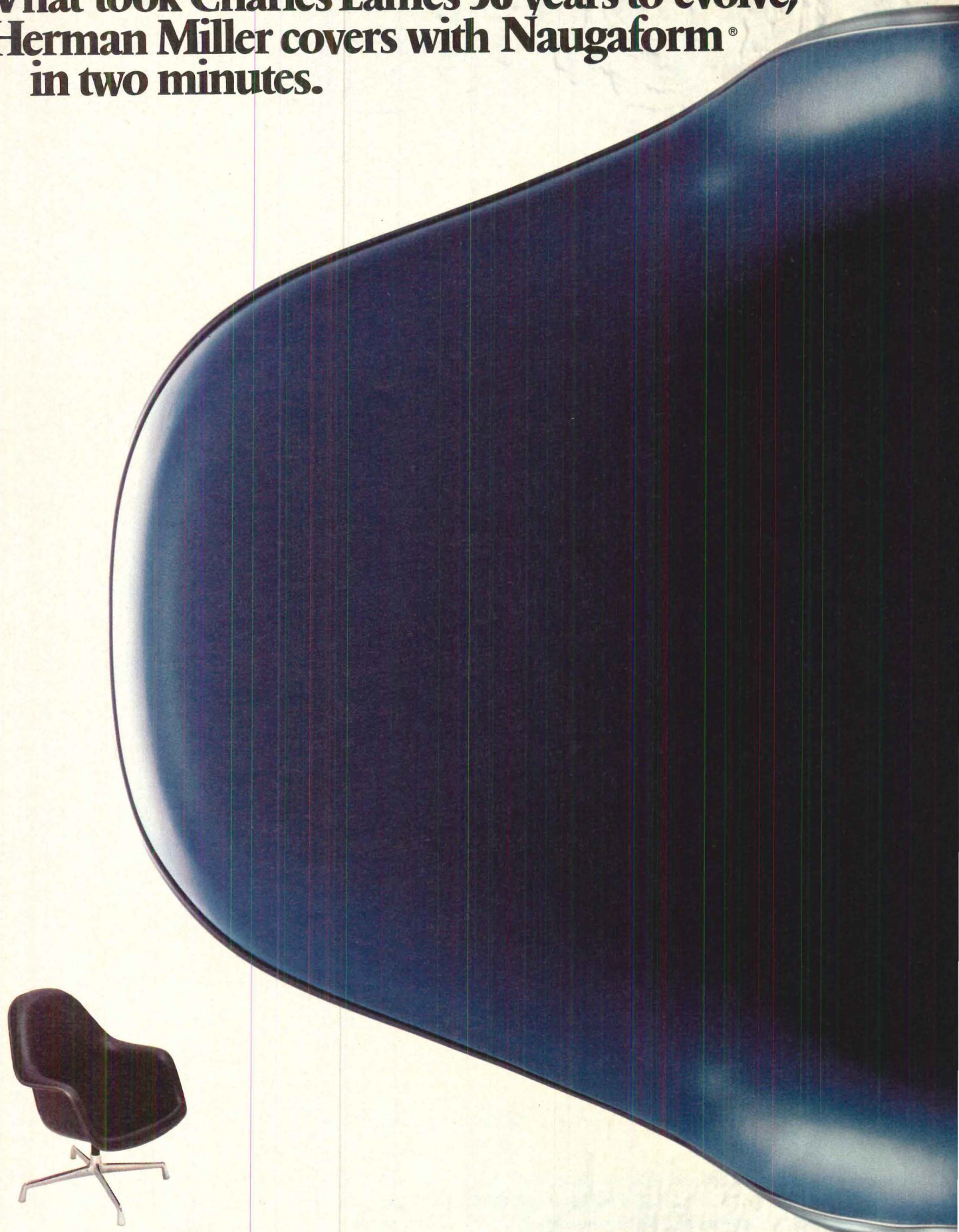
The guest rooms . . . luxury suites and accommodating corridors in the elegant STOUFFER'S ATLANTA INN are carpeted exclusively in PATCRAFT carpeting. "STEREO" was the carpet selected for the corridors since the basic requirement was a carpet tough enough to stand up under heavy traffic yet attractive enough to reflect the continuing beauty of this new, luxury Inn.

"STEREO" is as modern as Stouffer's Atlanta Inn!

Write for samples and complete specifications. PATCRAFT MILLS, INC., Dalton, Ga.

Patcraft MILLS INC.

What took Charles Eames 30 years to evolve, Herman Miller covers with Naugaform® in two minutes.



Naugaform is a vacuum-formable fabric from Uniroyal. Herman Miller shapes it into a covering, for the chair that represents 30 years of design evolution by Charles Eames. And does it in 120 seconds.

Naugaform will cover your creations every bit as elegantly. And just as fast. So you can eliminate costly cut-and-sew production. And put a more competitive price on your finest furniture.

Many of the patterns, color and grains in the standard Naugahyde® vinyl fabric catalog can be re-created in Naugaform. And instantly molded into a single piece of fabric that fits any furniture design yc have in mind. With special effects like stitches, buttons and pleats embossed in the same instant your fabric takes shape.

Got a few extra minutes? Pour a urethane cushion betwe the Naugaform covering and your furniture's frame. And eliminate springs, supports and other hardware.

Uniroyal engineers will set up your own Naugaform syste

on line. Match it to the way you make furniture.
nd follow through with full technical service and support.
So, if you'd like to bring down the cost of covering
rniture, without compromising quality, spend a few minutes
lking over Naugaform's possibilities with your Uniroyal
presentative. Or write Uniroyal Coated Fabrics,
Mishawaka, Indiana 46544.

We help you do it with style.

Naugaform

UNIROYAL

Books continued from page 114

for drinking, a subject that heretofore n body has wanted to mention.

3 A digester system that consumes grease, food scraps and other kitchen wastes.

It is obvious that if these findings are sustained and employed, the general u of municipally supplied water could decrease by about 75 percent and the bu on public sewage treatment plants cou be immeasurably reduced. Item one wo appear to be the most important of thes proposed new strides. Limited space in this review precludes a detailed descri tion of the digestive function. Always p suasive to the layman, however, is the that the solid products of a convention toilet fixture, when digested, comprise than one percent of the total volume a that this minor sludge is largely inert, biologically.

It is evident that this drastic approac shifts the burden of physical installatio and cost from the public body to priva dividuals or groups. It is thought that t overall cost would be less than for an u graded public works approach. It woul paid directly by the citizen instead of p ment in the form of taxes. Comparison be made with the correcting of *industr* wastes, the cost of which is often assu by private corporations.

Testimony assembled by the consult group is impressive. For example, in a ida State Park, digester toilet installatio were used for two years with no overfl and only small amounts of water adde replace the vented, odorless evaporati A private sailing yacht with digester to and recycled nontoilet wastes, in an 1 month cruise around the world had no need to take on water in any foreign p

Plastics As Design Form *by Thelma R. Newman. Philadelphia: The Chilton Bo Co., 1972. 340 pp. $17.95.*

The creative use of plastics is on vie the over 700 photographs in this book written by the author of *Plastics As An Form.* Describing design parameters f use with plastics and its processes, wh have common and innovative applicat in the design field, the book covers a w range of forms—for environments, fur ture, windows, containers and others.

Guidelines are developed for using ciples of design for transparent forms where light is the defining medium. M

[continued on page 124]

Bright idea

Corridor Washfountains take the horseplay out of washup.

Washfountains in the corridor do away with the things kids get into when they're not being watched. With vandal-proof Bradley Washfountains in the corridor, students get in and out of toilet rooms quickly. Wash where they can be supervised. The 54" semi-circular Bradglas® Washfountains made of reinforced polyester project only 35¼" from the wall. Serve four students at a time with only one set of connections. Clean, contemporary lines. Five borrowed-from-nature colors. Durable, non-porous, fire-safe. Won't chip, peel or crack. Won't swell, shrink or warp. Comparable to steel on a strength to weight basis. See your Bradley washroom systems specialist. And write for latest literature. Or call (414) 251-6000. Telex 2-6751. Bradley Corporation, 9109 Fountain Boulevard, Menomonee Falls, Wisconsin 53051.

Circle **No. 330**, on Reader Service Card

from Bradley!

BRADLEY ®

Leader in Washroom Fixtures and Accessories

PPG's Solarban® 575 Twindow® insulating glass.

A look at a smart money building: comfortable environment; comfortable economics.

S. S. Kresge Company executives, who know a lot about successful retailing, also know a lot about successful building.

When they commissioned the design of their new International Headquarters Building, they asked the architect to provide an economically reasonable, but comfortable, working environment for an executive and administrative staff of more than 2,500 persons.

And like most smart money people, Kresge, anticipating growth, asked for a complex that could be easily expanded in the future.

The architect's solution was an assembly of building modules, each two to four stories high, with 10,000 square feet on each floor. Connecting modules provide large, contiguous open spaces for the clerical staff. And each module has its own mechanical services in an adjacent tower. This modular concept allows for future building additions without disruption of existing work areas.

The architect chose his exterior building materials for economics as well as esthetics. The exterior is colored in warm bronze and brown—specially glazed brick, no-maintenance weathering steel, and 77,000 square feet of high-performance *Solarban* 57 *Twindow* insulating glass from PPG. (The *Solarban* 575 unit, with a *Solarbronze*® coverplate, takes on a muted bronze tone that complements the coloring of the other exterior materials.)

The *Solarban Twindow* units also contribute to the comfortable working environment. Their insulating construction reduces heat loss during th

nter. The exclusive *Solarban* coat-
reduces the sun's harsh glare for
ual comfort and significantly re-
ces solar heat gain during the
nmer.
And these performance character-
cs provide another economic
nus: day-to-day savings in the
erating costs of the heating and air
nditioning equipment.
Look into the advantages of *Solar-*
575 *Twindow* insulating glass—
he others in our family of Environ-
ntal Glass—for your next building.
ly in the design stages.
Write to PPG Industries, Inc.,
e Gateway Center, Pittsburgh,
15222.

G: a Concern for the Future

PPG
INDUSTRIES

Owner: S. S. Kresge Company, Troy, Michigan
Architects and Engineers: Smith, Hinchman & Grylls Associates, Inc., Detroit, Michigan

Circle No. 387, on Reader Service Card

Books continued from page 120

ods for working with acrylics, foams, polyesters, silicones and vinyls, as well as industrial procedures and new techniques, are offered. Designs are shown from the U.S. and abroad with the focus on plastics as plastics, not as imitators.

From food and furniture to skin and bone, from tooth fillings to raincoats, the list of plastics is endless and the book is crammed with facts, figures and information, much of it technical, all of it informative and interesting.

Documents

[*The documents listed below are available from the associations and agencies cited. Request for such documents should be directed accordingly.*]

Open Space for People. *The American Institute of Architects, 1785 Mass. Ave., N. W., Washington, D. C. 20036. Upon request.*

An illustrated anthology of papers presented at the International Union of Architects' Conference of the Commission on Town Planning, this book emphasizes that open space is essential for man's most important needs. Representatives of 24 nations which hold membership in the Town Planning Commission met in 1970 to exchange ideas on open-space preservation and enhancement. Nine of the 12 papers in the books are from American conference speakers; three are from France, Bulgaria and Spain. Subjects range from the aesthetics of preserving natural resources to planning a livable environment for the not-too-far-off year 2000.

The book points out that nations are wearing out the open space they have, including the great parks, and urges new ways of creating and acquiring new kinds of open space to prevent the squandering of land through inadequate acquisition.

Designing for excellence. *20-minute color sound/slide film. Available on 10-day loan basis from Metal Lath Association, 221 North LaSalle St., Chicago, Ill. 60601. $5 for 10-day rental.*

Metal lath curtain wall installation in all parts of the country are shown in this film, with the focus on the benefits and design flexibility of these systems in exterior wall applications. Highlighted are such features as design versatility, light weight, durability, space savings, economy, construction time savings and maintenance ease.

An old communication system can go sour on you.

he communications explosion is right utside your door. If you're not expecting what will you do with all the wires you'll e getting? For more phones, more ex- tic equipment? Poke holes are passé. A fire hazard. So take a tip. Put a Walkerduct Underfloor System in your building specs. It will keep things humming.

By running all the communication, power and signal requirements under the floor inside Walkerduct, you've got nothing to worry about. The building is safer, more efficient and able to handle any future needs quickly, easily and neatly. Without tearing up the floors. Without spending a small fortune.

Contact your nearby Walkerman for more information. Or write: Walkerduct, Parkersburg, West Virginia 26101. In Canada: Walkerduct of Canada.

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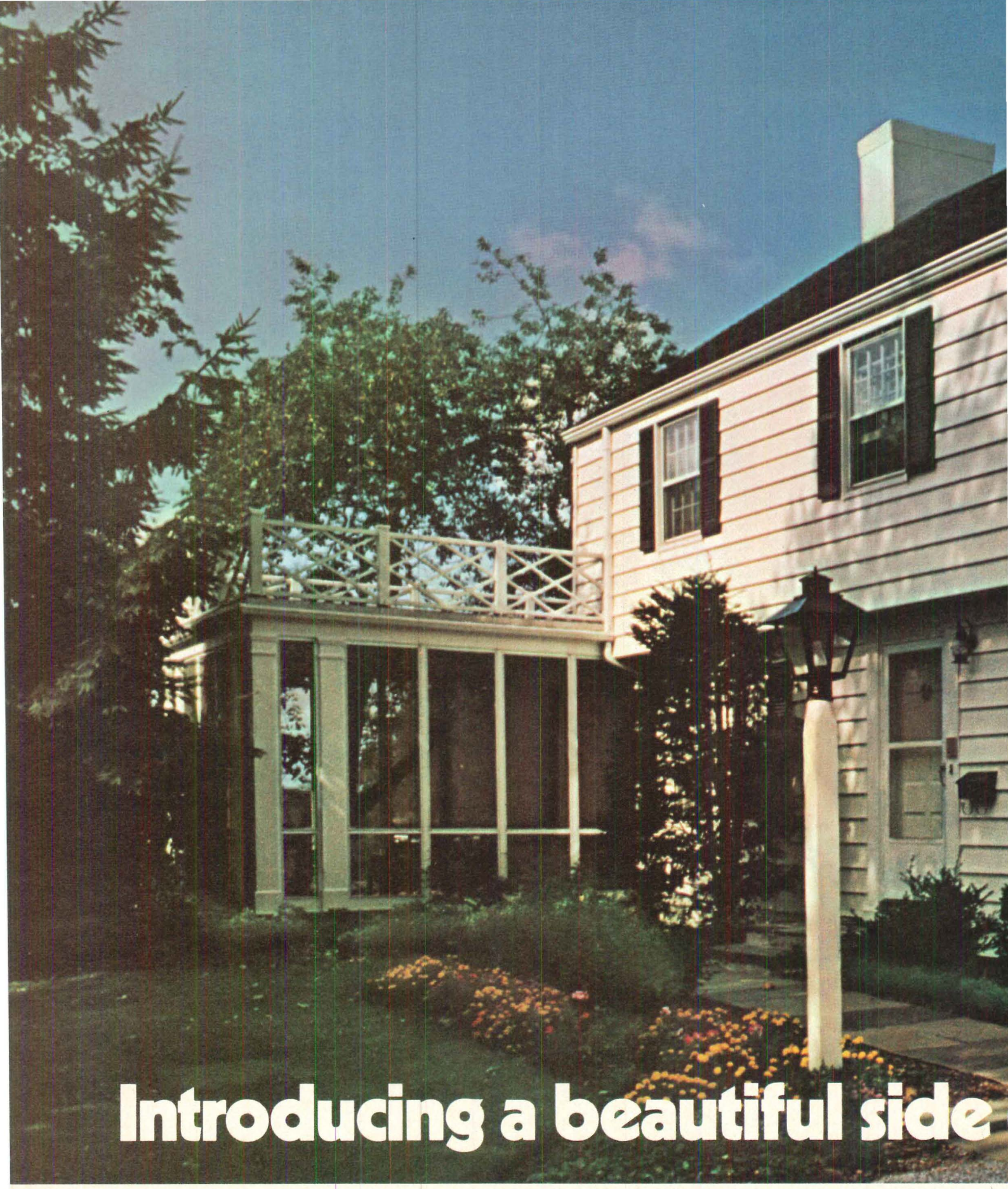

Introducing a beautiful side

We don't have to tell you about GAF's existing roofing, flooring and siding products. Judging from the way you've accepted them, we know they've done a good job.

That's why we think you'll be pleased to hear that GAF is now in the vinyl siding business.

The name of our vinyl siding is Vanguard™. And that means leader.

Unlike non-vinyl sidings, Vangua keeps its good looks all by itself.

That's because the colors, (there 4 of them) go clear through the vinyl. So Vanguard won't show scratches, and ne needs painting or finishing.

And since it's weather resistant, i won't rot or corrode either. Which means last as long as the house you put it on.

AF you've never seen before.

What's more, Vanguard's lightweight
ls are much quicker and easier to install
most other types of siding. They can
ut and worked with ordinary tools.
ial nailing flanges and preformed nailing
help you put it up quickly and neatly.
of course, there's no on-site painting or
ning for you either.

Finally this great new siding comes with GAF's 20 year warranty against manufacturing defects.

Vanguard Vinyl from GAF. We think you'll be glad to have us on your side.

For further details, call your GAF Building Products distributor or write: GAF Corporation, Building Products Division, Dept. PA-23 140 West 51 St., New York, New York. 10020

gaf® Vanguard™ Vinyl Siding

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Notices

Appointments

F. Kempton Mooney was appointed vice president of Stevens & Wilkinson, Atlanta

Harry A. Golemon has been named cl man of the board of Golemon & Rolfe As ates, Inc., Houston, Tex.

Timothy Hamilton, David Soliday and **James Weber** have been named associa partners of Associated Architects, Inc., C rado Springs, Colo.

Peter Van Dae has been appointed vic president and divisional manager of the A Distribution Products Division of Barber- man Company, Rockford, Ill.

Richard J. Horsman has been named associate of Peter G. Rolland & Associat Site Planners and Landscape Architects, Rye, N.Y.

Hubert C. Taylor, AIA, and **Thomas A Grahame, ARIBA,** have been appointed sociates of Zimmers-Luquer, Philadelphi

Keith Eric Johnson was appointed to Los Angeles based medical facilities grou of Daniel, Mann, Johnson & Mendenhall.

John R. Wiley has joined J.E. Greiner Company, Inc., Tampa, Fla., as special c sultant for airports.

Sheldon Lee Anonsen, AIA, has been pointed vice president of special projects Ellerbe, Minneapolis and St. Paul, Minn. **G. Hanson** has been named vice preside of the facilities programming division.

Wayne Y. Takeuchi and **Robert H. Da gett** have been elected directors of Chai Johnson Associates, Los Angeles.

David O. Kelly has been named direct construction management at Heery & He Atlanta, Ga. **Joseph R. Langford** has be named chief designer for The Interiors Group, a wholly owned subsidiary of Hee Heery.

Elmer Carl Fischer, Jr., AIA, has been named partner of Graham, O'Shea & Wis nosky, Springfield, Ill.

Robert T. Greigg has been elected pr dent of Benham-Blair & Affiliates of Calif nia, Inc., Century City.

Anton H. Matusek has joined Stephen Oppenheim & Associates, Los Angeles, director of construction management.

Herbert F. Wulfekamp has been nam manager of the architectural departmen commercial and institutional division of K ser Engineers, Oakland, Calif.

[continued on page 132]


Most people take copper building wire for granted. Nick copper and it doesn't break easily; bend it sharply and it doesn't fracture. Pull it through conduit and it resists stretch. Twist joining, soldering, and splicing are easy. Copper is the tough, dependable one, fastest to install.
Copper is the more dependable performer, too. When you make a connection with copper, you make it for good without any need for special terminals. No worry about surface oxides. No worry about excessive resistance due to loss of contact. No worry about creeping and loosening of connections resulting in arcing.
So keep taking copper wire for granted. It's the quality standard, backed by code acceptance everywhere. It may sometimes cost a little more to begin with, but first cost is the least cost when it's the only cost.
For a free booklet, "Copper: Your Best Buy in Wiring", write: Copper Development Association Inc., 405 Lexington Ave., N.Y., N.Y. 10017.
Copper wiring.
The dependable one.
COUNT ON COPPER

our cover story is even better this year.

ıg mysterious about it, Now you have a choice standard Milcor access roof hatches, skylights, smoke vents, floor and sidewalk doors—up m our last report.

made improvements, dded automatic closers fire rated access doors. sed the light penetration f our skylights. Moved rings on our popular 3′ x 2′6″ roof hatch so the opening is completely clear. And according to intelligence dispatches, other new developments are in the works.

Milcor standard units come in such a wide range of sizes that they'll cover almost any rectangular opening you might have. Most are readily available from a stocking point near you. (On the off chance that none of the 222 meet your needs, our long experience in designing special units may accomplish your mission.)

For a dossier on Milcor access doors, see Sweet's 8.12/InL or write for Catalog 33-1. Milcor roof hatches and floor doors are in Sweet's 7.7/In, or Catalog 34-1. Your contact is: Milcor Division, Inland-Ryerson Construction Products Co., B4069 West Burnham St., Milwaukee, Wis. 53201.

INLAND RYERSON

General Offices: Chicago, Illinois

A member of the INLAND steel family

No. 345 on Reader Service Card

Notices continued from page 128

Howard B. Van Heuklyn, AIA, has joined Octagon Associates, Inc., as a principal and vice president of the Los Angeles office.

Expansions and mergers

Vincent G. Kling & Partners, Philadelphia and Washington, D.C., and Seri/Renault have formed Seri/Kling International, 78 Le Chesnay, France.

J. Paul Robinson & Associates, Inc., Long Beach, Calif., has expanded services to include environmental planning.

Hewitt & Royer, Kansas City, Mo., is now affiliated with URS Systems Corp., and will be known as URS-Hewitt & Royer.

V. Aubrey Hallum & Partners and Fowlkes Associates, Inc., have merged and are now known as Hallum/Fowlkes Associates, Inc. Their new address is 3624 Oak Lawn Ave., Dallas, Tex. 75219.

Name changes

Black, Pagliuso, Kikuchi & O'Dowd, Honolulu, Hawaii, is now Media Five Limited.

Matthew E. Lambert, PE, is now known as Matthew E. Lambert, Architecture & Engineering, PC, Jericho, N.Y.

Feldman & Sanzari, White Plains, N.Y. is now Feldman Sanzari Kroin Architects PC.

Pistrui & Conrad, Architects, is now Pistrui, Conrad & Gebauer, Architects, Inc., Saint Louis, Mo.

Wolff Zimmer Gunsul Frasca Ritter, Portland, Ore., is now Wolff Zimmer Gunsul Frasca.

New addresses

The Office of Mies van der Rohe, Suite 3015, One Illinois Center, Chicago, Ill. 60601.

Gruen Associates, 910 Sixteenth St. N.W. Washington, D.C. 20006.

Smith, Hinchman & Grylls Associates, Inc., 455 West Fort St., Detroit, Mich. 48226.

C.F. Murphy Associates, 2420 Pershing Rd., Crown Center, Kansas City, Mo.

C. Curtiss Inscho & Associates, 1560 Fishinger Rd., Columbus, Ohio 43221.

New firms

John W. Tullock Jr., Landscape Architect and Site Planner, 68 Northumberland Rd., Pittsfield, Mass. 01201.

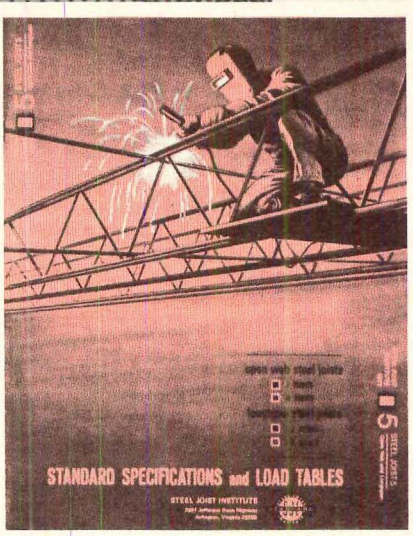
Jerry L. Pollak, AIA, & Associates, 11466 San Vicente Blvd., Los Angeles.

Norman E. Bartholomew, AIA and William Robert Wakeham, AIA have formed Bartholomew & Wakeham, Architects, Suite 230, 3700 Computer Dr., Raleigh, N.C.

Why steel joists were the right answer to this building need

STEEL JOISTS MEANT LOWER COSTS

FOR THIS MODERN OFFICE BUILDING



The new Aero-Space Building (subsidiary of the M.A.T. Land Company) in Prince George's Co., Maryland, combines functional efficiency with esthetic appeal. The nine-story structure, measuring approximately 140' x 120', was designed by architects Walton, Madden, Cooper & Auerbach, A. I. A.

About 214 tons of open web steel joists were used in the construction of this ultra-modern facility. Why steel joists? Principally for economy, according to engineers Scullen, Keller and Marchigiani, who specified these versatile structural members. But speed of erection was an added benefit as the building proceeded from groundbreaking to completion.

Economy, speed, versatility — these are just some of the many benefits offered by open web steel joists for office buildings or any other type of high-rise structure. For the complete story, send now for our latest edition of Specifications and Load Tables for Open Web Steel Joists and Longspan Steel Joists.

STEEL JOIST INSTITUTE
2001 Jefferson Davis Highway
Arlington, Virginia 22202

STEEL JOIST INSTITUTE 72004
Suite 707-B, 2001 Jefferson Davis Hwy.
Arlington, Va. 22202

Please send me a copy of your Specifications and Load Tables

NAME_____

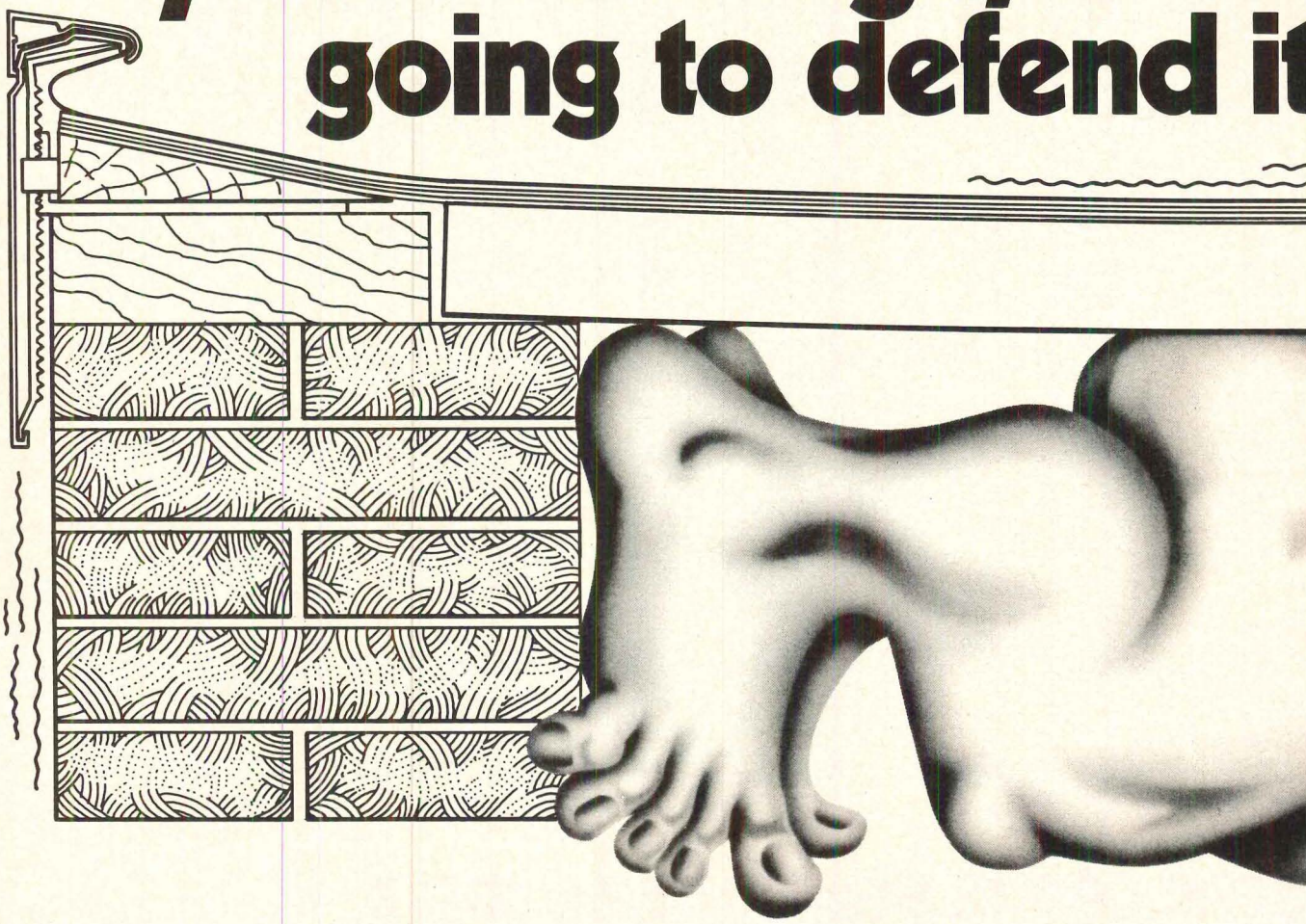
TITLE_____

FIRM_____

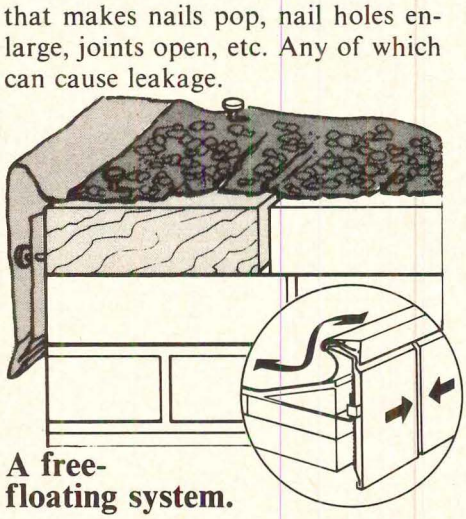
ADDRESS_____

CITY_____ STATE_____ ZIP CODE_____

When movement attack your roof edge, what going to defend it



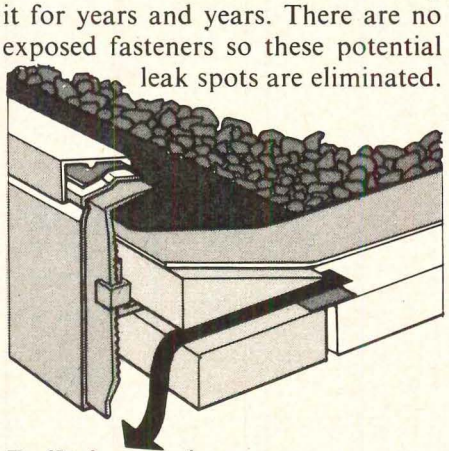
Everybody knows you can't stop the attack. For wherever you find two adjoining structural planes, you'll also find movement. Movement in different directions, at different rates, that makes nails pop, nail holes enlarge, joints open, etc. Any of which can cause leakage.



A free-floating system.

But now there's a beautiful defense against movement: Tremline, a unique free-floating fascia system that takes movement in stride like no other roof edging system can.

For other systems are static and have very little give. But the components in Tremline are free to move independently, without exerting strain on each other. So Tremline can absorb movement between the roof and wall. And keep absorbing it for years and years. There are no exposed fasteners so these potential leak spots are eliminated.

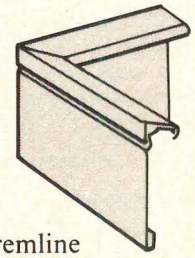


Built-in venting, too.

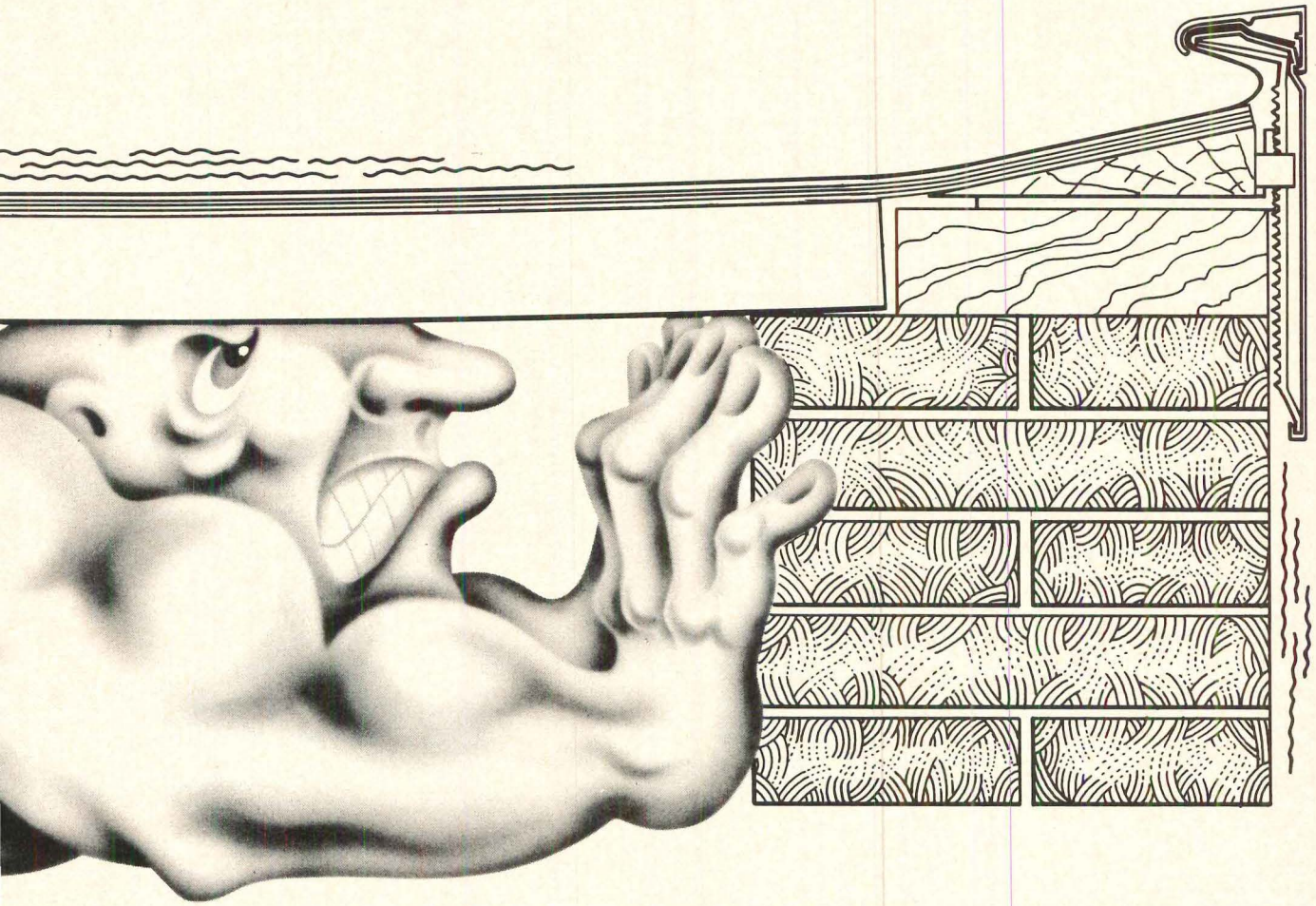
Tremline also allows perimeter venting of the roof insulation. Other edgings provide only partial venting, if any. And with the neoprene membrane in position, you have broken weatherproof seal arou entire building edge. The mer also acts as an expansion which absorbs roof moveme

A complete modular syst

Tremline is also versatile and able. With its modular design easily be installed on concrete, lightweight concrete and steel decks. And there's also a



Tremline flashing system for parapet walls. Same leakproof security, same easy installatio



And with Tremline, you get the
nplete system, from one respon-
e supplier. All necessary com-
ients are preassembled to meet
ditions at corners, ends and tran-
on points. So there's little to be
ailed on drawings or fabricated
the job. Fascia is packaged in 15′
gths, 6″ or 8″ facings.

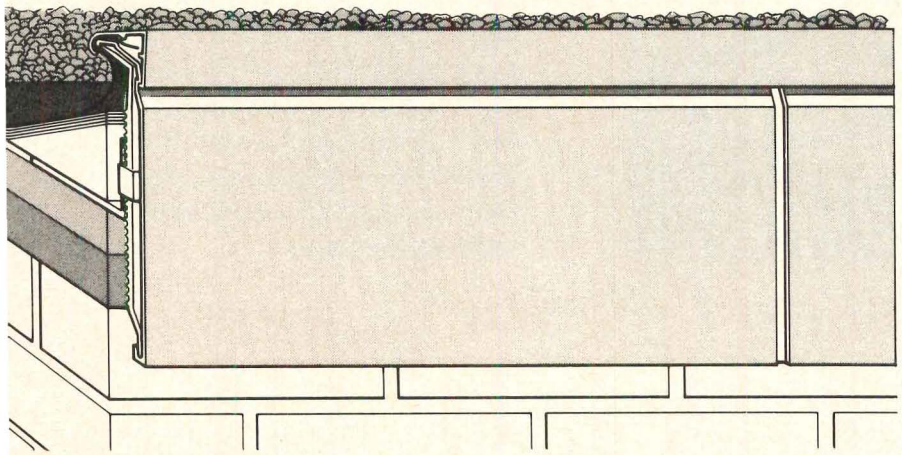
chitecturally beautiful.

mline is uniquely beautiful, too. Gives a clean-line appearance to the roof edge. The extruded aluminum fascia comes in mill, anodized or custom-painted finishes, with slip joints every 15 feet. No ugly exposed fasteners. No oil canning.

Your contractor will appreciate another beautiful feature: its easy installation. It snaps together and self-locks, adjusts up or down in 1/16″ increments. Which also makes for easy alignment and compensates for most roof irregularities.

The Tremline/Alwitra Edging System is a patented product that has been proven in performance for more than seven years. It meets insurance wind requirements and is approved by Factory Mutual System. For more details, see your Tremco man.

And if you have any caulking, glazing or waterproofing problems, he can help too. For over 40 years, our business has been solving these problems and providing top-quality leak proof systems and products, such as our job-proven sealants MONO, DYmeric and Lasto-Meric, and liquid polymer Tremproof waterproofing. The Tremco Manufacturing Company, Cleveland, O. 44104, Toronto 17, Ont.



TREMLINE/ALWITRA EDGING SYSTEMS FROM:

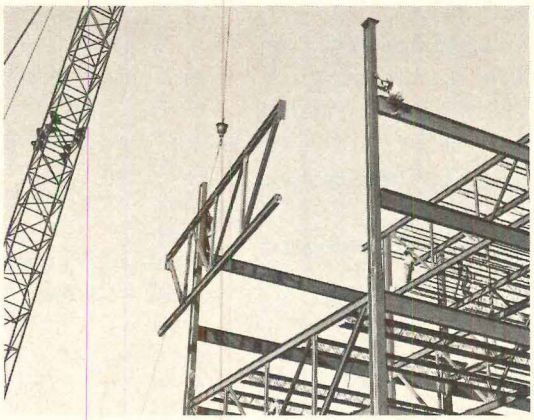
TREMCO

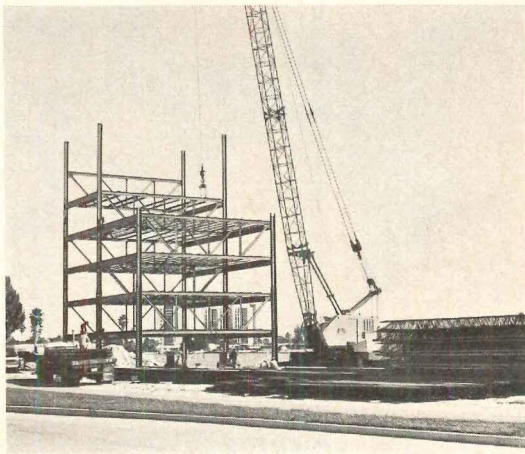
The water stoppers

Treasure Island, Florida: another builder cuts costs in today's competitive market with Staggered Steel Truss.

Staggered Steel Truss is a new structural design concept for multi-story structures. It's been proven across the country to compete with and often beat other framing systems. And it can compete on a number of counts.

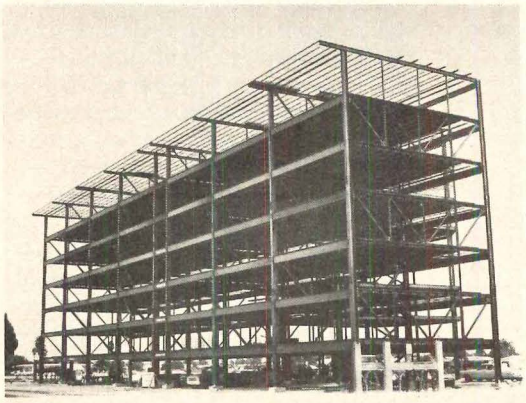
For instance, Green Feathers, Inc., owner and builder of St. James Apartments, Treasure Island, Florida, chose Staggered Truss for construction speed. They wanted faster occupancy for a quicker return on their investment. The main body of the building, which utilizes the Staggered Truss design is a rectangle, 207 ft. x 40 ft. and 7 stories high. It was erected in just 5 working days. (a 68 ft. x 46 ft. wing in the rear of the structure was erected with the conventional braced steel frame method.)



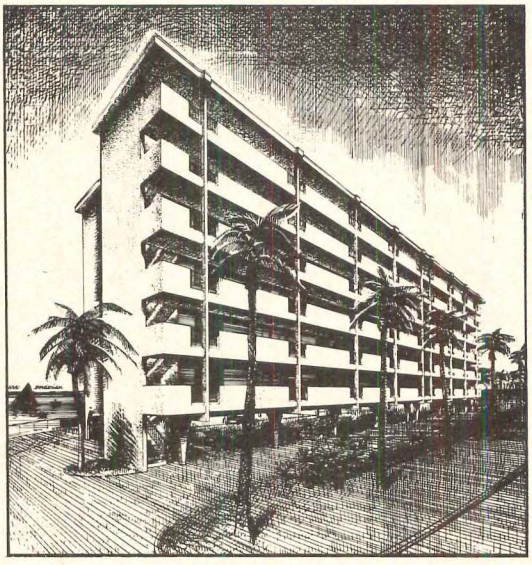


The Staggered Truss design also provided an ideal solution to off-street parking requirements by making possible a column-free 207 ft. x 40 ft. ground level parking area under the building. Additional benefits were realized in a relatively light weight steel frame and less costly foundations.

Essentially, the Staggered Steel Truss system is made up of one-story high trusses that span transversely between exterior steel columns and occur in a staggered pattern from floor to floor. Trusses at a given floor are placed midway between those of the floors below and above. Each floor rests on the top chord of the trusses below and is supported, alternately, from the bottom chord of the adjacent trusses.



Staggered Truss concept was developed for U. S. Steel by the Massachusetts Institute of Technology. The St. James Apartments is just the latest of many buildings around the country to use it effectively—and profitably.



We'll gladly send you a complete structural report (ADUSS 27-5588-01), which describes how Staggered Truss was used on this building. Also a free 26-page booklet on Staggered Truss, that shows a design for a typical 20-story apartment building in full detail. Write U. S. Steel, P. O. Box 86, Pittsburgh, Pa. 15230.

Construction Details

Description: A 7-story apartment building with penthouse atop. The main unit is a rectangle 207 ft. x 40 ft., to which a short wing 68 ft. x 46 ft. is appended. The latter is conventionally steel framed and cross-braced. 53 apartments, of which 8 are one-bedroom, 40 two-bedroom, and 5 three-bedroom. The entire main unit is set on pedestals, providing a 207 ft. x 40 ft. column-free parking space on the ground floor.
Design live loads: 40# psf in apartments/100# psf in corridors/20# psf on roof/Wind loading as per code.
Applicable Code: Southern Standard Building Code, Coastal Region.
Structural Steel: Total steel frame weight, 206 tons. Weight of other structural steel, 121 tons. Field connections are high-strength bolts.
Floor System: 16″ joists on 2′6″ centers. 9/16″ formed metal deck with 2½″ poured concrete.
Roof Construction: 28 gage galvanized steel formed decking; 3″ lightweight concrete slab; built-up roofing with tar and gravel.
Foundations: augered caissons.
Interior Walls and Partitions: Partitions ½″ drywall on 3⅝″ metal studs. Party walls without truss: ⅝″ Fireguard X Gypsum wallboard on each side of 8″ lightweight concrete blocks. Party walls with truss: ⅝″ Fireguard X Gypsum wallboard plus 1″ soundboard on 3⅝″ steel studs.
Exterior Wall: 8″ concrete block, sprayed with stucco.
Elevators: 1 bank, 2 elevators.
Fire Resistance: 1 hour for floor/ceiling. 2 hours for columns, spandrels & trusses (dry-wall).
Steel Erection Time: For the main unit of the building, 5 working days. Total steel erection time: 12 working days.
Gross Area: 90,098
Floor-to-Floor Height: 9′8″
Floor-to-Ceiling Height: 8′ (7′ in bathrooms and corridors).

Owner: Green Feathers, Inc., Treasure Island, Florida
Architects: Edward W. Hanson, Architect, Inc., Clearwater, Florida
Structural Engineers: O. E. Olsen & Associates, St. Petersburg, Florida
General Contractor: Green Feathers, Inc., Treasure Island, Florida
Structural Fabricator: Musselman Steel Fabricators, Inc., Tampa, Florida
Structural Erector: West Coast Steel Erectors, Inc., Tampa, Florida

United States Steel USS TRADEMARK

Job mart

Situations open

Architects and architectural draftsmen: Young, progressive architectural-engineering firm with a present staff of thirty people has immediately available positions for project designers, project architects and project captains. Designers and project architects should be architectural graduates with project architects having or capable of obtaining NCARB certification. Project captains should have five years experience. Expanding regional practice throughout Ohio, Indiana, Michigan and Kentucky with many diversified projects. Submit complete resume in confidence to: W. W. Schmidt, Fanning & Howey, 540 East Market Street, Celina, Ohio 45822.

Architects (R.A.) and architectural lead draftsmen: If you have been involved in architectural planning of educational, institutional and industrial facilities for more than 5 years and feel that you have not received the recognition you deserve, then you will want to investigate this ad today. Comprehensive hospitalization, life and disability insurance, vacation, sick leave and profit sharing plan all company paid. Credit Union privileges. Send resume or contact: Personnel Director, Buchart Associates, 611 West Market Street, York, Penna. 17405. Phone: 717-843-3854. An equal opportunity employer.

Architects and engineers: Growing architectural and engineering firm with general practice of contemporary architecture including engineering and planning seeks good architects and mechanical, electrical, and structural engineers. Have immediate openings in Dallas, Corpus Christi, and south Texas. Please submit confidential resume of experience and earnings to: Personnel Manager, Box 2201, Harlingen, Texas 78550.

Architects and land planners: Publicly-held, AMEX-listed, environmentally-oriented developer of quality communities in the Rocky Mountain area has immediate openings for: Architects — must be degreed, have heavy experience and good record of creative design in modern housing and service facilities such as shopping centers, golf clubs, etc. Land Planners — degree required with solid background in community master planning. Proven experience record. Excellent compensation package including profit sharing plan. Please send samples of work (return guaranteed) plus resume and salary history in confidence to: Martin L. Shuck, Director of Personnel, The Woodmoor Corporation, Monument, Colo. 80132. An equal opportunity employer.

Architects for Peace Corps/Vista-Action: Volunteer overseas and U. S. Low-income housing projects, design of schools, hospitals, community centers, etc. Most openings — singles; some couples. Information: Bruce Mazzie, Action, OCP Box 10, Washington, D. C. 20525.

Architectural senior draftsman: Immediate opening for permanent position in small progressive firm, doing diversified projects. Minimum 5 years experience. Advancement and salary commensurate with ability. Send resume or call. Argie McElmurry, Architect, Planning and Interior Design, 810 Drew St., Clearwater, Florida 33515 (813) 443-0497.

Design and project architects: Expanding firm with national/international projects has open positions for design architects with strong experience in building and land planning, design and design presentation. Project architects also needed to head working drawing teams. Each should be registered and have a minimum of five (5) years experience. Both to work with clients in developing projects from early concepts. The Ramos Group/Architects, Planners; 816-421-0470; Kansas City, Missouri 64105.

Director of design: Position available as Director of Design in growing Baltimore contract and office design firm. Applicant must be innovative with strong architectural background, architectural drafting experience and proven supervisory capabilities. Send resume and salary history to Mr. G. Arnold Kaufman, Lucas Design Group, 221 E. Baltimore Street, Baltimore, Md. 21202.

Instructor position available: Department of Interior Design, Southern Illinois University. Instructor to teach in Interior Design Department. Subjects include design, delineation, basic theory, professional practice, and contract. Masters degree and professional experience in interior design or related field recommended. Salary and rank commensurate with background. Contact: Paul J. Lougeay, Chairman, Department of Interior Design, Southern Illinois University, Carbondale, Illinois 62901.

Manufacturers reps: Manufacturers reps wanted by long established aluminum metal pan acoustical ceiling tile manufacturer with new and proven items to merchandise. Looking for agents who call on architects for our "Spec" items; and general contractors, acoustical contractors, lumber yards, building supply houses, etc. for our "Direct Sale" items. Many territories open. Commission basis. Flexible agency policy. No stock to carry. Write to Simplex Ceiling Corp., 663 Fifth Avenue, New York, N. Y. 10022.

Project architects, job captains, interior designer, architectural draftsmen: Expanding medium sized A/E/P firm has openings th[at] require experienced, ambitious, decision making individuals who desire responsibili[ty] to match their talents. You create the opportunities for advancement through your own personal performance. General practi[ce] includes commercial, institutional, educati[on]al and industrial facilities. Degree or registration desirable, but not mandatory, perfo[r]mance is the name of the game. Your fring[e] benefit program is complete and comparab[le] to any. Send resume, salary requirement a[nd] technical references to: Samborn, Steketee Otis and Evans, Inc., 600 LOF Building, Toledo, Ohio 43624. An equal opportunity employer. Phone: (419) 248-6271.

Registered architect: Rapidly growing reta[il] food chain seeks young registered archite[ct] (N.C.A.R.B.) to supervise the application o[f] uniform store design in eleven-state area. Must have degree and knowledge of structural and mechanical engineering, seismic design, surveying and topographical engineering, and Uniform and/or Southern Building Codes. Send detailed resume of education, experience and salary requirements to Store Planning Dept., P. O. Box 758, Houston, Texas 77001.

Specification writer: For aggressive, desig[n] oriented architectural-engineering office. Minimum of five years writing architectura[l] specifications, material and systems research, estimating and cost control. Memb[er] of C.S.I. preferred. Send detailed resume [to] Quinlivan Pierik & Krause/Architects-Engi[neers], 121 East Water Street, Syracuse, N[.Y.] 13202.

Situations wanted

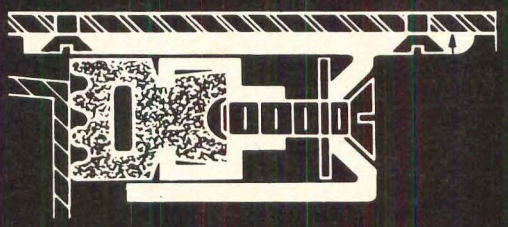
Architect: AIA, Michigan registration, NCA[RB] pending, 20 years experience all phases, years principle nationally known office in charge of construction, supervision, spec[ifica]tions, contracts, negotiation, bidding, con[]struction management; willing to relocate consider position in teaching or allied fiel[d]. Will respond with resume to suitable or interesting offers. Reply to Box #1361-472, *Progressive Architecture.*

Architect: 46, with 15 years in own practi[ce] considers leaving N. Y. for any stimulatin[g] involvement in or out of architecture. Exp[eri]ence ranges from small to large commiss[ions] international work, teaching, writing boo[ks] success in competitions and good relatio[ns] with clients, partners and family. Reply to Box #1361-473, *Progressive Architecture*

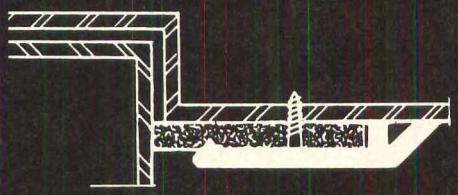
Architectural technology associate profes[sor]: Wants teaching-administrative position i[n] medium-sized college in the lower Mid-we[st]

[continued on page 140]

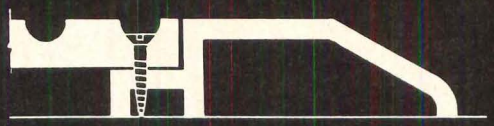
Our Old Design



Head and Jamb Sound Seal No. 170. Basically excellent weatherstrip seal but sound penetrates where insert moves.

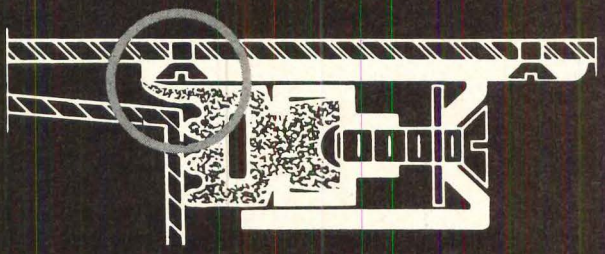


Head and Jamb Weather Stripping No. 139. Screw penetrates Neoprene, makes adjustment difficult. Retainer will tilt if screwed too tightly. 1¼" dimension will not fit on 1" stop.

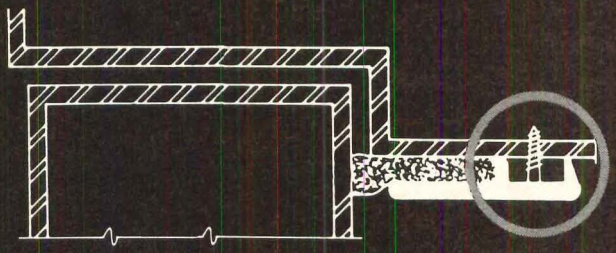


Saddle Assembly. Assembly must be fastened by drilling and tapping through plate into support section. Difficult to set level. Expensive to install.

Our New Design



Head and Jamb Sound Seal No. 170. Neoprene projection, compresses against housing, eliminates sound penetration when insert is adjusted. Excellent weatherstrip seal modified to compensate for sound in 45 decibel range.



Head and Jamb Weather Stripping No. 314. Support leg keeps housing straight. Screw does not contact Neoprene; adjustment is easy. ⅞" dimension allows fit on 1"stop. Housing is 34% heavier.

Saddle Assembly. Interlock between plate and support section eliminates drilling and tapping. Secure fit guaranteed. Easy installation.

Zero's weatherstripping isn't just an improvement over everyone else's. It's even an improvement over our own.

If you want the benefit of these and other improvements in weatherstripping, soundproofing and lightproofing materials, don't specify "Zero or equivalent." There is no equivalent! The only way you can be sure you get exactly what you — and your job — call for is to specify "Zero." By the style number in our new, 1973 catalog. Send for your copy today.

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GENTLEMEN: Please send me your 1973 catalog

Name _____ Position _____

Company _____

Address _____

City _____ State _____ Zip _____

Zero Weather Stripping Co., Inc.
415 Concord Avenue, Bronx, N.Y. 10455 / (212) LUdlow 5-3230

Job mart continued from page 138

Registered, NCARB certificate, AIA, Master degree; 10 years as administrative principle in Mid-west firm, 8 years college teaching, interested in curriculum development. Resume available. Reply to Box #1361-474, *Progressive Architecture.*

Creative multi-disciplined management: NCARB registered architect, A.I.A., additional degrees building engineering and construction, fine arts. 10 years diversified, shift-sleeved design professions and construction management. Seeks affiliation with 1980's firm. Capital available for ownership participation. Currently employed, available 30 days, northeast only. Resume available. Reply to Box #1361-475, *Progressive Archecture.*

Environmental designer: Architectural/interior planning. M.S. Pratt Institute. 5 yrs. related business experience. 2 yrs. free lance contract, institutional, residential N.Y.C. including work with established design firm. Enjoy client contact, individual or team work. Seeking versatile opportunity with innovative firm. 30, married, will relocate. Reply to Box #1361-476, *Progressive Architecture.*

Experienced architectural graduate: Seeking apprentice architect position in small to medium firm with diversified practice; opportunity for growth and advancement paramount. B. Arch., "Cum Laude" graduate, 26, married. Ready to accept responsibility and demonstrate ability. Air Force Engineering Officer with over four years of experience in project programming from client needs; feasibility analysis; site selection; master planning; cost estimating; construction documentation and specification; coordination of other disciplines into architectural design; and supervision of draftsmen, professional engineers, and technicians. Prefer Kansas-Colorado-Nebraska-Oklahoma area. Detailed resume upon request; available early July 1973. Reply to Capt. Arley D. Lanman, 44 Gross Drive, Loring AFB, Maine 04750.

Mechanical engineer: P.E., HVAC and plumbing specialty. Will accept short term or long term contract. Geographical area no barrier. Reply to Box #8246, Detroit, Michigan 48213.

Researcher, educator and practioner: In the fields of industrialized building, architecture, housing, urban technology, seeks responsible position. Age: 39, married, two children; citizenship: British (naturalized); residence: U.S.A. 5 years. 4 languages, publications, international experience. Availability flexible; salary very good; interests: systems approach, R & D, innovative teaching, travel. Box #1361-477, *Progressive Architecture.*

U.S. Architect: Now residing in Europe, Registered New York, NCARB, European qual fications. Excellent French. Professional ex perience all phases in U.S. and Europe. Ho tels, motels, commercial, others. Seeks re sponsible position with international orien firm. Box #1361-478, *Progressive Archite*

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American Professionals: Our agency has a complete range of Architectural openings. "low key" approach is used with our client companies. Complete confidence is maintained at all times. All positions 100% Fee Paid. Send resume, location and salar requirements to 10730 Pacific St., Shaker Place Suite 226, Omaha, Nebraska 68114.

Architectural Photography: Architects are artists and rely heavily in photography to convey their ideas to prospective clients. Architectural photography shows not only how the entire building looks, but the deta of its construction, the materials, and the way various design elements relate to and enhance its function. Our practice and dir tion in Architectural Photography is sensit to the message the architect wishes to co municate. May we be of service? Bob Gell Visual Communications, P.O. Box 56384, Peachtree Center Station, Atlanta, Georgi 30343, Phone: 404/875-0594.

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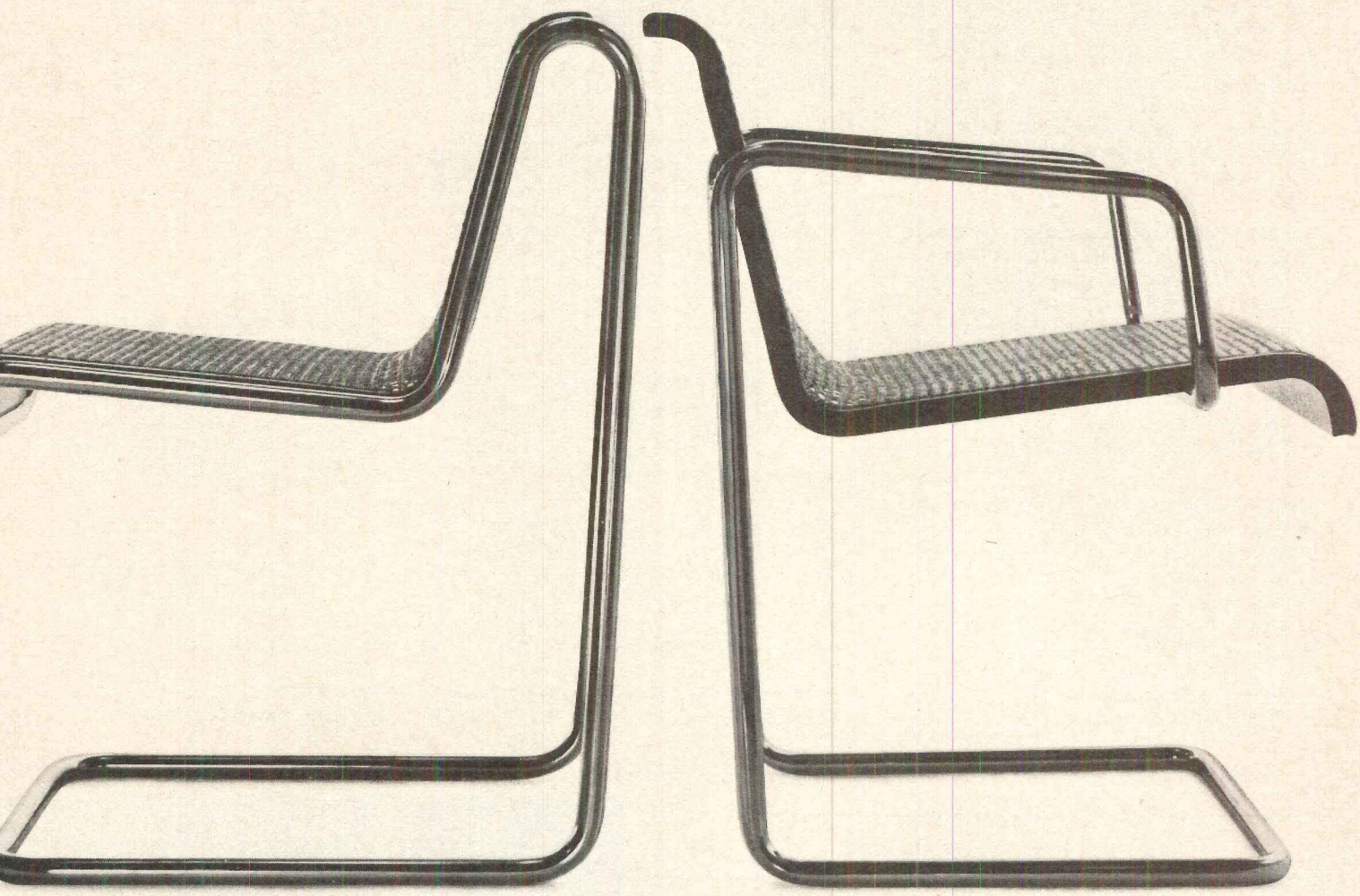

Thonet Cantilevers. The Great Profile chairs. Great from every viewpoint. And comfortable, too. Polished chrome with black wood framed cane or upholstered seat and back. Arm chair, side chair and two bar stools. Coordinating tables available. The Cantilevers, designed by Arthur Umanoff. And, like all Thonet furniture, built to endure. See them at the Thonet Center of Design. New York. Chicago. Los Angeles. San Francisco. Dallas. Miami. Or write Thonet Industries, Inc., One Park Avenue, New York, New York 10016.

THONET
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Job mart continued from page 140

Career Builders Inc., Agency: Complete range of Architectural and Interior Design placement under the direction of Ruth Hirsch. Apprentices to Senior Designers and Project Architects. Professional screening and personalized service. References checked. 501 Madison Ave., New York, N. Y. 10022. PL 2-7640.

ComTex Industries: Distributors, representatives wanted. Woodsticks—Dramatic new three dimensional wooden wall paneling consisting of strips of exotic Brazilian Pau Ferro of varying lengths and thicknesses glued to hardboard backing. Two foot sections interlock forming perfect surface ready for nailing. Free brochure: ComTex Industries, P.O. Box 355, Miami, Florida 33138 Tel: (305)751-5563.

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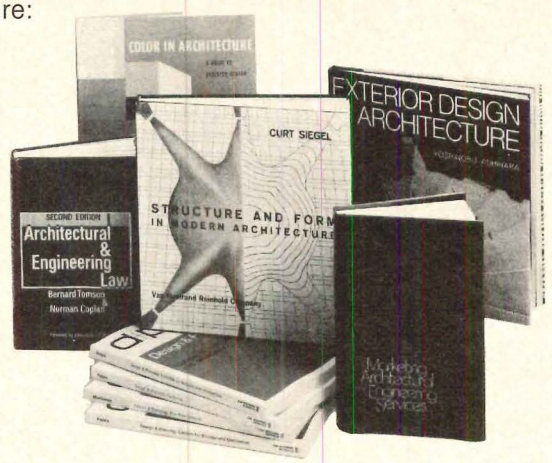

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ll Corp. 124
tics Group

eer Architectural Products 90, 91
on, Jasper, Rose & Co.

Closers 115
. Franz, Inc.

-Owens-Ford Co. 20, 21
bell-Ewald Co.

tone Products Corp. of America .. 120
d Owen & Co.

ney 33
Dawson, Inc.

l, Jerome, Co., Inc. 142
Glynn & Ward

nal Gypsum Co. 46, 47
& Smith & Ross Inc.

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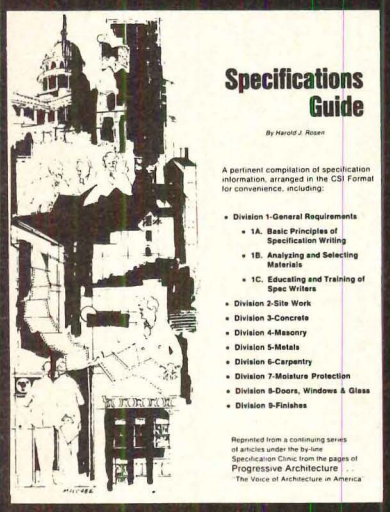

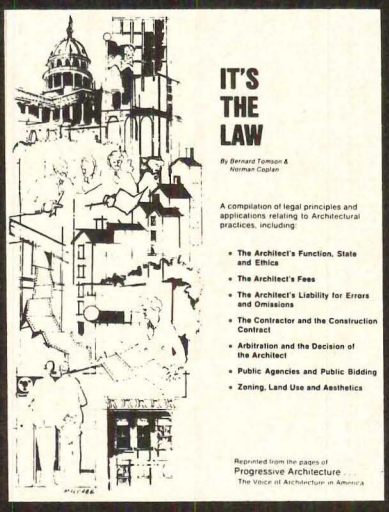

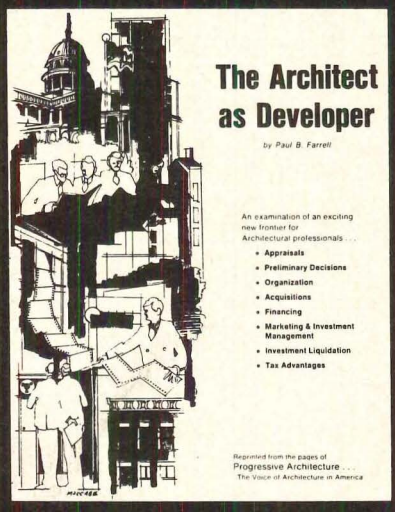

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