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ARCHITECTURAL RECORD

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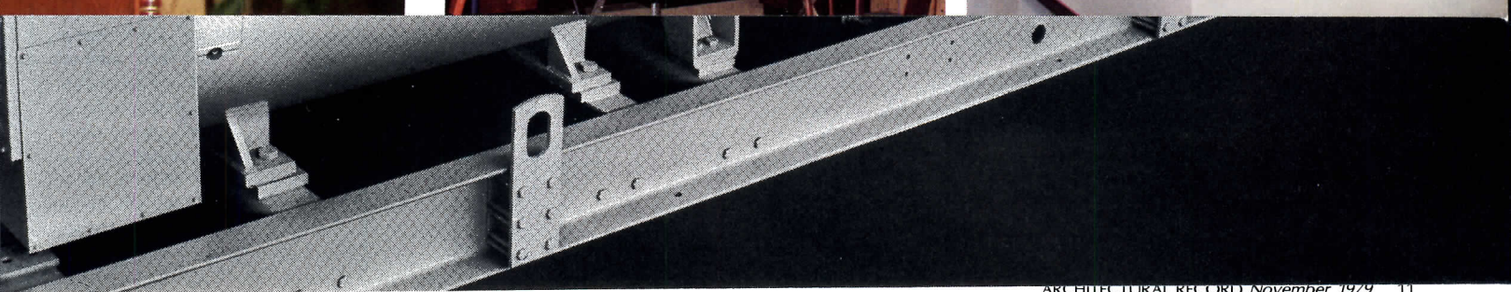

Letters to the editor

Your mid-August issue on Engineering

Your article on the Boettcher Concert Hall portion of the Denver Center for the Performing Arts (March 1979,

Calendar

NOVEMBER

ARCHITECTURAL RECORD (Combined with AMERICAN ARCHITECT, ARCHITECTURE and WESTERN ARCHITECT AND ENGINEER) (USPS 132-650)
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The Florida AIA devotes its whole convention to design. . .

. . .and the result, as one participant said in the closing section, was electrifying. In response to AIA President Mitchell's call for a "Celebration of Architecture," conference moderator William Morgan, himself one of the state's pre-eminent designers, organized forty architects into a program intended to express "the state of architecture in our region today." The format was simple: Morgan chose eight team leaders, and together they chose four additional architects for each team, creating eight teams—four representing North and Central Florida, four representing South Florida, Puerto Rico, and the Virgin Islands. Each team leader coordinated his team's 45-minute slide show (each member was allotted 16 slides to show his or her work or ideas), was moderator for his team's 45-minute discussion period after the slides, and was responsible for summing up his team's design directions and attitudes at the wrap-up session on the last afternoon of the convention. The sessions were run on a tight time schedule, and the convention attendees scurried from team session to team session with the enthusiasm and urgency of freshman changing classes on the first day of high school. For one thing, while each team had a meeting room seating well over 200 people, there were never enough seats.

What was it that attracted all this enthusiasm? Just plain old good design. The architects chosen by Bill Morgan and the team leaders were clearly chosen because they were "design architects"—and a very wide range of work was shown: lots of houses, apartments, and (inevitably, in Florida) condominiums; schools and college buildings, a happy number of public buildings; several airports, hospitals and (again inevitably in Florida) hotels— though these top designers seemed more involved in the low-rise kind under the palms along the beach than the high-rise kind which are clearly spreading north through the state from their spawning ground in Miami Beach.

The point is this: the subject of design—just plain old good design—generated the most involved, here-to-listen-and-learn (and debate), enthusiastic convention I'd been to in a long time. Interestingly, there was no super-intellectual talk on design theory. I only heard the phrase post-modern twice. And the tone of discussion among the teams and during the audience participation periods was questioning, not querulous.

Significantly, the question raised most often was whether the body of work shown represented a regional architecture—and whether that was a good thing. I had been invited to the Florida convention to attempt some sort of wrap-up of the design sessions—to suggest some kind of conclusions. I offered the opinion that the work of these upper-rank designers "looked as if it belonged in Florida." It looked appropriate. Perhaps none of the houses, and few of the larger-scale buildings, would have looked right in Connecticut, or Dayton, or even California's warmer end. And I suggested that if that's regionalism, Florida has it and ought to do its damndest to stick with it.

The point is, of course, is that regionalism is not a "style." The great New England houses reflect their climate. The great Florida houses (and most of the best larger scale buildings) reflect entirely different requirements—careful sun control; taking advantage of the breeze by single-loaded circulation systems, often clusters of pavilions; porches, expressing the need for sun-shaded outdoor living; interior patios; light colors.

Another regionalism that was evident in the Florida work was the use, indeed the discipline, of native materials—wood houses, pole structures, and concrete, which in Florida seems a natural expression of the sand that is everywhere. Another expression of regionalism was, to me, the "timelessness" of the work that the older architects showed—Bob Broward's open and breeze-filled houses of 20 years ago, Mark Hampton's work of 25 years ago which looks as it had been designed and built this summer, and Henry Klumb's remarkable large-scale energy-conserving buildings of 30 years ago.

Of course, it was also necessary to point out that there are a lot of bad buildings going up in Florida—the central section in and around Disneyworld is spawning the stock hotel high-rise shapes that somehow seem singularly inappropriate in Florida's flat landscape. For a state which has a lot of growing left to do, the infusion of non-regional (indeed, intentionally standardized) hotels and fast food places leave the Florida architects with much to ponder.

I, for one, think a lot of other states or regions might profit a lot from a convention just like the one held in Florida—it drew a lot of attendance, it taught some lessons, it raised some fine debate—all in the cause of better design which surely is the noblest goal of an assembly of architects. —*W.W.*

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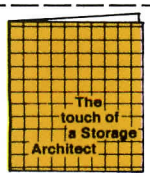

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Height restriction calls for unusual design approach

...steel helps provide most economical solution

How do you build a 136,558-sq-ft building on a 7.5-acre lot that's restricted by a three-story height limitation? The builders of this project, Bannockburn Executive Plaza, Bannockburn, Ill., solved the problem with a steel-framed, "Y"-shaped structure featuring 30-ft-sq bays.

"We considered most of the alphabet before settling on a basic 'Y' configuration," reports Harry Dolan, vice president for the developer, Terracom Development Group. "Ideally, a building with this much area requires about nine stories to insure optimum floor layout and depths. The challenge was to compress this height to only three stories, yet leave the site open with good sight lines."

Preliminary framing analysis (PFA) requested

Early in the final design stage, the project's structural engineer asked Bethlehem to prepare a PFA based on a 30 ft x 30 ft bay size. Earlier, the designers conducted a similiar study on a concrete frame.

After the results of both studies were compared, the steel frame came away the winner. The structural engineer reports, "Structural steel proved to be the best solution because of its economy, light weight, ease in spanning the 30-ft bays, and speed of erection." The frame was erected in about 10½ weeks at a cost of $5.35 per sq ft. The unit weight of the steel frame was 7.5 lb per sq ft.

Construction economies were attributed to the ease by which the utilities and mechanical systems could be installed within the steel frame. Also, structural steel simplified the framing for the cantilevered balconies and the roof skylight in the center atrium.

Composite construction

ASTM A36 beams and girders are designed as simple beams. Lateral wind forces are resisted by beam-column moment connections utilizing Type 2 Construction per A.I.S.C. design specification. Single-piece, ASTM A572 Grade 50 high-strength columns were used throughout. The elimination of column splices contributed to fabrication and erection economies.

The floor system consists of 3-in. composite steel floor deck topped with 3¼-in. lightweight concrete. The floor system acts compositely with floor beams spaced 10 ft on centers. The beams, in turn, are supported by composite floor girders.

Sales Engineering Services available

Bethlehem's frame analysis service team can be very helpful in determining the most economical steel frame for your building. Our PFA program is part of the broad range of technical and advisory services we offer.

Our District Office Sales Engineer and Home Office Buildings Group can work in cooperation with your consulting engineer to develop a detailed budget cost study on the total steel framing system package. The program utilizes the systems approach and includes all components of the building floor system, as well as wind and seismic/drift control. At the conclusion of the study, you are presented with a comprehensive material quantity summary and cost estimate in a convenient, easy-to-read form. No fee or obligation is involved.

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While prospects for construction in 1980 are less than cheery, matters may improve in the last half "if inflation can be reversed in the next six months," says economist George A. Christie of McGraw-Hill Information Systems Company. According to Mr. Christie's *1980 Dodge/Sweet's Construction Outlook*, nonresidential contracts will fall an estimated 8 per cent for the year, with residential contracts up 3 per cent. Details on page 65.

Two Senate panels contemplate the quality of Federal architecture and the selection of designers, as Senator Moynihan of New York proposes to rewrite the Public Buildings Act and Senator Stafford of Vermont offers the Architectural Excellence Act of 1979. Details on page 36.

Nonresidential contracts for the month of August, at $4.5 billion, rose 10 per cent over last August, according to the F.W. Dodge Division of McGraw-Hill Information Systems Company. Most of the gain reflected a return to the normal volume of school, hospital and other institutional building, while commercial and industrial building rose 6 per cent for the month. Housing was off 2 per cent in August; George A. Christie, Dodge chief economist, commented, "Typical of the 1979 housing market, August showed weakness in single-family starts, which was offset by a gain in multifamily building." Dodge's cumulative figures for the first eight months of the year showed nonresidential contracts up 14 per cent and housing up 4 per cent.

Senate hearings on GSA's art-in-architecture program suggest efforts to increase funds for commissioned art from the present ½ of 1 per cent of construction cost to a full 1 per cent. Details on page 37.

Another governmental agency, the Veterans Administration, has established its own arts program. Assisted by the National Endowment for the Arts with help in selecting artists, the first phase of the program will place $500,000-worth of commissioned art in 15 VA hospitals. Additionally, the Endowment has granted VA $12,500 to establish an artist-in-residence at Hines VA Medical Center near Chicago, the first such service in a projected program of residencies in the visual, literary and performing arts.

The AIA will sponsor a joint conference on energy next year with the Royal Architectural Institute of Canada. The conference, announced recently after a meeting of the AIA Executive Committee and the RAIC Council, is the first of hoped-for joint meetings on other subjects of mutual professional interest, such as professional liability. The two institutes intend to schedule the meetings in cities convenient to the 49th parallel.

DOE and code officials will hold public meetings on a proposed model code for solar heating and cooling to elicit response from architects, engineers, contractors, manufacturers and consumers, as well as from code officials. The meetings, sponsored by the Department of Energy and the Council of American Building Officials, and coordinated by Trinity University, will convene December 3 in Washington, D.C., December 5 in Denver, and December 7 in San Diego. For information: Trinity University Continuing Education, 517/736-8311.

The Cooper Union for the Advancement of Science and Art has named Bill N. Lacy, FAIA, its president. Mr. Lacy served most recently as president of the American Academy in Rome, and earlier was director of the architecture and environmental arts program at the National Endowment for the Arts and in private architectural practice. Cooper Union is a private, tuition-free school offering degrees in architecture, art and engineering.

The Bricklayers' International Union has made a special posthumous award of $15,000 to Louis I. Kahn, "not only to pay its respect to a genius who loved and excelled in the use of masonry," but also to assist the University of Pennsylvania establish the Louis I. Kahn Architectural Collection of drawings, sketch books and correspondence. The union also presented its 1979 Louis Sullivan Award for Architecture to Edward Larrabee Barnes, FAIA.

The Queens Museum seeks information, documents and other material on the 1939/40 New York World's Fair, about which it plans a major exhibition next summer. The museum reports that it has already unearthed the original model of the New York City Building, which still survives as the home of the Queens Museum. For information: Helen A. Harrison, Guest Curator, The Queens Museum, New York City Building, Flushing Meadow-Corona Park, Flushing, New York 11368.

The National Endowment for the Arts will sponsor a "recognition" program for design projects supported by the Design Arts Program (formerly the Architecture, Planning and Design Program). Winners will have their projects shown in a special publication and a national traveling exhibition. This year the program will consider grant awards made between 1966 and 1978 in architecture, landscape architecture, urban planning, and interior, industrial, graphic or fashion design. The program's coordinators, Partners for Livable Places, make a special appeal to grantees who have failed to leave forwarding addresses. For information: Design Arts Program, National Endowment for the Arts, 2401 E Street, N.W., Washington, D.C. 20506, or Dori Jacobson, 202/223-5867.

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Architect: Chester L. Lindsey, Architects, Seattle, WA
General Contractor:
Howard S. Wright Construction Co., Seattle, WA
Structural Engineer: KPFF—Consulting Engineers, Seattle, WA
Steel Fabricator:
Atlas Iron Works, Inc., Portland, OR
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STEEL: the first choice for Seattle's newest office tower.

The new 25-story Fourth & Blanchard Building in the Denny Regrade district is the most ambitious project conceived by Seattle office-space developer Martin Selig —a name synonymous with first-class planning design.

It was decided that steel design would best provide the freedom to incorporate all the proposed architectural features. Several designs were presented, the final choice being a parallelogram floor plan with angled upper stories. The steel design also helped keep the weight of the structure to a minimum. This was important for the design in seismic Zone 3. A glass curtain wall was dictated by the form of the building which demanded a clean, smooth, flush, monolithic surface—in no way competing with the upper lines.

Maximum usable space

The $33-million building has two interconnected towers with 45-degree angled roofs. The roofs—a striking design feature —offer prime office space with spectacular views. A minimum of interior columns helps maximize use of the 531,000 sq. ft. of floor space, including the 3-level garage.

Conservation of energy was a key consideration, and an electric-hydronic heat pump system connected to a main circulating water pipe provides heating and cooling which is both energy efficient and economical to install. In addition, the roofs were designed to accommodate solar panels in the future.

Steel speeds construction

The new building was erected on a narrow site—just half-a-block—and over 2,650 tons of A-36 and A-572 grade 50 steels were supplied by U.S. Steel. The fabricated steel was trucked from Portland at night and erected during the day using a single truck crane having a 280 ft. tower topped by a 170 ft. boom. This eliminated traffic congestion in a busy downtown area with a minimum of storage space. And the structural framing was completed one month ahead of schedule!

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Circle 19 on inquiry card

Two Senate panels consider the design of public buildings

The always volatile question of how architects should be selected for public projects is again causing dissension in Washington:

- The American Institute of Architects says the General Services Administration's present system is just fine and should not be changed.
- The GSA says its use of public advisory panels for selections is clumsy and expensive and should be dropped.
- Senator Robert T. Stafford, a Vermont Republican, wants the agency to use a formal architectural competition for all projects expected to cost $25 million for construction.

These competing views were aired before a Senate subcommittee in mid-October. Senator Daniel Patrick Moynihan, a New York Democrat, and head of the Senate's public buildings panel, says that he is rewriting the entire charter of GSA's Public Buildings Service and will deal with the question of architect-engineer selection at that time.

That the hearings were held at all is another indication of greatly increased interest in architectural excellence. This was the recurring theme throughout the hearings. But there was little agreement on how to achieve this excellence.

The question has had little practical meaning in recent years: the GSA has had virtually no money for new construction. In fact, the spending level for this fiscal year is only $16.2 million. Further need for office space is being accommodated by leasing.

But the days of lean spending for new construction may be ending. If current thinking holds, the Carter Administration will request $137 million in new construction money for GSA in fiscal 1981.

And Sen. Moynihan has already let it be known that the new Public Buildings Act he is writing will insist on a preference for new construction over leasing. According to the Senator, this will mean "a whole generation of buildings, and we hope they are going to be designed better" than past Federal buildings. "GSA architecture," Sen. Moynihan says, "has been pretty awful."

Those privy to Sen. Moynihan's thinking say he believes GSA has tended to hire big-name architects who have prepared "safe" designs. He wants "more daring."

So, apparently, does Sen. Stafford. He has introduced what he calls the "Architectural Excellence Act of 1979," which has been given the designation of S. 461. Under it, GSA would set aside between ½ of 1 per cent and 1 per cent of the estimated construction cost for financing a competition to determine the design of any public building costing more than $25 million.

The competition would "stress innovative designs that would be compatible with the community, conserve energy and materials, encourage public use of and access to the building, and reflect the dignity, enterprise, vigor and stability of the Government of the United States."

The prize in the competition could be as much as $250,000, upon the discretion of GSA, but would not in any case exceed that amount. The winner would be named by a panel of five that would include a private architect who would serve as chairman, a nominee of the National Endowment for the Arts, an architectural editor or critic, and a representative of GSA.

Significantly, the requirements in Sen. Stafford's bill would cover buildings constructed at Federal expense as well as those rented to the government over a long term.

GSA does not think this is such a hot idea. The Commissioner of the Public Buildings Service, A.E. (Mike) Marschall, testified before Sen. Moynihan that "we find no great advantage in the design competitions in contrast with our present selection system."

Mr. Marschall notes that the availability of design work is widely advertised and this "results in the selection of the most qualified firm through a careful evaluation process." Moreover, he says, the present system "through the requirement for technical proposals at different stages of screening, enables us to accomplish the same goals and objectives as highlighted in S. 461."

The AIA is also opposed to the idea. Testifying before the Senate panel, George E. Kassabaum, a past president of the Institute and a partner in Hellmuth, Obata and Kassabaum, Inc., noted that GSA already uses a form of architectural competition on its so-called Level Three projects (those considered unusually difficult or complex). The result, he says, is excessive cost to the government and participating firms, additional time required in selection through competition, and overemphasis on cosmetics rather than performance.

According to Mr. Kassabaum, S. 461 "is clearly not immune to the 'beauty contest' syndrome."

In summary, this is what he had to say: "Because of the complexities involved in design competitions, cost overruns and uneven results, the AIA is presently working with the National Endowment for the Arts to pursue alternatives and explore ways to overcome some of the obstacles."

Mr. Marschall used the occasion of the hearings to air another grievance of the GSA: the use of public advisory panels for A-E selections. These panels were instituted in the wake of the scandals surrounding former Vice President Spiro T. Agnew and were intended to isolate the GSA staff from selection decisions and from politics.

Experience has shown, Mr. Marschall said, that the system is expensive in terms of delay, which, "due to increasing escalation, affects the cost and time of delivery of our buildings." He went on to tick off eight other reasons for dropping the panels, one of which is that they eliminate highly qualified firms from consideration for commissions because of their membership on a panel.

What Mr. Marschall would like to do is replace the public panel with a board made up of professional architects and engineers on GSA's staff. Doing so, he says, will result in "substantial annual saving in construction costs, administrative costs and travel and per diem expenses."

The AIA does not think much of Mr. Marschall's idea. As Mr. Kassabaum says it, "The AIA enthusiastically supports the existence and function of these public panels."

The hearings also highlighted another difference of opinion between GSA and the AIA. It centers on the question how much actual design work should be handled by GSA staff designers and how much should go to private firms.

Mr. Marschall says GSA has gradually increased the percentage of work it contracts for and has decreased in-house design work. But PBS doesn't want to go too far in that direction, he testified, saying that permitting GSA designers to design keeps them motivated and hones their skills. Contracting out 80 per cent of the work to private design firms is his goal.

AIA, according to Mr. Kassabaum, is "firmly committed" to GSA's use of design-oriented registered architects, but he adds that they should only be used where their services are currently most needed, namely in project administration. This, he says, "would create a collaborative relationship between the private architect and the project administrator, insuring that an efficient and cost-effective design process becomes a reality."

These debates will be continuing ones. Sen. Moynihan will soon begin circulating the draft of his proposed rewrite of the Public Buildings Act. He's doing so to seek the participation of all interested parties. But it will probably be next spring before Congress gets around to acting on the proposal. —*William Hickman, World News, Washington.*

IRS eases overseas taxes for construction workers

It will become less expensive for U.S. design firms and construction companies to send workers overseas.

The Internal Revenue Service has written a new set of regulations that will qualify most construction industry employees in the Middle East and other developing areas of the world for personal income tax benefits because they live in "camps."

The definition of camps has been a point of contention since June, when the IRS wrote its first set of regulations for implementing a congressional change in the tax code to benefit U.S. taxpayers overseas. According to the U.S. Overseas Tax Fairness Committee—a lobby organization sponsored mainly by the construction industry—the rules were so rapidly written that no more than 1 per cent of the employees overseas would have qualified.

A vigorous campaign by Tax Fairness and other industry representatives convinced IRS to liberalize the regulations, and now the committee's director, Robert M. Gants, estimates that 80 to 90 per cent of the employees will be eligible for the camp residence benefits.

Taxpayers living in a camp will be able to exclude $20,000 in annual income from taxes, meaning that their tax bite is far lower than it would otherwise be. This affects employers because most firms and companies have been increasing employee compensation to make up for the amount lost as a result of the higher taxes. This extra expense on employers has been enough to handicap U.S. firms seeking price-competitive work overseas.

U.S. construction interests complain bitterly that they are being priced out of the competitive world marketplace anyway, and they point out that the Philippines is the only country other than the United States to tax foreign earnings.

The Tax Fairness Committee is mapping strategy for a battle in Congress to exempt U.S. taxpayers totally from assessments against their foreign earnings. —*William Hickman, World News, Washington.*

AIA offers aid to government in saving building energy

The American Institute of Architects has offered its assistance to the government in implementing programs for saving energy and demonstrating the value of solar power in Federal buildings.

The offer was made by Institute executive vice president David O. Meeker, Jr., in an appearance before the House Public Works Committee. The Federal plan, Mr. Meeker said, was overdue and he pointed to the AIA headquarters, which was retrofitted in 1978 to reduce energy consumption by 50 per cent. The payback time will be 2½ years.

AIA studies on energy savings have been proved by two recent university studies, Mr. Meeker said. "Those studies state that vigorous energy conservation in buildings is more cost effective than the development of new energy supplies, has more positive environmental impacts, more beneficial economic impacts, and is more likely to succeed." —*William Hickman, World News, Washington.*

City park accents grass and Renwick lighthouse

Roosevelt Island, New York City's New Town in Town, cheerfully, even joyfully, sets apart spaces among its new apartment buildings for older 18th- and 19th-century buildings—a farmhouse here, a chapel there, an Octagon Tower elsewhere. With the opening of Lighthouse Park at the northern end of the island, James Renwick's 1876 lighthouse joins the group.

Quennell Rothschild Associates, landscape architects and architects, report that the five-acre park is the largest to be dedicated in the city in more than 30 years. It is also the largest open space on the island, with a narrow tip jutting directly upstream in the East River.

Improvements on what is described as "a once barren wasteland" concentrate on greenery and simplicity so as not to detract from incomparable views of midtown Manhattan and river traffic—a great many trees and shrubs, lawn, and a small paved area for seating and picnicking, as well as a man-made wetland. The architects found ready consultants on barrier-free design at the Bird S. Coler Hospital for the handicapped, adjacent to the park.

The Renwick lighthouse that gives the park its name is a 50-ft tower of gray stone quarried on the island. It no longer works as a navigational aid, but the architects say that the Coast Guard has granted preliminary approval to relight the lantern as decoration.

New York City designated the lighthouse a landmark in 1976, and included in its certification a legend that attaches to the structure:

"Local legend maintains that during the 19th century a patient from the nearby Lunatic Asylum was permitted to build a stone fort on this outcropping since he deeply feared an invasion by the British. When plans were formulated to build the lighthouse, this patient was allegedly persuaded to surrender the fort only after much cajoling and a bribe of bogus money. The tale continues that the patient himself demolished the fort and built the new lighthouse, carving the inscription:

This is the work
Was done by
John McCarthy
Who built the Light
House from the bottom to the
Top all ye who do pass by may
Pray for his soul when he dies."

The park was developed by the Roosevelt Island Development Corporation, a subsidiary of the New York State Urban Development Corporation, with a $540,000 grant from HUD.

Peter Rothschild

Laudatory hearings on GSA's art-in-architecture program hint an increase in funds

"Oversight" hearings sound inquisitorial, but the recent hearings conducted by the Senate Subcommittee on Civil Service and General Services regarding the General Services Administration's art-in-architecture program scarcely seemed hostile to the program overseen. Indeed, one observer characterized the proceedings as a "sweetheart" hearing.

The presiding, and only, officer of the hearings was freshman Senator David Pryor (D.-Ark.), who made his own support of the program clear in his opening statement. It was, moreover, quite clear by the end of the hearing that Sen. Pryor intended this as the opening wedge in a campaign to extend the Federal arts program and to increase GSA's allowance for artists' commissions to 1 per cent of the cost of a building.

Sen. Pryor also assembled a body of big-gun enthusiasts for the program, including the Vice President's wife, Joan Mondale; a ranking American artist, George Segal; the head of the National Endowment for the Arts, Livingston L. Biddle, Jr.; former GSA Administrator Jay Solomon; four fellow senators—James R. Stasser (R.-Tenn.), Jacob Javits (R.-N.Y.), Daniel Patrick Moynihan (D.-N.Y.) and Ted Stevens (R.-Alas.)—who either testified or submitted statements for the record.

The art-in-architecture program came into being at President Kennedy's prodding in 1962, when GSA issued a policy order directing an allowance for fine arts in new Federal buildings equal to ½ of 1 per cent of the estimated construction cost. The program lapsed in the late '60s under inflationary pressures, but was reactivated in 1972, with selection procedures using "peer panels" at the National Endowment. It has by all accounts succeeded resoundingly, both in the number (upward of 100) and quality of works commissioned from such artists as Baskin, Breuer, Calder, Nevelson, Noguchi, Oldenburg, Segal and Stella, among others.

Mrs. Mondale's energetic support of the arts has been much in evidence in this Administration. In her testimony before the subcommittee, however, she directed one of her main points less to the esthete than to the hard-headed taxpayer: GSA purchases in the art-in-architecture program have appreciated 300 per cent in market value.

Sculptor Segal—who can, after all, create works of considerable value at will—was more impressed by the freedom given "grouchy" artists, in consequence of which, he testified, he had himself spent more time than his "meager" fee quite paid for. (Mr. Segal sculptured *The Restaurant* for the Federal office building in Buffalo.)

Only Admiral Rowland G. Freeman, III, the present Administrator of General Services, introduced a note of caution into the rosy proceedings. While affirming GSA's continued support for the art-in-architecture program, he did not feel that legislation was needed to codify the administrative order. He further pointed out that the program's cost had risen from $400,000 in 1977 to a projected $1.3 million in 1980. In response to a suggestion from Sen. Pryor that operational savings at GSA might be adequate to expand the arts program without additional funding, Adm. Freeman pledged to take the matter under advisement.

One of Adm. Freeman's major suggestions for improving the program was a plea to increase community participation in the selection process. Though that suggestion has been made by others, and though the National Endowment attempts to get the broadest possible participation in selection, the proposal perhaps takes added force from the GSA Administrator, one of whose first problems on taking the office was a petition from citizens in Huron, South Dakota, requesting the removal of the sculpture *Hoe Down* by Guy Dill from the lawn of the Federal Building.

New national marketing firm will advertise design services

A Dallas-based architectural-engineering firm is forming a national marketing organization for architects patterned, it says, after successful nationwide networks of real estate agents. Next spring, by which time it hopes to have a nucleus of about 20 member firms, the organization will launch a major advertising effort in national business publications aimed at buyers of design services.

SHWC, Inc., is forming the organization, to be called the United Professional Network (UPN), as a wholly owned subsidiary. It will pool the resources of large and small firms across the country and establish a sophisticated marketing vehicle for member architects as well as a computer bank of information on members' areas of expertise, production capability, and their current workload.

Each member company will maintain its own identity and organization, however, along with the national marketing program. UPN will offer to put its members in touch with each other to act as consultants or associates for special projects. It will help with design, programming and production services, and will provide advice on marketing plans and operational procedures. These services, the new organization says, will give small firms the capability of getting larger jobs than they could normally handle.

According to SHWC vice president David Wilson, who will be president of UPN, after researching the concept for almost a year and making a personal survey of some 60 firms located across the country, the company plans to start offering UPN memberships to selected architectural firms this fall. It will hold membership fees in escrow until about 20 firms have joined, then it will begin its marketing effort.

UPN does not plan to advertise for members in business journals, and members will be permitted to join only after a personal appraisal.

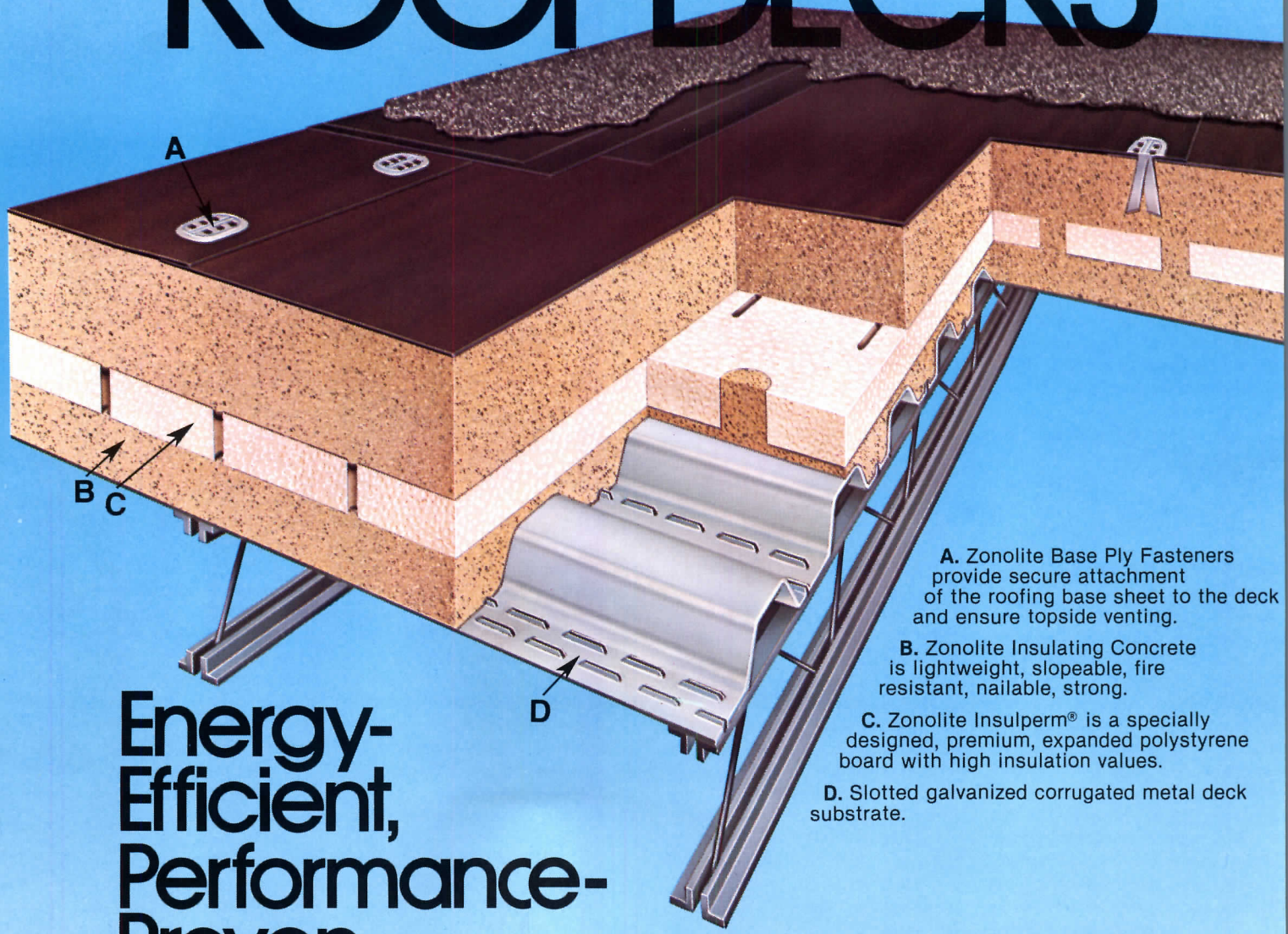
According to SHWC president James Heister, a network like UPN became feasible only after court rulings and subsequent changes in the American Institute of Architects' code of ethics permitted advertising by architectural firms.

UPN intends to spread its original group of companies across the country in order to give the organization a national aspect from the beginning. Membership in a geographic area, however, will be limited on the basis of market size and potential. The organization will be headquartered in SHWC's Dallas office, but eventually there may also be regional offices.

Member firms will pay an initial charge to join UPN. Thereafter monthly dues will be based on a percentage of the member's increase

continued on page 39

Zonolite® ROOF DECKS



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gross income. UPN hopes that by narketing the name nationally it can stablish a national identification that ill enable small member-firms to ompete more effectively for con-acts against larger architectural as-ociations.

Mr. Heister says that UPN has the otential of expanding its member-hip to include related fields such as ngineering, developing and land-cape architecture.

SHWC, which has 85 employees, 5 of them in Dallas, claims to be exas's sixth largest architectural firm. does more than 50 per cent of its ork on public schools and colleges, ith about $170 million in education-work under contract in the past ve years. Second in volume to its chool design work is condominium nd hotel design, with more than 48.5 million in work in those catego-es in the past five years.

Mr. Heister says that since open-g the Dallas office and moving the rm's main production facilities to lorth Texas 10 years ago, SHWC has rown 20 to 30 per cent annually. ounded in Harlingen, Texas, where it ill has an office, SHWC now has ffices in Brownsville, Corpus Christi, louston and Dallas. —*Lorraine Smith, World News, Dallas.*

Florida legislators wipe out model law for A-E selection

Florida's model architect-engineer selection law is in jeopardy.

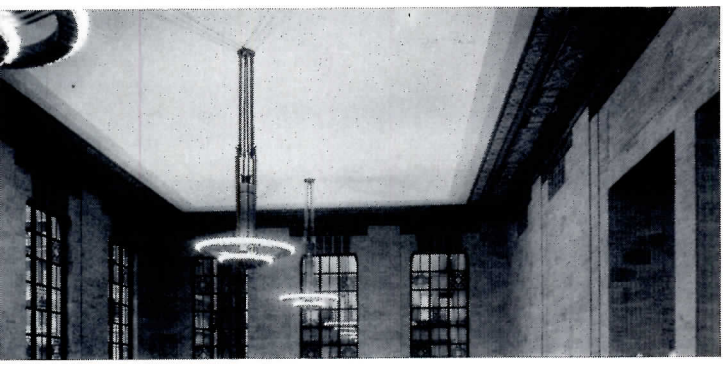
The legislature this year passed a law that wipes out the non-price-bid selection procedure for certain construction design services.

The measure, attached to an appropriations bill for the State Department of Transportation, says funds appropriated to the department cannot be spent on any kind of consulting services contracts unless the specific price of the services is submitted as part of the proposal and evaluated along with the traditional, most-qualified selection criteria.

The Florida Engineering Society and eight individual A-E firms have filed suit, claiming that the law is unconstitutional under the state's charter, which says that changes in "substantive law" cannot be made through an appropriations act. A state court is expected to rule on the claim next spring.

The A-E law in Florida has often been used as an example of the kind of measure local officials ought to have for selecting construction design professionals. —*William Hickman, World News, Washington.*

979 crafts award goes to Des Moines tradesman/artist



n increasing taste for restored and e-used buildings, and an increasing istaste for discarding beautiful if hreadbare buildings, has correspondingly increased the importance f craftsmen, especially those who ork in trades that largely fell into isuse in the giddy press of post-war rchitecture. The place of craftsmen n the building process and their workmanship and ingenuity" are ecognized biennially by the Ameri-an Institute of Architects and the uilding and Construction Trades De-artment, AFL-CIO, in their Crafts-nen of the Year program.

Svend Paulsen, a tradesman/art-st of Des Moines, was named 1979 Craftsman of the Year last month for estoring the water-damaged Art Deco ceiling of the 48-year-old Valley National Bank in Des Moines.

Of Mr. Paulsen's work, the jury aid, "In the ceiling restoration of the rt Deco bank building constructed n 1931, Mr. Paulsen demonstrated reat skill in his ability to see and mix olor in the application and composition of the ceiling restoration in the main banking space. The ceiling contributes immensely to the success of the over-all restoration project."

The architect for the restoration was Charles Herbert and Associates, Des Moines.

The jury also gave an Award of Merit to three Columbus, Ohio, craftsmen—George Martina, Victor Fabro, Jr., and Clanton Edwards—for their "sensitive handling of a difficult material and careful attention to detail and contrasting surface finishes" in the restoration of the terrazzo floor in the sanctuary of St. Joseph Cathedral, Columbus. Gilbert Coddington, FAIA, and John P. Gibboney, AIA, were the architects.

Members of the jury were William Marshall, Jr., FAIA, William R. Jarratt, FAIA, and Roy E. Johnson, president of the United Union of Roofers, Water Proofers and Allied Workers. Candidates for the award are nominated by AIA chapters and local trade unions recognized by the AFL-CIO.

600 million people may live in "absolute poverty" by 2000

As the world lurched toward the murky international economic scene of the 1980s, there was little cause for rejoicing at the annual World Bank-International Monetary Fund meetings in Belgrade early last month. But the meetings did mark the recognition of the Bank's cumulative impact in investments for the urban poor, which began in 1972.

In its past seven fiscal years, the Bank has provided assistance in the amount of $1.11 billion to help finance 42 urban projects costing a total of $2.54 billion. These Bank-assisted projects for countries in the developing world will provide some 1.25 million poor urban dwellers with serviced sites, and projects for improving slums and squatter areas will cover an additional 4.5 million.

The Bank's projects, oriented to the urban poor, have extended their reach from roughly the poorest 50 per cent to exclude only the poorest 10 to 20 per cent of the population, and are designed with increasingly innovative concepts that go far beyond those of conventional public housing, with the objectives of affordability, replicability and cost recovery. The build-up of technical design expertise, not only among Bank staff but among consultant and local authorities as a result of the Bank's initiatives, is given due credit, enabling the Bank to develop new methodologies and analytical tools to assess alternative designs.

The Bank's 1979 Annual Report takes as a case example its work in the Philippines, where in May 1976 the Bank approved a $32-million loan to help finance a project upgrading slum sites and services in the Tondo Foreshore area of Manila. This loan helps provide urban services for approximately 180,000 slum dwellers and some 2,000 serviced sites for squatter families. The project has brought the area to a take-off point and has stimulated private investment by residents to an extent even greater than anticipated, the Report says. A new Bank loan has now been made to expand similar work in the four most important urban areas—Metropolitan Manila, Cebu, Davao and Cagayan—and the country's creation of the Ministry of Human Settlements in June 1978 has provided an institutional framework for the extension of innovative low-cost projects.

The Report indicates the Bank's acceptance of increasingly large and integrated urban development projects as a viable area for future investment linked to the solution of poverty and the development of effective urban economies. The Bank's Urban Projects Department, with more than a hundred professionals, is now being "regionalized" and assigned to existing regional projects departments.

The second World Development Report (1979) issued by the Bank gives some estimates of absolute poverty in the developing countries for the year 2000, using a set of alternative scenarios. These reckon that some 600 million people could be living in absolute poverty by the end of the century, with a "high" scenario of 470 million and a "low" scenario of 710 million. Much of this poverty will be in rural areas, even though the number of people living in the cities and towns of developing countries is expected to increase by nearly a billion, from about 650 million in 1975 to more than 1.6 billion in 2000.

News of Habitat

The 58-member Commission on Human Settlements, which held its second session in Nairobi in April and approved a two-year work program for the UN Center for Human Settlements (Habitat), will meet for its third session in Mexico May 5-14, 1980. High on the list of concerns for this meeting is the inadequacy of operational resources for the Center, whose professional staff of more than 50 was transferred from UN Headquarters in New York City to Nairobi early in 1979. Although voluntary governmental contributions of $13.5 million were required to carry out the Center's work program, only a fraction of this amount has been pledged or contributed to date, despite growing demands for technical assistance and services. The United States has thus far neither pledged nor contributed to the Habitat cause.

The UN Habitat and Human Settlements Foundation, which began operations in Nairobi in August 1975, has been fully absorbed into the Center, whose executive director, Dr. Arcot Ramachandran, also serves as the Foundation's administrator. Before its merger into the Center, the Foundation developed a wide range of projects, although the resources available to it were limited to a one-time grant of $4 million from the Governing Council of the UN Environment Program, plus voluntary governmental contributions of less than half that amount. The Foundation's main roles in the future will be in project appraisal and fund-management.

The regional meetings on Human Settlements Finance and Management, convoked by the Center and the Foundation during 1978 and 1979 in Nairobi, Mexico City, Manila and the United Arab Emirates, have stimulated more attention to regional action and financing. The African Development Bank has moved in cooperation with other agencies to establish Shelter Afrique, a new private African housing finance corporation. Steps are now being taken to study the feasibility of an Asian Housing Bank. —*Eric Carlson, Habitat, Nairobi.*

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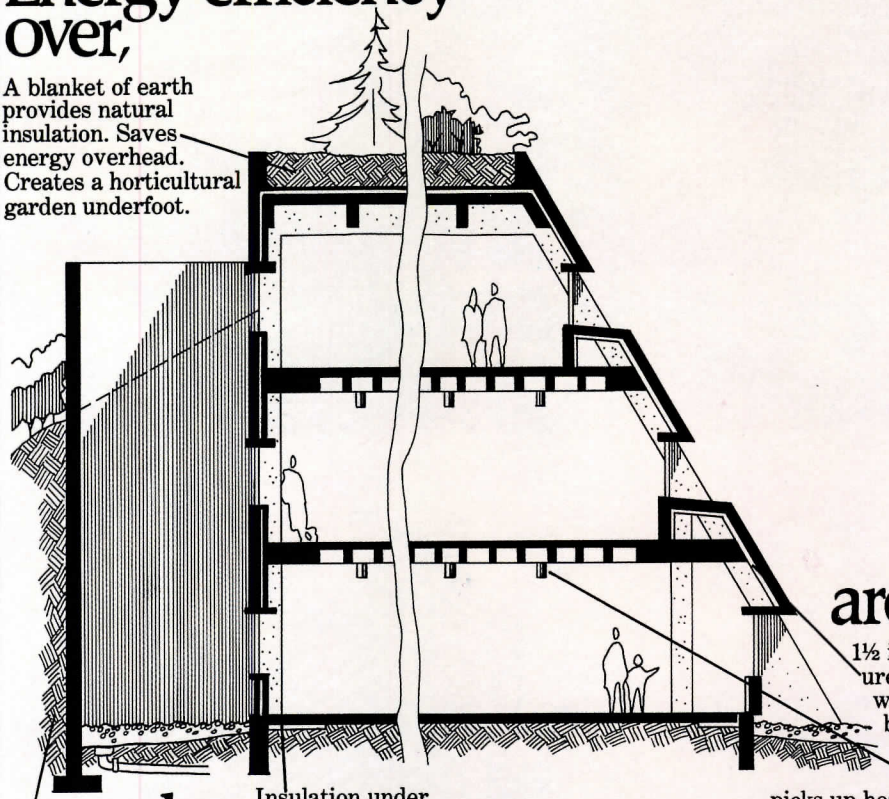

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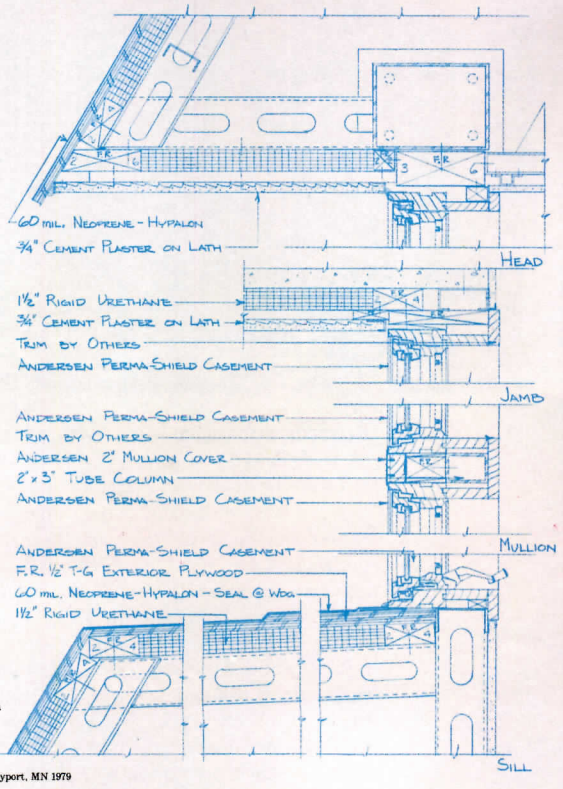

Camden County Library
Voorhees Township,
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Architect:
Louis Heyer Goettelmann
II A.I.A.
Haddonfield,
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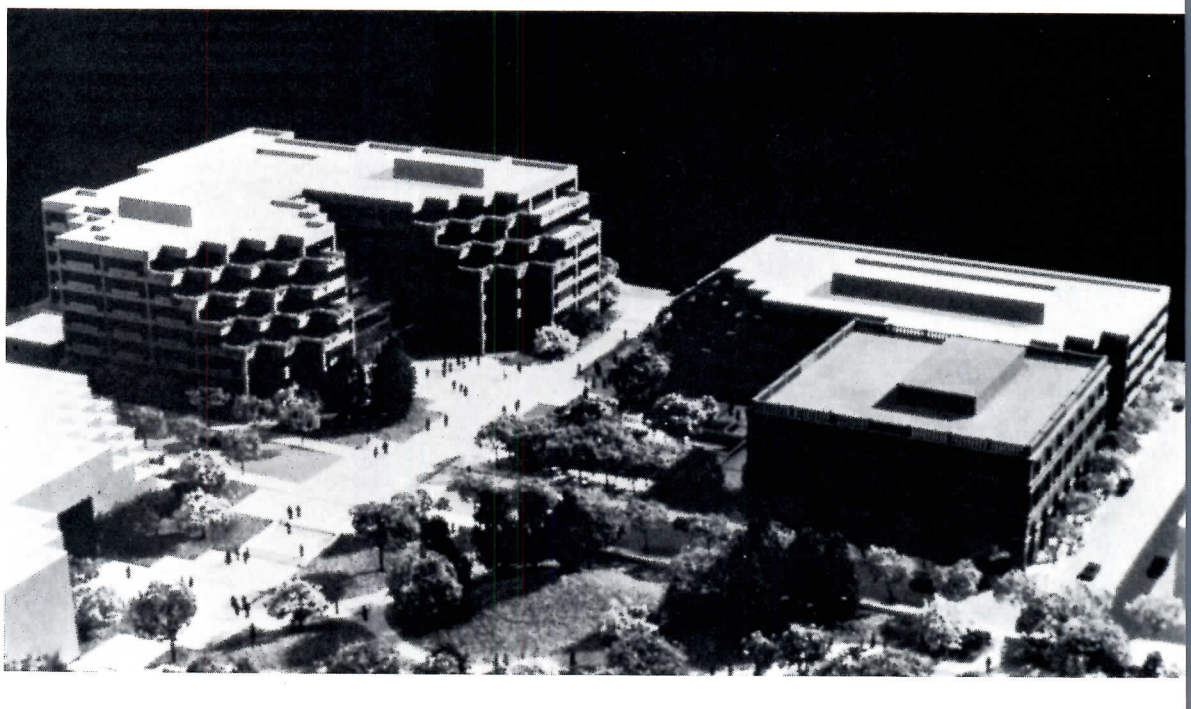
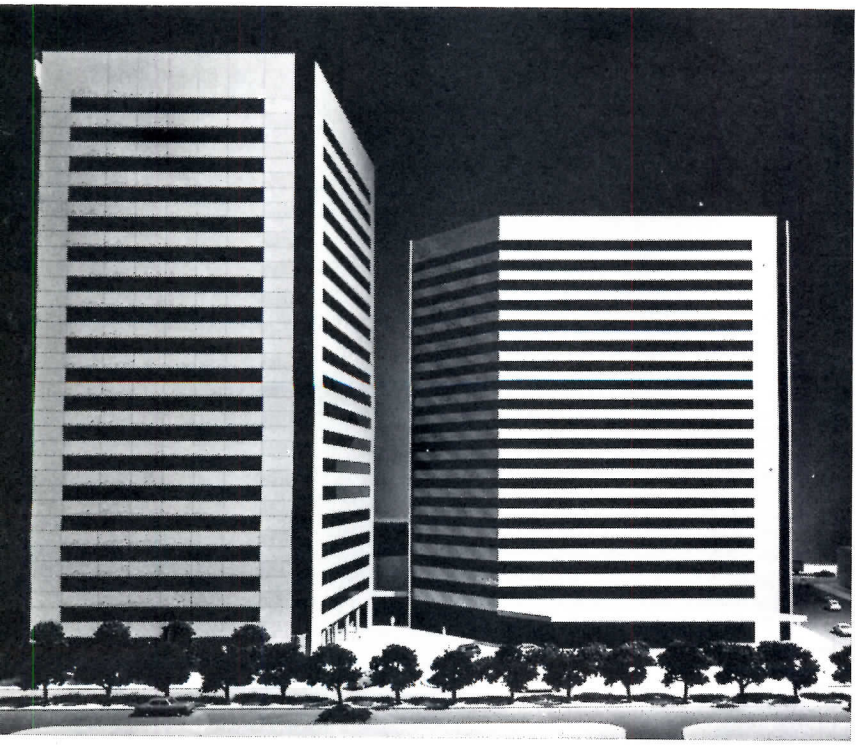
Levi Strauss builds a mixed-use complex on the Embarcadero

Levi Plaza, a mixed-use complex planned by Levi Strauss & Company for its corporate headquarters, will cover nine acres on San Francisco's northern waterfront. Designed by Hellmuth, Obata and Kassabaum, Gensler Associates and Howard Friedman and Associates, the project encompasses both new and old buildings, centering on a four-acre park designed by landscape architect Lawrence Halprin and dedicated to public use. The terraced facade of the new buildings will reflect the contour and scale of adjacent Telegraph Hill. The complex will include office and retail space.



Mid-America Plaza rises in Oklahoma City

A two-building complex, plus a 600-car parking garage, will anchor the eastern end of Oklahoma City's downtown. The first phase of the project, designed by architect S. I. Morris of Houston in association with the Oklahoma City firm Benham-Blair & Affiliates, Inc., calls for a 19-story, 344,000-sq-ft office building, Mid-America Tower (at left in model). The second phase will add a 350-room hotel. Horizontal bands of granite and bronze-colored double glazing will alternate on the curtain wall, and at the beveled corners unbroken vertical bands of reflective glazing will extend the full height of the buildings. The office building will cost an estimated $20 million.

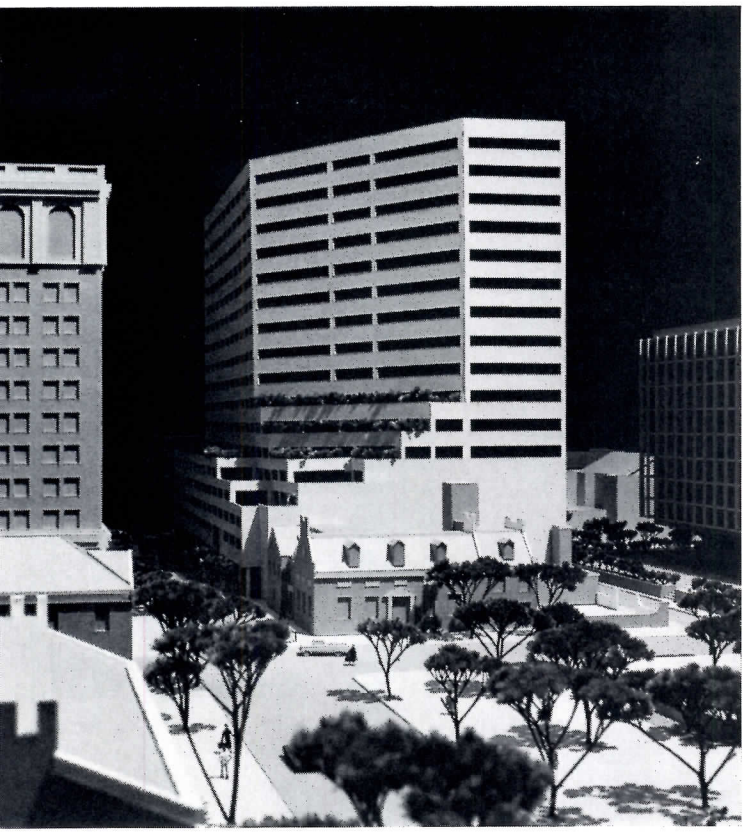


Boston complex joins offices and a landmark

On the site of the old Federal Reserve Bank of Boston in the center of the city's financial district, One Post Office Square will combine a new 39-story office tower and a hotel—a conversion of the original Federal Reserve Bank building and a designated landmark. Architects are Jung/Brannen Associates, with Pietro Belluschi as consultant. The buildings will be linked at the base, where the office building's six-story lobby will become the highest portion the hotel's atrium. The arc tect sculptured the tower ma with overhangs and re-entra corners, doubling the numb of corner offices and varyi floor areas from 10,000 23,000 sq ft (22,000 sq ft typical). The 300-room hot which was designed origina by R. Clipston Sturgis, takes form from the 16th-centu Palazzo della Cancelleria Rome; renovation is schedul to get underway this fall.

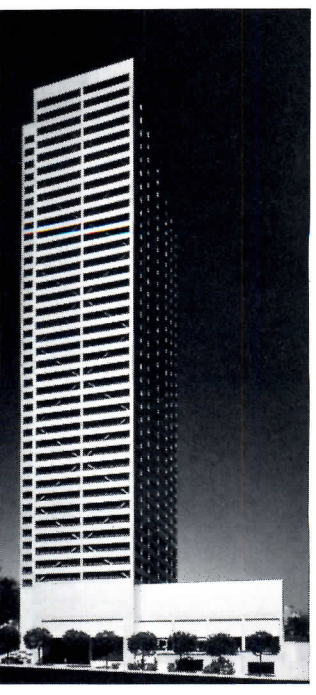
iladelphia building will face Independence Hall

adelphia, with an imposing ection of both historic and v buildings, places special nstraints on design, especial- when a site lies across the eet from a national shrine. its design of the specula- e Independence Mall Office lding, Ballinger cut off long gonal sections at two cor- s to open up views and races and to leave visual space not only for Independence Hall but also for the old Public Ledger Building on one side and Pietro Belluschi's Rohm & Haas building on the other. The new building, faced with gray limestone, gray brick and red-brown tinted insulating glass, will house offices, a garage, and ground-floor retail space to extend the Chestnut Street shopping mall.



Pilotis lift San Francisco tower above glass lobby

Johnson-Burgee have designed a faceted tower that will, at 600 ft, be the third tallest building in San Francisco—unless voters pass an initiative on this month's ballot limiting building height in the city to 260 ft. The 1.2-million-sq-ft building, 101 California, has been developed by Gerald D. Hines as the headquarters of Itel Corp. It will have a faceted cylindrical tower of light-colored stone and gray-tinted glass. The architect has raised one side of the tower on seven-story pilotis, which will support a slanted glass roof over the faceted glass walls of the building's lobby.



Bank will occupy towers in Seattle and Spokane

Seattle-First National Bank will be the major tenant in two new office buildings under construction in the Pacific Northwest, both developed by Gerald D. Hines Interests, both designed by 3D/International of Houston. In Seattle, cross-bracing directly behind and visible through the natural aluminum and gray glass curtain wall will draw attention to the 42-story Seafirst Fifth Avenue Plaza. In Spokane, Seafirst Financial Center's 20 floors will make the building the tallest in the city. The office building and the adjacent four-story atrium will be clad with pale bronze-colored aluminum and bronze-colored reflective glass. Completion is scheduled for mid-1981 in Seattle and for fall of 1980 in Spokane.

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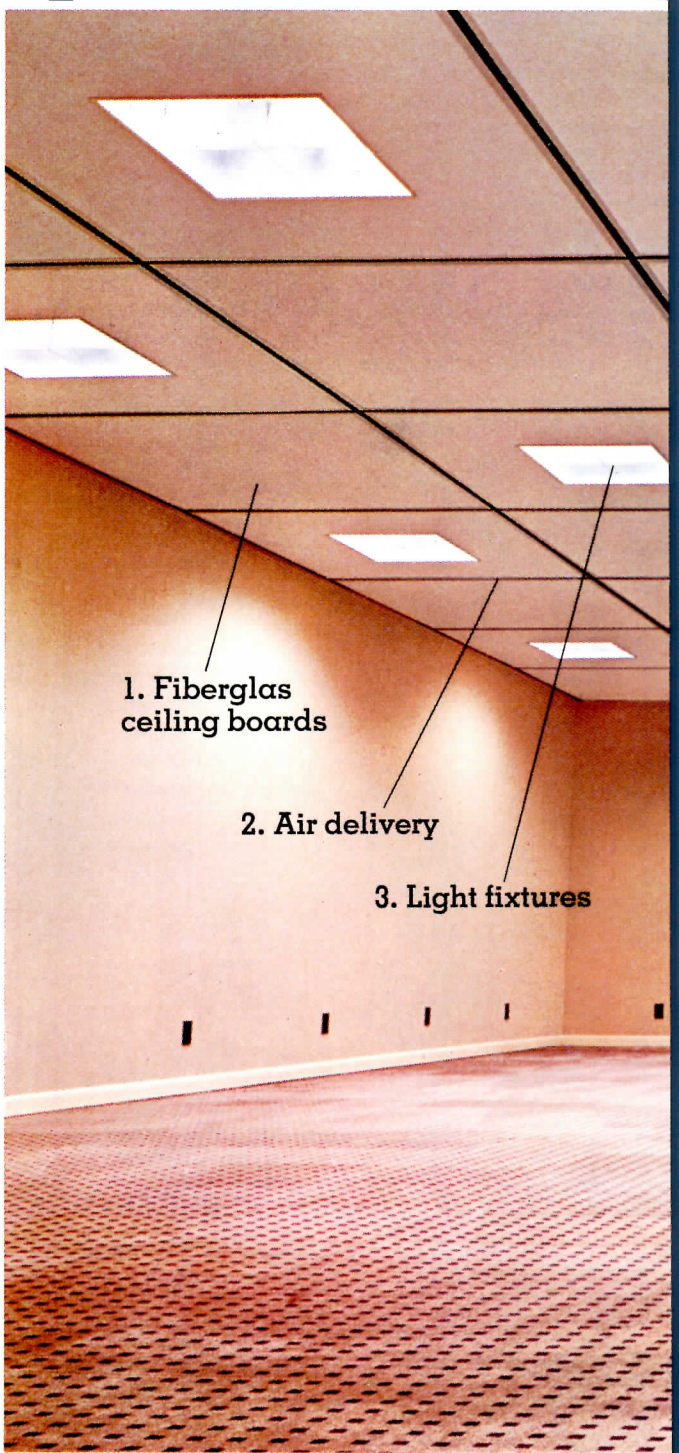

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Dodge/Sweet's Construction Outlook: 1980 is *not* 1975

On the surface, at least, you couldn't find much evidence of recession in the construction industry in the fall of 1979. Contractors and their crews were completing a record $230 billion of work in progress—a total that was still expanding. Building products manufacturers' and distributors' sales and profits reflected this strong on-site demand for materials with continued gains. Just below the surface, however, there were unmistakable signs that the string had run out on the four-year-long expansion of the construction cycle. All of this year's 9 per cent gain in the value of construction put in place (and then some) was nothing but inflation as 1979's physical volume of work slipped below 1978's level. And even in inflated 1979 dollars, the value of new construction projects being started passed its peak in the year's opening quarter. Declines in the seasonally-adjusted rate of contracting during the second and third quarters point the way of the future for on-site work in progress. At the same time, the near future looks less supportive of the start of new construction projects than it has in several years.

This transition is, of course, the construction industry's reaction to the nation's interlocking problems of inflation and recession. Inflation, or more precisely the measures taken to restrain inflation, began to slow the pace of building activity early in the year. That was when soaring interest rates turned off the two-million unit annual rate of housing starts that prevailed through 1977 and 1978. Monetary restraint was backed up by budgetary restraint, and the expiration of the $6 billion Local Public works Act put a crimp in most kinds of publicly-financed construction as well. This left only commercial and industrial building to sustain the flow of new construction projects at midyear, but with the economy sinking into recession, support from the private nonresidential sector could hardly be depended upon for long.

In the days of 1979 that still remain, all the risk is on the downside with the environment for the construction market becoming increasingly hostile on all fronts. As the chairman of the Federal Reserve Board searches for the ultimate rate of interest that will finally have a deterring effect on inflation, the housing market will stagnate. As the fiscal 1979 budget gives way to the fiscal 1980 budget, public works spending will be a prime target for restraint. As the recession moves into its third quarter, commercial and industrial building will be curtailed. And that's the way things will remain until there's a fundamental change in the economic environment.

The 1980 outlook: what are the limits to decline, and when does recovery begin? The Dodge/Sweet's Construction Outlook for 1980 addresses two questions: What are the limits to the decline in construction contracting that is already under way? When will the next recovery begin to take hold?

Answers to these questions depend

1980 National Estimates

Dodge Construction Potentials

Nonresidential Buildings		1978 Actual	1979 Preliminary*	1980 Forecast	Percent Change 1980/79
Contract Value (millions of dollars)	Office Buildings	$ 9,085	$11,100	$10,500	− 5
	Stores & Other Commercial	11,403	12,700	11,600	− 9
	Manufacturing Buildings	8,703	7,500	6,800	− 9
	Total Commercial & Manufacturing	$29,191	$31,300	$28,900	− 8
	Educational	$ 5,725	$ 6,400	$ 6,700	+ 5
	Hospital & Health	3,720	4,700	4,950	+ 5
	Other Nonresidential Buildings	5,737	6,900	7,700	+12
	Total Institutional & Other	$15,182	$18,000	$19,350	+ 7
	Total Nonresidential Buildings	$44,373	$49,300	$48,250	− 2
Floor Area (millions of square feet)	Office Buildings	207	235	205	−13
	Stores & Other Commercial	548	555	455	−18
	Manufacturing Buildings	209	230	195	−15
	Total Commercial & Manufacturing	964	1,020	855	−16
	Educational	105	101	95	− 6
	Hospital & Health	52	57	55	− 4
	Other Nonresidential Buildings	153	162	165	+ 2
	Total Institutional & Other	310	320	315	− 2
	Total Nonresidential Buildings	1,274	1,340	1,170	−13

*Eight months actual; four months estimated.

Residential Buildings		1978 Actual	1979 Preliminary*	1980 Forecast	Percent Change 1980/79
Contract Value (millions of dollars)	One-Family Houses	$ 59,790	$ 54,250	$ 58,400	+ 8
	Multifamily Housing	12,942	16,650	14,700	−12
	Nonhousekeeping Residential	1,799	2,800	2,750	− 2
	Total Residential Buildings	$ 74,531	$ 73,700	$ 75,850	+ 3
Floor Area (millions of square feet)	One-Family Houses	2,246	1,827	1,800	− 1
	Multifamily Housing	512	600	488	−19
	Nonhousekeeping Residential	41	58	52	−10
	Total Residential Buildings	2,799	2,485	2,340	− 6
Dwelling Units (thousands of units)**	One-Family Houses	1,439	1,150	1,125	− 2
	Multifamily Housing	523	585	500	−15
	Total Housekeeping Residential	1,962	1,735	1,625	− 6

Nonbuilding Construction					
Contract Value (millions of dollars)	Highways & Bridges	$ 11,078	$ 13,600	$ 13,400	− 1
	Utilities	12,336	13,500	15,500	+15
	Sewer & Water	8,608	7,900	8,800	+11
	Other Nonbuilding Construction	7,512	7,500	7,700	+ 3
	Total Nonbuilding Construction	$ 39,534	$ 42,500	$ 45,400	+ 7

All Construction					
Contract Value (millions of dollars)	**Total Construction**	$158,438	$165,500	$169,500	+ 2
	Dodge Index (1972 = 100)	174	182	186	

*Eight months actual; four months estimated.
**F. W. Dodge basis.

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nostly on the next developments in the ontinuing struggle with the dual problem of nflation/recession in the context of an elec- ion year. A few simple principles form the oundation upon which we can erect a ramework of assumptions. These basics, vith which there can be little argument, are:

The economy has reached the peak of a ycle without experiencing the usual excesses n inventory build-up or capital spending. The bsence of serious imbalance in these areas uggests a minimum need for market self- orrection, but as long as economic policy is irected at curbing inflation, the risk of deep ecession is greater than it would otherwise e.

Until there are signs that double-digit nflation is beginning to yield, national economic policy will be held to its present, estrictive course. For this we have the olemn promise of the Messrs. Carter, Miller, nd Volcker.

As inflation recedes over the months head, unemployment will almost certainly ise. Before long, rising unemployment will ecome a greater political liability than infla- ion, and receive a higher policy priority.

The rest we have to assume, and it is on hese assumptions that most forecasts for 1980 performance differ. The key economic ssumptions supporting the Dodge/Sweet's Construction Outlook for 1980 are:

1. The rate of inflation, finally leveling off t 13 per cent, will begin to recede in the ourth quarter of 1979, and stabilize tempo- arily at 9 per cent in the second half of 1980.

2. After the Federal Reserve's drastic October move to tighten bank liquidity, the ext step in monetary policy is likely to be oward relaxation of restraint, hopefully in 1980's first quarter.

3. Interest rates will reach their peak arly in 1980 and decline gradually over the est of the year.

4. Fiscal stimulus in the form of a tax cut will be announced early in 1980, and will ecome effective before midyear.

5. After a brief inventory correction, ecovery of the economy will begin in the econd quarter of 1980.

6. Recovery will be sluggist, leaving real GNP in 1980 slightly below that of 1979.

This scenario of a relatively mild, four- quarter-long recession is contingent on a shift n policy from restraint of inflation to moder- te stimulus of recovery by the spring of 1980. Recovery will be retarded, however, ince the continuing threat of a new outbreak f inflation will limit the amount of stimulus hat can be safely applied. We can now onsider how this series of developments will ffect construction markets during the year head.

Housing will bottom out at 1.5 million units sometime before mid-year

Not only is housing the construction indus- ry's biggest market by far, it's the place where things happen first. And whatever happens to housing sooner or later is trans- mitted to a number of commercial, institu- tional, and public works construction mar- kets. Those are three good reasons to lead off the 1980 Construction Outlook with an analysis of residential building.

True to form, housing was the first build- ing market to crack under the strain of anti- inflationary monetary restraint. However, the most important feature of the 1979 housing market is not its weakness but its continuing strength under conditions of double digit mortgate rates. In sharp contrast to the last major credit crisis, when the volume of hous- ing starts plunged by 50 per cent from a peak of 2.4 million units to only 1.2 million, the reaction of 1979 has been mild. After an initial drop of about 15 per cent from 1978's two million starts, volume has stabilized. . . so far, at least. . . close to 1.7 million units. But the most recent escalation of monetary restraint by the Fed's new chairman has yet to have its full impact on the housing market.

In assessing the limits of the current housing cycle, it is important to appreciate the extent of the structural changes that have taken place in the housing market in only the past five years.

Paradoxically, rising home costs have spurred purchases

The demographic foundation of the demand for shelter is now approaching its all-time peak. The present rate of household forma- tion at 1.7-1.8 million per year is 10 per cent stronger than it was only five years ago, and will continue at this rate through the early 1980's. Since household formation is the source of two-thirds of total shelter demand, this implies an average annual need for shelt- er of all kinds of 2.7 million units. Assuming that 600,000 units of this need will be satisfied by mobile homes and by conversions (rehab), there remains a solid annual demand for 2.1 million new site-built units until 1984.

The near doubling of the cost of new one-family homes over the past half dozen years has been, paradoxically, more of an incentive to buy new or existing homes than it has been a deterrent. Housing is to the typical American family what gold is to many Europeans—a good hedge against inflation.

A recent innovation in savings banking has taken most of the sting out of the dreaded word "disintermediation." Since mid-1978, high yielding Money Market Certif- icates have provided a viable alternative to fund-switching in periods of rising interest rates. To date, they have attracted nearly $100 billion, most of which has been chan- neled into mortgage lending.

Two of these three supports to the hous- ing market—demography and inflation—will be as influential in 1980 as they have been in 1979, leaving credit as the key to housing's short-term fate.

A setback for housing is the inevitable by-product of the Federal Reserve's latest and toughest move to check inflation through monetary restraint. With the flow of pass- book savings falling off in recent months, Savings and Loans have become increasingly dependent on alternate sources of funds— Money Market Certificates and sales of exist- ing mortgages via the secondary market—to sustain their liquidity. These expedients, which have worked so well during the past year of tight money, will continue to provide a base of support to housing finance in 1980, but they will not be nearly as effective in the aftermath of the Fed's October boost in short-term interest rates.

As short-term rates are pushed still high- er, funds that S & L's acquire through MMC's (for which they must pay a high rate of interest competitive with Treasury Bills) can- not be loaned out profitably as mortgages. Sharply rising short-term interest rates also inhibit secondary mortgage market opera- tions by encouraging institutional lenders to divert funds into higher-yielding short-term securities instead of purchasing existing mort- gages in the secondary market. With less support coming from these non-traditional sources in the months ahead, S & L's will be exposed to a liquidity squeeze.

In addition to indirectly restricting the availability of mortgage funds, the continued upward movement of interest rates—acceler- ated by the Fed's latest round of tightening— will soon be directly choking off homebuild- ing in the many states which have 12 per cent usury ceilings on mortgage lending. At the latest reading, rates on conventional mort- gages were rapidly approaching this limit.

For a short time, thrift institutions will continue to support a 1.6 million unit rate of housing starts as they honor their existing commitments for mortgage loans. Once these commitments are depleted—possibly by year-end—the 1980 rate of building will have to adjust to a reduced volume of lend- ing until the Federal Reserve eases its restraint.

At 500,000 units, volume in multi-family housing still looks surprisingly good

One of the few surprises in 1979's housing setback is the relative strength of multi-family demand. With most of the decline in the rate of housing starts from last year's two million to the current 1.7 million confined to one- family homes, starts of multi-family units will still exceed 500,000 in 1979—a good volume for this market considering the way the popu- lation is changing.

According to the "official" demographic projections of a few years ago, this is the time when the mix of housing demand is supposed to shift dramatically. Because the growth of the population is now heavily concentrated among those 30 to 45 years old, the propor- tion of one-family homes needed should rise sharply, while multi-family demand wanes. And that's the way it's been happening, though not quite to the extent that Census Bureau demographers led everyone to expect.

Experience of the past five years shows that projections of household formation prepared back in 1975 were not only too low (by about 10 per cent), but failed to antici- pate the changing life-style of the 1970's. Hindsight shows that people married later and divorced more in the 1975-79 period than before. The result: more one-person

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ouseholds and fewer husband-wife house-olds, making more new households in total y as many as 150,000 per year. What all this neans is an even stronger total demand for nelter than expected. Demand is still tilted eavily toward one-family homes, but there ow appears to be more potential for multi-amily units than previous demographic data ndicated.

The 1980 outlook: The housing cycle will each its lowest point—at an annual rate of .5 million units—during the first half of 1980 vhen the effects of monetary restraint will ear hardest. Easing credit is expected to ring an upturn by or before midyear, but the ear's housing start total, at 1,600,000 units, vill fail to match even 1979's weak volume of ,700,000.

For two years—1979 and 1980—housing utput will fall short of current needs, imply-ng continued cost pressure and a large arryover of demand into 1981. Under favor-ble credit conditions, housing output in 1981 ould easily exceed two million units.

After a record-setting year, commercial and industrial sectors face moderation in '80

Because the nonresidential building category embraces a wide variety of privately and publicly financed building types ranging from metropolitan skyscrapers to small-town librar-es, the cyclical turning points of this diversi-ied market are not usually as well-defined as hey are in a homogeneous market such as housing. Just the same, it is quite clear by now hat the nonresidential building cycle is once again doing the only thing it knows how to do: follow the housing cycle.

After a 14-quarter period of expansion which began late in 1975, contracting for nonresidential building projects reached the peak of its current cycle in the first quarter of 1979—only one quarter behind the down-turn of housing. And like housing, the decline of nonresidential building so far has been a gentle one—unlike the drop that began late in 1974. To assess the limits to the decline of nonresidential building in 1980, as well as the prospect for recovery, it is necessary to sharpen the focus on the individual building types included in this group.

As the part of the nonresidential building market that relates most directly to business capital spending, commercial and industrial building has two dominant characteristics. Like business capital spending in general, contracting for commercial and industrial building typically shows a delayed response to changes in business activity. But when that response finally comes, it is usually a severe one.

Swings in commercial and industrial building are matched only in the volatile housing market.

The outlook for business capital spending, as revealed through surveys of investment intentions, remains relatively strong considering that recession will leave industry with excess capacity through most or all of 1980. But even if investment plans do not yet indicate a cutback in outlays next year, the proposed 1980 increase is conservative. After adjustment for inflation it implies a *smaller physical volume* of plant and equipment to be added next year.

Translating these 1980 spending plans into their potential for contracting for commercial and industrial building requires backing up six to nine months (the typical time span between the start of a project and its maximum expenditure impact). This adjustment establishes the first half of 1979 as the period of peak contracting, a fact that becomes increasingly evident as the year goes on.

By the time contracting for commercial and industrial building ceased expanding (mid-1979), the value of projects started in 1979 was a strong 15 per cent ahead of the comparable 1978 amount. That lead began to shrink in the third quarter, however, as the commercial and industrial building market entered its period of maximum vulnerability.

Stores & warehouses: With most of its demand derived from the housing market, store and warehouse contracting is now backing off a record volume and adjusting to 1979's reduced rate of residential building. If, as expected, housing activity recovers by mid-1980, an upturn in store and warehouse contracting can be anticipated sometime in the second half. Because this upturn is not likely to take hold until late in the year, however, 1980's total square footage will be less than in 1979 by 18 per cent.

Office buildings: Explosive growth in white collar employment during the past few years has driven the demand for office space to a new high. With the strong prospect of rising *un*employment in the years ahead, growing concern about market saturation appears to be slowing the office building boom in time to prevent a 1974/75-type reaction. In contrast to that two-year collapse

1980 Regional Estimates

Dodge Construction Potentials

Northeast

Connecticut, District of Columbia, Delaware, Massachusetts, Maryland, Maine, New Hampshire, New Jersey, New York, Eastern Pennsylvania, Rhode Island, Virginia, Vermont

Contract Value (millions of dollars)

	1978 Actual	1979 Preliminary*	1980 Forecast	Percent Change 1980/79
Nonresidential Buildings				
Commercial & Manufacturing	$ 4,527	$ 5,250	$ 4,875	− 7
Institutional & Other	3,114	3,625	3,900	+ 8
Total	$ 7,641	$ 8,875	$ 8,775	− 1
Residential Buildings				
One-Family Houses	$ 7,556	$ 7,000	$ 7,225	+ 3
Multifamily Housing	2,208	2,475	2,425	− 2
Nonhousekeeping Residential	461	875	900	+ 3
Total	$10,225	$10,350	$10,550	+ 2
Nonbuilding Construction				
Highways & Bridges	$ 2,160	$ 2,100	$ 2,200	+ 5
Utilities	2,830	425	2,000	++
Other Nonbuilding Construction	4,206	3,250	3,800	+17
Total	$ 9,196	$ 5,775	$ 8,000	+39
Total Construction	$27,062	$25,000	$27,325	+ 9

Midwest

Northern Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, North Dakota, Ohio, Western Pennsylvania, South Dakota, Wisconsin, West Virginia

Contract Value (millions of dollars)

Nonresidential Buildings				
Commercial & Manufacturing	$ 6,878	$ 7,325	$ 6,675	− 9
Institutional & Other	3,995	4,550	4,850	+ 7
Total	$10,873	$11,875	$11,525	− 3
Residential Buildings				
One-Family Houses	$13,565	$11,250	$11,450	+ 2
Multifamily Housing	2,973	3,425	3,100	− 9
Nonhousekeeping Residential	371	625	625	—
Total	$16,909	$15,300	$15,175	− 1
Nonbuilding Construction				
Highways & Bridges	$ 2,997	$ 4,050	$ 3,775	− 7
Utilities	5,676	1,750	4,000	++
Other Nonbuilding Construction	4,346	4,000	4,200	+ 5
Total	$13,019	$ 9,800	$11,975	+22
Total Construction	$40,801	$36,975	$38,675	+ 5

*Eight months actual; four months estimated.

South

Alabama, Arkansas, Florida, Georgia, Southern Illinois, Kansas, Louisiana, Mississippi, Missouri, North Carolina, Nebraska, Oklahoma, South Carolina, Tennessee, Texas

Contract Value (millions of dollars)

	1978 Actual	1979 Preliminary*	1980 Forecast	Percent Change 1980/79
Nonresidential Buildings				
Commercial & Manufacturing	$11,280	$10,675	$ 9,875	− 7
Institutional & Other	4,961	6,225	6,675	+ 7
Total	$16,241	$16,900	$16,550	− 2
Residential Buildings				
One-Family Houses	$23,513	$20,600	$22,500	+ 9
Multifamily Housing	3,846	5,625	4,700	−16
Nonhousekeeping Residential	581	725	675	− 7
Total	$27,940	$26,950	$27,875	+ 3
Nonbuilding Construction				
Highways & Bridges	$ 3,973	$ 4,875	$ 4,950	+ 2
Utilities	3,098	11,075	7,000	−37
Other Nonbuilding Construction	4,396	5,000	5,125	+ 3
Total	$11,467	$20,950	$17,075	−18
Total Construction	$55,648	$64,800	$61,500	− 5

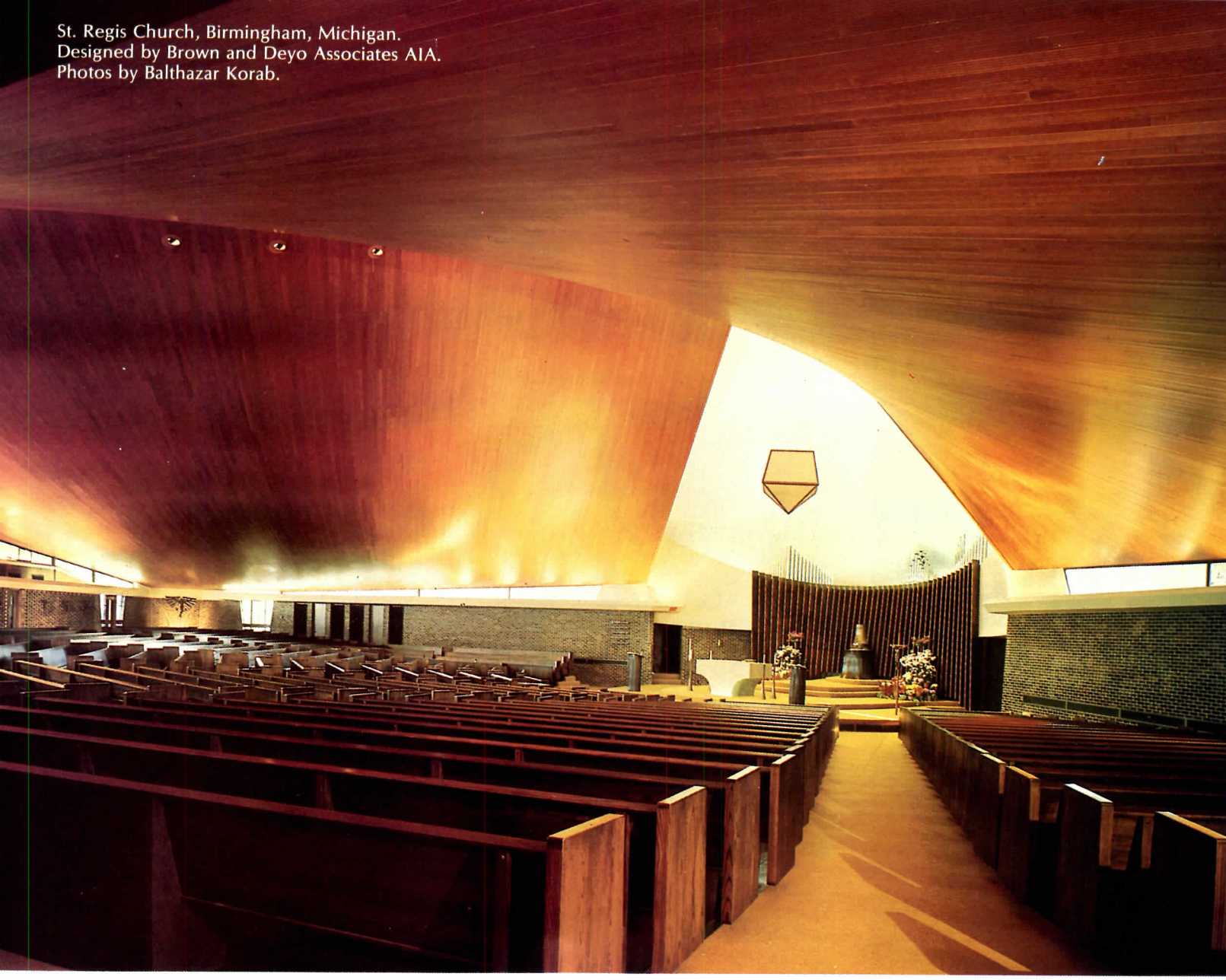
West

Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming

Contract Value (millions of dollars)

Nonresidential Buildings				
Commercial & Manufacturing	$ 6,506	$ 8,050	$ 7,475	− 7
Institutional & Other	3,112	3,600	3,925	+ 9
Total	$ 9,618	$11,650	$11,400	− 2
Residential Buildings				
One-Family Houses	$15,156	$15,400	$17,225	+12
Multifamily Housing	3,915	5,125	4,475	−13
Nonhousekeeping Residential	386	575	550	− 4
Total	$19,457	$21,100	$22,250	+ 5
Nonbuilding Construction				
Highways & Bridges	$ 1,948	$ 2,575	$ 2,475	− 4
Utilities	732	250	2,500	++
Other Nonbuilding Construction	3,172	3,150	3,375	+ 7
Total	$ 5,852	$ 5,975	$ 8,350	+40
Total Construction	$34,927	$38,725	$42,000	+ 8

*Eight months actual; four months estimated.



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of nearly 50 per cent in the volume of office building, the 1980 adjustment to reduced demand will be more like 13 per cent.

Manufacturing buildings: Capacity utilization is the single most reliable guide to the volume of contracting for industrial construction, and recession will be increasing the amount of idle manufacturing capacity in 1980. However, without the need for drastic inventory liquidation, the decline in capacity utilization need not extend beyond an average of 81 per cent in 1980 (compared with only 75 per cent in 1975). The normal volume of industrial building consistent with an 81 per cent operating rate suggests a decline of not more than 15 per cent in contracting next year. Typically, this will be among the last of the building markets to recover.

The 1980 outlook: As long as the 1979/80 recession is kept within reasonable bounds, the inevitable cutback in commercial and industrial building will be moderate. With recovery in progress before year-end, the 1980 decline in square footage of contracting for offices, stores, warehouses, and manufacturing buildings can be limited to 16 per cent. In 1980 prices, contract value of commercial and industrial building will be within 8 per cent of 1979's record high.

Major potential in institutional building lies in retrofit, not new construction

Two dominant characteristics of the institutional building market are its strong link to slowly changing demographic patterns and its reliance on public financing. Neither of these sources promises to offer much additional support in 1980.

Unfavorable demographics explain the declining trend of institutional building. Annual volume has shrunk from a high of 481 million square feet in 1968 to the current 320 million, and most of this decline has been concentrated in educational building. Losses are also evident in the smaller categories of institutional building such as hospitals and public administration buildings, however.

The downward trend in publicly-financed nonresidential building was temporarily interrupted in 1977 by the stimulus of the Local Public Works Act, although this injection of Federal funds left the market vulnerable to a later setback. In 1978, contracting dropped precipitously once the LPWA money ran out. By 1979 things had returned to normal in the institutional building market, which is to say better than 1978, but not much better.

Having reverted to its pre-LPWA declining trend, institutional building faces the prospect of continued adverse demographics compounded by further budgetary restraint in 1980 at both the Federal and local levels. Perhaps the most that can be said for this building market is that its decade-long decline has by now come close to bottoming out at just above 300 million square feet per year. Renewed growth of new construction is still years away, but in the meantime *existing* schools, hospitals, public administration buildings and other institutional buildings offer some of the best potential for rehabilitation and retrofit.

The 1980 outlook: Stability is the best prospect for the institutional building market in 1980 with square footage of building just short of the 1979 total. Inflation will boost the 1980 value of contracting by 7 per cent.

With the institutional sector of the nonresidential building market more or less neutral in 1980, the recession-related decline of privately-financed commercial and industrial building will be dominant, pulling total nonresidential building volume down by 13 per cent in 1980. Inflation will make 1980's nonresidential dollar total look almost as good as in 1979, however.

Non-building construction will be boosted by nuclear plants

Although instability is the norm in the non-building construction market, three recent events added some new twists to the flow of contracting for public works and utilities.

One was the $6 billion Local Public Works Act, which was a powerful stimulus to highway and sewer construction in 1977 and 1978. With these funds having been fully committed by mid-1978, a sharp drop in 1979 was clearly indicated. Without the extra backing of LPWA, contracting for sewer and waste-treatment facilities soon fell back to its former level. Highway construction, on the other hand, found new and longer-lasting support. Instead of settling back when LPWA funds ran out, roadbuilding rose to new heights in 1979.

This new thrust came from the $51 billion, four-year Surface Transportation Act which was signed into law at the very end of 1978. The program gives a whole new dimension to the highway construction market by escalating on-going Federal support for highways, bridges, and mass transit by roughly 25 per cent. It is no coincidence that contracting for highways and bridges has been running 25-30 per cent higher since the beginning of 1979.

The third event to impact nonbuilding construction in 1979 was the notorious "accident" at Three Mile Island. As a result of the subsequent moratorium on the start of nuclear power plants, contracting for utility projects plummeted from $8 billion in the year's opening quarter to almost zero in the second.

The 1980 outlook: After 1979's sharp escalation of contracting for highway and bridge construction, this market has already achieved a level required to satisfy the goals of the Surface Transportation Act. Fluctuation around the current rate of construction will be the pattern for the next couple of years. Sewer and waste treatment projects, recently showing "withdrawal symptoms" in the absence of LPWA funding, will soon be back on their upwar trend. For all public works and other non-building construction (excluding utilities), a nominal increase of 3 per cent is expected in 1980.

Although the underlying trend of utility growth may be slowing, next year's expected 15 per cent gain in contract value will be well above average as some of 1979's delayed nuclear construction is carried over.

This potential rebound of utility projects will help to offset the prospect of weakness in public works during 1980. Total non-building construction contract value, at $45.4 billion next year, will be up about 7 per cent.

1980 appears to be a replay of 1975, but it's not

For the construction industry, the decade of the 1980s is getting off to a wobbly start.

Contracting for new construction, the industry's leading indicator of future construction put in place and on-site demand for building materials, is now several months past its cyclical peak. What's more, the conditions that brought about this reversal of contracting in 1979—tight money, budgetary restraint, recession—are still present. They will continue to inhibit construction activity until they begin to have their intended effect on double digit inflation. In this kind of environment, the short-run forecasting problem becomes reduced to a matter of finding the limits to the decline that is already in progress.

It is tempting to look to the past for guidance, and it was only a half dozen years ago that construction markets faced a similar set of circumstances. The first energy "crisis" of 1973 triggered a round of 11 per cent inflation in 1974 which was followed by recession in 1975. That sequence turned out to be something of a disaster for the construction industry. Roughly one-fourth of the construction market evaporated in that most severe cyclical contraction since the 1930's.

In many ways the situation facing the construction industry in 1980 looks alarmingly like a replay of the previous cycle as the economy is put through the energy/inflation/recession sequence once again. But 1980 is not 1975.

Despite the obvious similarities to the mid-1970's, there are—fortunately—some important differences that are helping the construction industry come through the stress of 1979/1980 in considerably better style.

The absence of serious imbalance in the economy improves the chances for a shorter, less severe recession in 1979/80 than in 1974/75. A milder swing in business capital spending means a shallower decline in contracting for commercial and industrial building during the year ahead.

Recent structural changes in the credit market have greatly reduced housing's traditonal vulnerability in periods of high interest rates. Today's broader, more reliable base of mortgage support puts a higher "floor" under the housing cycle than it ever had before. Support for housing indirectly helps to limit the decline of commercial and institutional building markets which derive their strength from home-building.

Few, if any, building markets can be considered overbuilt in 1979. By contrast, at the peak of the last cycle both housing and commercial building markets were stimulated far beyond sustainable output by HUD subsi-

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ies and by REIT lending excesses. When the ownturn came, the decline was deepened nd the recovery delayed by this backlog of urplus building. Without the need to absorb uch a surplus in 1980, recovery can take old sooner.

Although cycles will always be a domiant feature of the building business, develpments of the 1970's are now beginning to ring greater stability to construction. If unaway inflation can be reversed in the next ix months, most building markets will be naking their recovery during 1980's second alf, responding to the strongest demand the onstruction market has ever experienced.

Because the decline of residential buildng will be confined mostly to 1979, while the veakness in nonresidential markets will be oncentrated in 1980, total construction ontract value over the two years will look a ot steadier than its major components.

In 1980, the total value of contracts for ew construction is estimated to be $169.5 illion, a gain of 2 per cent over 1979's dollar mount. Adjusted for inflation, however, 1980 *volume* will decline by 8 per cent.

Beyond recession, more inflation

Although recession has to be the immediate concern of the 1980 outlook, this temporary setback cannot be isolated from the continuing problem of inflation. The two issues are tightly intertwined. Remedies for inflation, if carried far enough, usually lead to recession; cures for recession often set up the next round of inflation. The recession of 1979/80 can only be understood in this broader context.

The construction industry has a long history of vulnerability to inflation. While prices in the general economy have been spiraling upward at an average rate of 7½ per cent over the past five years, construction costs over the same period have soared at an average annual rate of more than 10 per cent. In 1979, construction costs are rising at more than 13 per cent. The roots of this severe inflation are complex; the distortions it has imposed on the construction industry are far-reaching.

Conventional economic theory recognizes two fundamental sources of inflation: "demand-pull," in which levels of demand in excess of productive capacity bid prices up, and "cost push," in which the rising costs of inputs to production push prices up as they are passed along.

The beginnings of the current wave of inflation can be traced to "demand-pull" origins, precipitated in the late 1960's by the attempt of the Federal government simultaneously to finance expansive social programs and a costly military campaign during a period of maximum productive output, without raising taxes. Aggregate demand outstripped productive capacity, and the swell of Federal dollars printed to finance those ambitions provided the economy with an initial inflationary bias from which it has yet to fully recover. In the early 1970's, cost-push took over where demand-pull left off. Gargantuan price increases by Middle Eastern oil producers and ever-increasing concentration in key sectors of the American economy have been the ingredients for a cost-push brand of inflation that stubbornly refuses to yield to monetary restraint.

Energy: a special impact on construction

The pattern that has taken shape during the 1970's is one of intermittent bursts of double digit energy cost increases that become built into a steadily rising base rate of inflation which, by itself, may now be in the vicinity of 8 per cent per year.

The huge energy price increases that keep escalating the economy's base level of inflation have struck with particular impact on the construction industry. Because about 50 per cent of every construction dollar is spent on building materials, price fluctuations in these materials play an important role in determining overall levels of the cost of construction. The prices of construction materials, in turn, are affected by cost of inputs—labor, raw materials and capital. And because the materials used in construction are among the most energy-intensive in the economy, energy price changes ripple quickly through the construction industry.

To be sure, there are other considerations besides energy which have figured prominently into rising materials costs. The important influence of the construction cycle and its effect on overall levels of demand, costly government regulation including pollution control equipment, labor costs, price protection from foreign competition, financing costs, and raw materials shortages have all contributed to rising prices.

The price of lumber, one of the most important materials used in construction, has been particularly affected by this last consideration. It is estimated that lumber inputs represent about 15 per cent of the purchase price of a new single-family home, and accordingly, are weighted heavily in the construction materials cost index. Lagging production from domestic sources—especially from the national forests—has spurred huge imports (mostly from Canada), creating considerable upward price pressure. Lumber imports now comrpise more than a third of all U.S. consumption, and even with the release of large tracts of previously protected U.S. forest land, supply constraints will continue to force up lumber prices as housing demand reaches unprecedented levels in the early and mid-1980's.

The cost of raw materials in a world of growing resources scarcity has affected other materials besides lumber. In fact, when grouped by the degree of processing involved in production, those materials requiring relatively little processing—i.e., closer to their raw material state—show price increases significantly greater than those requiring relatively greater degrees of processing. This indicates greater cost pressure from raw materials supply constraints than from costs associated with fabrication.

Other factors, unique to specific materials, have also contributed to the dizzying price spiral. Insulation prices, bolstered by tax breaks for energy conservation and the economics of higher heating costs, have been pulled up by an extraordinary surge of demand. Cement prices have risen dramatically due to shortages caused by regional disparities between the location of existing production facilities, many of which are in the East and Midwest, and end-use markets, most of which are in the South and West.

Retrofit promises continued potential

In contrast to the 1960's, when wage rates were the source of most of the inflation in construction, the 1970's have seen the prices of building materials displace labor costs as inflation's forerunner. Over the past decade, materials prices—reflecting the huge rise of energy costs—have been outpacing wages in construction by 25 per cent. This shift in the relative cost of construction wages and building materials has a bearing on one of the most significant transitions in the construction industry in years—the redirection of resources from new construction to renovation and alteration work.

Since rehabilitation of existing structures is more labor intensive than new construction, (half the total cost of rehab is labor, vs. only one-third of new construction) retrofit work provides an opportunity to subsitute less expensive labor for more expensive materials. This is not the only reason for the current boom in rehabilitation work, but it has to be an important consideration.

Outlook: double-digit price increases

While the cyclical slowdown in construction in late 1979 and 1980 may ease price pressures temporarily next year, construction costs will remain close to the double-digit level far into the future. A recent McGraw-Hill survey of a panel of construction industry experts offers some interesting, though not entirely unexpected, opinions on the subject of inflation. The panel agrees that inflation in construction will probably ease in 1980. Energy and declining construction activity are the reasons cited as contributing most significantly to this temporary moderation in cost increases.

The median expectation for the average annual rise in construction costs over the next five years is a none-too-hopeful 8.8 per cent. Inflation in construction is expected to maintain a spread of nearly one and one-half percentage points above economy-wide costs as measured by the GNP deflator, according to the panel.

Interestingly, while tight money (especially) and fiscal measures are the panel's overwhelming policy choices to contend with inflation, they are given poor marks in terms of their expected impact on construction costs. This attitude of frustration sums up the inflation quandary: existing policy options are ineffective, and effective options are politically unacceptable. Consequently, the ballooning costs of recent years are likely to be with us well into the 1980's.

Prepared October 1979 by the Economics Department, McGraw-Hill Information Systems Company; George A. Christie, vice president and chief economist.

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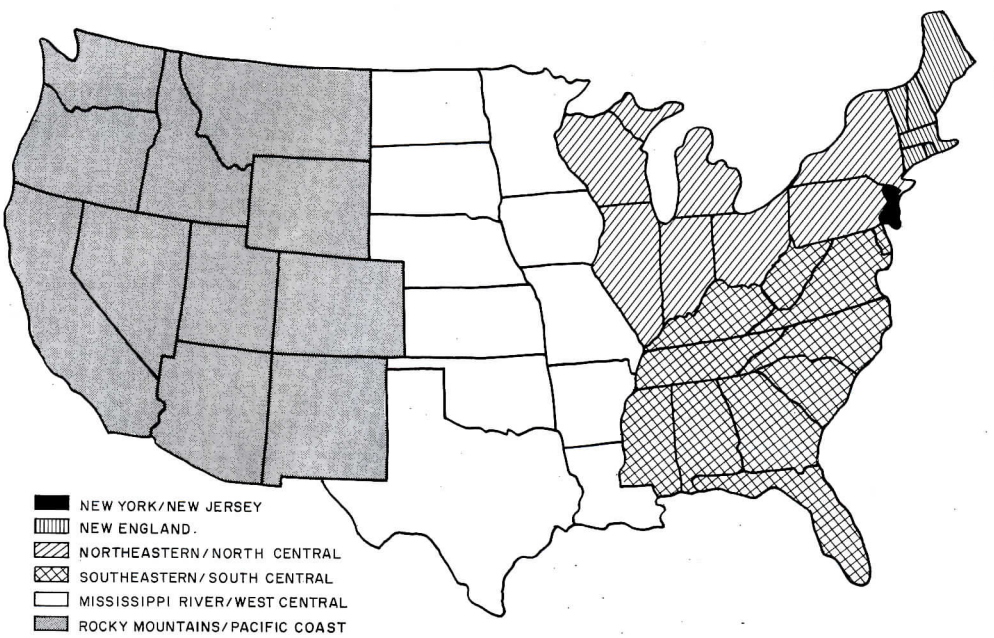
Construction costs show a 13.8 per cent twelve-month increase

Based on a recent survey of the prices of five key building materials, and wage rates for ten widely used building trades, average building construction costs have increased 13.8 per cent in the past year.

According to the McGraw-Hill Cost Information Systems' report, on the average, the price of concrete rose 19 per cent in the twelve-month period ending September 1979, while gypsum board soared 23 per cent, copper 15 per cent and steel 11 per cent. Prices for lumber, plywood and block have increased 17 per cent above a year ago, and reinforcing steel has risen 27 per cent. Additionally, hourly wage rates of building trade craftsmen have increased between 8 and 10 per cent nationwide.

The increase in labor rates, material prices, fuel and utility costs will cause construction costs to rise between 2 and 3 per cent per month through 1979.

Districts	Number of metro areas	3/79 to 9/79 %	9/78 to 9/79 %
Eastern U.S.			
Metro NY-NJ	16	8.8	13.4
New England States	21	9.2	10.5
Northeastern and North Central States	46	8.7	12.3
Southeastern and South Central States	39	7.2	15.2
Average Eastern U.S.	122	8.5	12.9
Western U.S.			
Mississippi River and West Central States	35	7.5	14.2
Pacific Coast and Rocky Mountain States	25	7.5	15.3
Average Western U.S.	60	7.5	14.8
United States: Average	182	8.0	13.8



HISTORICAL BUILDING COST INDEXES—AVERAGE OF ALL NON-RESIDENTIAL BUILDING TYPES, 21 CITIES

1941 average for each city = 100.00

Metropolitan area	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978 1st	1978 2nd	1978 3rd	1978 4th	1979 1st	1979 2nd	1979 3rd	1979 4th
Atlanta	384.0	422.4	459.2	497.7	544.8	575.0	598.7	657.1	714.2	724.0	746.8	769.6	783.1	819.6	836.0	872.1	
Baltimore	322.8	348.8	381.7	420.4	475.5	534.3	581.1	585.0	635.6	643.2	656.0	668.9	680.6	729.6	744.2	773.6	
Birmingham	303.4	309.3	331.6	358.3	402.1	421.2	448.9	551.9	585.4	594.8	603.4	613.9	624.6	704.1	718.2	724.5	
Boston	295.0	328.6	362.0	394.4	437.8	462.5	513.2	555.9	587.7	594.1	605.4	616.7	627.5	691.9	705.7	718.9	
Chicago	356.1	386.1	418.8	444.3	508.6	529.6	560.1	635.2	689.9	696.4	711.0	725.6	738.3	805.4	821.5	885.9	
Cincinnati	325.8	348.5	386.1	410.7	462.4	500.1	550.6	609.8	656.6	662.4	673.6	684.9	696.9	750.7	765.7	810.0	
Cleveland	358.3	380.1	415.6	429.3	462.2	509.5	531.0	632.9	625.2	635.4	655.6	655.7	667.2	794.7	810.6	853.6	
Dallas	308.6	327.1	357.9	386.6	436.4	477.9	499.6	538.5	615.2	618.9	631.6	644.3	655.6	739.0	753.8	873.0	
Denver	339.0	368.1	392.9	415.4	461.0	510.0	553.6	616.0	703.8	715.9	723.0	730.2	753.0	803.2	819.3	847.4	
Detroit	352.9	377.4	409.7	433.1	501.0	538.7	597.5	617.2	664.2	679.0	738.3	797.6	811.6	840.6	857.4	865.5	
Kansas City	295.5	315.3	344.7	367.0	405.8	444.9	509.1	547.3	603.0	614.0	626.0	637.9	649.1	657.7	670.8	711.0	
Los Angeles	344.1	361.9	400.9	424.5	504.2	531.8	594.1	673.1	756.8	765.4	777.6	789.9	803.7	886.3	904.0	955.4	
Miami	392.3	353.2	384.7	406.4	447.2	485.5	558.9	592.5	628.4	640.1	644.9	649.7	661.1	686.1	699.8	736.9	
Minneapolis	331.2	361.1	417.1	412.9	456.1	488.6	538.0	564.1	629.4	640.8	646.9	653.0	664.4	793.4	809.3	824.3	
New Orleans	297.5	318.9	341.8	369.7	420.5	442.1	494.7	534.8	614.7	620.2	631.0	641.9	653.1	697.7	711.6	734.7	
New York	344.5	366.0	395.6	423.1	485.3	515.3	533.5	580.8	619.8	632.0	641.2	650.3	661.7	666.6	679.9	778.9	
Philadelphia	321.0	346.5	374.9	419.5	485.1	518.5	567.5	579.2	658.8	661.7	673.6	685.5	697.5	778.0	793.5	814.6	
Pittsburgh	311.0	327.2	362.1	380.3	424.4	465.6	509.5	526.3	589.6	599.4	608.7	618.0	628.8	692.2	706.0	736.5	
St. Louis	324.7	344.4	375.5	402.5	444.2	476.7	528.9	537.1	617.1	622.3	632.2	642.0	653.2	752.0	767.0	782.8	
San Francisco	441.1	465.1	512.3	561.0	632.3	672.5	753.3	820.8	963.2	972.3	983.0	993.7	1,011.1	1239.0	1263.8	1200.3	
Seattle	317.8	341.8	358.4	371.5	424.4	450.2	515.1	570.5	629.6	638.6	656.5	674.4	706.6	700.7	714.7	761.0	

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

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Norman McGrath photos except as noted.

Kingsborough Community College

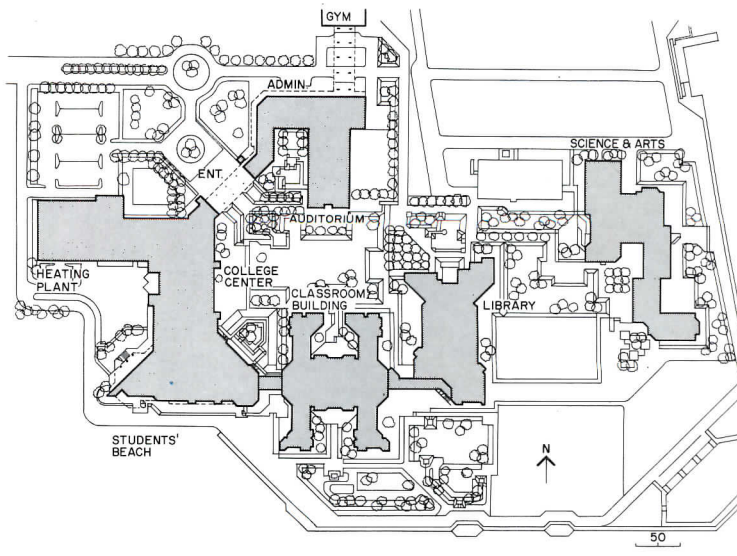
DESIGNING THE CAMPUS AS ONE BIG BUILDING

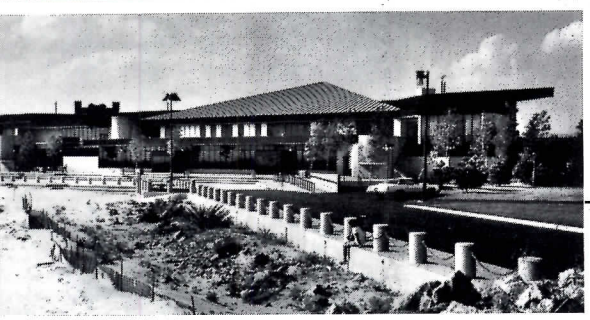
The four community colleges in this study were all conceived as single, integrated structures. The first, Kingsborough Community College, in Brooklyn, master planned by Katz Waisman Weber Strauss Blumenkranz and Bernhard, and Warner Burns Toan and Lunde, is a linear scheme which is not yet unified because an important link has not so far been built. Each of the remaining three—a college near Dallas, one in Jacksonville and another in Baltimore, all under the design control of Anthony J. Lumsden of DMJM—has an interwoven lattice-like scheme which appears complete at each stage of development. Both approaches are valid and much can be learned from comparing them. *—Mildred F. Schmertz*

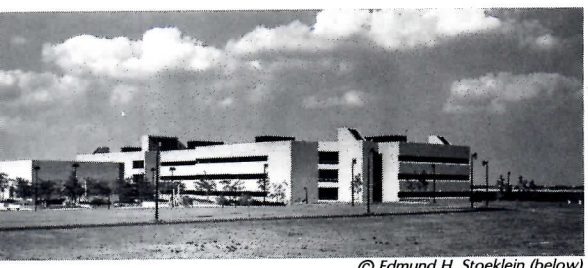
KINGSBOROUGH COMMUNITY COLLEGE

Kingsborough Community College occupies a wonderful 60-acre site, formerly known as Manhattan Beach at the eastern tip of Coney Island in Brooklyn. It has water on three sides—the Atlantic Ocean to the south, Jamaica Bay's Rockaway Inlet to the east and Sheepshead Bay to the north. Apart from its magnificent views, the site had more potential than beauty when its architects began to develop a master plan for it. Shortly after the United States entered World War II, the Federal government had built a Maritime and a Coast Guard station there, stripping the land of trees and constructing row after row of barracks.

This campus began as an ambitious master plan completed in 1967 by two firms in joint venture: Katz Waisman Weber Strauss Blumenkranz and Bernard (headed by the late Sidney L. Katz); and Warner Burns Toan and Lunde. As originally conceived it was to have had a continuous underground service passage linking all the buildings and freeing the campus quadrangles from roadways, service yards and turnarounds. At the ground level, all the buildings were to have been linked by a single enclosed concourse serving both as a protection from

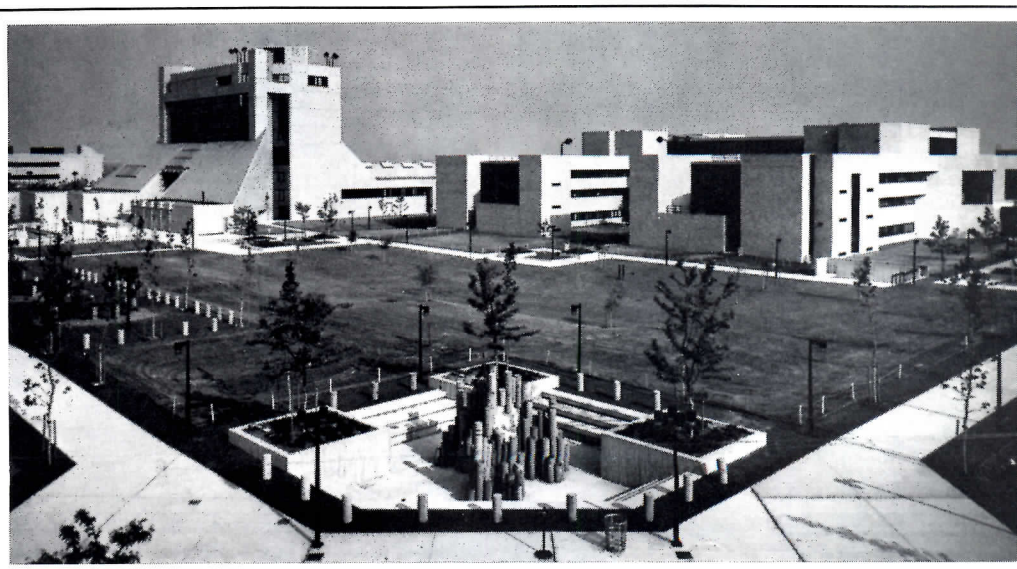


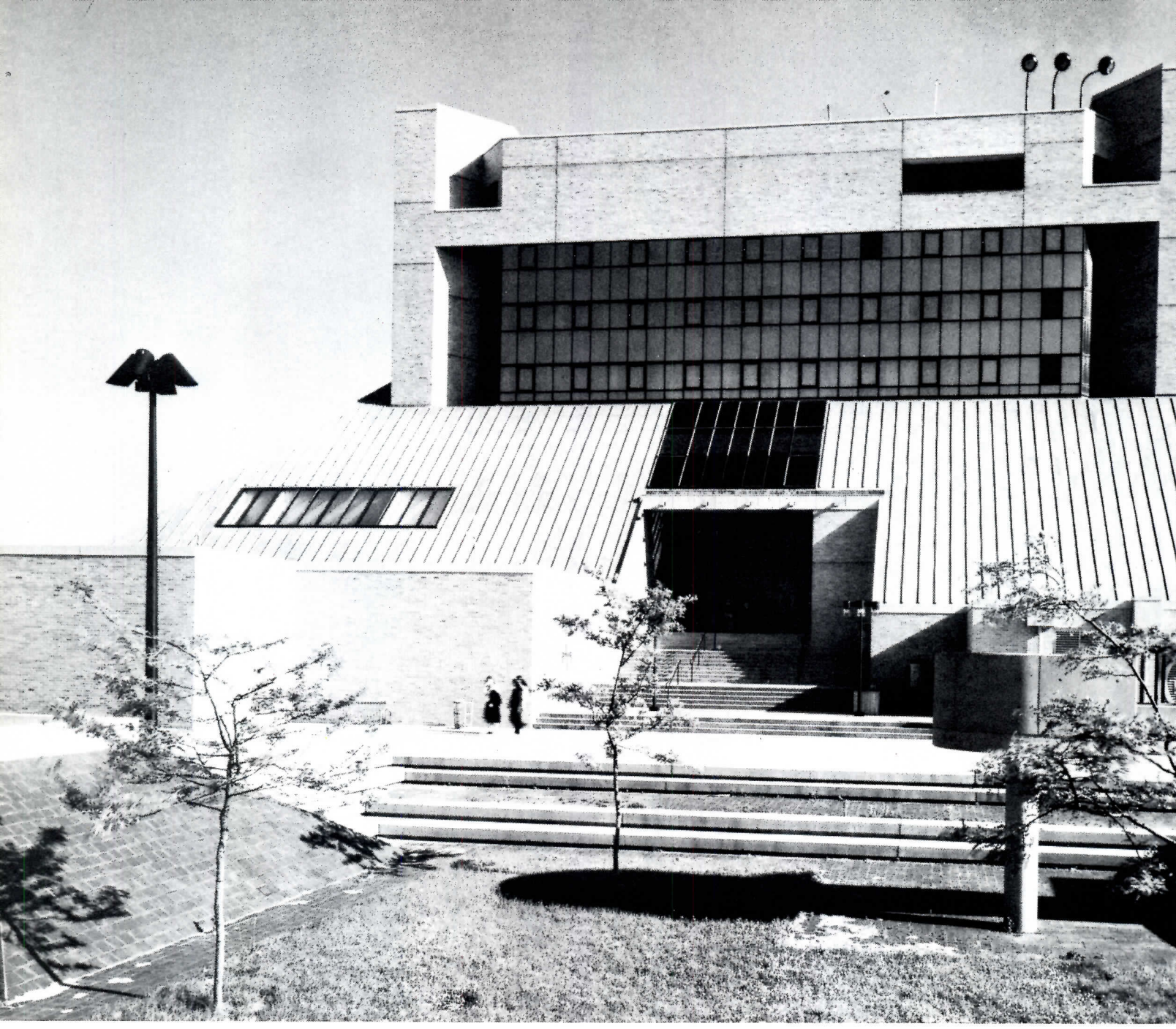




© Edmund H. Stoeklein (below)

The vista above is along the main east-west axis of the campus facing the arts and sciences building by Lundquist and Stonehill (also shown in the middle photo at left). To the north of the east-west axis is the auditorium theater by Katz Waisman Weber who also designed the college center which faces the Atlantic beach (top photo at left). To the south of the axis is the library and learning center and the west academic cluster by Warner Burns Toan and Lunde. The gymnasium and pool (bottom photo at left) was designed by James Stewart Polshek and Associates (February 1978).





Kingsborough Community College: library and learning center

ocean winds and as a kind of continuous student activity center. A large marina was to have been dredged to the north of the academic buildings separating them from the playing fields.

In preliminary models and drawings, a row of four student dormitory towers marked the Atlantic edge of the campus to offer the students matchless views of the ocean. These towers were to enhance the campus silhouette as seen from Sheepshead Bay or from the deck of a ship in the Atlantic. The campus was also to have included a parking garage for 2,000 cars and faculty housing.

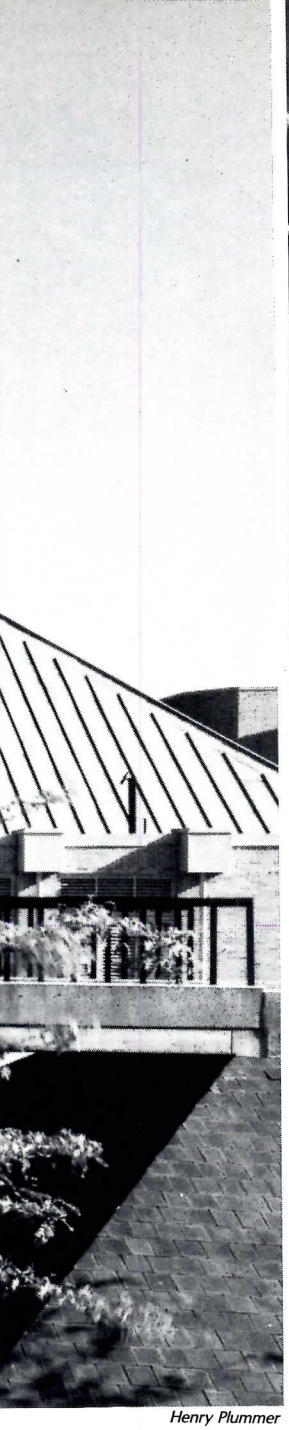
Unfortunately in the decade which followed the buoyant late sixties, economic pressures squeezed the grand plan. Not only were a number of the original Coast Guard barracks retained as classrooms beyond their temporary function as such, but a second academic building which would have linked the arts and sciences building to the rest of the campus was not built, thereby isolating the latter structure and interrupting the enclosed concourse. The subterranean service connection was eliminated, destroying the concept of an exclusively pedestrian academic enclave and no student or faculty housing was built.

A vestigial marina was constructed along the beach facing the Rockaway Inlet, better than nothing but not so pretty as the proposed little harbor decked with small boats, part of a narrow watercourse which was to meander through the campus.

This sad and all too familiar architectural story ends better than most, however. In spite of all these cuts, the Kingsborough Community College still has a unity of style, a diversity of profile and a sweep of vista which it would not possess today, had its architects not had the optimism and verve to plan grandly at the beginning.

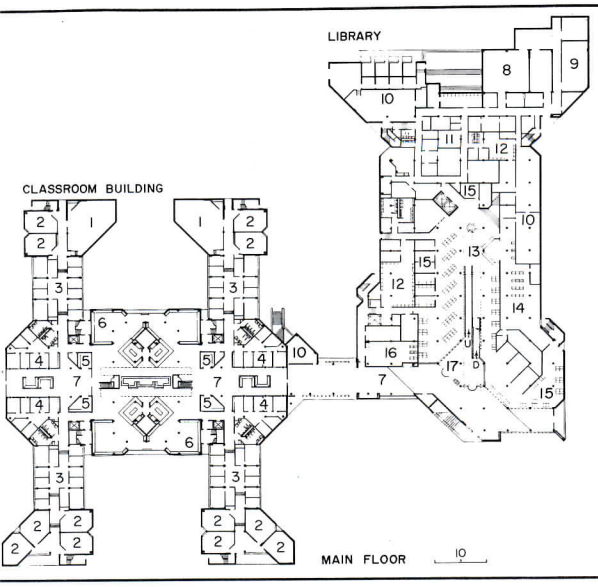
Their decision to propose a continuous building complex instead of a collection of individual structures made the interior street possible as far as it goes. Except as interrupted by the unbuilt east academic cluster, the buildings provide a continuous shelter from the elements and define and protect the interior quadrangles. The contiguous structures facilitate the distribution of utilities, including central heating and cooling.

Another important early master plan decision was to link the study facilities of the library and learning center with the west



Henry Plummer

The library and learning center can be entered from the principal campus quadrangle (opposite page top) or by means of a ramp (above) leading from the concourse. The ramps interconnect the learning center on the lower level of the building and the catalog, reference area and circulation desk on the main library floor. The balance of the 75-thousand-volume collection is housed on five stack floors.



1 Lecture
2 Classroom
3 Faculty Offices
4 Counselor Offices
5 Receiving
6 Dining
7 Concourse
8 TV Studios
9 Film Studio
10 Mechanical
11 Offices
12 Storage
13 Circulation Desk
14 Closed Stacks
15 Study
16 Mail
17 Lobby

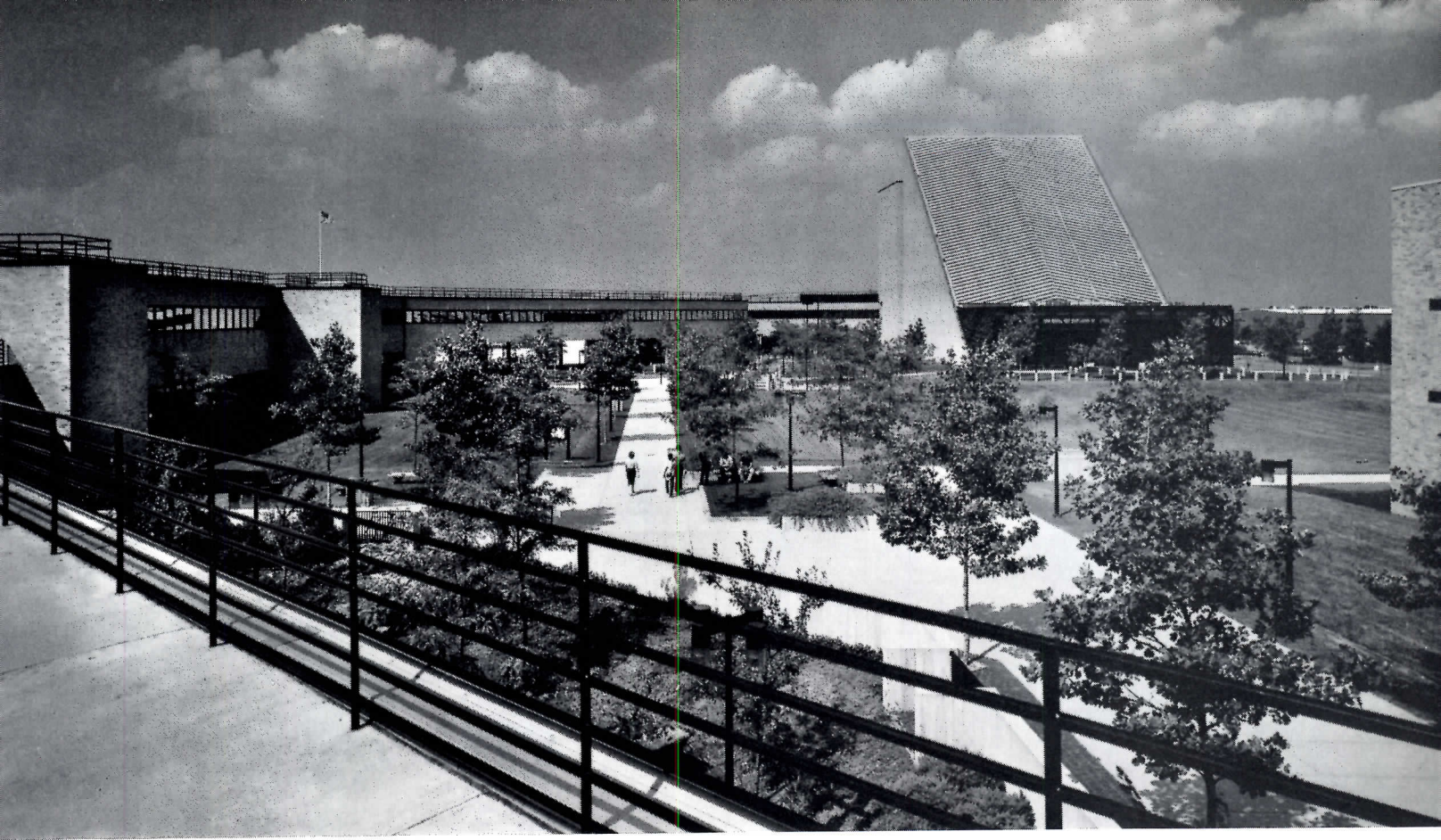
Kingsborough Community College: theater and auditorium, administration building and college center

Robert Galbraith

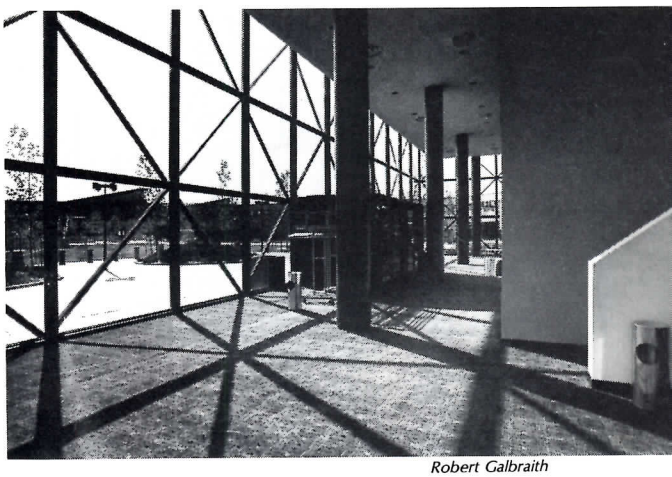
academic cluster. The latter was conceived as four departmental complexes, each with teaching spaces, faculty offices, a library area, lounge, meeting rooms, an eating facility and administration and counselors' space. This effort to integrate classroom space with activity areas of a more sociable function was in architect Danforth Toan's words, "an effort to minimize the megalithic and impersonal character of many classroom buildings on large campuses." Unfortunately budgetary constraints have discouraged the college from opening the snack areas which were to enhance student interaction within the teaching areas, while the areas which had been reserved for study libraries have been adapted for use in the tutorial programs initiated by the college in response to open enrollment.

The library, and learning center, as befits its importance, is the dominant building on the campus in its size, profile and central location. It can be entered either from the concourse or from one of the main axes of the campus.

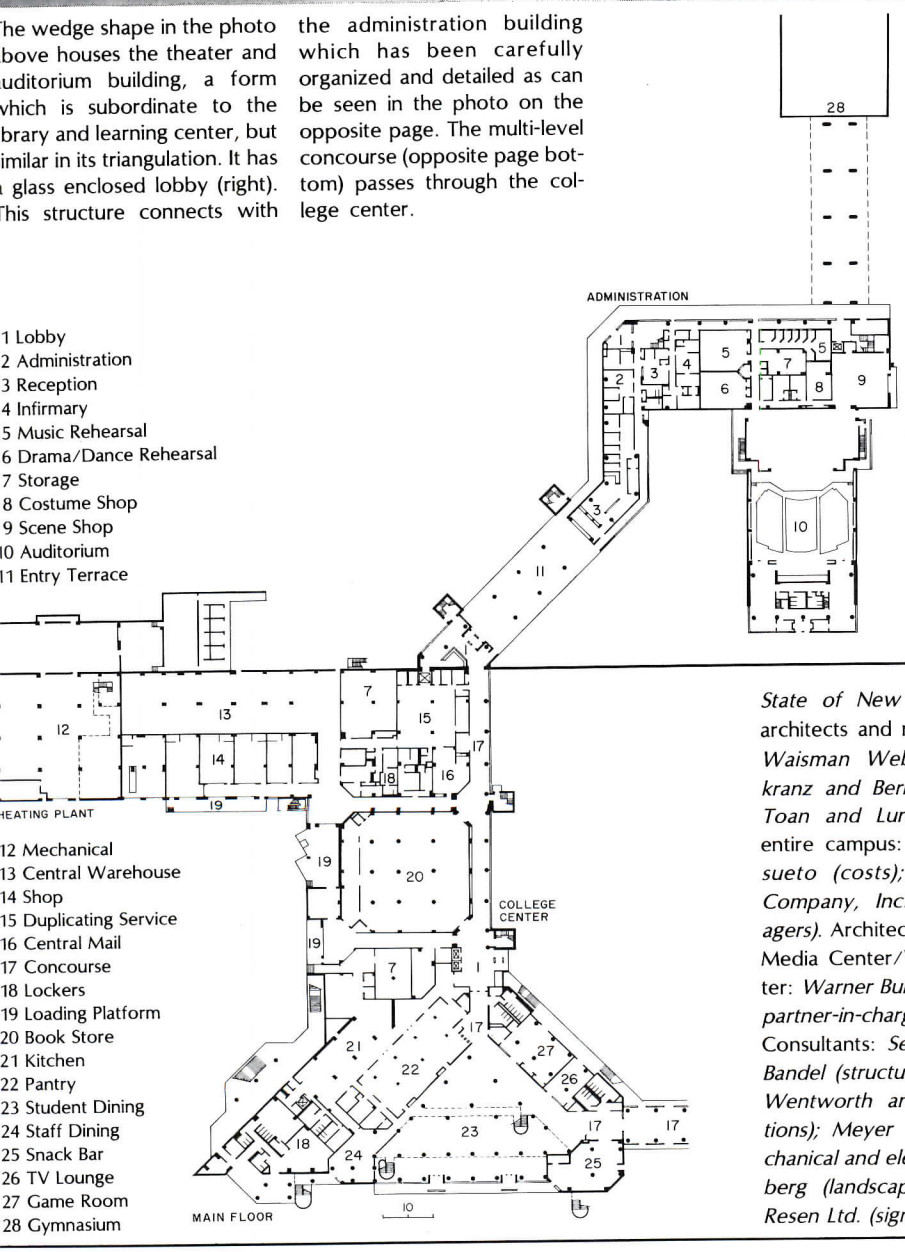
KINGSBOROUGH COMMUNITY COLLEGE, Brooklyn, New York. Owners: *City University of New York and the Dormitory Authority of the*



The wedge shape in the photo above houses the theater and auditorium building, a form which is subordinate to the library and learning center, but similar in its triangulation. It has a glass enclosed lobby (right). This structure connects with the administration building which has been carefully organized and detailed as can be seen in the photo on the opposite page. The multi-level concourse (opposite page bottom) passes through the college center.



Robert Galbraith



1 Lobby
2 Administration
3 Reception
4 Infirmary
5 Music Rehearsal
6 Drama/Dance Rehearsal
7 Storage
8 Costume Shop
9 Scene Shop
10 Auditorium
11 Entry Terrace
12 Mechanical
13 Central Warehouse
14 Shop
15 Duplicating Service
16 Central Mail
17 Concourse
18 Lockers
19 Loading Platform
20 Book Store
21 Kitchen
22 Pantry
23 Student Dining
24 Staff Dining
25 Snack Bar
26 TV Lounge
27 Game Room
28 Gymnasium

State of New York. Joint venture architects and master planners: *Katz Waisman Weber Strauss Blumenkranz and Bernhard; Warner Burns Toan and Lunde.* Consultants for entire campus: *McKee Berger Mansueto (costs); Cauldwell-Wingate Company, Inc. (construction managers).* Architects for the Library and Media Center/West Academic Cluster: *Warner Burns Toan and Lunde—partner-in-charge: Danforth W. Toan.* Consultants: *Severud Perrone Sturm Bandel (structural); Mueser Rutledge Wentworth and Johnston (foundations); Meyer Strong & Jones (mechanical and electrical); M. Paul Friedberg (landscape); Page Arbitrio & Resen Ltd. (sign and directory graphics); Consultants Collaborative (kitchens).* General contractor for the Library: *James Barrenello & Sons.* General contractor for the Academic Cluster: *Kensel-Hedeman.* Architects for the Administration/Auditorium, College Center and Heating Plant: *Katz Waisman Weber—partner-in-charge: Sidney L. Katz. Consultants: Severud Perrone Sturm Bandel (structural); Mueser Rutledge Wentworth and Johnston (foundations); Meyer Strong & Jones (mechanical and electrical).* Architects for the College Science Center and Visual Arts Center: *Lundquist & Stonehill.* Consultants: *Goldreich Page & Thropp (structural); Abrams, Moses & Solomon (mechanical and electrical).*

NORTHLAKE COMMUNITY COLLEGE

Although two architectural firms worked together on this 276-acre campus in Dallas County, Texas, its design expresses the ideas of one architect, Anthony J. Lumsden of DMJM. Designed and built for a student body of 2,400 day and evening students but master planned for an eventual enrollment of 7,500 in the year 2000, it is not directly comparable to Kingsborough College which was originally designed for a maximum of 6,000 students to occupy the campus in the late seventies. Certain comparisons with Kingsborough, however, will help define Lumsden's particular approach to design.

Although the architects of Kingsborough wished the campus to have the unity of a single building, stylistically, structurally and in materials and finish, they did not push the idea nearly as far as Lumsden does and indeed were working within an entirely different esthetic system.

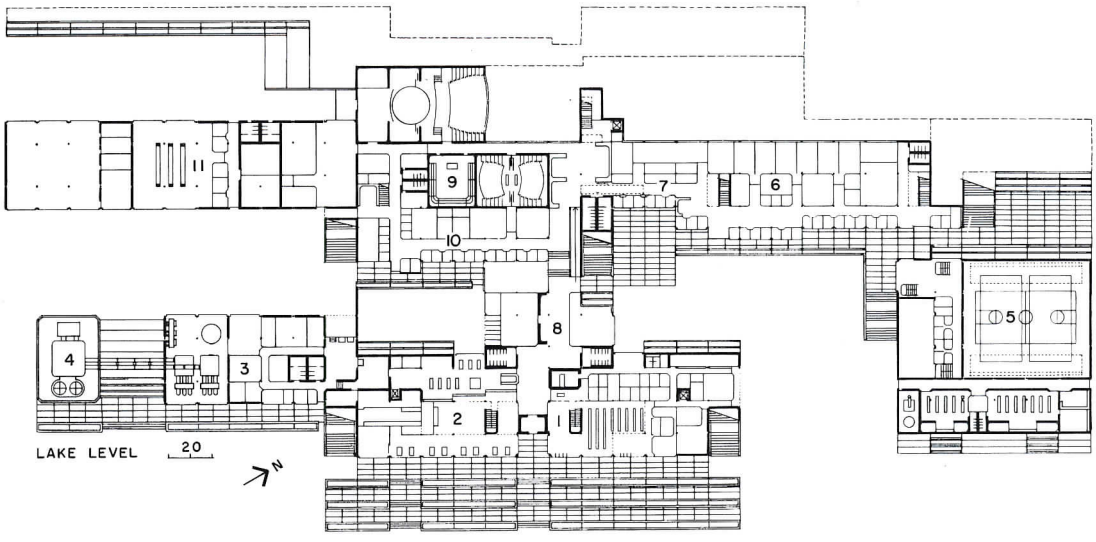
Their system required that certain functions be expressed—that the library, for example, be a centrally located, dominant, intricately shaped, eye-catching mass, because of its importance as a symbol of learning. The theater and auditorium building was positioned and shaped to express its subdominance, yet special character, and given a steeply pitched roof.

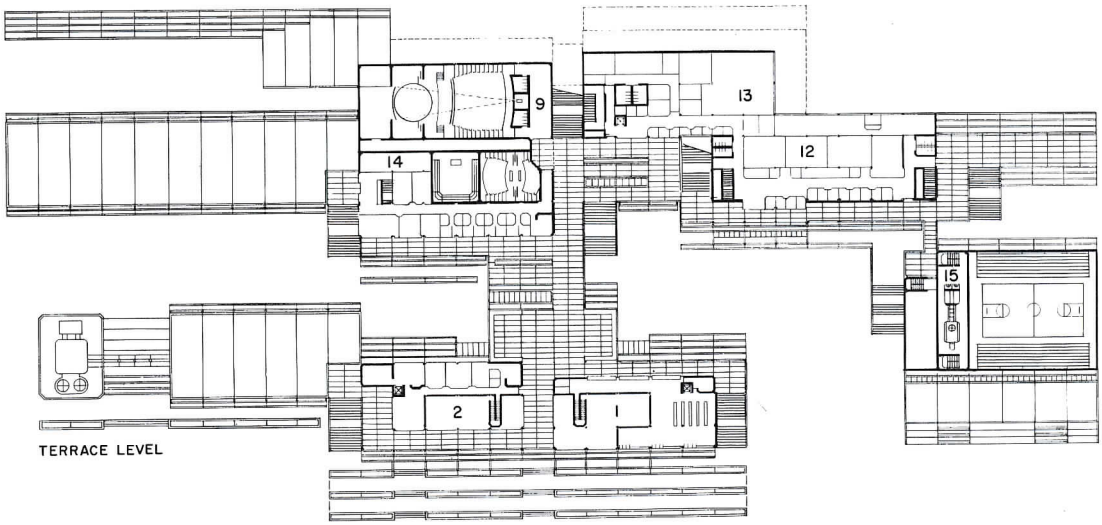
None of this interests Lumsden. His grandly terraced Texas campus, new, raw and badly in need of planting, looks like an ancient Mexican ruin—a piece of Teotihuacan or Monte Alban. The library, the auditorium and the gym are not expressed as separate shapes, but instead are clustered and interlocked with other spaces. The enclosure of the building gives no hint of its functional and structural organization. Lumsden considers the building's skin or membrane to be separate and distinct from the functions it encloses.

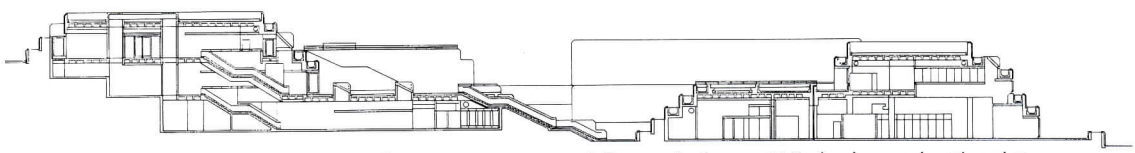
Anyone familiar with Lumsden's work will note that this time he has wrapped his building in brick and be aware that this could not have been his first choice. Brick surfaces do not bend and curve and undulate as easily as metal and glass membranes can be made to do. His original design for the college was slicker—elegantly crafted metal panels, windows with rounded corners, partially visible structural supports shaped like gantry cranes—a celebration of advanced building technology.

The design appears to have accommodated the brick surfaces, however, and the campus

Norman McGrath except as noted

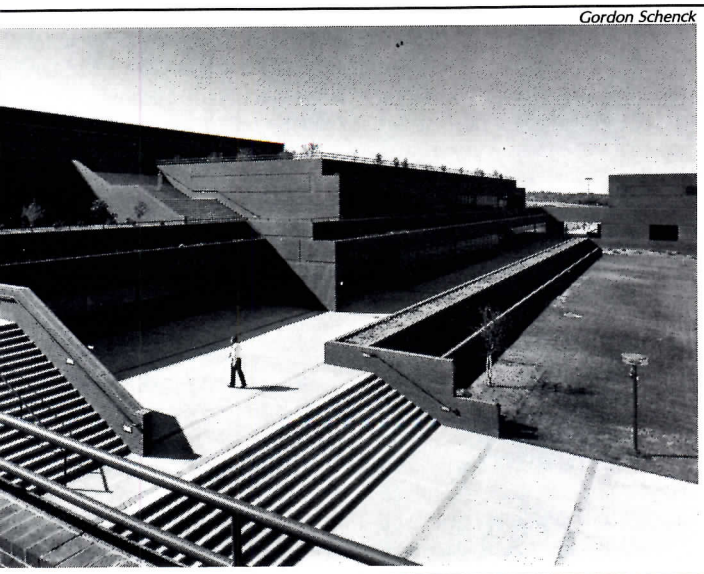


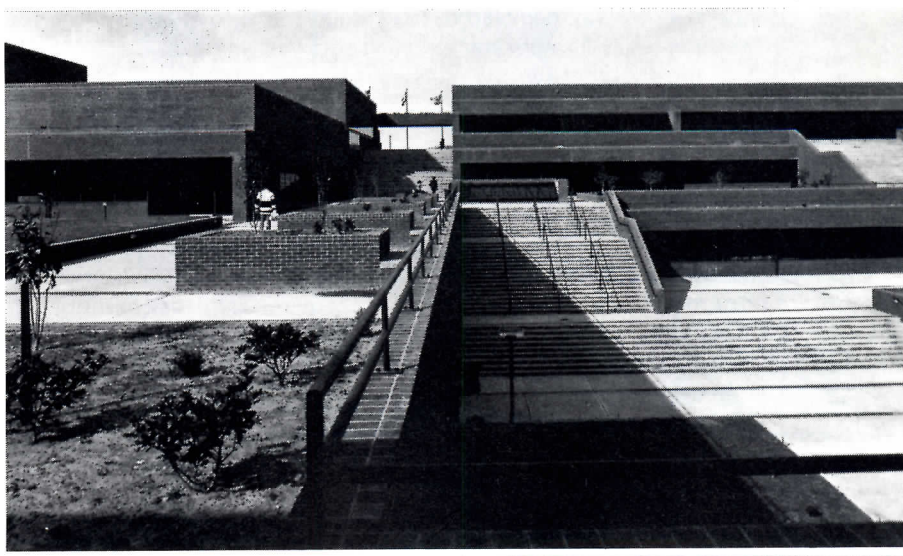




1 Learning resources center
2 Campus Center
3 Campus service center
4 Cooling tower
5 Physical education
6 Communications
7 Social science
8 Art
9 Drama
10 Music
11 Technology and engineering
12 Science
13 Business administration
14 Mathematatics
15 Mechanical

Gordon Schenck





Northlake Community College: interiors

has been in no way humbled by its cheaper skin. Its appearance will gradually improve if the terraces are landscaped as planned.

Lumsden's scheme conforms very well to the topographical requirements of the sloping site. Like much of his work it appears to be endlessly extendable along a horizontal plane. The compact plan is fractured, repetitive and thereby flexible and expandible. The spine of the campus is an outdoor terraced garden accessible at all levels and interconnecting all the elements of the campus. Adjacent to this circulation system are various spaces which encourage casual meetings and social activity.

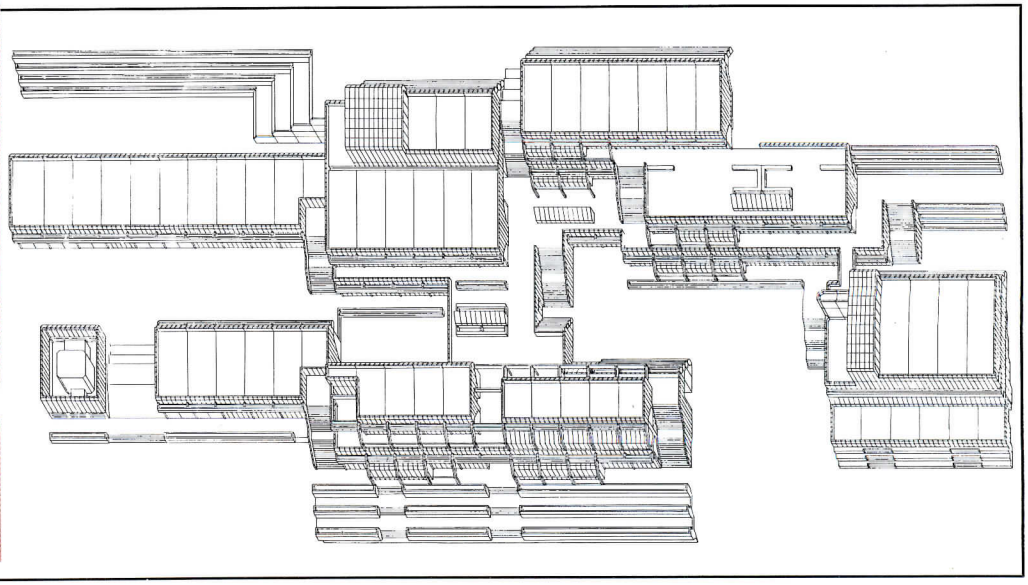
The rooms which require natural light face the views and the desirable south sun, protected by the overhanging planters. The interior circulation areas at each level open upon distant vistas and nearby spaces to be landscaped. The rooms which do not require light or outdoor exposure such as the theater and lab spaces are positioned into the hill at the rear of the structure, or screened by planters or earth mounds.

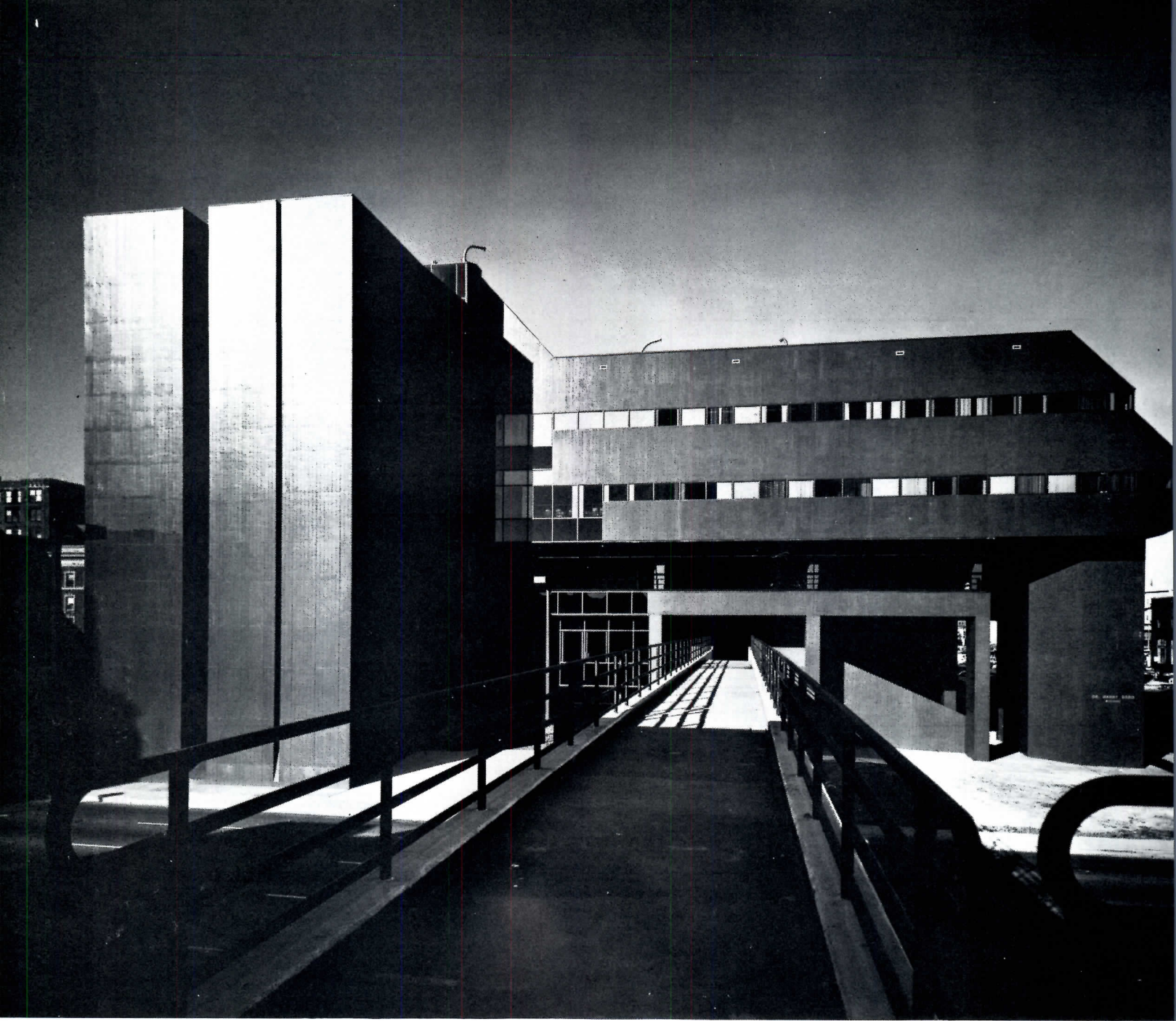
The parking is located further up the hill behind the building on flatter areas screened by strips of planting. All vehicular access to the building is from the rear or the sides and does not interrupt the terraced pedestrian spaces, or the vista over the lake.

The structure consists of poured-in-place concrete columns on a 30-foot module and poured-in-place concrete pan joists. The decks, terraces and garden patios are brick and concrete.

NORTHLAKE COMMUNITY COLLEGE, Irving, Texas. Owner: *Dallas County Community College District.* Architects: *Envirodynamics, Inc. and Daniel, Mann, Johnson & Mendenhall. For EDI—partners-in-charge: Joseph Guthrie and Gerald L. Clement; project architect: Michael Archer. For DMJM—principal-of-design: Anthony J. Lumsden; project architect: Gerd Ernst; principal-for-educational facilities: Stanley Smith; project designer: Daniel Herron; design team: Michael Ross, Peter Golze.* Consultants: *George Mayes (structural); Soils Consultants, Inc. (foundations); James E. Crisp (mechanical); C.R. McCreary & Associates (electrical); Joiner-Pelton-Rose, Inc. (acoustics); Variable Acoustics Corporation (theater acoustics); Ann R. Musgrave Interiors (interior design); RYA/Crawford Dun, Inc. (graphics).* General contractor: *Henry C. Beck Company.*

Lumsden's designs are intricate in section—a complexity which produces interior spaces with a variety of ceiling heights, mezzanines and clerestories as well as shadowed passages contrasted with bright interior vistas. Although neither the student dining hall (opposite page) nor the library (above and left) are expressed or dramatized on the exterior, they are both high ceilinged handsome rooms.





COMMUNITY COLLEGE OF BALTIMORE, HARBOR CAMPUS

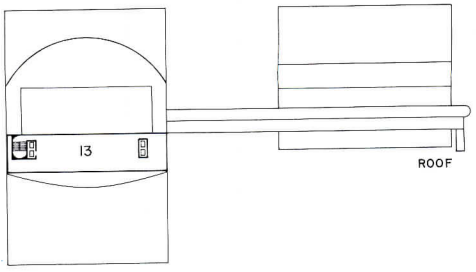
DMJM's architects, led by Anthony Lumsden, were thinking all the right thoughts when they began to design this two-year community college for 2,500 students with future expansion for an additional 2,000. They wished to make it "contextual" in deference to the Neo-Classical facade of the Baltimore Customs House on the north and to the 19th century brick buildings—row houses, a market place, an industrial building—to the east and south. It was also to serve as a community focal point for Baltimore's Inner Harbor Redevelopment Area. Unfortunately, during the working drawing phase, a recession led to budget cuts which denied the architects the chance to achieve a sufficiently sculptured and detailed silhouette to relate to the more intricate surrounding facades. A focal point the building is. Contextual it is not. Lumsden has used brick again as he did at the Northlake Community College in Texas—this time a dark reddish brown face brick veneer, backed up by concrete masonry units. Unlike the structure in Texas, however, which turned out quite nicely, this building appears to want to be in metal and glass. Lumsden's buildings in the latter materials seem to occupy their space lightly and undemandingly, as they offer the viewer the richness of transparency and reflectivity.

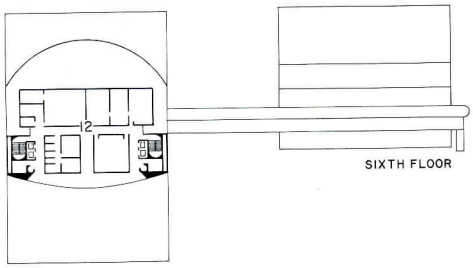
Wrapped in brick veneer the Baltimore Community College appears dense and ponderous. If Lumsden intends to use masonry skins as anything but a cost cutting substitute, he should begin at the beginning and devise a new esthetic for the use of this material in his own way.

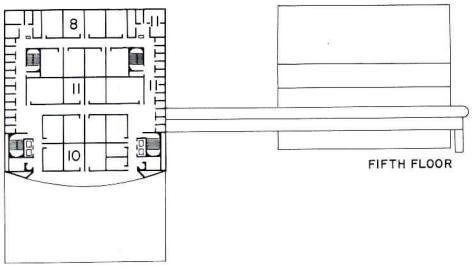
The building consists of a six-story structure linked by a bridge to a two-story structure. Both are steel frame. The two-story unit houses large workshops and studios for vocational programs.

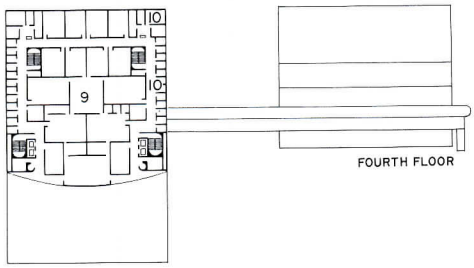
The library and other semi-public spaces in the six-story structure are located within the triangulated mass on the northern side of the building. The rest of the enclosed space contains classrooms, student activity and service areas.

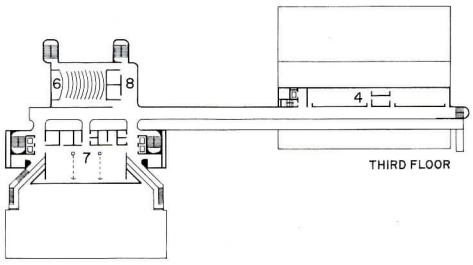
COMMUNITY COLLEGE OF BALTIMORE, HARBOR CAMPUS, Baltimore, Maryland. Architects: *Daniel, Mann, Johnson & Mendenhall—principal-for-design: Anthony J. Lumsden; design team: Richard Matteson, Alberto Bertoli; project architect: Gerd Ernst; job captain: Milan Svabensky.* Consultant: *Bolt, Beranek & Newman (acoustics).* General contractor: *R.S. Noonan, Inc.*

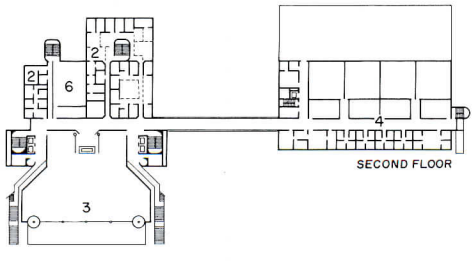


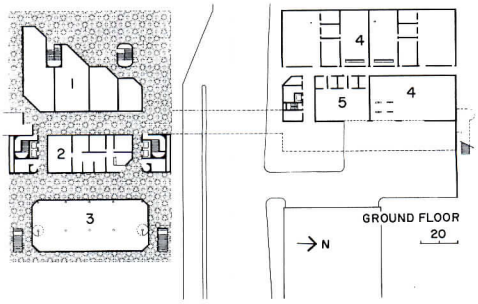


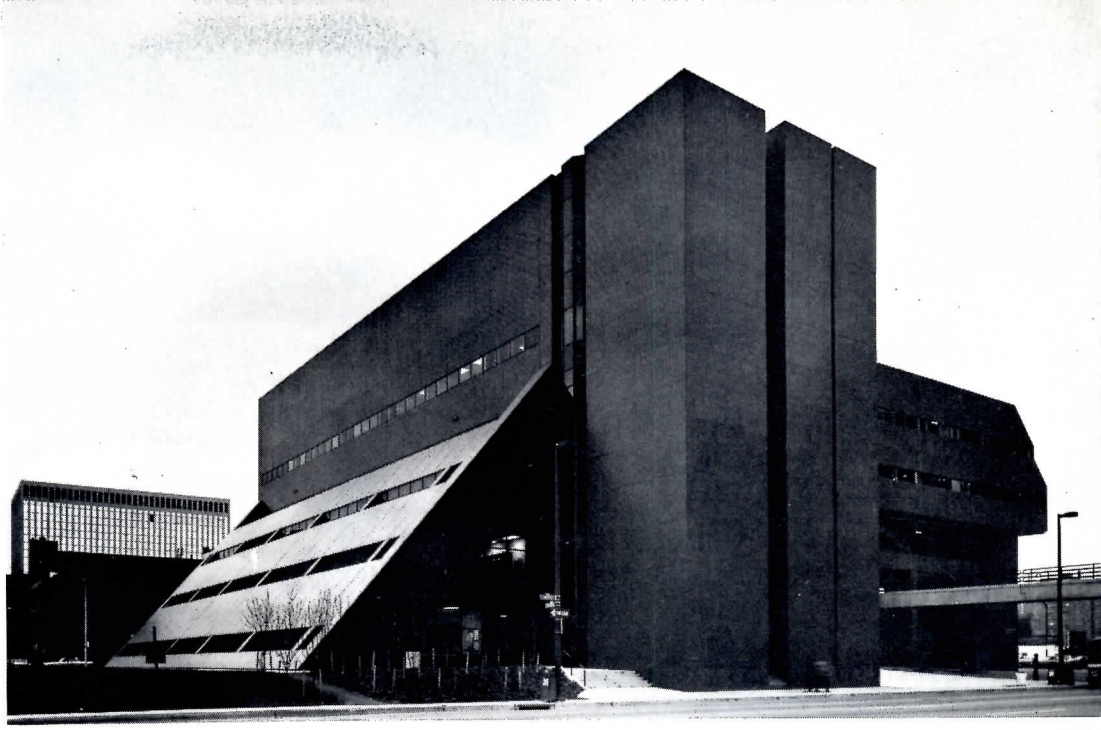






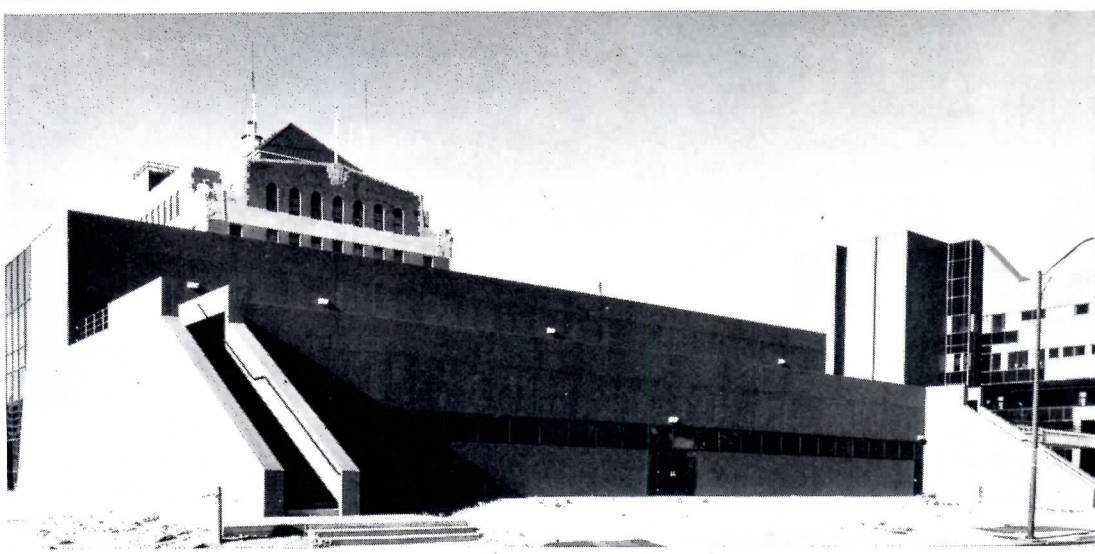


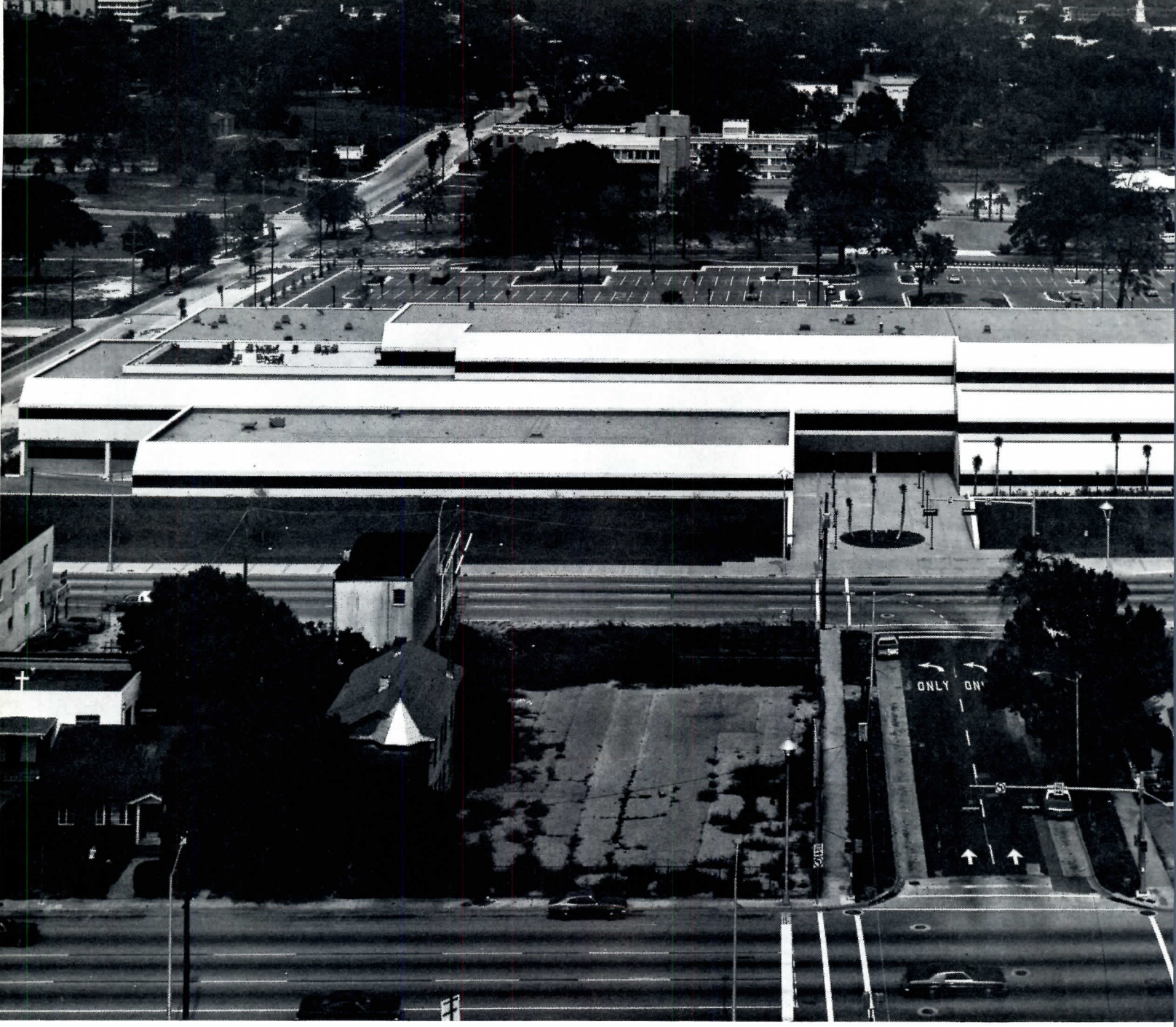




Norman McGrath photos

1 Commercial retail space
2 Administration
3 Library
4 Career programs
5 Campus service
6 Lecture
7 Student activities
8 Language
9 Sciences
10 Social sciences
11 Business sciences
12 Creative arts
13 Mechanical





FLORIDA COMMUNITY COLLEGE

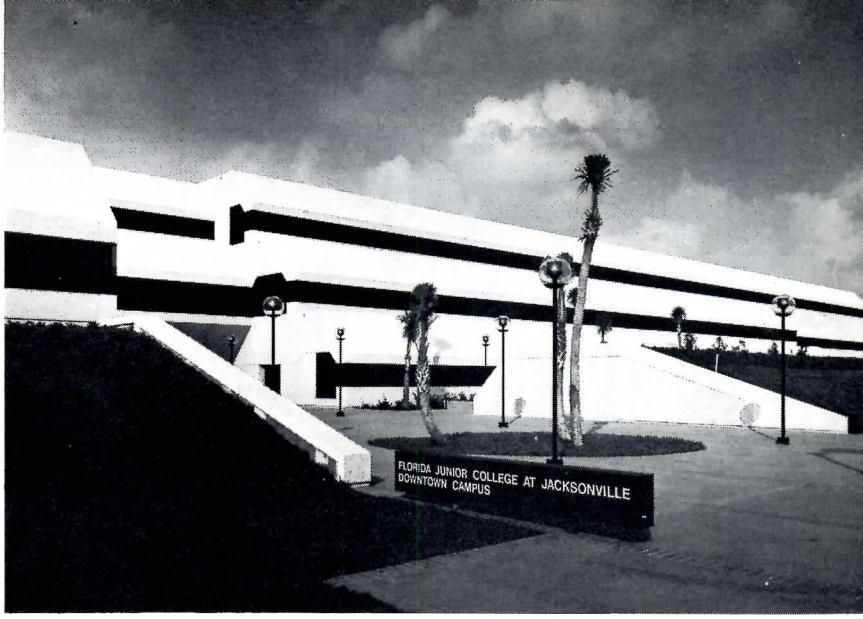
This campus is similar to Lumsden's Northlake Community College in the manner in which it is extended along a horizontal plane and terraced. The skin this time consists of lightweight prefab concrete wall elements. This material allows smooth transitions from one plane to another producing a handsome effect. As in Northlake, the use of an opaque masonry skin does not seem to violate Lumsden's esthetic system, as it does in the Baltimore campus. This may have something to do with the fact that the opaque membranes used on this campus and Northlake are in the form of narrow horizontal bands which appear to be endlessly extendable and further that both buildings are low lying, hugging the earth. They appear to be of the ground rather than, like the Baltimore campus, planted heavily upon it. Furthermore, the receding horizontal planes of this campus and Northlake, minimize the building mass giving it human scale.

This community college is located in a downtown redevelopment area in Jacksonville, Florida. The site comprises 10 city blocks totaling 21 acres. The campus has been planned in two phases that will ultimately provide space for 5,000 full time students. The phase now completed for 3,125 students is shown in the site plan (opposite page left). The ultimate plan will extend eastward to the limits of the site (opposite page right).

The campus consists of one multistory structure with a compact linear plan. Public related activities and those requiring frequent service are located on the ground level. Upper levels have been handled as loft spaces. Permanent structural members and support spaces have been located to permit flexibility to accommodate changing curricula and revisions as the college expands.

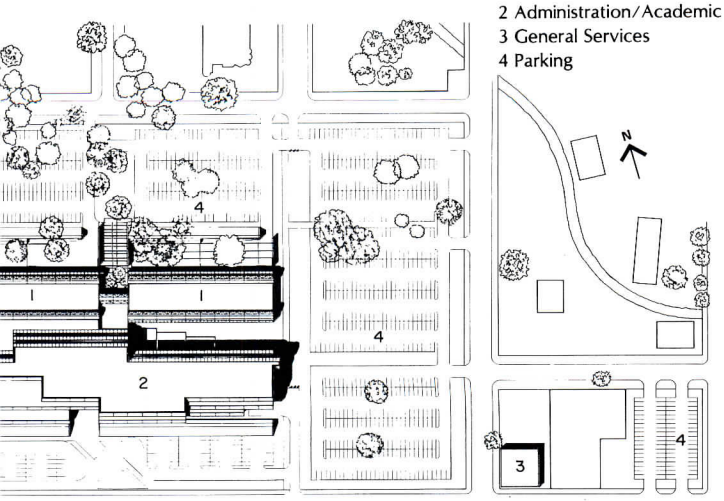
The compact plan, while very much a part of the Lumsden esthetic, is also an appropriate response to current economic requirements. To save energy, window exposure to the south was kept to a minimum.

FLORIDA COMMUNITY COLLEGE, CUMBERLAND CAMPUS, Jacksonville, Florida. Architects: *Reynolds, Smith & Hills. Associated architects for master plan and conceptual design: Daniel, Mann, Johnson & Mendenhall—principal-for-design: Anthony J. Lumsden; project architect: Gerd Ernst; design team: Daniel Herren, Alberto Bertoli; principal for educational facilities: Stanley Smith.*

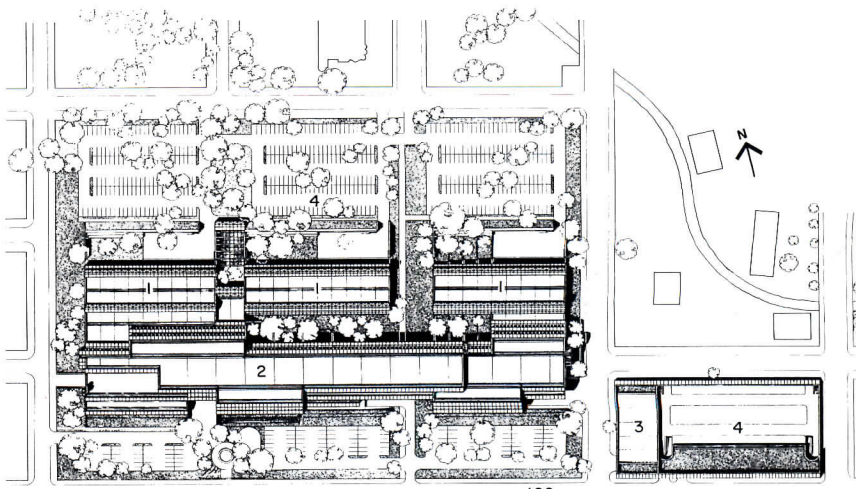


Gordon Schenck photos

1 Career Education
2 Administration/Academic
3 General Services
4 Parking



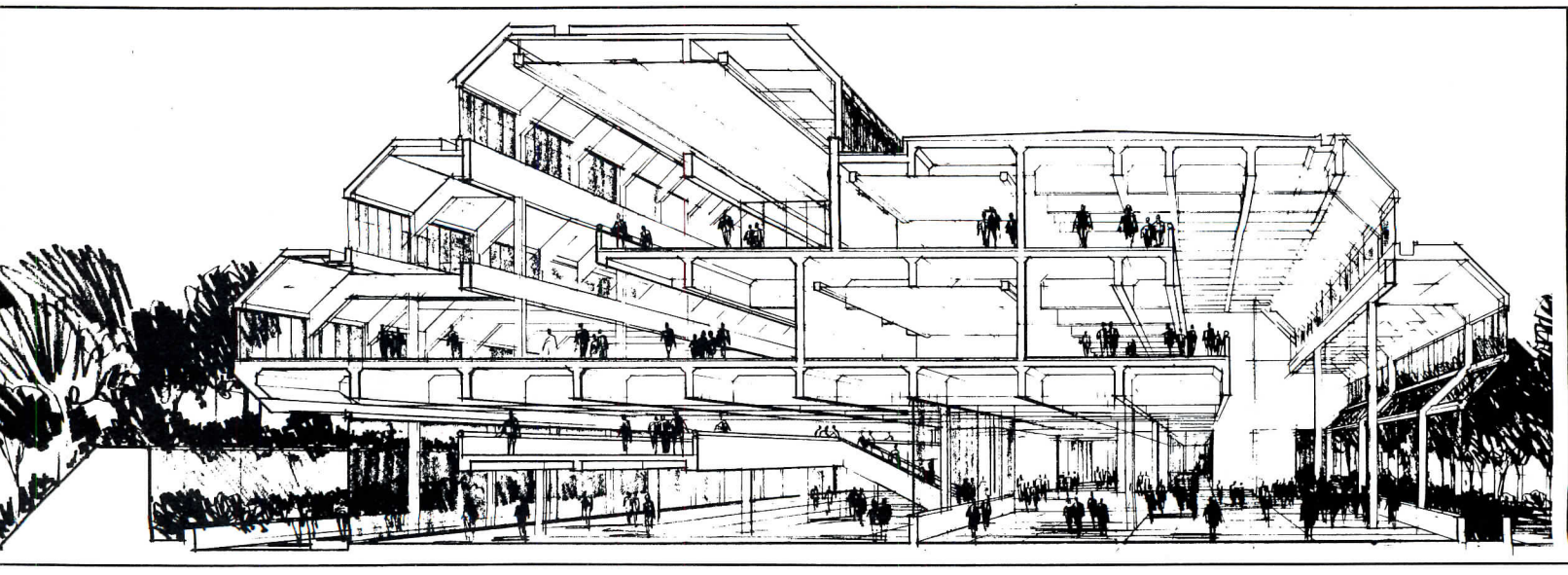
PLAN - FIRST PHASE



MASTER PLAN - ULTIMATE

Florida Community College: interior

The key to Lumsden's design system is to be found in his sections. He thinks of his buildings metaphorically as "extrusions". Metallurgically, of course, an extrusion is a form produced by the process of forcing metal or plastic softened by heat through dies by pressure. Such forms have no beginning or end. They are simply continuous. So are Lumsden's sections. The student lounge above is a good example of the fine, well lit interior spaces which result from this sectional intricacy.



Nick Wheeler photos

TWO PITTSBURGH HOUSES BY TASSO KATSELAS

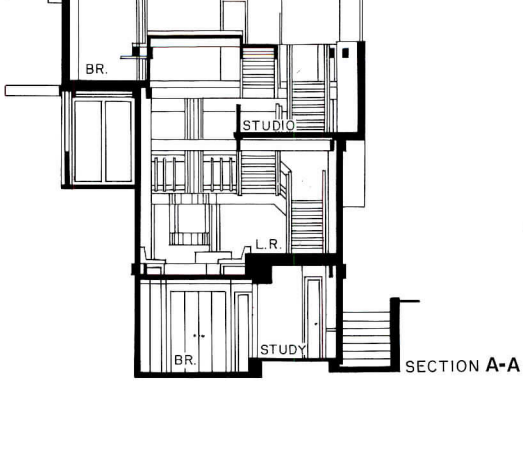
Katselas's own house (above) is squeezed into the tightest of backyard sites. Its views are sharply restricted, its spatial development is upward, its structure is a minimal sequence of point supports . . . The Hirsch house, by contrast, is suburban, expansive, open to views in every direction, and supported on thick masonry walls. But each house, in its own way, is a fine statement of design principles explored with intelligence and sympathy for materials.

THE KATSELAS HOUSE

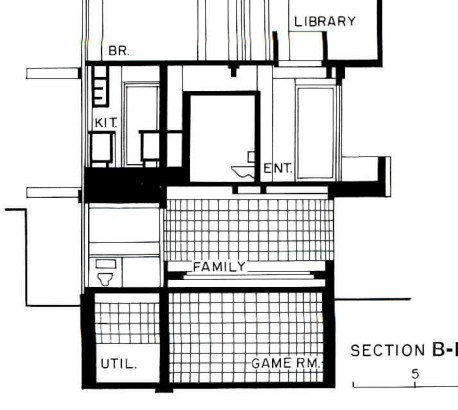
The sections, more than any other drawings, convey the character of Katselas' own house built on a small piece of property behind a streetfront house in downtown Pittsburgh. To satisfy local code, his house had to physically attach itself to the streetfront house—which it does with a single wood tie—then soar upward in a sequence of superimposed platforms to claim its share of sun and sky. The half-level solution could have produced a static series of semi-isolated spaces. It did not. Instead it produced a house of almost unbroken vertical flow, a design with enormous visual energy and dynamism. To generate the number and variety of spaces required, Katselas developed eight half-levels. Most, of course, derive their individuality from the functions they accomodate, but they are made into a unified whole by the structural grid of concrete columns and wood and concrete girders that frames the entire house. Throughout the design, a complex geometry of triangles, rectangles and circles has been skillfully integrated into this grid. From the uppermost levels of the house, where the need for privacy no longer requires the use of glass block in the openings, pleasant views of the neighborhood begin to emerge.

The stairs are simply detailed in wood and steel and left open to give them a visual prominence appropriate to a scheme of such markedly vertical development. Every space in the house has been tastefully personalized by built-ins, by carefully selected furnishings and, perhaps most especially, by the booty lovingly collected in the course of extensive foreign travel.

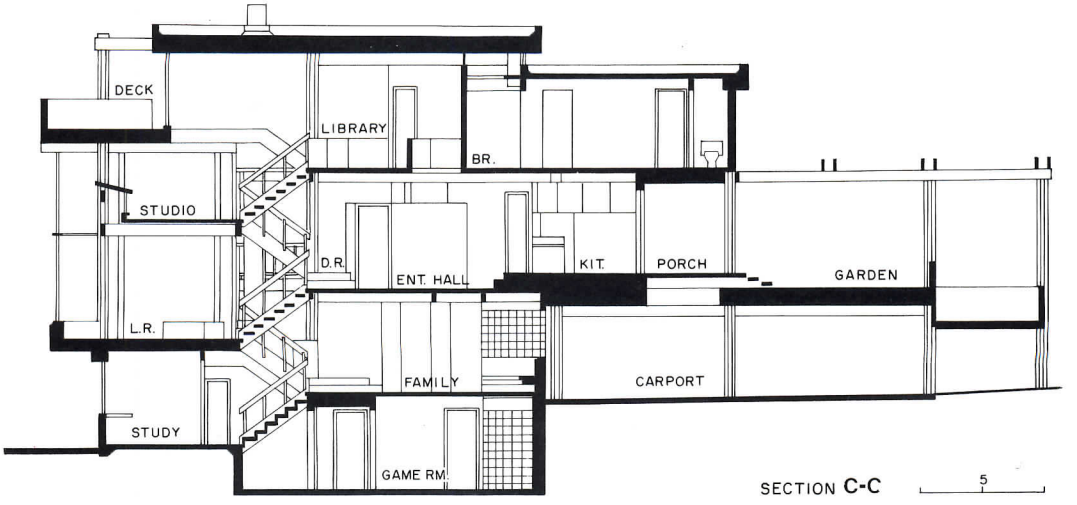
KATSELAS RESIDENCE Pittsburgh. Architect: *Tasso Katselas.* Structural engineers: *Gensert, Peller Associates;* Landscape architect: *Joseph Hajnas.* Interior consultant: *Paul Planert.* Contractor: *Sabina Construction.*



SECTION A-A

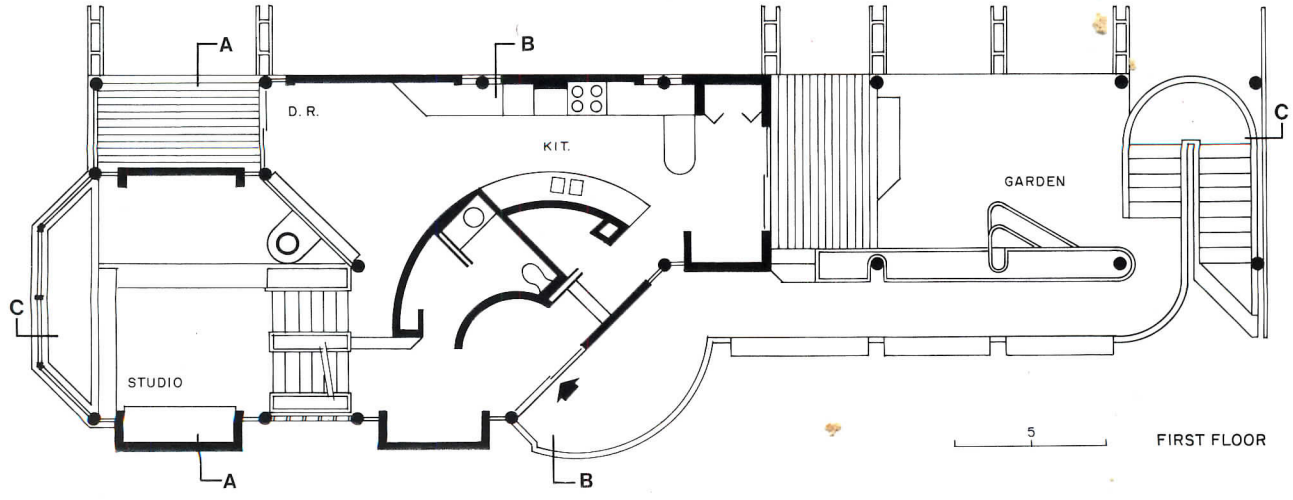


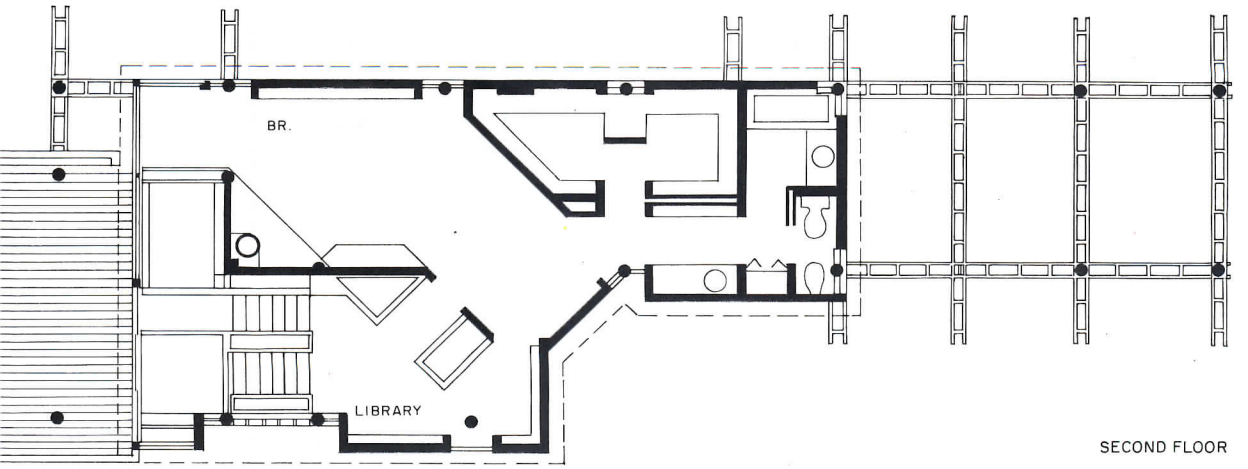
SECTION B-B



SECTION C-C 5

The outdoor spaces are developed at front and rear. On the approach side is a raised terrace-garden that is lightly screened for privacy. Behind the house (see photo opening page) is a small pool—"more for cooling off than for swimming" says Katselas. Also visible in that same photo is a Vierendeel truss used as a sheer element to stiffen the frame at the back of the house. The truss also supports the platform over the living room that serves Katselas as a studio.


A
B
D. R.
KIT.
GARDEN
C
C
STUDIO
A
B
5
FIRST FLOOR



SECOND FLOOR

THE HIRSCH HOUSE

The Hirsch house rests comfortably on the flank of a long hillside in the Pittsburgh suburb of Fox Chapel. The exteriors of the house are composed of carefully-articulated brick volumes that are played against each other and against large glazed areas to produce a sculptural character that is lively and somewhat directional. The main entrance, on the uphill side, is across a bridge that starts outside, continues inside, and spans a tall atrium space, an atrium that is lightly covered overhead by a pair of graceful, plastic barrel vaults. This happy space is crucial to the spatial development of the whole house, for all the major "rooms" key to it and freely borrow its planting, its light, its mood.

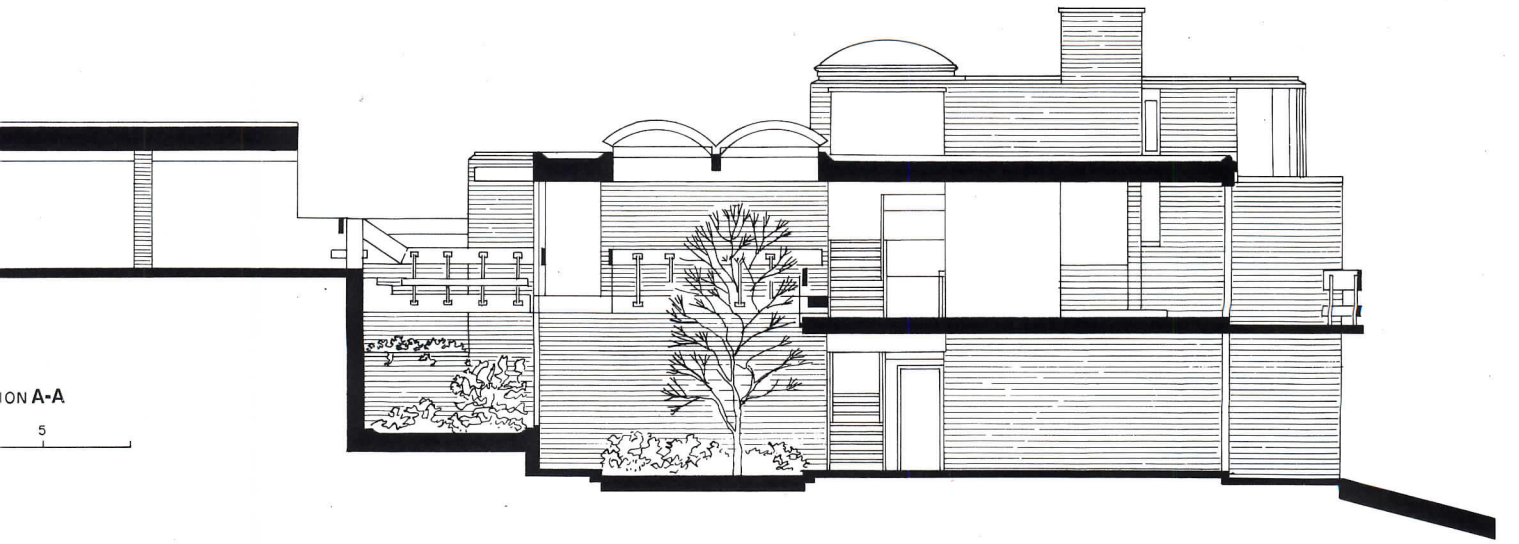
Brick shear walls, running perpendicular to the site's contours, divide the interiors into three structural bays that form a clear rhythmic pattern, but a pattern that is never overly insistent since generous openings—some of them arched—allow an almost continuous flow between bays. As in his own house, Katselas has produced a sense of vertical development by frequent changes of level. But because the Hirsch site is very ample, the need to stack spaces was not compelling. The architect therefore designed the interior spaces as a series of platforms that step down the site's falling contours with such naturalness that the process is hardly noticeable.

Views of the heavily treed site have been fully exploited in several directions, including upward through the plastic vaults. The daylight that streams in through these vaults reaches deep into the interiors, suffusing these spaces with warmth and printing the brick and tile surfaces with rich but ever shifting abstracts of light and shadow.

HIRSCH RESIDENCE, Pittsburgh, Pennsylvania. Architect: *Tasso Katselas.* Landscape architect: *Joseph Hajnas Associates*; Contractor: *Borson Construction.*

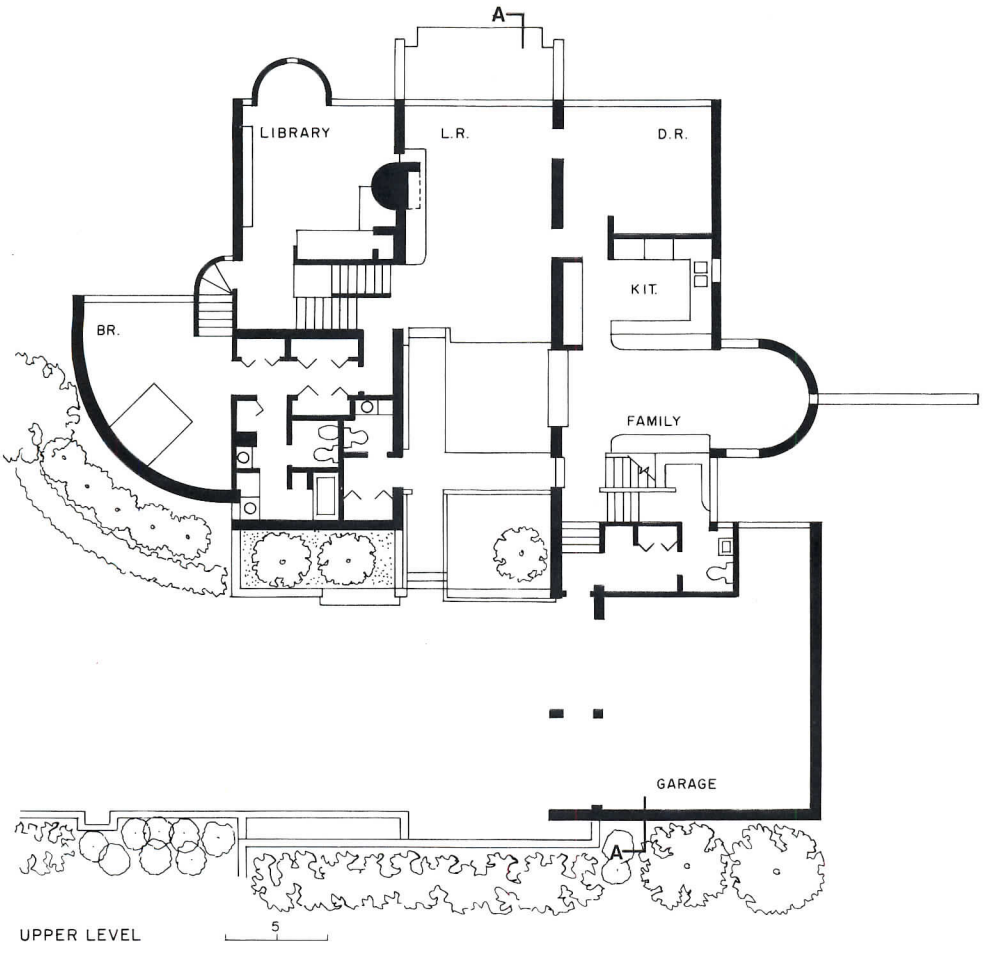
From the downhill side (photo left), the sharp-edged brick volumes are softened by circular elements that echo the curves of the plastic vaults and arches. The mass of the house is brought down to grade without exposed foundation wall, podium of fussy detail. A single retaining wall (photo above) locks the house to its site.

©Nick Wheeler photos

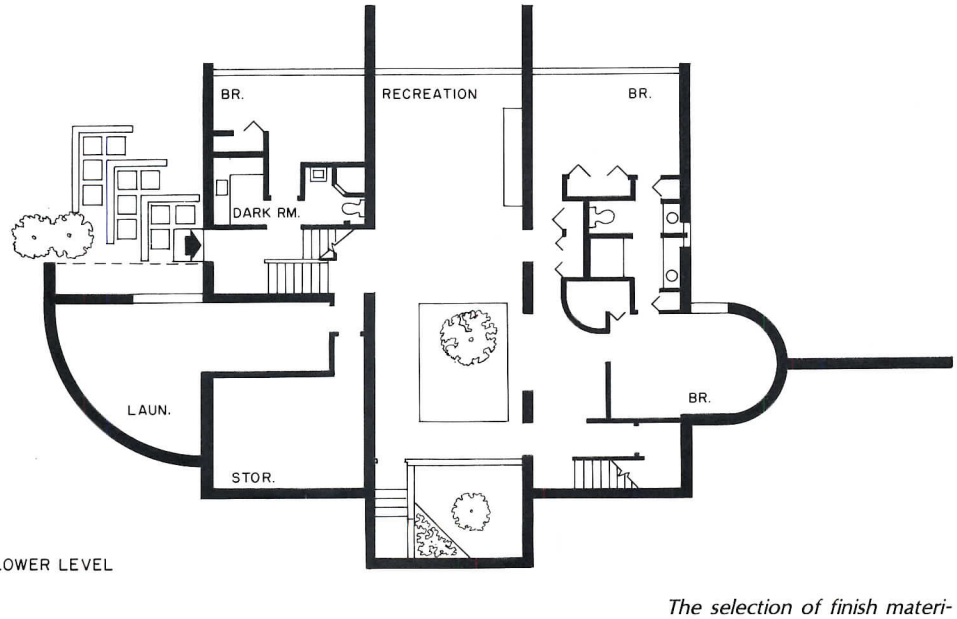


ION A-A

5



UPPER LEVEL

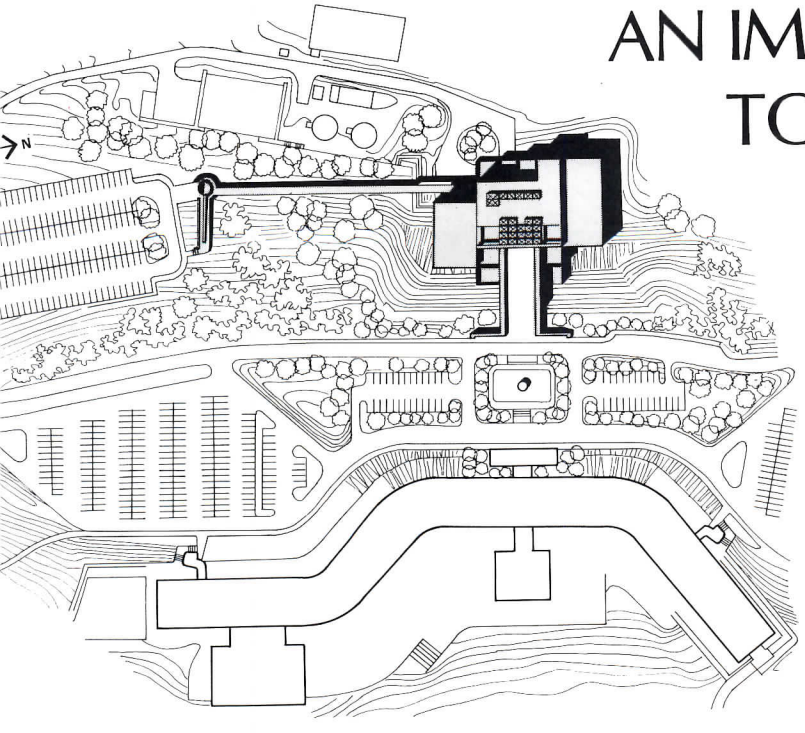


LOWER LEVEL

The selection of finish materials provides the Hirsch house with an unusually broad range of contrasts: both brick and clay tile, both redwood and oak, *both glass and plastic. All of these rather "hard" finishes are softened by area rugs and, of course, by the luxuriant interior garden. All these materials are detailed unselfconsciously but in ways that quietly express the varied natures of the materials themselves.*

An arched opening frames the dining space. Katselas has used wall washers and recessed down lighting to provide two different moods in this space. Nature adds her own during the day. From top to bottom, the Hirsch house is beautifully built. Katselas credits not only the builder but also Mrs. Hirsch—at least in part. She read the specifications carefully and took an active interest in every detail of construction. So expert did she become, that the architect seriously contemplated asking her to supervise construction on a later project.

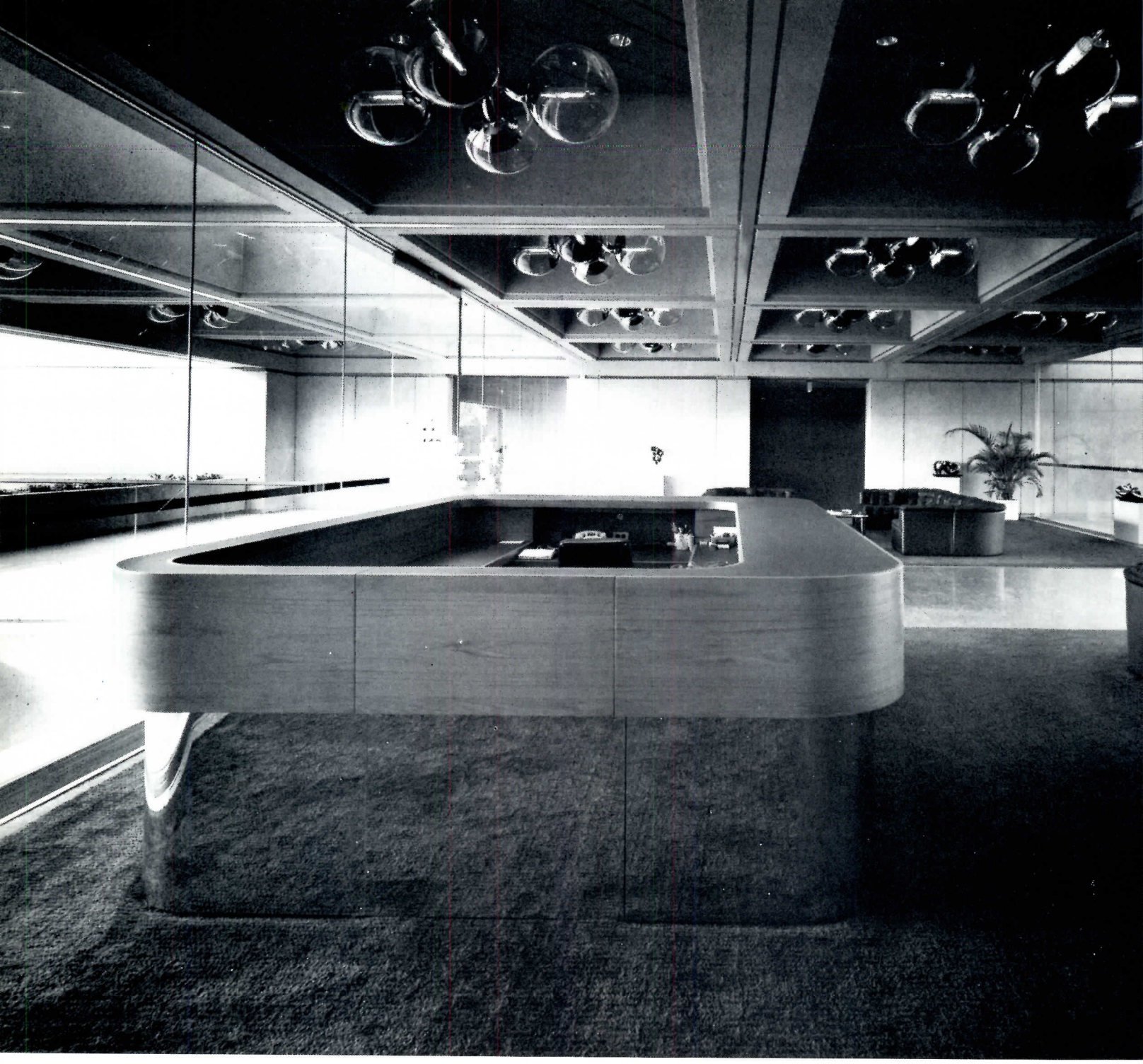
Alexandre Georges photos



AN IMAGINATIVE ADDITION TO A SUBURBAN OFFICE

When faced with the design of a major addition to the American Cyanamid Company's headquarters in Wayne, New Jersey, architects Schofield/Colgan sensitively used a sloping site in front of the original 1,100-foot-long serpentine building and its plaza, done by Vincent G. Kling in 1960, to erect a five-story structure with a minimal visual disturbance of the pleasant surroundings. The new addition (shaded in plan) is entered through its penthouse (photos above), which forms a viewing pergola overlooking the countryside. As can be seen on the following pages, the rest of the new building cascades in terraced blocks down the slope.

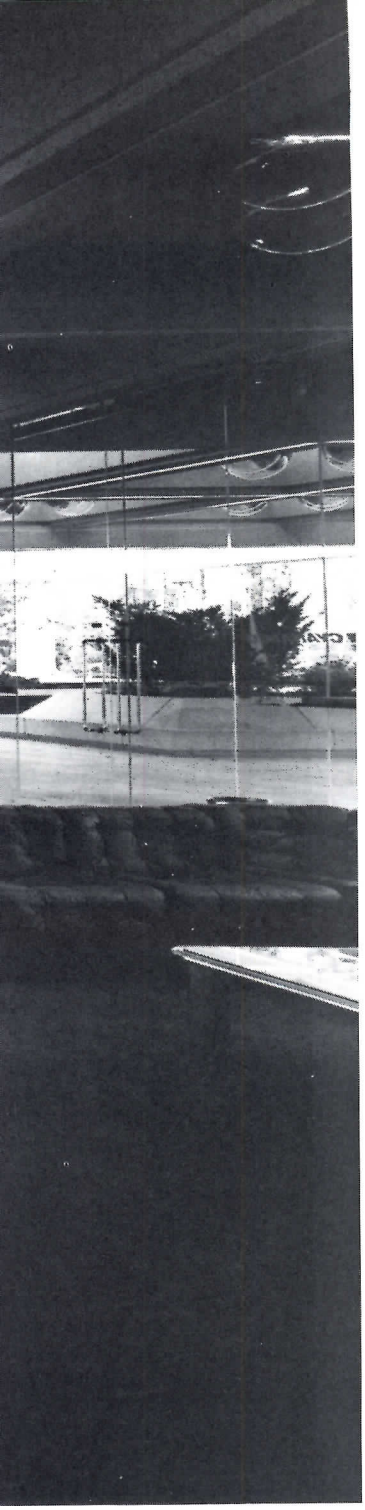
—Herbert L. Smith, Jr.

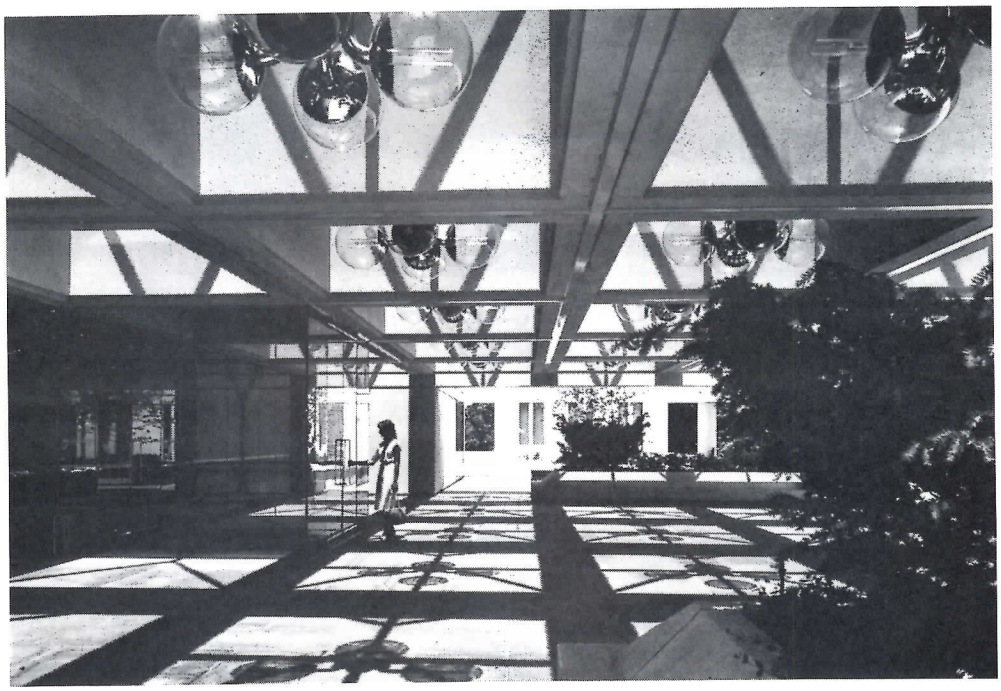


In addition to its near-disappearing act over the cliff to preserve the scenic views, the new American Cyanamid headquarters annex is a handsome structure with its own character but sensitively related to the existing building—and providing lots of outside terraces, balconies and courts, very flexible, light-filled interiors, and more than a nod to energy conservation.

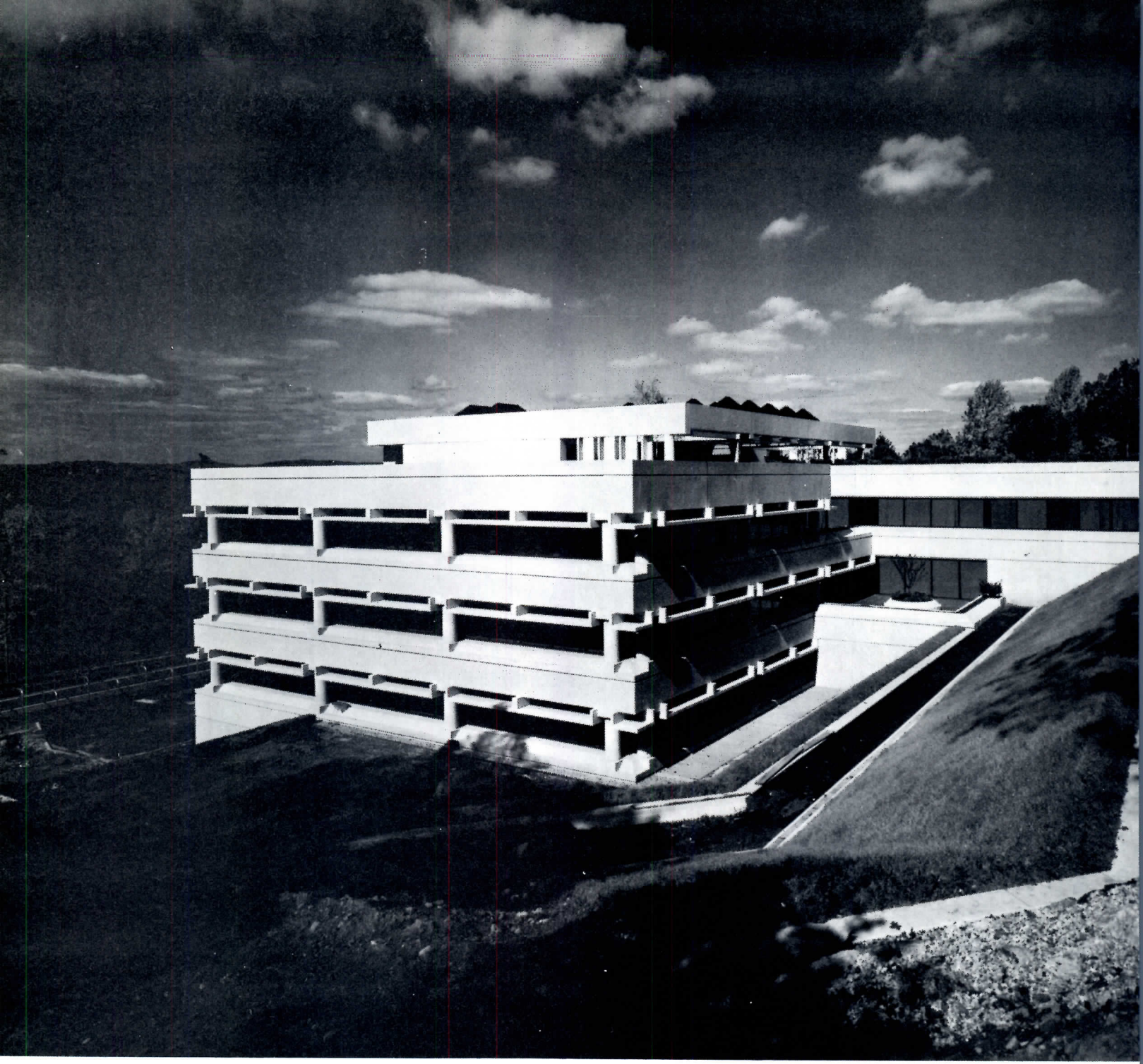
The original building is a big, sinuous structure, with strong horizontal banding of fenestration and and spandrels, punctuated by a large canopy accenting the main entrance and by a couple of free-form concrete stair towers toward each end. It centers on a large plaza with a fountain, flanked by parking areas. The new annex is connected to the plaza by an open, patterned-granite mall leading to its pyramidal skylighted entrance, and beneath the mall is a passage—partly specially lighted tunnel and partly windowed corridor—connecting the new and old buildings. A pneumatic tube system for mail also connects the structures.

Because little but the penthouse-entrance of the expanded office facilities is seen with or from the existing building, the owners and architects felt that a different but related exterior treatment was appropriate. The result is a strongly articulated concrete and steel structure with an almost Japanese-like character. It keeps the basic horizontal emphasis of the older building in both fenestration and precast sun shades, but also strongly emphasizes the columns of its 30-by-30-foot bay system. This somewhat larger than usual bay was designed to require fewer columns and give the open, highly adaptable spaces desired within. The bay shapes are also used to create terraced blocks that, in many places, are stepped back to relate to the sloping hillside or to provide outdoor courts and gardens. At the back, it is planned that future additions can be extended outward from the setback terraces without





The interiors of the addition to the American Cyanamid headquarters are open, spacious, light- and view-filled. Coffers, created by intersecting roof beams, are each fitted with a cluster light fixture and frequently topped by a pyramidal skylight—from the main entrance canopy (above), through the impressive lobby (left) to the back viewing-terrace beyond. Light walls, surrounded by glass walls, frequently punctuate the building to expand the feeling of space and light both horizontally and vertically within the building (right). Detailing throughout the interiors has been kept neat, crisp and simple.



destroying the fundamental design concept—a little like building a toy house of blocks.

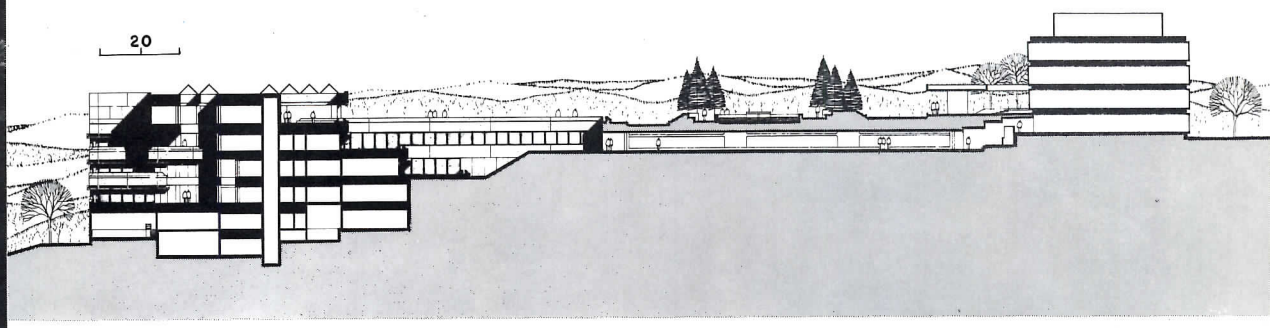
The steel framework was erected with metal decks and poured concrete fill at each floor. Exterior walls are constructed of precast concrete panels, carefully calculated and dimensioned to screen the direct rays of the sun at all levels and help reduce cooling loads. Windows are double-glazed with tinted glass.

The entrance mall (and tunnel roof) is built up with a steel deck, concrete fill, mopped built-up roofing, and rigid-foam insulation, topped with granite slabs. All other roofs use the same system, but with crushed stone instead of granite as the top layer.

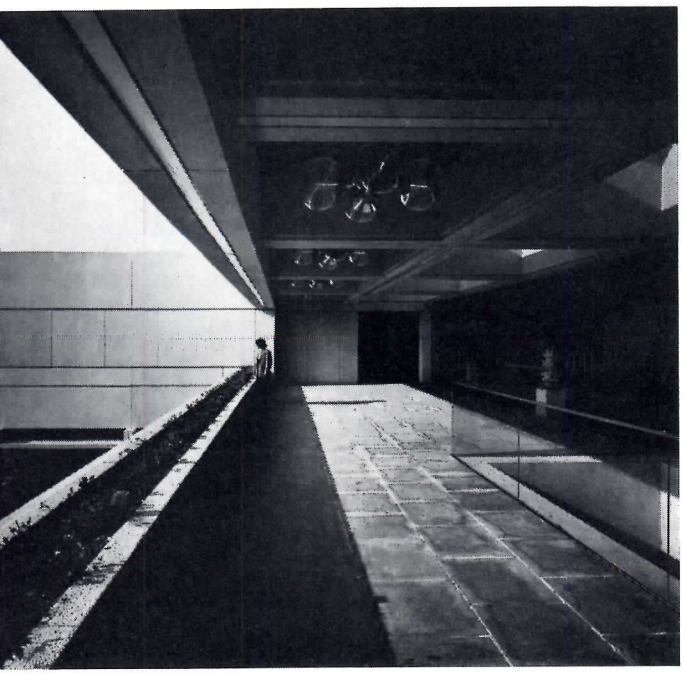
Substantial poured-in-place, reinforced concrete retaining walls extend to a height of three stories in places to accommodate the structure in the hillside. The retaining walls are freestanding, and not tied into the structural steel frame, to prevent pressure of the earth embankments from stressing the building. In other areas, the retaining walls provide open courtyards against the slopes. Continuous precast drainage trenches carry water off to the sides.

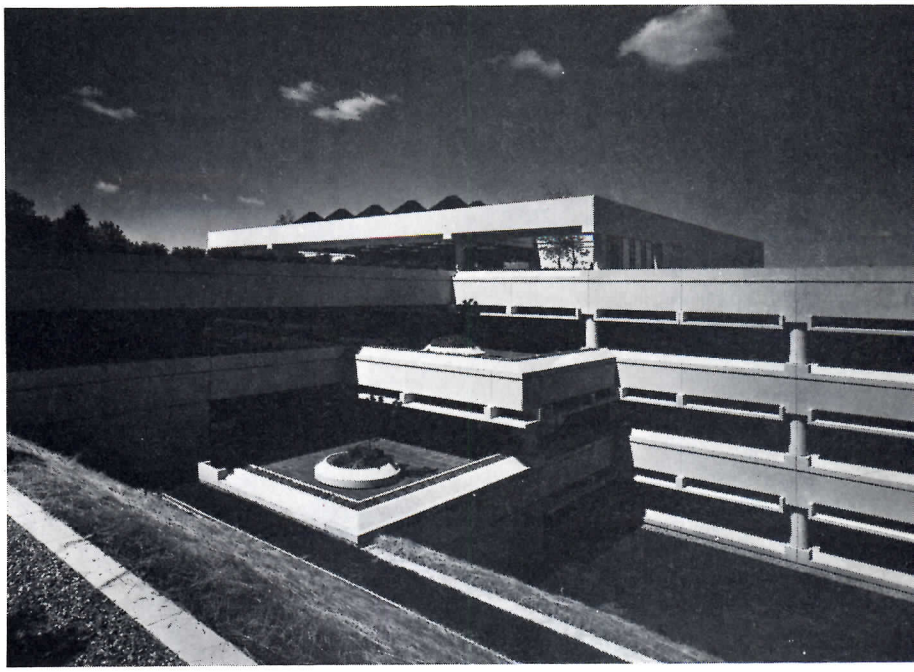
The structural bays of the building are further broken up into five- by six-foot modules that can be adapted to either open space planning or individual offices. The modules are integrated with the mechanical and electrical systems to increase flexibility. To help save energy, each light fixture has a high- and low-mode ballast to permit wattage to be stepped up or down depending on the natural light from windows or skylights.

ADDITION TO AMERICAN CYANAMID BUILDING, Wayne, New Jersey. Architects: *Schofield/Colgan.* Engineer: *Edwin M. Ragold* (structural). General contractor: *James D. King & Son, Inc.* Construction manager: *The American Cyanamid Company* (for excavation and grading, steelwork, foundation concrete, and site work).

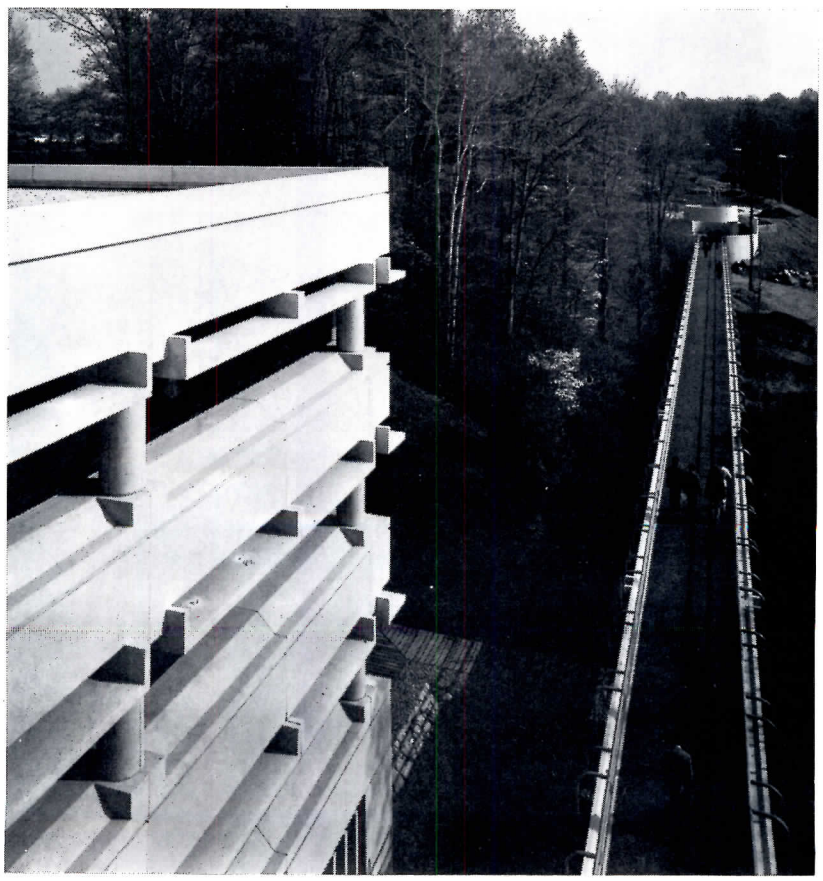


The new $10-million, 162,000 square-foot annex is planned to centralize most of the company's service divisions—such as engineering and construction, corporate development, personnel, tax, and transportation—which had previously been spread throughout the country. It currently houses 650 employees. The original building (at right in section), sited on a wooded rise overlooking a large reservoir at the back, houses most of the operating divisions. The new hillside addition is slowly revealed from penthouse entrance pavilion (see preceding page) to its full scope as one approaches the bluff.





AMERICAN CYANAMID ADDITION



A separate parking lot for employees in the new building is linked to the second office level by a pedestrian bridge that spans the rough terrain. It terminates with a fountain and steps to the parking lot. The walking surface is terrazzo, with a snow melting system installed before the top layer was poured. Cold cathode tubes inside the lower of the two railings on each side of the walk provide a continuous strip of light along the length of the bridge. A service road and loading dock are also on this side of the building, at the lowest level. The very careful articulation and detailing of the building's facade can clearly be seen in the photographs, along with some of the stepped terraces and balconies.

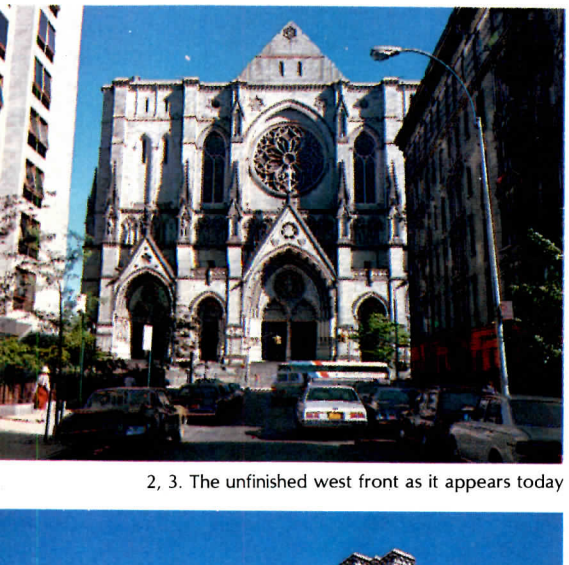
1. Drawing of the cathedral made in the late twenties for Ralph Adams Cram by Theodore A. De Postels

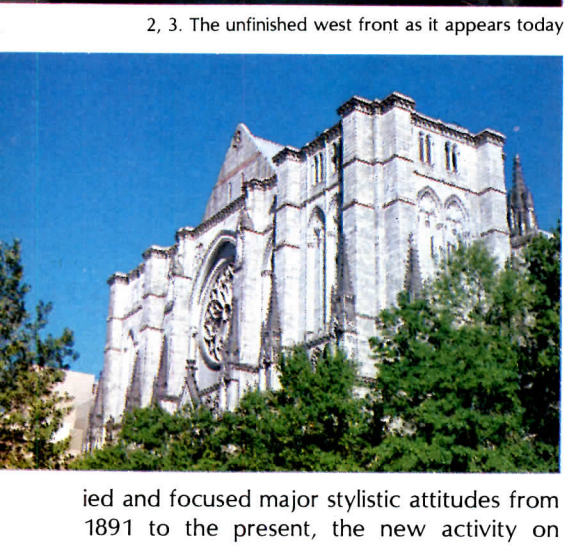
REFLECTIONS UPON THE NEW BEGINNINGS AT THE CATHEDRAL CHURCH OF SAINT JOHN THE DIVINE

By Gavin Macrae-Gibson

The Cathedral Church of St. John the Divine is built on the highest spot in Manhattan. It has a floor area almost as great as Notre-Dame and Chartres combined. Only St. Peter's in Rome is larger in both length and area. Sir Edwin Lutyen's Cathedral at Liverpool would have been the biggest of all but that, like St. John the Divine, it was designed at the end of a tradition and never finished. Only the crypt was built, whereas St. John the Divine was three-fifths completed when work was finally halted in 1941.

In June of this year, the dean of the cathedral, the Very Reverend James Parks Morton, dedicated its new stoneyard, marking the beginning of the completion of the church after a 37-year hiatus. Work is now underway to finish the towers of the west front. Because this great building has embodied and focused major stylistic attitudes from 1891 to the present, the new activity on Morningside Heights is a significant architectural event.





2, 3. The unfinished west front as it appears today

The unfinished west front (2,3) grows out of a completed nave (8)—both designed by Ralph Adams Cram in a High Gothic style. To the east rises a choir, high altar and apse in Byzantine Romanesque with Gothic overtones by Grant La Farge, the architect who preceded Cram and who had won the initial competition held in 1891. Cram's nave and La Farge's choir are joined at the crossing by a shallow self-centering tile dome by Raphael Guastavino. Built in 1909 and guaranteed to last only ten years, it has been in place for seventy. It covers the space between the four huge granite arches of the crossing that were intended by La Farge to support a tower which neither he nor anyone else has been able to complete to this day. To either side of the dome both Cram and La Farge proposed transepts, but the north transept is unfinished, and the south transept was never begun.

In justifying his prize-winning design La Farge said: "In the works of the medieval past it is not the few finished examples, in which the last word has been spoken to the point of dryness, that most excites us. It is rather those in which successive styles appear together." This was certainly borne out in his scheme, which was more Byzantine than Romanesque within, more Gothic than Romanesque without, but with a wide plan that was very compact and un-Gothic. This eclecticism delighted an anonymous writer for ARCHITECTURAL RECORD who, in September 1892, found that it represented a "wide departure from the accepted notion of a Gothic cathedral since its plan was not controlled by the exigencies of vaulting, but rather by Romanesque domes and barrel vaults, which were used to produce one vast auditorium . . . the great difference between a modern and medieval cathedral is thus recognized." Meanwhile the Gothic tendencies of the exterior gave "the required ecclesiastical feeling." In other words, La Farge skillfully chose and manipulated architectural styles to produce the desired functional performance inside and the required symbolism on the exterior.

Unfortunately for the firm of Heins and La Farge, when digging for the foundations for the great central Byzantine dome and the pyramidal Gothic tower above it, the excavators discovered problems. Though the cathedral was sited at the highest point on the island, directly under the proposed crossing were quicksands and subterranean springs. Undaunted, the architects constructed the four huge arches and buttresses which still exist today, the legacy of a proposal that could not be fulfilled.

La Farge might have been trying to make the greatest impact that he could, for he knew that, like the quicksands under the cathedral, the tides of public taste were shifting under his feet. The heyday of Eclecticism was passing and a bitter exchange of views took place between La Farge and a writer in the *American Architect* calling himself by the somewhat ominous pseudonym 'Candidus.' Candidus admitted that "matters have gone too far to rectify them in choir and crossing" but urged "that a reconsideration of the nave should be made before it is too late, to save money and avoid a still more hybrid effect."

Heins's death in 1907 released the trustees from the original contract and La Farge was retained *pro tempore*, but when the choir was finished a change in architectural firms was virtually inevitable, as La Farge's relationship with the cathedral administration had become unbearably strained.

Ironically the appointment of Ralph Adams Cram, while it ultimately gave the cathedral a nave and a west facade in a strict High Gothic style of impeccable scholarship and consistency, only added to the cathedral's over-all hybrid nature. ARCHITECTURAL RECORD, however, stuck up for La Farge, saying that Dr. Cram's work "showed entire lack of sympathy with what has t far been accomplished." Other critics prai his approach, however, and his attitude history. "The thing for me to do," he announced early in his career, "is to take the English Gothic at the point where it cut off during the reign of Henry VIII. This course means using the English Perpendicu Gothic style as the basis of what we hope do."

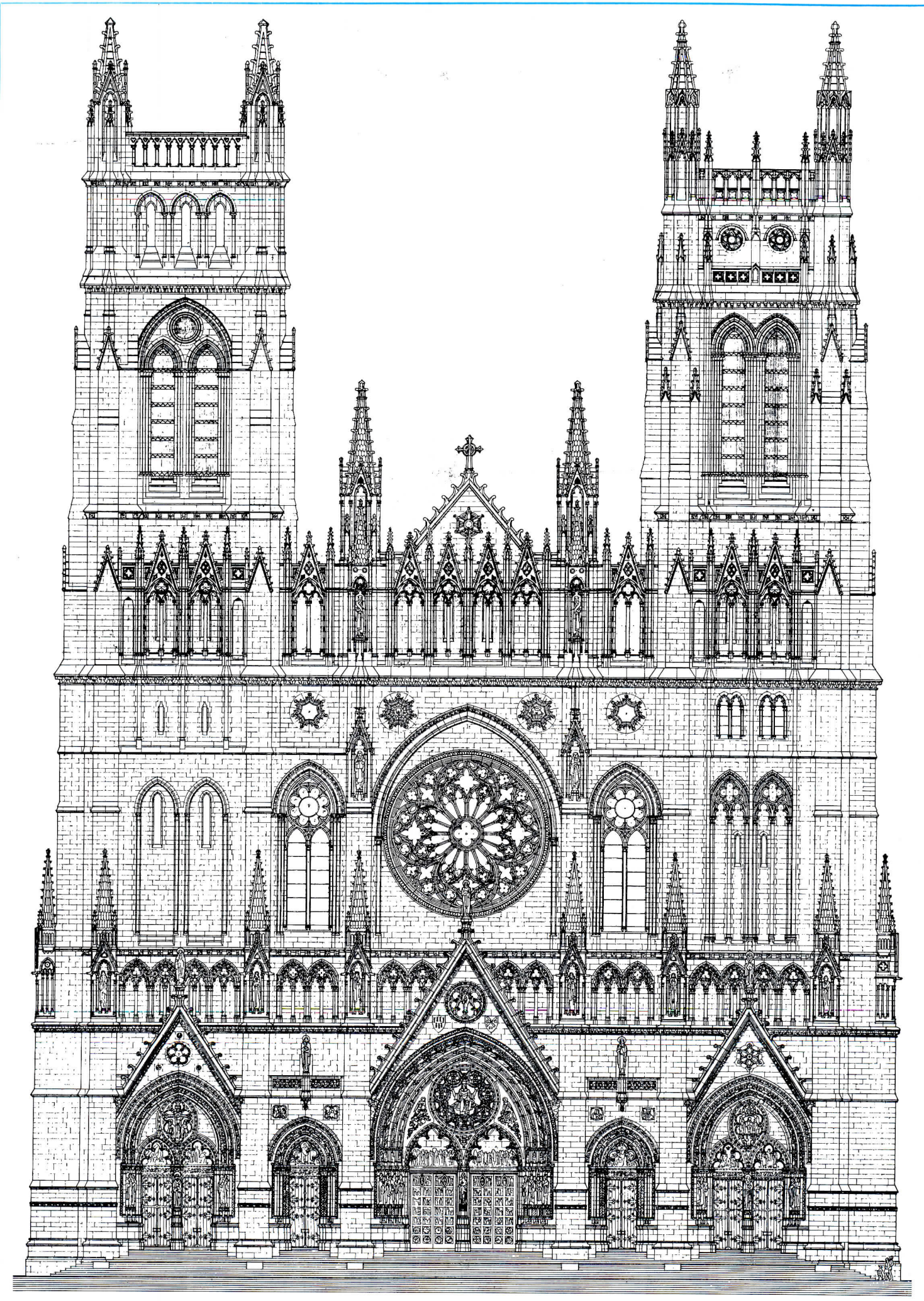
Cram forged ahead with his rather c though certainly impressive Gothic, but like La Farge, got stuck at the crossing. T 1929 scheme, according to which the n west towers are to be built, proposed enormous square tower at the crossi Foundation problems, and the Depressi conspired against the building of any of schemes for the crossing, and the size of t central tower gradually dwindled. By the y before Cram's death in 1942, this tower shown in models and drawings had shrunk a mere fleche, similar to that of Ste. Chape but inflated to American proportions, and yet unbuilt.

If the Depression was a watershed Cram's designs, it was also a signal that tim were changing. The year 1929 also saw t start of construction on Le Corbusier's V Savoie, and by 1932 the International St had come to America via Hitchock and Joh son's book of that name. By 1938 Wal Gropius was head of the School of Archite ture at Harvard, as was Mies van der Rohe Armour Institute in Chicago, the forerunn of IIT. In the year of Cram's death, a gene tion of students fundamentally opposed to not totally ignorant of, his views was leavi school and Beaux-Arts training was becomi extinct.

The Gothic nave of the cathedral w officially and triumphantly joined to the cro ing on December 6, 1941, but when t Japanese bombed Pearl Harbor the very ne day, Bishop William Thomas Manning, who episcopate was legendary as a result of t fervour he inspired in the drive to build, ga away the remaining iron and steel from t construction site to the war effort. It was t end of an age for the cathedral, though fe may have realized this at the time, or unde stood the profound meaning of the event.

Time moved fast and by 1954 the rev lutionary social principles of the Mode Movement had degenerated into an emp moral self-righteousness, when Pietro Bellu chi, then dean of MIT's School of Archite ture and Planning, addressed the New Yo chapter of the American Institute of Arch tects on "The Challenge of St. John's Cath dral." "It is a test of maturity," he said, "f the architect to free himself of old form shaped by other societies, which prevent hi from understanding the nature of his ow struggle. . . . We need a large supply faith—faith that the masses are really capab of growing in awareness, and faith that o more creative people will succeed in produ ing the spiritual symbols which may serve reflect and illumine our civilization." The ne year, he tested his faith in his "more creati

4. The west front as designed by Ralph Adams Cram in 1929 in a contemporary drawing by John Doran of Hoyle, Doran and Berry



5. Ralph Adams Cram's design for the south tower in a contemporary drawing by John Doran of Hoyle, Doran and Ber

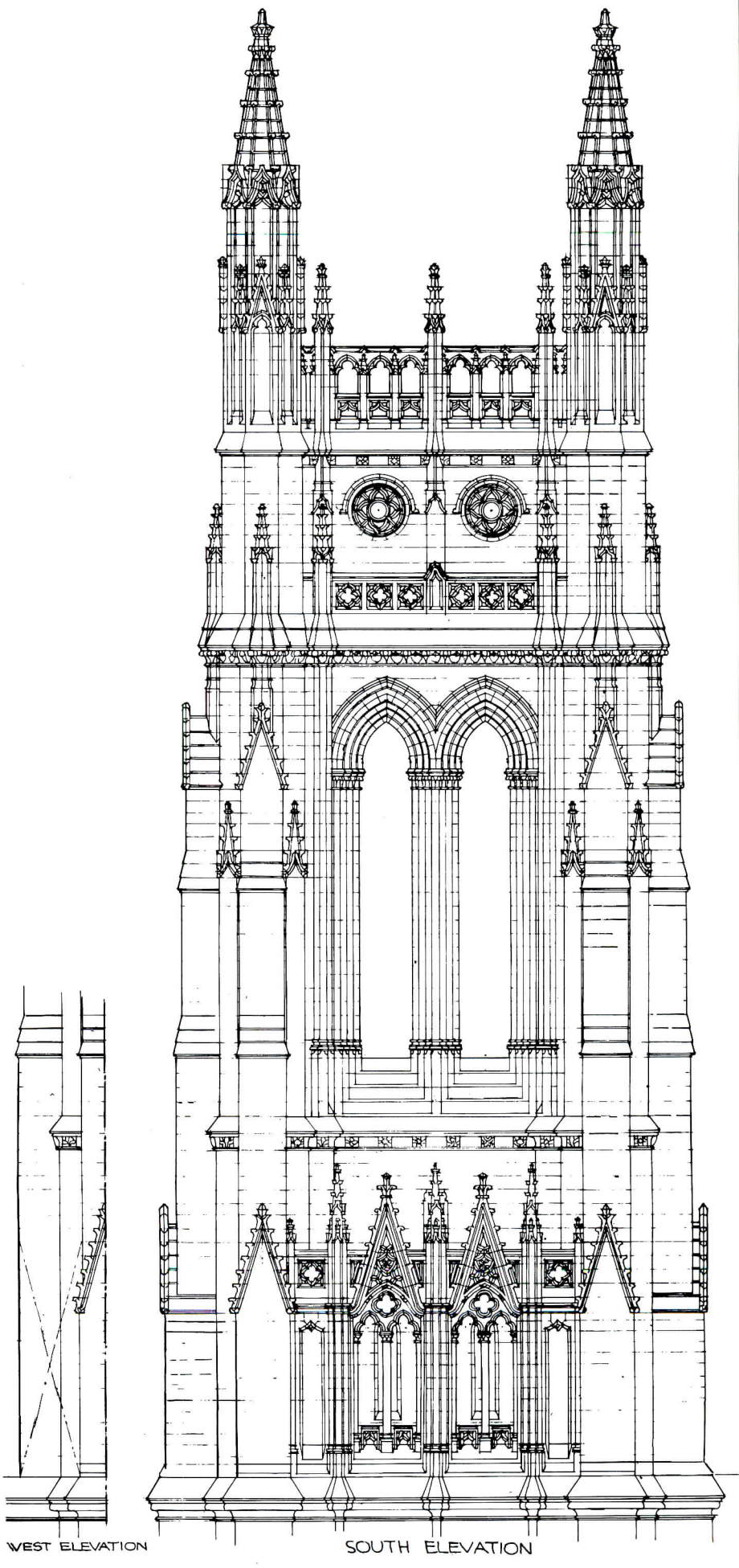
people" by assigning the completion of St. John the Divine as a studio problem. The Mexican, Felix Candela, whose Gothic-recalling concrete forms led Belluschi to believe he might be interested, refused the visiting professorship, declaring simply that the $20 million and fifty years work spent thus far should be summarily written off and the whole structure torn down. But Minoru Yamasaki was less inclined to such drastic and unpopular measures and agreed to teach the studio.

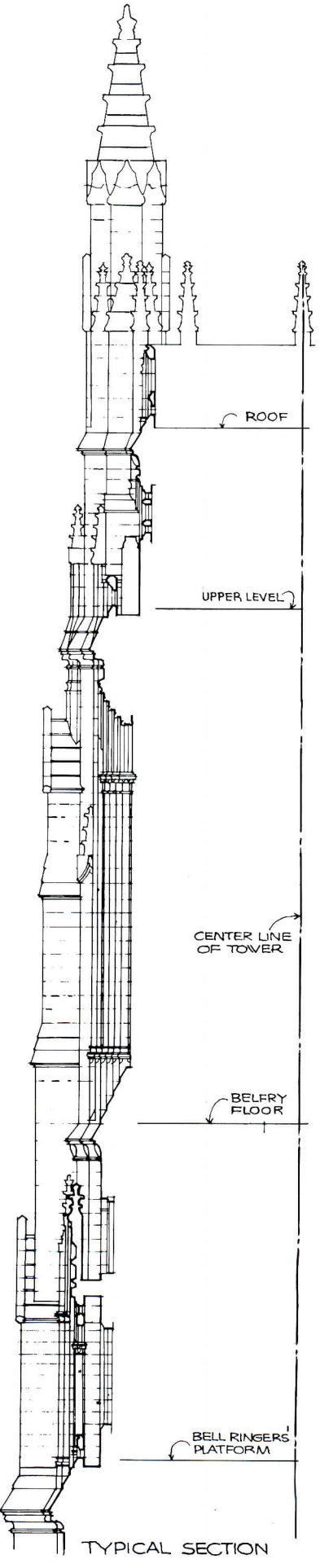
It would perhaps have been better to follow Candela's suggestion than to have had any of those 1955 projects built. The search for spiritual symbols to reflect and illumine the civilization resulted in dreadful parodies of the very styles that supposedly prevented man from understanding the nature of his own struggle, and created instead symbols of the utmost sterility based on a Machine Esthetic completely devoid of its original 1920's vitality (9,10).

The same kind of scheme based on interpretations of Gothic intentions in tension structures, high areas of glass with Gothic verticality expressed in the steel mullions and so on was repeated many times during the '50s and early '60s as students and professionals alike attacked such an obvious symbol of the past during the heyday of the Modernist spirit.

But in 1967 a design for the completion of the cathedral was commissioned from the New York firm of Adams and Woodbridge. The '50s' schemes had attempted a weightless look as if escaping from history, but this technological imagery had vanished in the Adams and Woodbridge proposal to be replaced by a ponderous massivity, though of concrete rather than stone, in which the crossing was finished with a concrete and stained glass lantern reminiscent of a section of a 1930's office building. Ada Louise Huxtable "blew the scheme apart," in the words of Dean Morton. The most interesting aspect of the project in the light of the present return to Cram's scheme was the trustees' comment that "the argument that a cathedral should be completed in one style carries little weight with us. Cathedrals built in the past and completed over a period of centuries often become a hodge-podge of architectural styles." They accepted the Adams and Woodbridge scheme "in principle."

But the project looked heavy and expensive, and seemed to express the affluence of an economy fueled on war while revealing a society bankrupt of formal ideas. The trustees were at that point even considering a 450-foot campanile to house the smokestack of the power plant. Such a symbol would have been completely against the times. America was restless and the pent-up aggression and violence exploded in New York as elsewhere while Harlem rioted and students barricaded Columbia. Against this background of unrest within blocks of the cathedral came Bishop Horace William Baden Donegan's 1969 proclamation that all building and consideration of building would cease. Priorities had changed, and money was sought to address social ills at





TYPICAL SECTION

the root, rather than express a program of community involvement in the fabric of the cathedral as is presently being done. All question of building was out, let alone building in Gothic. Frederick Woodbridge complained that "traditional stonework is almost impossible to produce nowadays. New York City has only eight competent stonemasons." A 1967 article in *Progressive Architecture* describing his proposals ended with a flourish: "Cram's building was probably the last Gothic cathedral that will ever be built. No one can build Gothic cathedrals anymore, and certainly no one seems able to finish them." *PA*'s crystal ball was clouded. Twelve years later—in June of this year—work began again, to finish the towers of the west front exactly as Cram designed them, in stone.

This decision was first announced, though only as an intention, by Dean Morton in the sermon he gave at his installation ceremony in 1973, which happened to be the hundredth anniversary of the granting of the charter of the cathedral by the New York State Legislature. However, the announcement this year that building will continue, and continue in the original Gothic, has been underlined by the arrival in America of the master mason James R. Bambridge. A former apprentice with Trollope and Colls, the London firm which restored the Houses of Parliament after World War II, he has recently been employed in the construction and restoration of Gothic cathedrals in England. After sifting through a flood of applications from would-be stone masons from the depressed areas in the neighborhood of the cathedral in order to train a small, dedicated team in the skills of stonecutting and Gothic construction, he has selected five (three from the neighborhood funded by the Harlem Commonwealth Council and two from outside the community funded by the cathedral). A stoneyard building designed by architect Michael Antonson has been erected in the cathedral's thirteen-acre close, where the team will be taught methods that were perfected over 700 years ago, but made easier by an assortment of modern saws and cranes.

A plan of this stoneyard lay on a table in Dean Morton's spacious office in the cathedral house, pinned down at its edges by lumps of rock. The room was charged with energy, and seemed to me at first sight to be a cross between a pleasantly eccentric Oxbridge don's rooms and an artist's studio. Several large interior views of the cathedral in watercolor held on tall easels dominated the center of the room, while heavy bundles of blueprints were jammed between the Gothic tracery of the high luminous windows. Numerous sketches and drawings of aspects of the cathedral's spaces and its fabric were thumbtacked resolutely to the wall. When I looked more closely about the room, I noticed rows of books in old comfortably solid bookshelves beyond a huge desk that was covered with the paraphernalia of an extremely busy churchman, who also happens to sit on twelve different boards as diverse as the Big Apple Circus and the Washington Institute of Policy Studies. A telephone loomed over the irregular topography of the desk from a raised vantage point.

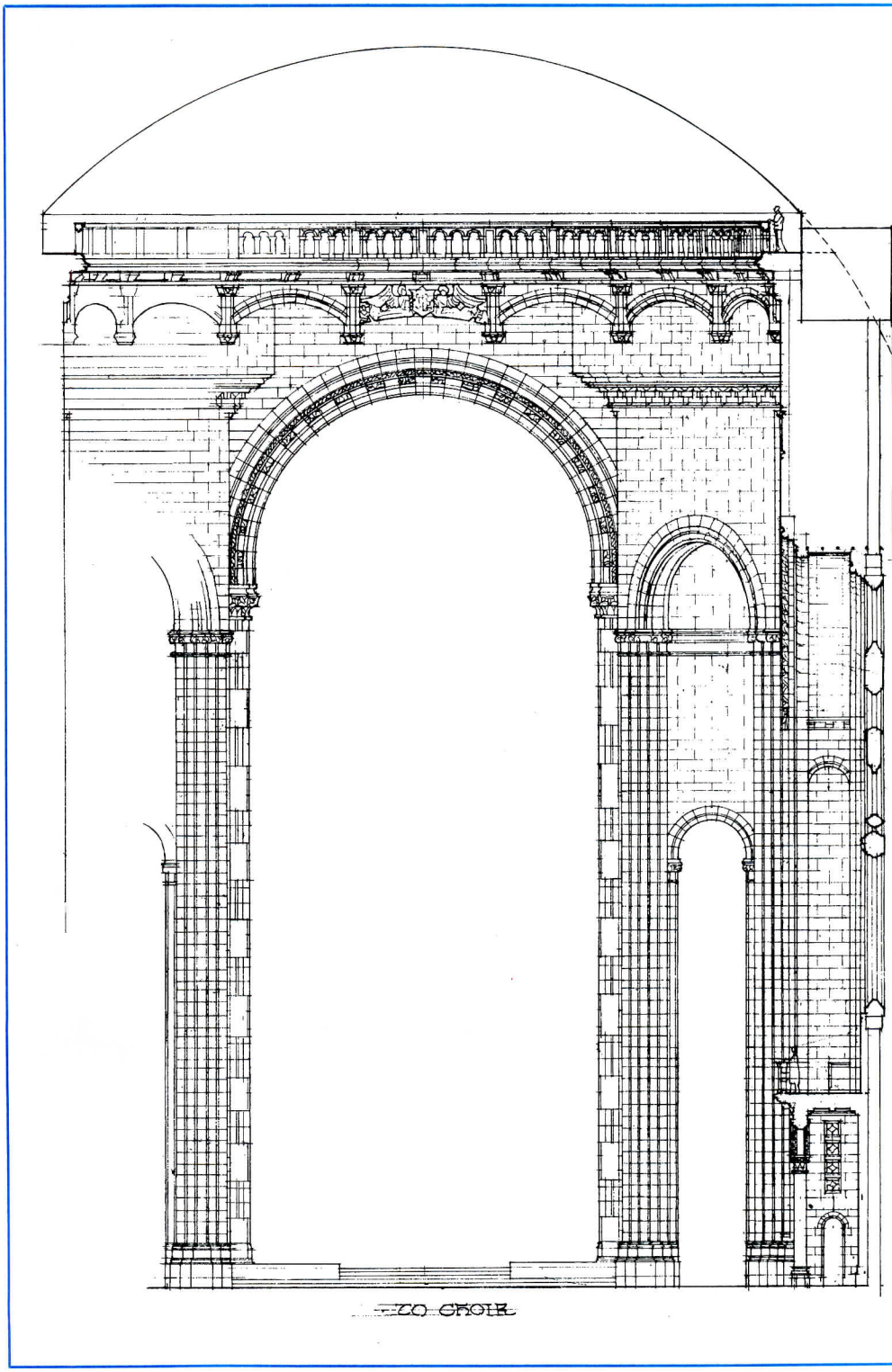
"Are you afraid of birds?" the dean asked me, removing the covering from a nearby cage. A green parrot stared at us, opening its beak silently and then closing it again. The cage was raised from a floor covered with layers of rugs and carpets, both large and small, which was also strewn with papers, piles of books and objects placed informally but certainly not randomly. A small brown dachshund with shaggy ears named Vierz inhabits this landscape of small mountains in which the dean moves with great decisiveness from one thing to another. The dean looked as if he would have little trouble with the four-pound hammers if he himself were called upon to take up stonemasonry, yet he gathered up Vierz very gently, explaining that the dog's name is short for Vierzehnheiligen, the German Baroque pilgrimage church.

The dean was dressed in black, but his shirt had the top two buttons unfastened after a long day of relentless appointments, revealing a powerful neck which supported a broad, handsome face with penetrating eyes, swept-back hair, and graying sidebeards. He has a strong, confident, almost booming voice. He joked about being a frustrated architect and can afford to, since it has been largely his energy and his decisions that have given rise to the ambitious new project for the cathedral.

What the dean envisions concerns on the one hand the towers of the west front, and on the other the dome, crossing and transepts. The towers are to be completed according to the letter of Ralph Adams Cram's design of 1929 (4,5). This design was judged by the Fabric Committee, of which the dean is a member, to be the best of Cram's half a dozen designs for that part of the cathedral. It was the last scheme before the Depression, after which Cram proposed to lower the towers 45 feet. According to Dean Morton, the thinking that went on among the trustees was "well, if we're going to do it, let's do it, but let's do the best we can." In contrast to the archaeological precision with which the towers are to be completed, however, the dean is enthusiastic about a sophisticated, technological image for the exterior of the crossing: "I would not in any sense be against having a very contemporary solution on the outside of the crossing where something has got to happen." On the other hand, in the inside he feels the solution should be as harmonious with the existing fabric as possible. To this end the Guastavino dome, which he says "has become and is appreciated as a very important thing," will be kept. The original Cram designs for the unexecuted rose windows in the unbuilt transepts will be carried out but installed inward to the line of the aisles, thus dispensing with proper transepts altogether.

Meanwhile, the half-finished north transept will be roofed at its present height and consequently will lie outside the main body of the cathedral but connected to it. The square of the crossing will then be joined with the

6. A design for the crossing in the Romanesque style by John Doran of Hoyle Doran and Berry



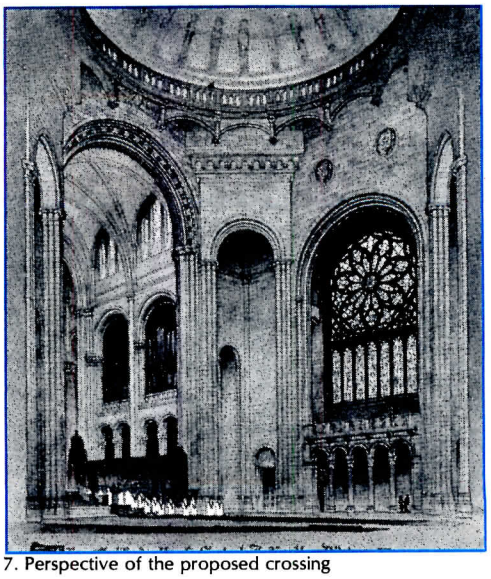
circular opening of the dome by an octagonal arrangement in the same stone as the rest of the building to recall La Farge's original Byzantine intent, while the choir and nave will be connected at ground level by a reintroduction of the choir's Romanesque arcading (6,7).

While in both cases Mr. Bambridge has full responsibility for the building activity as master mason and is making the full-sized drawings for each stone to be put in place, John Doran of the Boston firm of Hoyle, Doran and Berry is the architect. This firm is the successor to Cram and Ferguson. John Doran is the only survivor of the team from Cram's office who still practices architecture. As a young man he worked on the original drawings. Today he is responsible for making the working drawings based upon Cram's drawings for the towers, and for the design of the interior of the crossing.

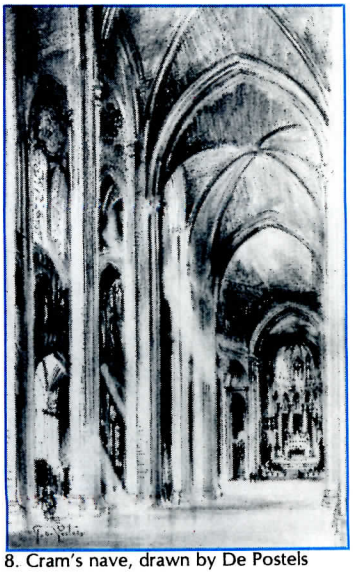
Dean Morton feels it is right to build the towers in Gothic for esthetic reasons and out of respect for Cram. "The west front and the nave is the one piece that is really Cram. There is nothing non-Cram there. Cram himself wanted to homogenize the whole church and gothicize La Farge as far as he could (1), but today there is a sensibility greatly different from that which existed in Cram's day." Thus two greatly different approaches can be taken with the towers and the crossing, adding something contemporary to the existing hodge-podge at the crossing, but accurately recreating an existing strategy for the two towers.

The whole scheme is given another dimension and justification, however, by the social and economic implications of the dean's plan, and the relationship of the building to the community. In his 1973 installation sermon he had said, "Any cathedral that is alive will never be finished. The needs of the city require its continued development and continual growth, and once a church says it is finished it has become a museum and no longer a church. Yes, we will again begin to build—to build in program and to build in architectural fabric to facilitate that program."

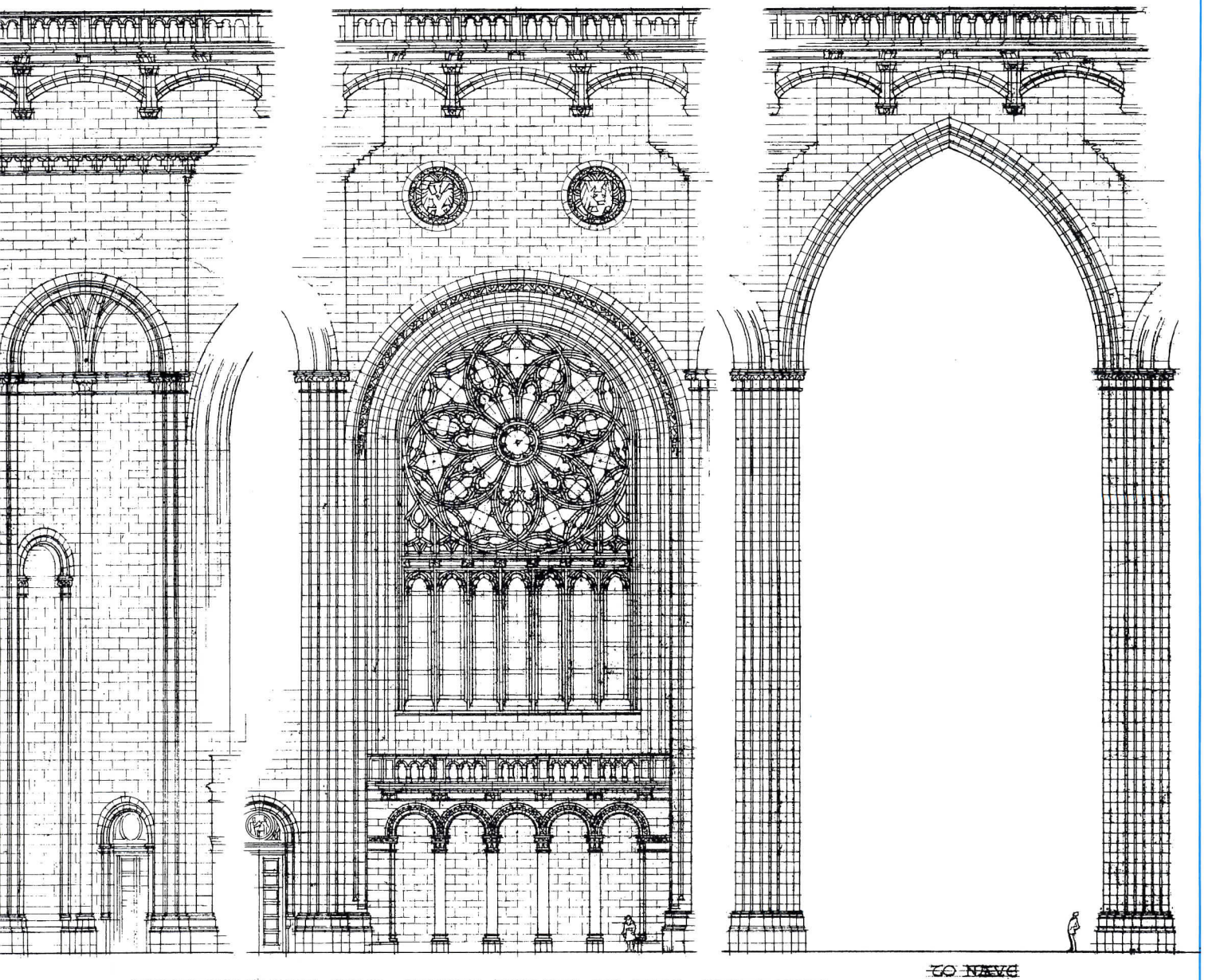
One of the first programs initiated by the new dean was U-HAB, a community rehabilitation program for multiple-family dwellings, which has since become a national demonstration model and which received a $3-million HUD grant last spring. Much of the housing stock that U-HAB is interested in, particularly in Harlem, is presently uninhabitable but has perfectly serviceable structural frames. The dean points out that stonework or brick with stone trim is the common cladding material for these older buildings, and sometimes the structural system itself. "If the long-range scheme for the salvation of neighborhoods is not going to be a resort to the '50s' solution of bulldozing, but rehabilitation instead, then there is going to be a great need of skilled labor for the thousands and thousands of buildings needing rehabilitation. Say the city gets serious about that, and escalates the U-HAB project and projects like it to 500 buildings a year, and then say that that



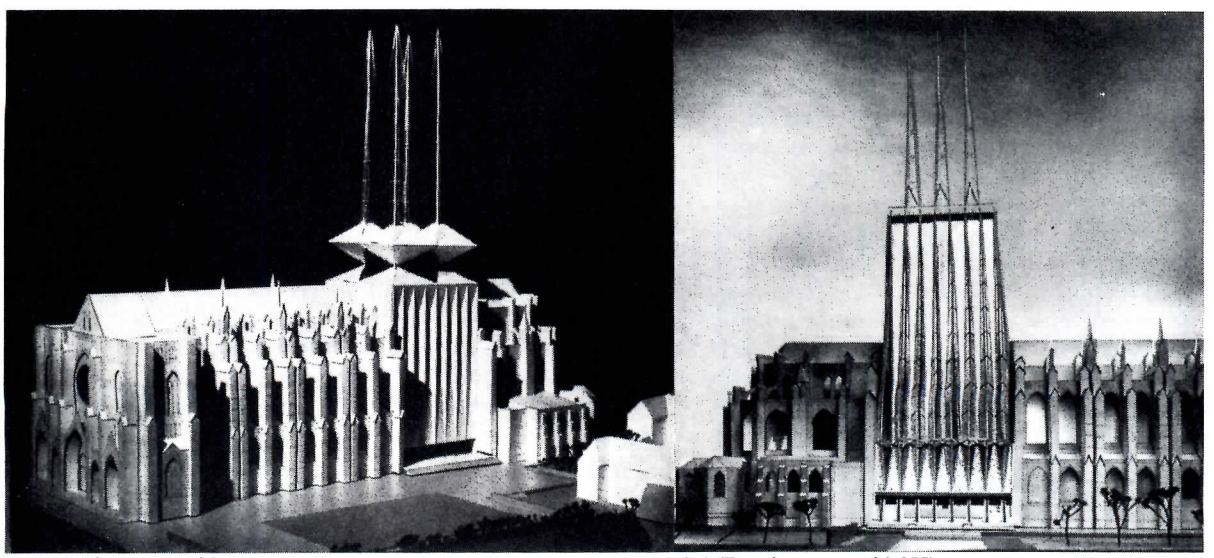
7. Perspective of the proposed crossing



8. Cram's nave, drawn by De Postels



ELEVATIONS, FOR COMPLETION OF THE CROSSING



9. MIT student proposal (1955)

10. MIT student proposal (1955)

becomes a national policy for older cities, then we are not training people for basket-weaving—because stonecutting is going to become a crucial trade."

But it is not only in rehabilitation that stonemasons could be useful. The change of attitude towards redevelopment which might replace cataclysmic planning with rehabilitation has a counterpart in the design of new buildings which go beyond Modernism. In a speech made by Philip Johnson recently at the Century Club, of which he and the dean are members, the designer of the stone-surfaced AT&T tower began his address by praising the Cathedral of St. John the Divine, while decrying the loss of the crafts that had built it, and complaining of the difficulty he had had in finding anyone in America who still knew how to detail granite moldings properly to achieve the correct shadows. The towers can be seen as providing work for men who will have the skills required for careful renovation and perhaps also for the stoneworking skills with which new buildings that depart radically from Modernism may be built.

However, the external treatment of the crossing represents to the dean an opportunity to deal with issues of energy conservation and alternative technology, which he sees as a second string to the bow of U-HAB. In this connection the Fabric Committee has been working for over a year with Buckminister Fuller, and the dean hinted that "it is conceivable that the south transept may be completed as a bio-shelter. The exterior of the crossing could be resolved in a radically different idiom from that of the existing fabric."

The cathedral has been active in the field of alternative technology. Its major spring event of last year was a week-long Sun Day celebration with learned discussions, lectures, and entertainments. This theme seems to have been posed to help answer the key question: "What form should the resolution of the exterior of the crossing take?"

Should a solution to the completion of the cathedral embracing both the Gothic style for the towers and a Late Modernist style for the exterior crossing become reality, then an eclectic solution truly in keeping with the times will have been achieved. Stone hammers and solar panels will jostle each other as two utterly different technologies meet. It seems appropriate that this should occur in the completion of a building that was conceived at a high point of Eclecticism—unsurpassed perhaps, until now. Symbolically, the joining of styles would bring together in a major building two opposed positions in present architectural thinking: that which looks back to history and that which looks for inspiration in modern technology. This meeting would be very well timed, for the present diverse streams of architecture need to seek some form of synthesis.

The decision to build again in Gothic is a product of the same shift in awareness that caused architects to start *looking at* history and that is also responsible in part for the U-HAB program. The altered perception is rooted in a sensitivity to the old rather than a blind faith in the new. On the other hand, the interest in a technological solution to the crossing is directly in the Modernist tradition (who could be more of a Modernist than Buckminister Fuller?) with its roots in a belief in technology as a means to solve the problems of a technological age. Today's beliefs, however, as distinct from those of old Modernists like the Italian Futurists—for whom technology was a glorious gas-guzzling escape from man's limitations—should be in a technology that increases our capabilities by working in harmony with nature rather than against it. The thinking behind Sun Day addresses the only sane answer to our future energy needs, as oil is used up, and the terror of irresponsible nuclear proliferation is exposed.

Today, the meaning that can be conveyed by a building is stunted if it is limited simply to an expression of technology for its own sake, as the Modern Movement encouraged, for times have changed. The vitality of public spaces relies on a complex and direct kind of impact that has been consistently denied in modern architecture resulting all too frequently in great voids of anonymous space. Ironically, it was the sophistication of meaning which traditional kinds of architecture possessed that allowed the early Modernist buildings to be read with interest and tension. Today, when in many cases the whole environment is Modernist, that sophistication has to be reintroduced to regain the interest and tension that was lost. This sophistication of meaning relies on the message that a building can convey by its forms, its imagery, its use of styles, its ornamentation, and all the other devices that have been developed throughout history, in addition to modern media techniques which still lie largely unexploited in architecture.

In the rhetoric of the Modern Movement, form and the message it carried were considered inseparable from function, though in reality function was used to justify an esthetic prejudice, just as progress was deemed to be teleological rather than a process of development involving the feedback between the message sent and the effect created. To limit meaning by any esthetic prejudice is as counter-productive in the present situation as to seek an architecture whose justification lies solely in its own nature. All means of communication should be tapped, so that story-telling in all its guises, from the most abstract stories of spatial connection to the most literal stories told by representational elements, can become part of the environment again, to enliven and make both intelligent and intelligible the public spaces of cities.

A manifestation of the necessity of this attitude is the role of the architect as a manipulator of meaning in buildings whose "functional" requirements have been previously determined by others such as the real-estate developer, the economist, and the marketing analyst. The forthcoming show at the Museum of Modern Art in which six architects were asked to propose designs for the facade only of a typical BEST Products retail outlet demonstrates this very clea
do the already built works for BEST, a
the exhibition, by Venturi and Rauch
SITE.

In the context of a show so close
cutting-edge, where most of the d
attempt to give meaning by manipulatio
different styles to the dumb box
contains the merchandising space, the
ing of the west front of St. John the Div
Gothic seems stunningly ironic. Archite
has come full circle since the cathedra
started, though the building was nev
sight of completion until now. It is
appropriate that it should be the west
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serves no purpose in the old Moo
sense, yet is the part of the Gothic cath
most deeply concerned with the mes
making and story-telling that give mean

As architects have looked back
history to find a meaningful language
has been a basic conflict between
abstraction of historical elements and
more literal interpretation. The gradua
dency, however, has been towards a
and more literal approach, as one ten
and abstracted historical fragment has
way to a slightly more recognizable
where arches that were once thin stri
molding acquire keystones and voussoirs
columns that were once mere pipes
capitals and bases. At a certain point o
path most architects have so far av
further literalization, yet there are thos
whom the only path is a return to a
Modern tradition in its entirety.

Architect Alan Greenberg has al
argued for the classical tradition, consid
the Modern Movement an aberration.
is no such champion of Gothic. It is ha
find a good reason for this since there
champions for all the styles when the co
tition for St. John the Divine was held, ar
are now in a period that is becoming as
eclectic as that period was, if not more

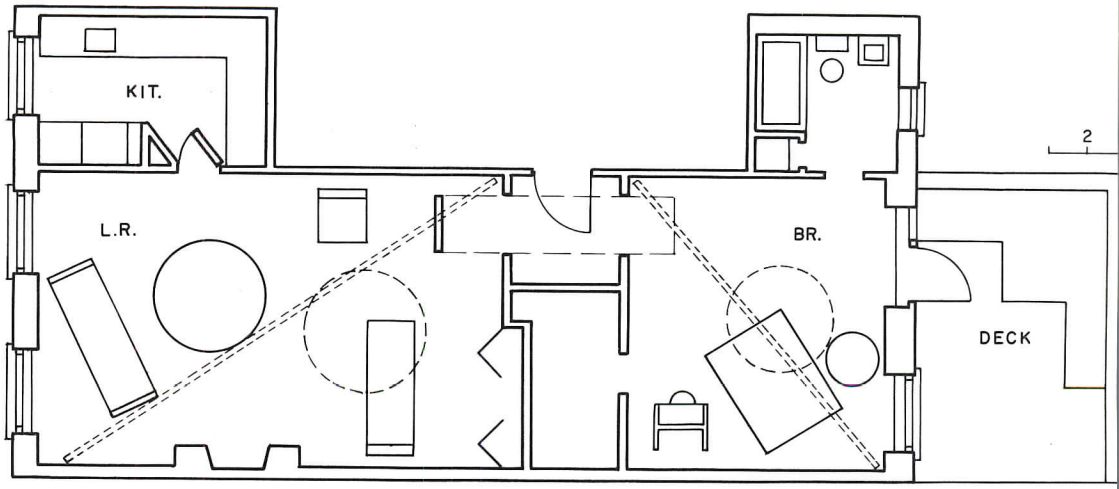
If Greenberg proclaims the necess
picking up once again the classical orde
Sir Edwin Lutyens left them, might not
Adams Cram set someone else's ha
motion?

The building of the towers to the o
drawings means that Ralph Adams Cr
alive and well and supervising construct
Morningside Heights. Yet Cram himself
probably have shuddered at the reck
eclectic approach towards which we
heading today, since he believed in a
ously consistent use of the English Perpe
ular. If the new work now beginning a
Cathedral of St. John the Divine stim
some interest in Gothic to add to our gro
barrage of acceptable styles, this will m
particularly interesting point of contact
La Farge's original eclectic intentions fo
cathedral. Grant La Farge would seem
alive and well too—and enjoying th
laugh.

Gavin Macrae-Gibson graduated from the Yale Sch
Architecture last spring after earning his first deg
Cambridge University. He now works in an archit
firm in New York City.

OPTING FOR THE UNCONVENTIONAL INTERIOR

What started out to be a manufacturer-sponsored display of new uses for photography in residential interiors has become an interesting study of new ways of seeing furnishings and their relationships with the spaces they are in. And photography has become an integrated ingredient, so that it states the new relationships in clear and memorable ways. So successful have the young designers, Ron Doud and Lisa Elfenbein, been in carrying through their ideas in a comprehensive way that it is not necessarily the appearance of the completed apartment that may seem startling. Indeed, there is a strong associative value with an historic period—Art Deco—in colors, textures and just plain mood. But a second look reveals that the furnishings little resemble anything from that period or any other. According to Doud, "we wanted to take furniture to a new place, and still make it work." Accordingly, seating and tables have been translated into playfully elegant, architectonic shapes. And these are so different from the expected that there is little chance for preconditioning to get in the way of our appreciation. "You can't just alter a seat height by two inches and expect that it will compare favorably with what has been done," says Doud. The result is that the shapes can be adapted to the human body in various ways, and indeed can be used in various positions (see caption overleaf) in tune with users' needs, in an era that demands multiple uses for everything. As opposed to other new approaches to furniture design that tend to fill rooms with upholstered platforms, this furniture sits like sculptural



objects in a gallery. The integrated photographic elements include large reproductions of a table on the ceiling, the trompe l'oeil window leaning against the wall (photo, far right), and the lunar eclipse series mounted on closet doors (previous page). And they act as the visual "glue" to tie the various elements to the space. Walls and ceilings in the two rooms have been painted various shades of gray that seem to alter physical dimensions. The apartment belongs to lighting designer Brian Thompson, who was active in the design process—especially on the lighting. Accordingly, two very long neon tubes cut diagonal lines across the ceilings of the two main rooms, and—when lit—cast an other-wordly glow over surfaces. It may come as no surprise that both Doud and associate Lisa Elfenbein were trained as architects, and that they tend to see spaces, forms and colors for their own visual strengths—as well as for their associative and decorative values. According to Doud, younger professionals coming out of schools are much more disassociated with traditional ways of seeing things. The designers' views in the future will call for radically different approaches. And these designers want to make what they see as the required sort of quantum leap successfully. —*CKH*

APARTMENT, New York, New York. Owner: *Brian Thompson.* Designers: *Ron Doud Inc.—associate-in-charge: Ron Doud, Lisa Elfenbein.* Lighting designer: *Brian Thompson.* Consultant: *Neon New York (neon).* Contractors: *Parallel Fabricators (furniture construction); General Drapery Services, Inc. (upholstery).*

ke objects in a gallery, architectonic hapes take the place of more ustomary furniture, and adapt to a umber of unusual positions. (Two ersions of positions for the L shape nd seating units are seen in the large hoto left). The round "back" (photo ght) becomes an oversized rocker

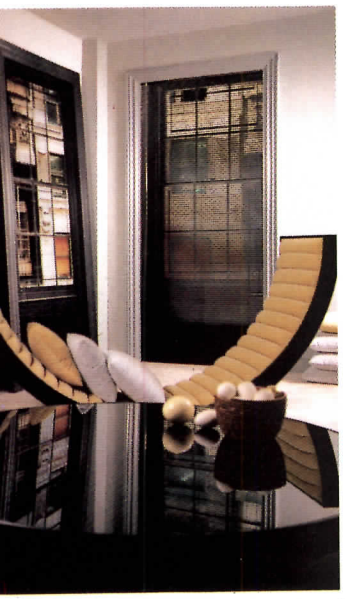
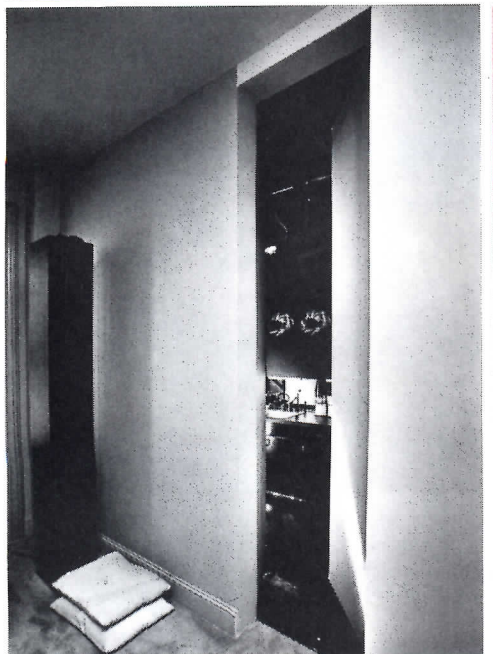
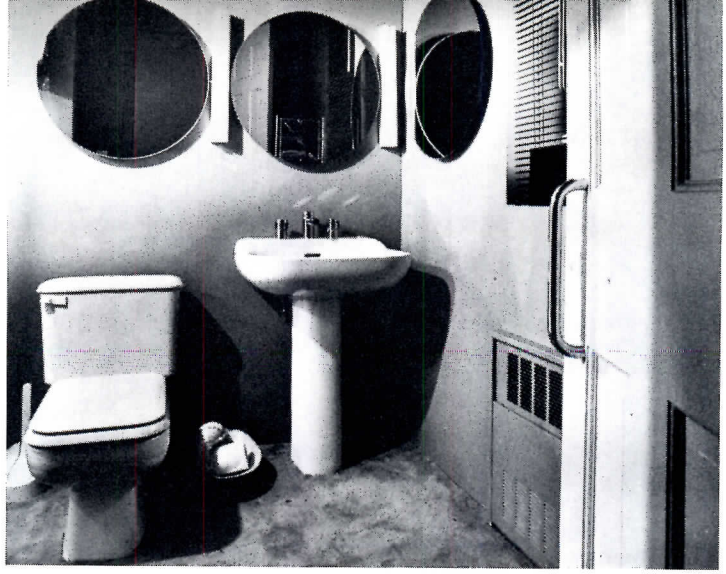


photo above). Large photographs of he table, mounted on the ceiling and of a window, leaning against the wall, bring unexpected dimensions to the oom and tie the various objects to it. These include a black rubber sculpture by Robert Mihalik (photos left nd below). The door to the kitchen below) can be adjusted to close that oom off, to offer a controlled view or to be wide open for access. Another L-shaped plane (photos left) provides a fluid transition between bedroom and living room and controls views into the latter.



DOUD APARTMENT

Smaller-scaled new photographic devices include the orderly composition of family photos in the bedroom (below), and of photographic "derivations" (previous pages), all placed on linear boards that simply lean against walls. They also include the multiple images of bread over the kitchen cabinets. Even the bath continues the mode of individual objects within a space with separate round mirrors and a new style of plumbing fixtures of American manufacture.



Building systems: something special in a Pei high-rise

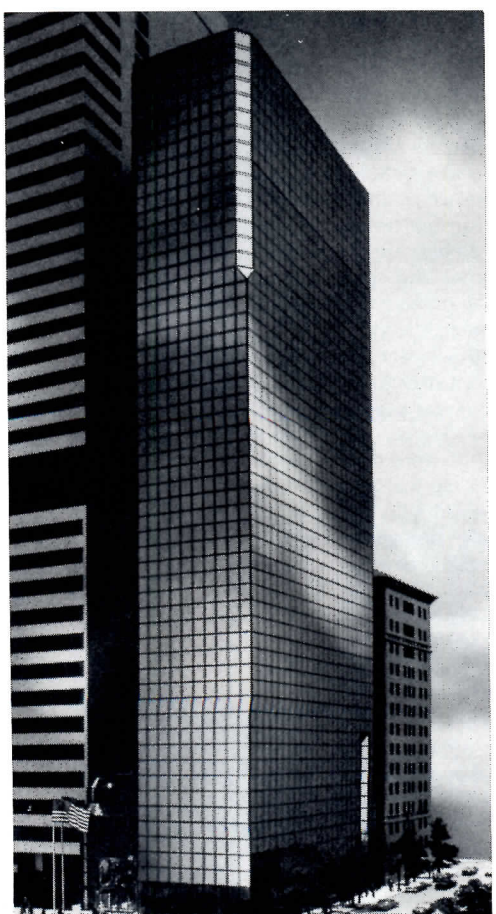
This 27-story office building at 499 Park Avenue in New York City by architect I.M. Pei for developer George Klein is in a premier location for premier tenants, so for this reason, and also for the reason that the site is a tight, narrow one, the engineered systems are quite different than those of other Manhattan office buildings.

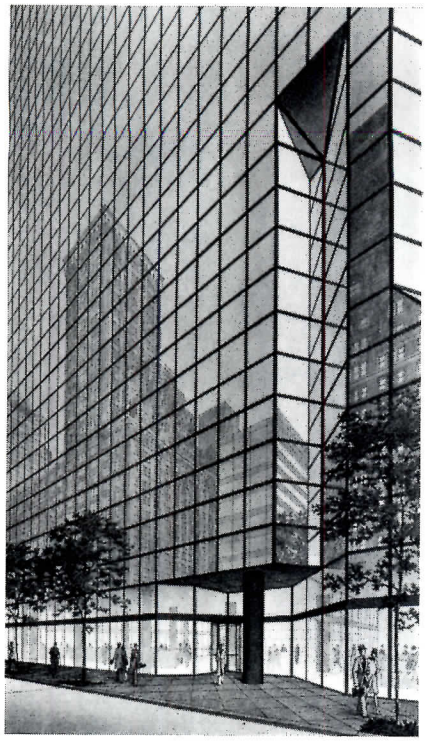
To provide as much unified office area as possible on each floor, the architects located the service core off-center in one corner of the 90- by 120-ft site, abutting two existing office buildings. Because of this off-axis geometry, the structural engineers could not use the core as the primary wind-resisting element, but chose instead to make a structural tube out of the exterior concrete columns and spandrel beams. The tubular system (i.e., the "cage" of exterior columns and spandrel beams) takes about 80 per cent of the wind load, while the core and interior columns pick up the remaining 20 per cent, according to Sylvian Marcus, project engineer for The Office of Irwin G. Cantor, P.C.

To allow tenants to have heating and air conditioning any time they want it—day or night or weekends—at an economical cost, the mechanical engineers, Cosentini Associates, designed a system of individual floor air conditioners and perimeter convectors.

A highly sophisticated security and fire protection system will be installed to meet the expectations of the tenants who will be paying something over $30 per sq ft rental when the building is finished early next year. For example, stairwells will have sensors to monitor movement. Tenants offices can have detection devices, and, in addition, panic alarms for use in an emergency. In case of fire, the smoke detection system will relay the alarm to the computerized control system which will reverse the fans in the air conditioner on the affected floor to discharge smoke outside the building and will shut off the fans on the floor above.

The structure, the hvac system, and the security and fire protection systems are unusual for a New York City office building—arising from problems posed by a tight site, and by the owner's desire for individual floor air-handling systems, and for deluxe features to offer tenants at a premier Park Avenue address. The 27-story concrete structure will be wrapped in gray-tinted insulating glass.

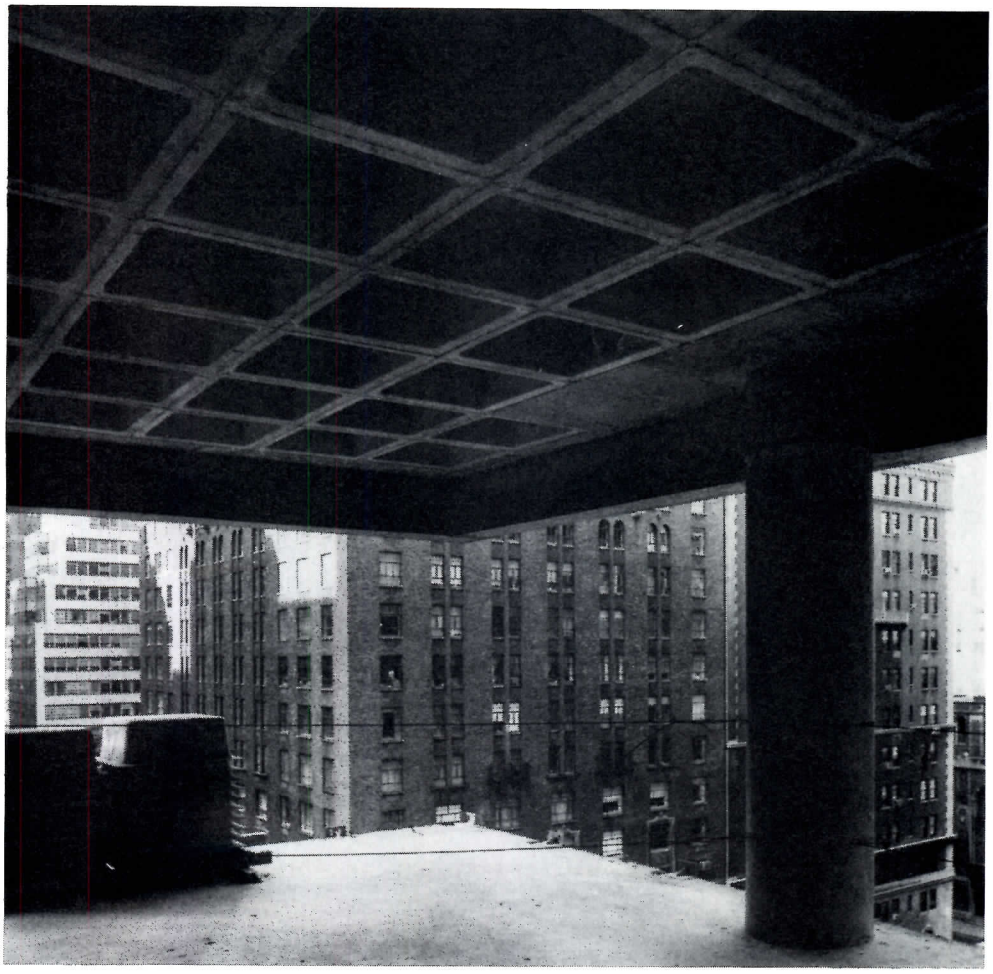


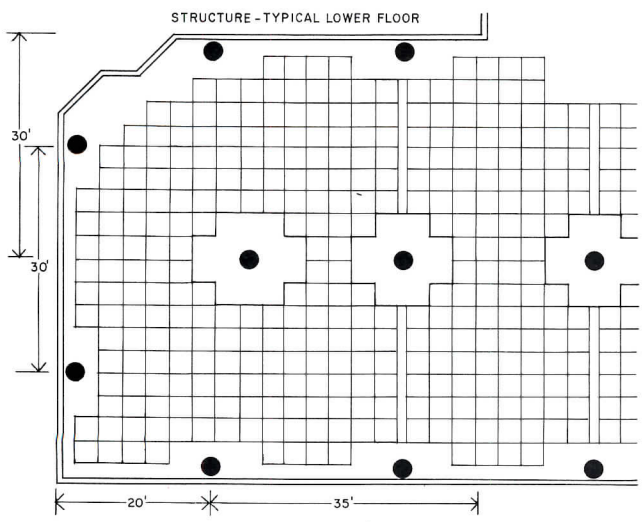


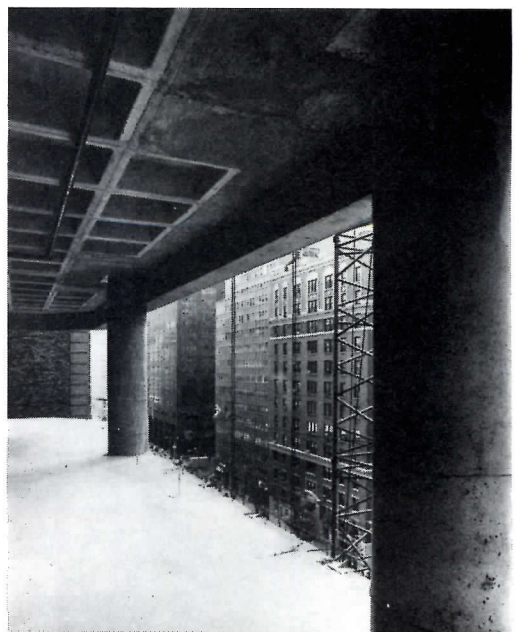
The concrete structure comprises 16-in. waffle slabs, circular columns, and 3-ft-deep spandrel beams. Because the service core is located in one corner of the floor plan, the structural engineers used the combination of exterior columns and spandrel beams as the primary wind-resisting element, carrying approximately 80 per cent of the wind load. High-strength concrete (7,000 psi) was used for the columns to diminish their size. Waffle slabs were conventional 3,500 psi. So that slabs and columns would work together structurally, strength of concrete for column heads was an intermediate 5,800 psi. Two corners of each floor are cantilevered, and a third corner is zigzagged to give views and interesting interior space. The Park Avenue entrance is signaled by the prismatic recess in that street's facade at the south end of the building (see above). The 59th Street entrance is through a six-story atrium.

The concrete structure comprises waffle slabs and circular columns which are omitted at the corners so as not to spoil the outdoor view. Columns will be left exposed, but finished and painted. To keep down the size of the columns, the structural engineers utilized high-strength concrete (7,000-psi), and as much as 6 per cent reinforcing steel. With conventional 3,500-psi concrete the columns would have had to be 30 per cent larger in area. The waffle slab is only 16-in. deep, spanning a maximum of 25 to 28 ft. Spandrel beams are 3 ft deep and 14 in. wide. Columns are 36 in. at the base and drop off to 32, 28 and 24 in. as the building rises.

While the most attractive aspect of the hvac system to tenants may be its flexibility, a number of other features also contribute to economy of operation and energy savings. For example, the air-conditioners can get free cooling from the induced-draft cooling tower when the outdoor temperature drops below 70F. This is done by utilizing condenser (cooling tower) water in precooling coils of the air-conditioning units. The air conditioners are custom-built units based upon a comprehensive specification by the consulting engineers. The units each have two 10-ton water-cooled refrigeration compressors and three fan sections. Because of height restrictions in the







echanical rooms it was necessary for the anufacturer to use three small fan wheels n the same shaft rather than a larger single an.

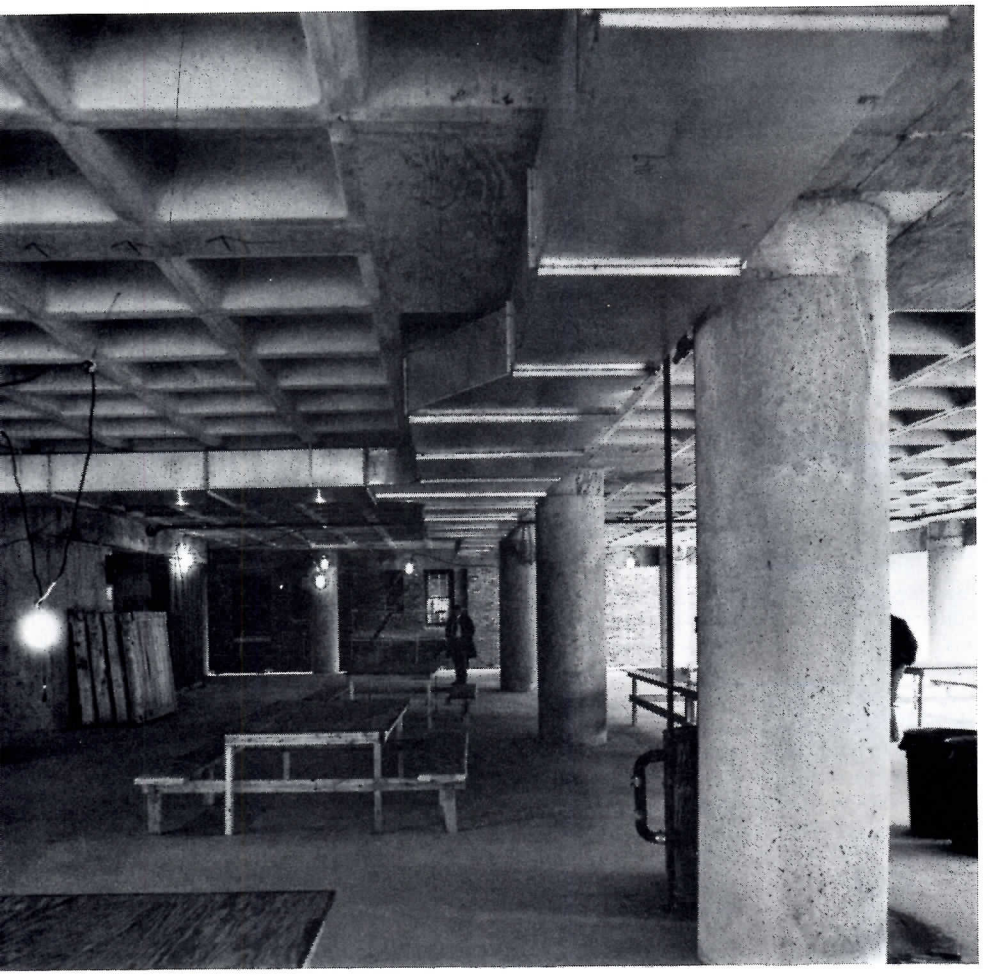
Operation of pumps to circulate cooling ower water takes much less energy than peration of compressors, a real advantage hen outdoor temperatures are 55-60F or elow. Because the temperature of the cool- ng tower water is allowed to go as low as 5F, the compressors need not run at all nuch of the time in cool weather.

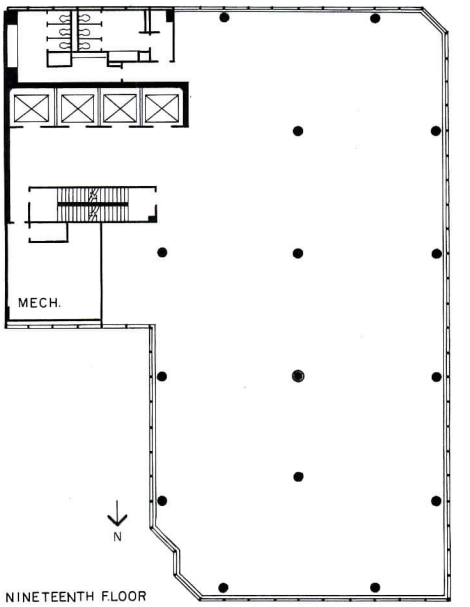
The air-distribution system contributes to ver-all energy savings through the use of ariable-air-volume (VAV) terminals of the air-valve shut-off type. As space temperatures are satisfied, thermostats signal air valves to close, resulting in higher static pressure at fans and less air delivered.

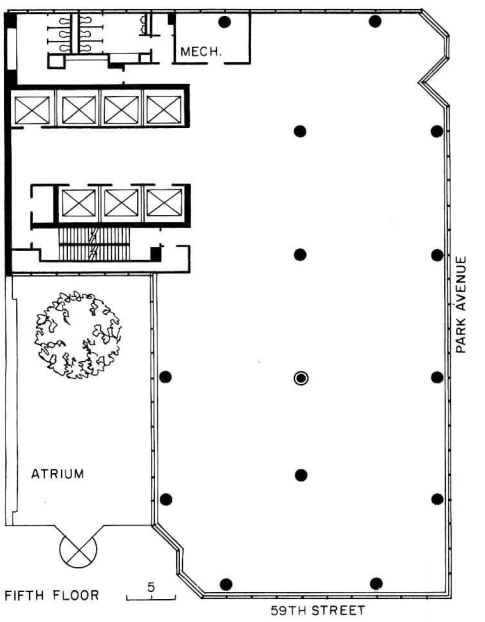
The perimeter fin-tube convectors extend only 8 in. from the interior glass which yields a maximum of usable floor space.

The skin of the building also contributes to energy saving as the all-glass facade will use insulating glazing, and both vision and spandrel areas will use gray glass.

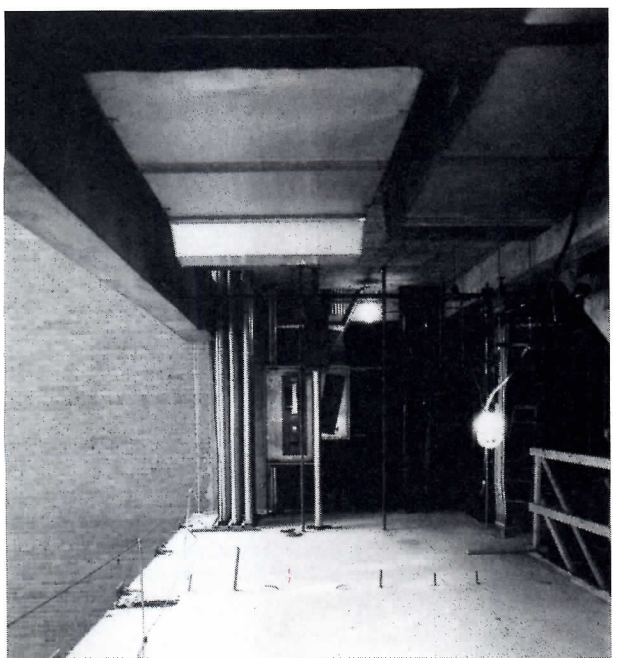
The partner-in-charge for I.M. Pei & Partners is James Freed, FAIA, and the project architect is Bernard Rice. Construction is by HRH Construction Corporation.

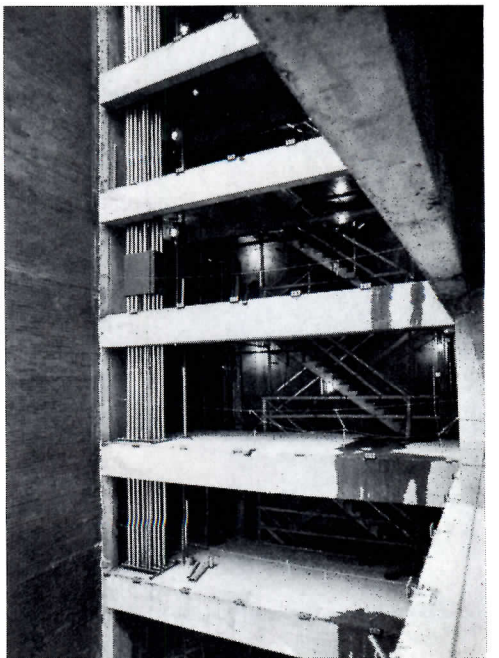






A small mechanical room on each floor will house individual air conditioners and electrical closets. In place in the photo near right are return and supply ductwork and electrical risers. The air conditioner, which is about 4 by 8 ft by 7-ft high, will be installed just ahead of the ends of the ducts. Supply ductwork for the floor is shown in the photo above. It will be tapped for lateral ductwork to variable-air-volume terminal units. Return air is through the ceiling plenum. Outdoor air is through louvered openings at each machine room. Safety is enhanced because there are no central duct risers interconnecting floors.



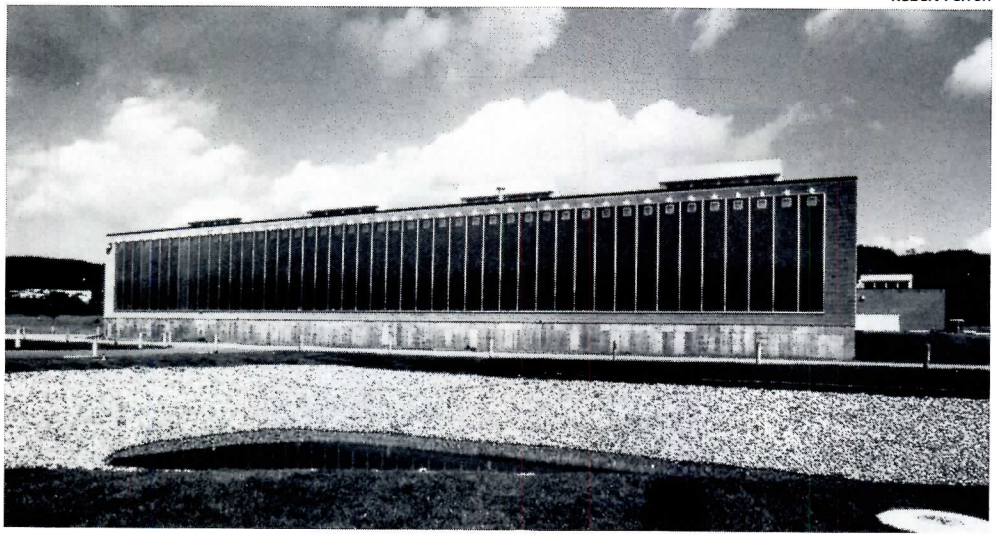


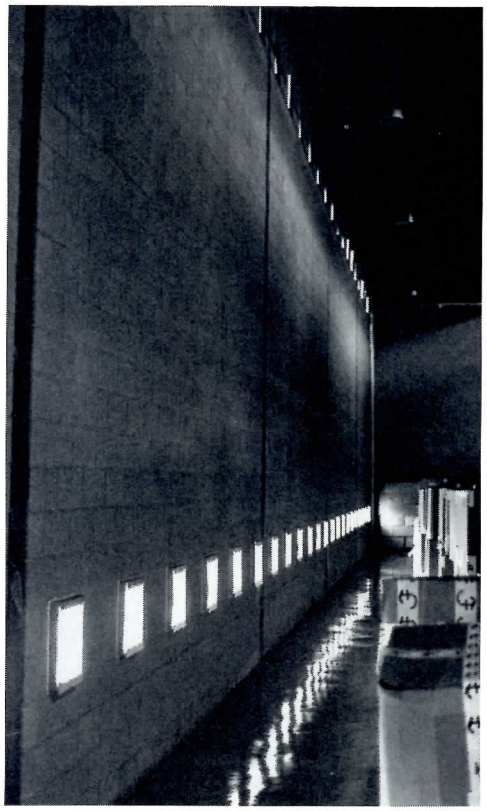
Massive Trombe wall saves energy in a Vermont warehouse

The Famolare shoe company headquarters buildings in Brattleboro, Vermont, are a showcase of passive solar techniques—light scoops on the office building, monitors on the warehouse roofs, and a huge Trombe wall on the south face of a new warehouse addition shown here. The office building, described in the mid-August 1978 issue of RECORD, has sliding shutters of translucent fiberglass plastic to exclude winter sun from offices when it's not wanted, with the trapped solar heat exhausted by fans and transferred to the cold sides of the building. Though the warehouse has yet to go through its first winter, the architects have calculated that the 20- by 184-ft Trombe wall will furnish 38 per cent of the heat required for a winter indoor design temperature of 55F. The additional cost of the Trombe wall, compared with the standard cavity wall of the warehouse (4-in. ribbed block, 2-in. polystyrene insulation, and 8-in. standard block), was $16,743, or $4.55 per sq ft of Trombe wall surface, according to architect C. Treat Arnold of Banwell White & Arnold, Inc. He estimates that the system will save 2,850 gallons of oil per year (payback 7.4 years).

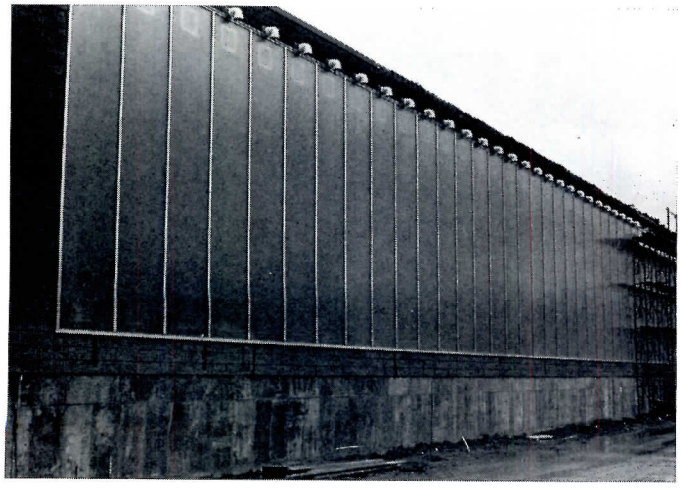
The system comprises a 12-in. concrete block wall painted black, with a double-skin transparent acrylic plastic sheet in front to let the sun's rays through while trapping the heat absorbed by the block. The heat is trans-

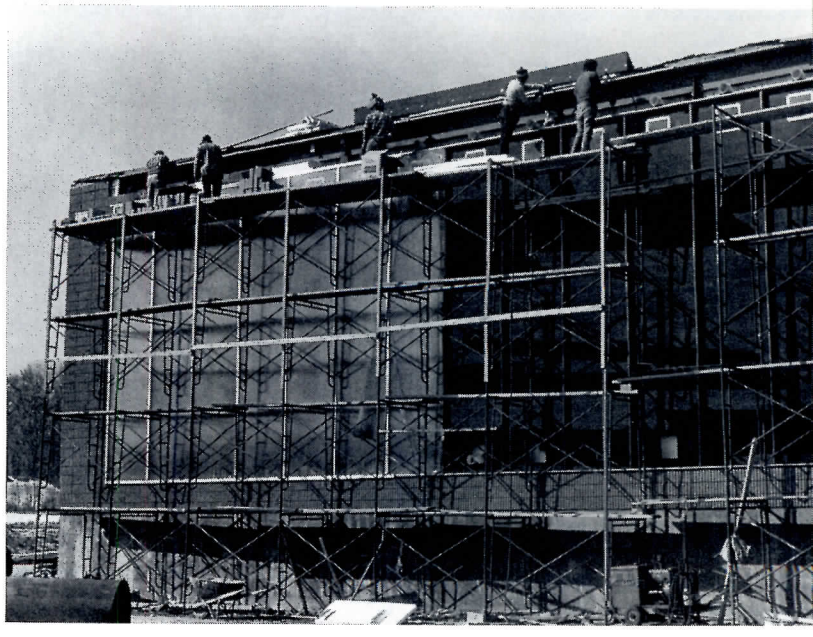
Robert Perron

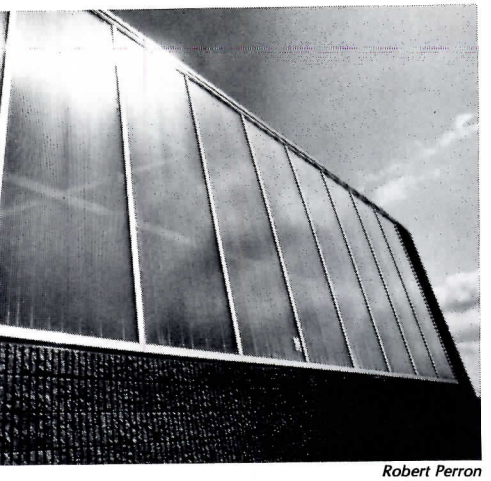




The Trombe wall for a warehouse addition at Famolare headquarters in Vermont is 184 ft long and is oriented 10 degrees east of due south. The warehouse is windowless except for 16 roof monitors. The pond in the foreground of the above photo is an absorption basin for rainwater drainage from roof and paving. The wall is expected to contribute 38 per cent of the building's heat, with the balance being provided by ceiling-hung oil-fired unit heaters. The two basic components of the system are a 12-in. concrete block wall and a double-skin acrylic plastic panel set in front of the outdoor face to reduce heat loss and to provide a channel for room air to enter at the bottom, pick up heat from the block and exit at the top—into the room in winter, and to the outdoors in summer. Details of the system are shown in the schematic across page. During the heating season, a hinged door is open at the top to allow convective air flow upwards; a plastic film check valve prevents downward flow of cold air at night. Framing for the glazing is box-section glazing bars attached to the block and snap-on clamping bars.



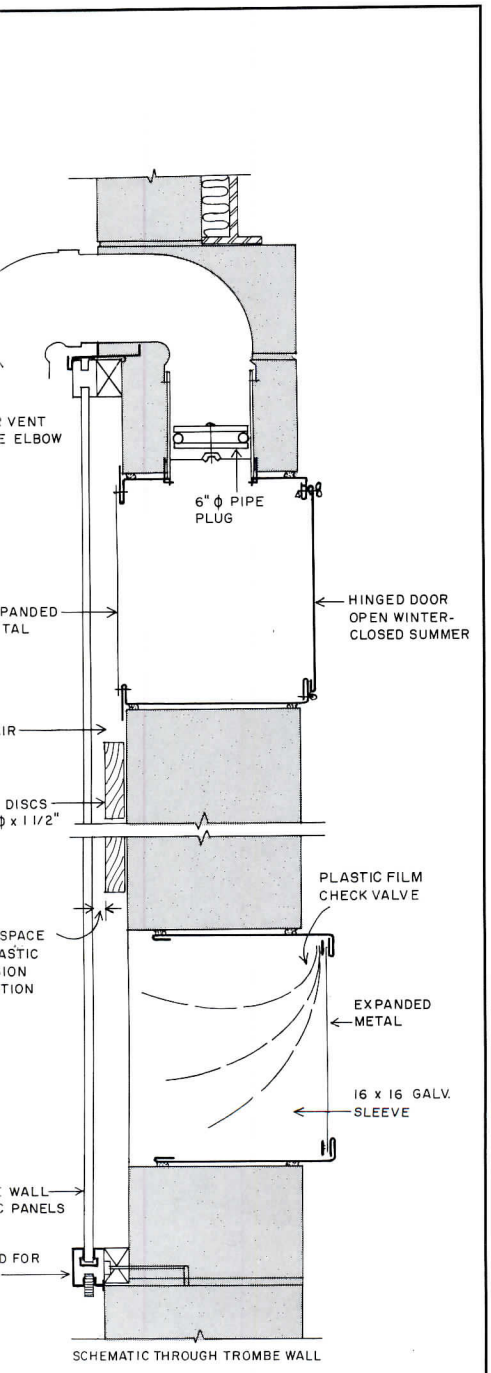




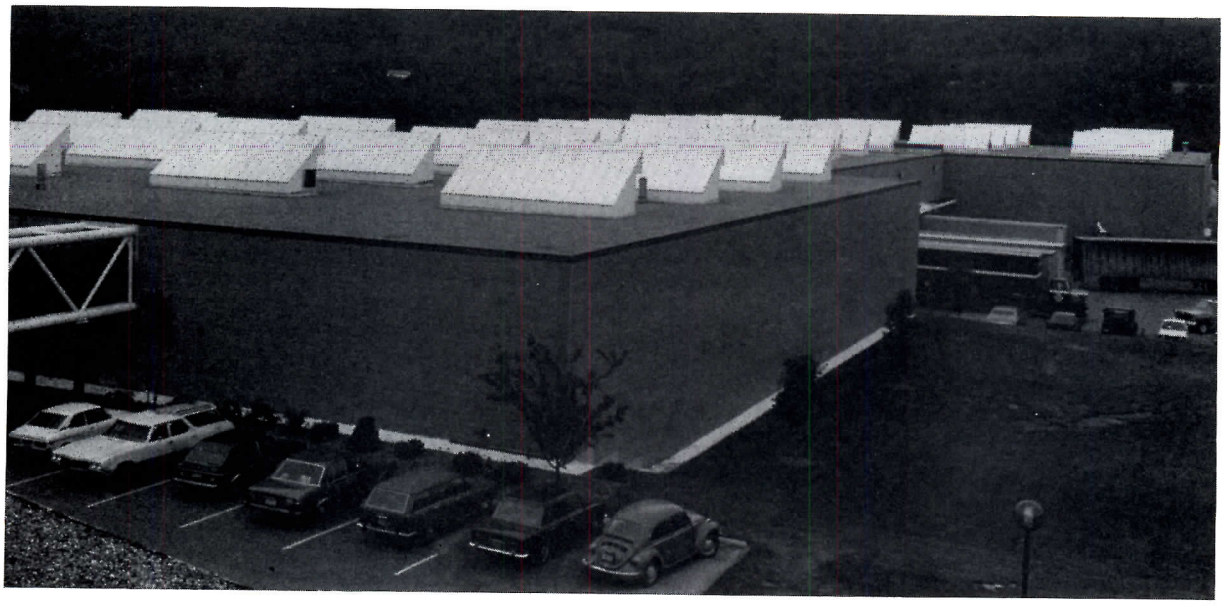
Robert Perron

ferred to room air by a thermal-siphon effect: there are 16-in.-sq openings every 4 ft at the top and bottom of the concrete block wall; convective action will extract heat from the Trombe-wall system and deliver it to the room. Four ceiling-hung, low-speed propeller fans were installed to prevent stratification of warm air at the ceiling. Gooseneck-shaped, 6-in. diameter plastic elbows, open to the outdoors at the top of each 4-ft segment of the Trombe wall (the width of a plastic sheet) are unstoppered in the summer so that air from the building can be exhausted through the space between the plastic and the block to dissipate heat. A plastic-film "check-valve" flap in the bottom openings of the Trombe wall allows upward flow when the wall is warm, but prevents reverse flow of cold air.

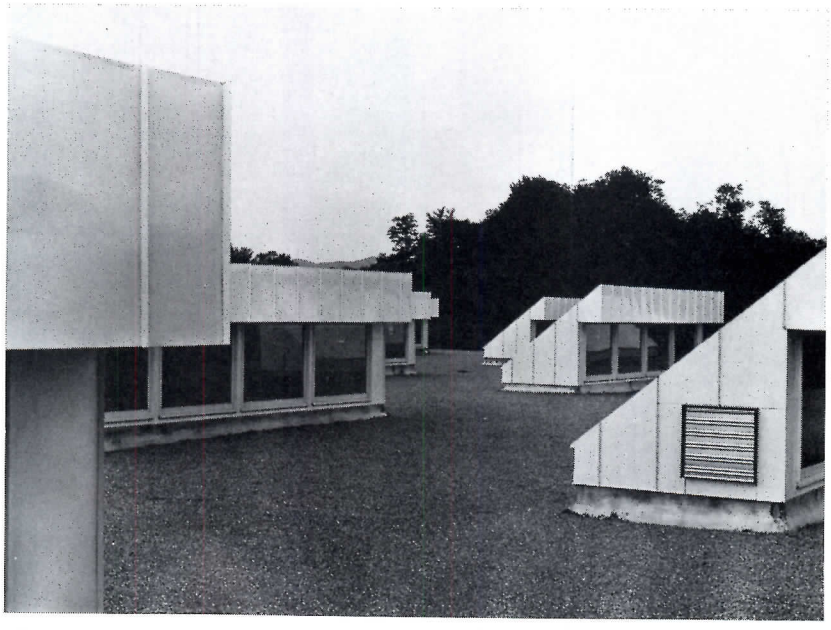
In using the extruded, double-skin acrylic plastic sheet, which has integral ribs, the architects had to take two precautions. First, the architects mounted 5-in. diameter, 1½-in.-thick wood disks between the concrete block and the plastic panel to limit deflection of the plastic induced by heat. Because the plastic gets warmer on its inside face, it will tend to bow in. Second, the architects specified that the wall be painted with a water-based latex paint because they could be sure this would not affect the acrylic plastic. Oil-based paint must be fully set so harmful vapors cannot develop.



SCHEMATIC THROUGH TROMBE WALL



Roof monitors on the original warehouse (foreground) and on the addition behind it let in useful daylight and heat in the winter, but exclude sun in summer. Lighting fixtures with high-pressure sodium lamps can be turned on when daylight is insufficient. The damper on one of the monitors in the photo at right is for one of four exhaust fans that ventilate the warehouse in summer. The layout of the aisle system was not affected by the Trombe wall as north and south aisles are running aisles. Mechanical and electrical engineer was Richard D. Kimball Co. Solar consultant was Professor A. O. Converse of Dartmouth. Builder was O'Bryan Construction Co., Inc.



more information, circle item numbers on
der Service Inquiry Card, pages 213-214

usual new design r dining chairs

wly introduced, these chairs n be used for dining or nference purposes. The 190 ning/Conference chair, de- ned by G. Faleschini, fea- es round wood legs in tan, own or black which curve ming the arms, and a chan- ed seat and back available abric, leather or suede. The air is 21½- by 22- by 35- ▪ The Pace Collection, Inc., ng Island City, NY

circle 300 on inquiry card

Classic traditional chair design modernized

The "Regency Chair"—designed by Louis M. Bromante—is a redefined expression of a 19th Century concept. Its sleek elegance is derived solely from its form, and outlined by its black color. It has won a design award from the Resources Council, Inc. of New York City. ▪ The Bromante Collection, New York City

circle 301 on inquiry card

ilored design r residential spaces

Ward Bennett has designed the "U" settee and its companion lounge chair to complement small spaces. Each has a clear, strong visual line that is created by its curvilinear form with tailored upholstery. The sette measures 60- by 29- by 23¼-in. ▪ Brickel Associates, Inc., New York

circle 302 on inquiry card

more products on page 147

Design Freedom!

Outdoor Lighting Without Poles

Introducing the LLF, Low Level Floodlight. The first high performance luminaire designed specifically for mounting below eye level as an integral part of the structure or sitework.

The LLF is capable of lighting large areas from mounting heights of only 2′ to 3′, with very low brightness. It is also available in a version capable of lighting most stairways with only one fixture.

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For more information, circle item numbers on Reader Service Inquiry Card, pages 213-214

STEEL DESKS / Literature describes over 60 different single-and-double-pedestal desks, credenzas, tops and component cabinetry that make up the "5200 Series" office line. ▪ Steelcase Inc.

circle 400 on inquiry card

DRAWER SLIDE / Selector guide lists 26 types of drawer slides, giving side space requirements, load capacity, sample applications and available sizes. ▪ Grant Hardware Co.

circle 401 on inquiry card

VERTICAL FILES / The Business and Institutional Furniture Manufacturer's Association has published a "First Generation Voluntary Vertical File Standard." The 20-page booklet outlines the tests for determining compliance with the Standard, and for evaluating the safety, durability and structural adequacy of free-standing vertical files of two to five drawers. Standard available from BIFMA, 2335 Burton S.E., Grand Rapids, Mich. 49506, for $2.00 plus postage.

COMPUTER FURNITURE / The "ESF" line is furniture designed especially to facilitate the integration of the mini-computer and other portable types of electronic information processing equipment into the office environment. ▪ GF Business Equipment, Inc.

circle 402 on inquiry card

MODULAR STORAGE / The *Quantum System*, a totally modular collection of lateral file units, overfiles, wardrobes, storage cabinets, communications centers and stack-on units that are designed to manage any conceivable work situation, is described in a 28-page color brochure. ▪ GF Business Equipment, Inc.

circle 403 on inquiry card

OPEN OFFICE / Literature describes this "Open Plan" system of work surfaces, wall-hung componentry, and panels with full electrical and communications wiring management capabilities. ▪ GF Business Equipment, Inc.

circle 404 on inquiry card

FEASIBILITY STUDIES / Folder explains services offered to design professionals in establishing the space and budget requirements for office facilities. Working from building plans and job descriptions, feasibility study report includes photographs, plans and dimensions of suggested work stations for each employee category. ▪ Herman Miller, Inc.

circle 405 on inquiry card

SOUND DIVIDERS / The design versatility of open office sound dividers is explained in a 12-page brochure. The system permits positive locking, an electrical raceway, hang-on capability and two inches of leveling adjustment; technical data and assembly instructions are given. ▪ Owens-Corning Fiberglas Corp.

circle 406 on inquiry card

FIRE-RESISTANT LINERS / Reference source acts as a guide to *Vonar* interliners and their use in business and institutional furniture. Photos show extensive flammability testing carried out on seating constructed with and without the polymer interliner. ▪ DuPont Co., Elastomers Dept.

circle 407 on inquiry card

ART REPRODUCTIONS / Presentation folder illustrates examples of well-known paintings reproduced by Tag Art's *Pictography* a French process offered in limited editions. ▪ Uram Corp.

circle 408 on inquiry card

POCKET-SIZE CATALOG / A pivot-bound card book enclosed in a swing-open plastic case, the "BooKassette" format is used as a catalog for this line of furniture, lighting, art and accessories. Each 2 ½- by 4-in. card contains product data and photographs of contract seating, lounge pieces, armchairs, office systems, lighting, etc. ▪ Atelier International Ltd.

circle 409 on inquiry card

WOOD WINDOW BLINDS / Made of northern basswood stained in any of 20 standard hues, one- and two-in. horizontal blinds, vertical blinds and frames are shown in a "Wood Window Furniture" catalog. Measuring instructions, product specifications and energy-saving characteristics of the blinds are included. ▪ Nanik.

circle 410 on inquiry card

OFFICE FURNITURE / Designed by Bob Becker, "Options System" open office furniture is introduced in a color brochure on these enclosure and storage components. ▪ Helikon Furniture Co., Inc.

circle 411 on inquiry card

OAK FURNITURE / The "7000 Series" desks, credenzas and tables, all with solid white oak radius corners, are featured in a color brochure. New items in the expanded line include lateral files and a bookcase. ▪ Kimball Office Furniture Co.

circle 412 on inquiry card

INSULATED BUILDINGS / On-site photos and detail drawings illustrate an 8-page color catalog on prefab insulated buildings for industrial, commercial and agricultural use. Wall panels are designed for fast assembly and relocation using only a socket wrench. ▪ Bally Case & Cooler, Inc.

circle 413 on inquiry card

ACOUSTICAL CEILINGS / Sound absorption, flammability, light values and other data on ceilings and interior surfaces are given in a 12-page brochure. Included are acoustical ceiling boards and panels; the *Architexture* series; energy-saving ceilings and wall treatments; and noise barrier batts. ▪ Owens-Corning Fiberglas Corp.

circle 414 on inquiry card

more literature on page 145

Steel framing saved more than $150,000 in four-story retirement complex

Local code restrictions for wood frame construction would have limited Casa de los Amigos in Redondo Beach to only three stories, but four stories were needed to provide the desired 136 living units on the land available for this HUD approved senior citizens' project.

In seeking alternatives, a structure combining steel framing on the first floor with three stories of wood framing above was shown to have many problems. The accepted solution, a design prepared with the help of Inryco engineers, used Inryco/Milcor roll-formed steel stud and joist framing throughout. It solved construction problems and also reduced costs by $155,470.

You Get More Than Just Product When You Specify Inryco/Milcor Steel Studs and Joists:

1. Architectural and structural design assistance from our experienced staff.

2. Counsel for owner, designer and contractor based on our longtime involvement in steel frame construction — including an honest appraisal of its suitability for your project.

3. The combination of benefits inherent in our systems: design flexibility . . . construction speed through advance fabrication of framing assemblies . . . thermal energy efficiency . . . capacity to withstand heavy seismic and high wind loads . . . numerous one- and two-hour fire rated assemblies . . . insurance advantages of non-combustible components.

Let us help you increase construction efficiency and reduce costs on your projects. See the information on our steel framing systems in Sweet's: General Building File, section 5.3/In, and Light Construction File, section 5.3/Inr. (Or write for Catalogs 37-1 and 37-2.) Then give us a chance to discuss their application to your projects.

Milcor Division; INRYCO, Inc.; Dept. L-4033; P.O. Box 393; Milwaukee, WI 53201.

Inryco/Milcor® Steel Framing Systems

Casa de los Amigos, Redondo Beach, California
Architect: Arthur Hugh Kensler, A.I.A., Los Angeles, CA
General Contractor: J. R. Slaught Construction Co., Irvine, CA
Framing Contractor: W. C. Froelich, Inc., Buena Park, CA

Inryco
an Inland Steel company

A9-37-1

Circle 54 on inquiry card

ABRIC STRUCTURES / Permanent architectural abric structures, both air-supported and tension, re described in a 14-page color brochure. Applicaons range from radomes to convention centers; hotos show completed buildings and illustrate ach step. ▪ Birdair Structures, Inc.

circle 415 on inquiry card

PACE FRAMES / *Triodetic* frames which serve as oth structural and design element are shown in a apabilities brochure. Grids, arches, and domes, in ingle and multiple layer space structures, can be onstructed from the *Triodetic* hub and tube ystem. ▪ Butler Mfg. Co.

circle 416 on inquiry card

ONG SPAN BUILDINGS / Color brochure tells ow pre-engineered *Widespan* systems provide nobstructed interiors, leak-resistant roofs, and nergy conservation features. ▪ Butler Mfg. Co.

circle 417 on inquiry card

SWIMMING POOLS / Color catalog covers alluminum pools and related equipment. Photos lustrate municipal, commercial, educational pools, s well as special therapy pools. ▪ Chester Prodcts, Inc.

circle 418 on inquiry card

PLYWOOD ROOFS / "Build a Better Roof", a 4-page booklet, outlines the benefits of plywood oof decks, explaining how they cut costs and work vith almost any support system used in commercial nd industrial construction. Modifications in roof eck design to resist high winds and seismic loading re suggested. ▪ American Plywood Assn.

circle 419 on inquiry card

NTEGRATED CEILINGS / Two aluminum ceilings re covered in a color brochure: the *Planar* ceiling n indoor and soffit applications, including outof-square and curved areas; and the *Plenum Mask* ystem, which screens mechanical and other equipment while allowing air to circulate and sprinklers o operate. ▪ Alcan Building Products.

circle 420 on inquiry card

ELEVATORS / Self-supporting *Oildraulic* hydraulic elevators for buildings of up to five or six floors are covered in a 12-page catalog. Geared and gearless traction elevators for high-rise structures are also included, along with accessories and operators. Color photos illustrate recent elevator installations. ▪ Dover Corp.

circle 421 on inquiry card

ESCALATORS / Dramatic color photos show the *Moduline 100* escalator in a variety of people-moving applications; product brochure discusses the space- and energy-saving advantages claimed for *Moduline* installations. ▪ Westinghouse Elevator Co.

circle 422 on inquiry card

GRAVITY CONVEYORS / An 8-page brochure explains wheel and roller conveyors, designed for handling loads of up to 110-lb and 350-lb respectively. The *Cleanline* aluminum roller conveyor, for light loads such as food trays and components, is featured. ▪ Rapistan, Inc.

circle 423 on inquiry card

PEOPLE MOVERS / Fully illustrated with color photos of recent installations, capabilities brochure describes elevators and escalators for new buildings as well as retrofit applications. ▪ Westinghouse Elevator Co.

circle 424 on inquiry card

SOLAR CASE STUDIES / Professionals interested in practical applications of active solar energy systems may subscribe free of charge to the "Solar Spectrum" newsletter. Each issue will cover installations of *Daystar* and other solar products on a project basis, providing information of funding, historical details, design, installation and system performance. ▪ Solar Thermal Systems, Div. Exxon Enterprises Inc.

circle 425 on inquiry card

BATHROOM FIXTURES / Vitreous china fixtures, including the "Beauty Spa" whirlpool bath, water saving "Conserver" closets, and luxury lavatories, are shown in a full-line plumbing product brochure. ▪ Briggs.

circle 426 on inquiry card

MODULAR COLLECTOR / The efficiencies of the *Sun-Aid* collector's *Tube-In-Strip* copper absorber plate are outlined in an illustrated brochure. Liquid-carrying tubes are integrally formed in the sheet; collectors may be manufactured in virtually any configuration to meet special custom design requirements. ▪ Revere Solar and Architectural Products, Incorporated.

circle 427 on inquiry card

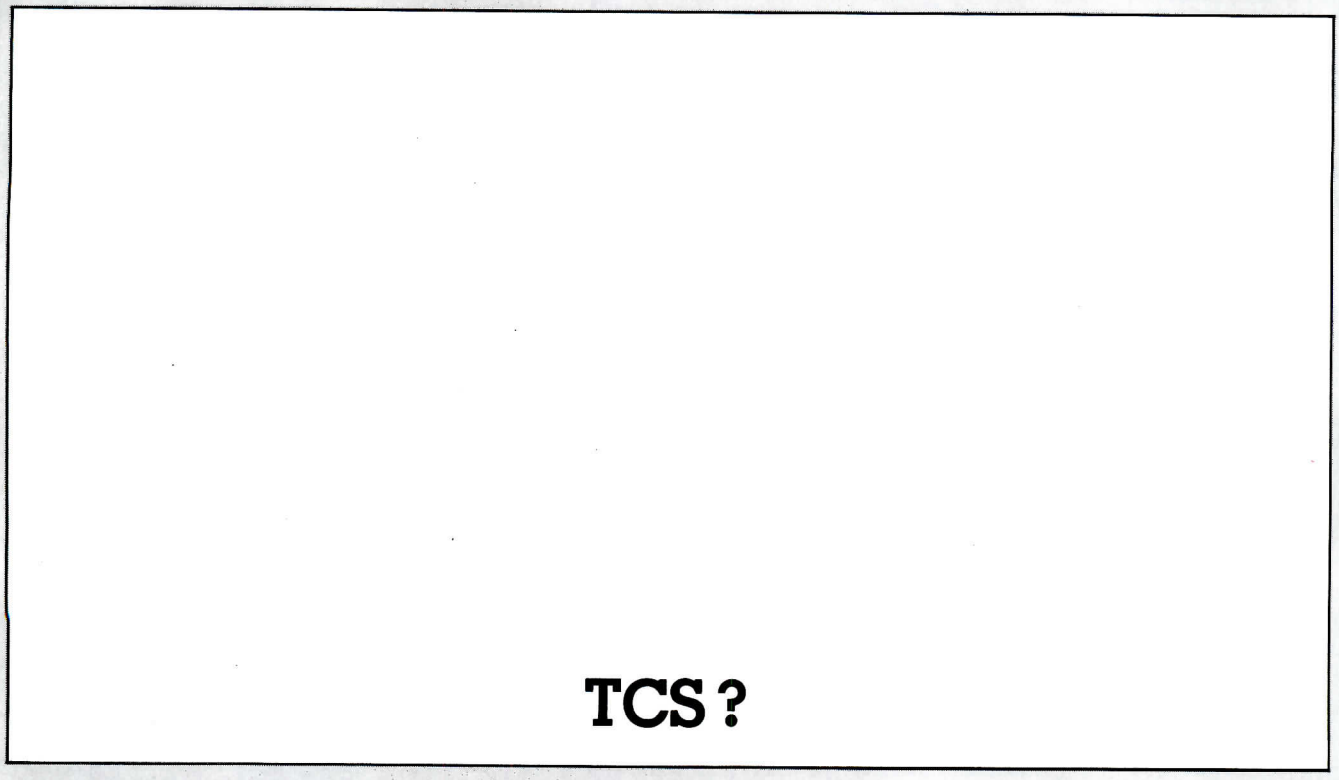
TWO-QUART TOILET / Color folder explains how the *Microphor* air- and water sequence toilet, using only two quarts of water per flush, can save water, sewage and septic costs. ▪ Microphor.

circle 428 on inquiry card

AIR FILTERS / Brochure describes the *Hi-Flo Aerosolve* line of extended surface air filters: over 200 different types to provide ASHRAE efficiency ratings of 50-, 65-, 85-, and 95-per cent. ▪ Cambridge Filter Corp.

circle 429 on inquiry card

MAINTENANCE FREE?



WORRY FREE!

Where architectural metals are concerned, the answer to the first of these questions is obvious, and the term itself virtually self-defining. A material to which it can legitimately be applied should need neither replacement nor repairs throughout its normal life span if properly installed. Expressed in the simplest manner, "maintenance-free" means "worry-free".

As for the second question, no other roofing and flashing metal can match TCS (Terne-Coated Stainless Steel) in maintenance-free longevity. Furthermore, it has many outstanding secondary characteristics. Among these are uniform weathering to an attractive warm gray; no staining of adjacent surfaces because of wash-off; and perfect solderability.

We will be happy to send you more detailed information (please call us without charge by dialing 1-800-624-6906).

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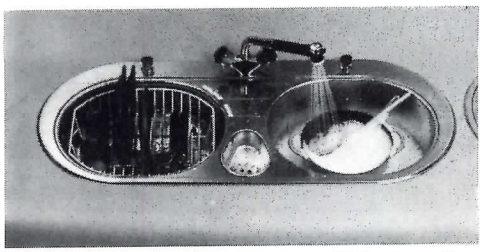
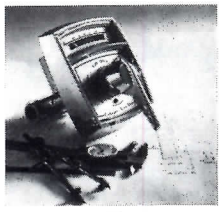


KITCHEN SINKS / The oval-shaped "Frankon Center" unit pictured is one of a line of stainless-steel sinks imported from Switzerland. Drain and faucet requirements are made to fit U.S. plumbing fittings. Available in single- and double-basin models, *Franke* sinks are offered with fitted chopping board, strainer bowl and drain basket. ▪ Contemporary Systems Inc., Woburn, Mass.

circle 303 on inquiry card

PRESSURE-BALANCING VALVE / An automatically-registering thermometer is available with the *Safetymix* pressure-balancing shower valve. Valve allows the user to turn the handle to the temperature desired—100 deg. is marked as the "Average Shower temperature"— and that's the temperature the water will be. Integral service stops are offered as an option; the *Safetymix* valve allows hospital attendants to preset shower or tub temperatures for patients. ▪ Symmons Industries, Inc., Braintree, Mass.



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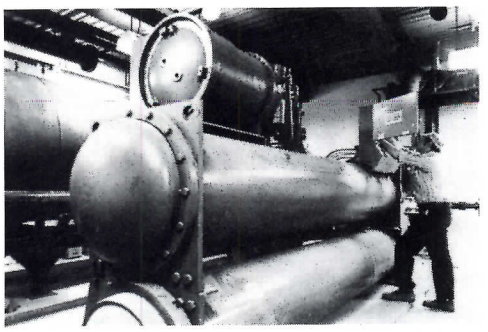
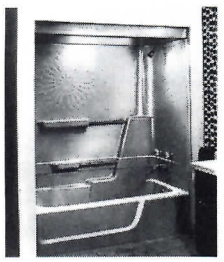


INDUSTRIAL HEAT PUMP / A nonreversible heat pump/water heater capable of recovering industrial or hvac waste heat in commercial and industrial buildings and amplifying it to temperatures up to 220 deg. F, the *Templifier* water-to-water pump can provide economical heat for process fluids, make up water, and hot service water in offices and institutions. ▪ Westinghouse Electric Corp., Staunton, Va.

circle 305 on inquiry card

TUB/SHOWER / The "Gemini" fiberglass tub/shower is constructed in two units so that it can be carried through any doorway for remodeling jobs or new construction: tub does not have to be installed during rough-in phase. Back wall has molded-in sunburst pattern, two horizontal grab-bars and soap dishes; "Gemini" fiberglass tub/shower comes in white, blue, green, gold and creme colors. ▪ Universal-Rundle Corp., New Castle, Pa.



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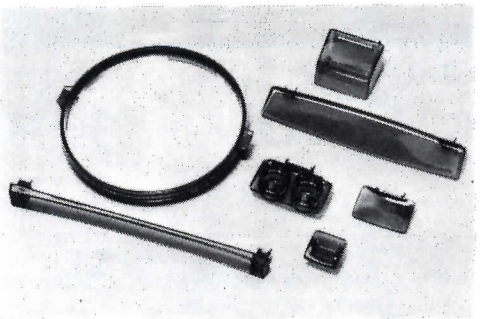

BATH ACCESSORIES / The "Prisma Collection" of contemporary-styled acrylic bath fittings consists of a pivoting wall mirror, toothbrush, unbreakable tumbler holder, soap dish, tissue holder, bathroom shelf, towel bar and garment hook. ▪ Ajax Hardware, City of Industry, Calif.

circle 307 on inquiry card

TRANSLUCENT OFFICE PANELS / Curved panels of ½in. grey-tone *Plexiglas* are offered in this manufacturer's "ASD" open office line. Panels are framed in dark neutral, soft white and string colors. ▪ Westinghouse Electric Corp., Pittsburgh, Pa.

circle 308 on inquiry card

more products on page 149

For total washroom design, Bobrick is your single source.

1. *A Total Design Concept* in quality stainless steel washroom accessories and laminated plastic toilet compartments.

2&3. *Designer Series* washroom accessories including warm-air hand dryers can be color coordinated with laminated plastic toilet compartments.

4&5. A full line of high quality hotel bathroom accessories—available in satin, bright polished, or new bronze finishes.

6. A complete selection of large capacity waste receptacles for recessed, surface-mounted, and free-standing application.

7. Choose from more than 65 dispensers—designed for practically every soap product used today.

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9. For the physically handicapped, specify stainless steel grab bars and patented partition-mounted accessories.

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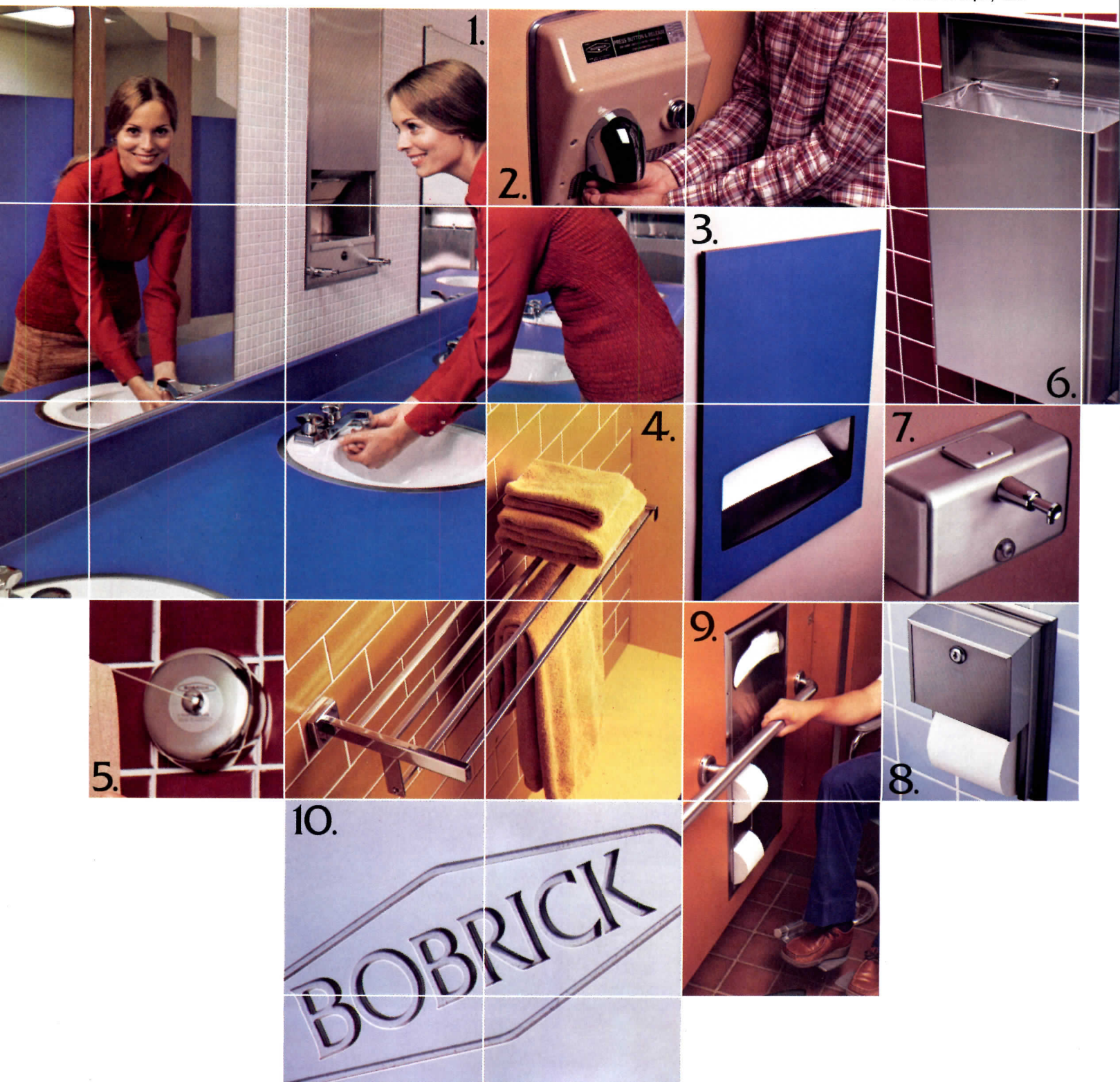
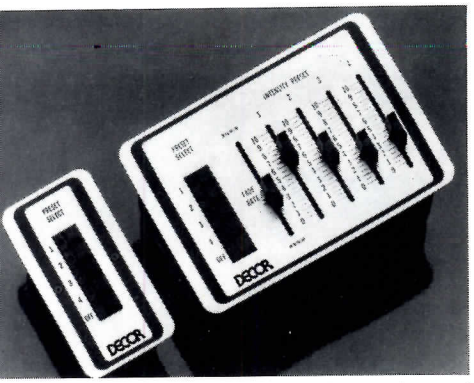
Photo No. 1: TSPS Building, Walnut Creek, California. Architect: Howard Johnson and Associates, San Francisco, California.

Circle 58 on inquiry card

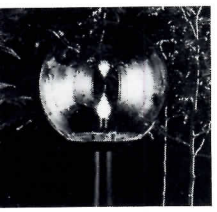




LIGHTING DIMMER / The "VIP" control panel operates an architectural dimming system for restaurants, church sanctuaries, hotel ballrooms, auditoriums, etc., allowing light levels and a fade rate to be pre-determined and set. Any number of remote control push buttons activate the fader and move light levels to another setting at a smooth rate. This rate is continuously variable from 0 to 60 seconds, from immediate response to just perceptible. Once light levels are set on the master panel, the controls can be locked behind an optional hinged door. ▪ Decor Electronics Div., Wide-Lite, San Marcos, Texas.

circle 309 on inquiry card

ACRYLIC LAMP ENCLOSURES / A "deep-draw" vacuum-forming process extrudes sheet acrylic to a uniform, seamless thickness for these clear outdoor lamp globes. Said to be optically better than glass, acrylic enclosures have superior resistance to ultra-violet aging. Globe line is available in clear, white, translucent grey or bronze tints in both regular and high-impact strengths. Standard sizes include 12- to 24-in. spheres and 15-in. cube shapes. ▪ IBAC Industries, Princeton, Minn.



circle 310 on inquiry card

HARDWOOD FLOORING / "Lincoln II" antique grade red or white oak floors are constructed from solid ¾-in.-thick tongued-and-grooved pieces preassembled, to form 24- by 24-in. sections. Small-scale pattern provides a custom look; finish selected is applied when the floor is installed. ▪ Wood Mosaic, Louisville, Ky.

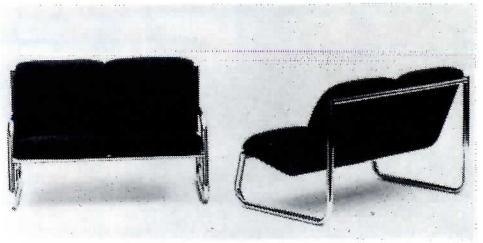
circle 311 on inquiry card

VERTICAL FILES / Steel "Mini-Planfile" has the same storage capacity as twelve flat file drawers but takes less than half the space. Plans, drawings, prints and mylar can all be stored in plan-files; a pocket compression system organizes, protects and flattens filed material. Steel file cabinets are mounted on swivel casters; stored material is protected from fire and water damage. ▪ Ulrich Planfiling Equipment Corp., Lakewood, N.Y.

circle 312 on inquiry card

PRECAST JAIL CELLS / High-strength reinforced precast concrete in thin-wall components were used in place of steel construction in the Cuyahoga County Justice Center in Cleveland designed by Prindle, Patrick & Partners. Each pair of jail cells needs only five components, based on prefabricated bunk units shipped, hoisted and installed in one piece. Separate wall components incorporating steel doors and frames, conduits, security mirrors and even coat hooks were installed at the plant. Seamless parts fasten to each other and to the building by use of concealed weld plates. Surface finish is smooth yet sound absorbent, hard and almost completely vandal proof. ▪ Beer Precast Concrete Ltd., Scarborough, Ont.

circle 313 on inquiry card



LOUNGE FURNITURE / Shipped knocked-down to reduce freight costs, the "Maslan" group of lounge and reception seating and tables feature "wall-saving" design. Included are one-, two- and three-seat units, with or without arms; these pieces may be ganged on a common arm unit. Reception tables, and side, corner and coffee tables, and two and three-seat benches are also available. ▪ Fixtures Mfg. Corp., Kansas City, Mo.

circle 314 on inquiry card

more products on page 153

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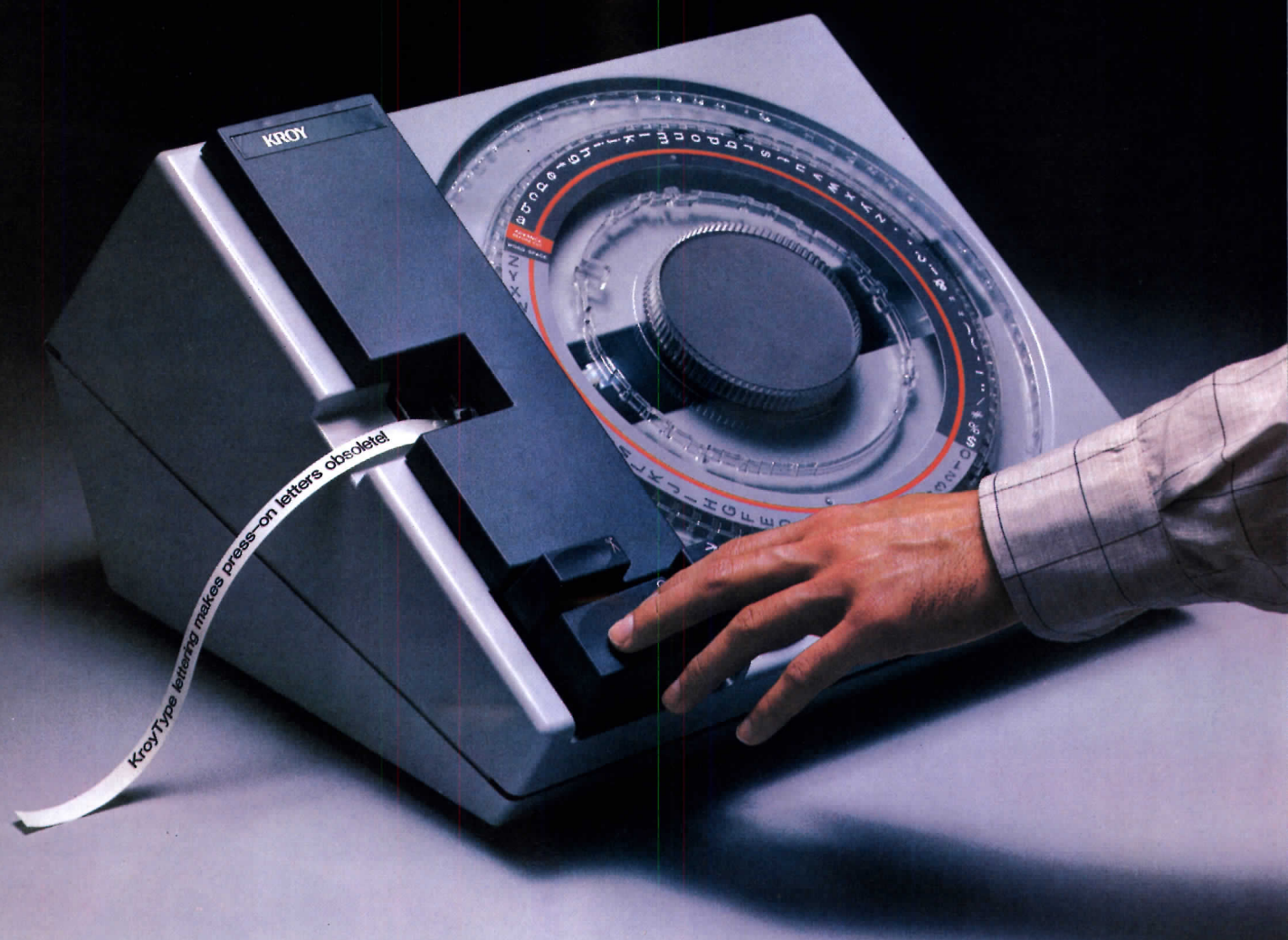
The adhesive backed tape is incredibly easy to position. And reposition. Sticks to any surface.



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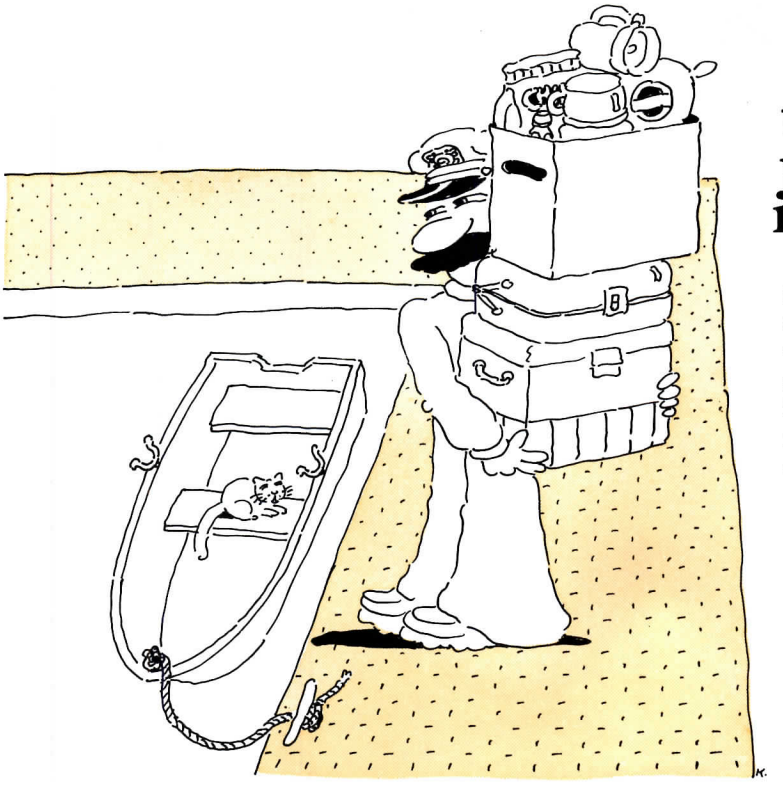

Come to Simpson for the slip-resistant panels that make it safer underfoot.

SkidGuard is a remarkably slip-resistant surface for apartment decks, boat docks, home decks and construction walkways. Its waffle-weave embossed surface improves traction underfoot. Saves time in construction, too, since it installs directly over framing or a good existing surface.

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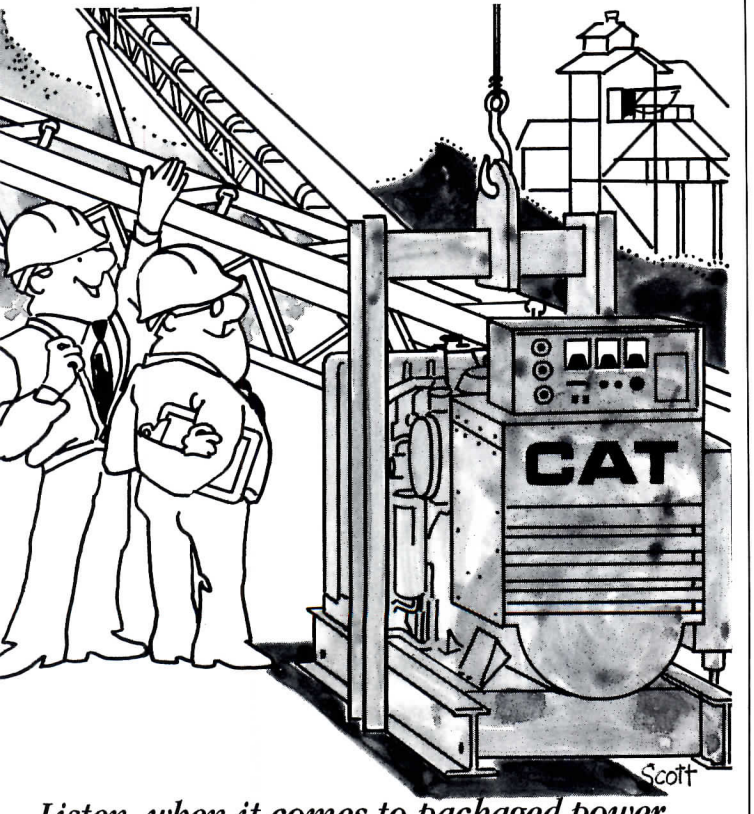

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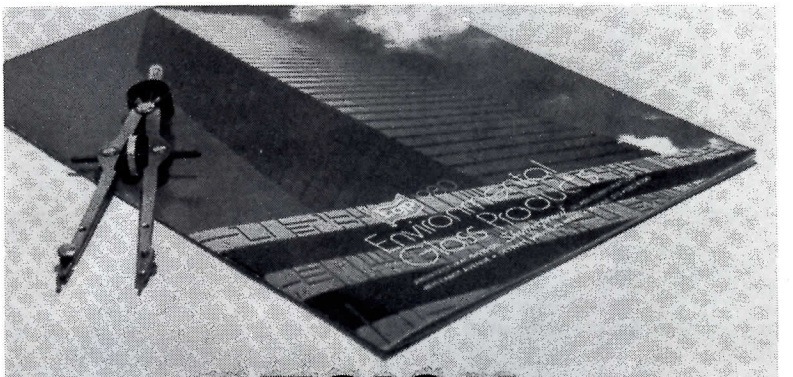

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An intriguing, yet subtle color to throughout your entire bathroom or kitchen.

Kohler now offers Aspen Green in complete selection of reasonably priced bathtubs, whirlpools, fiber glass bathing modules, toilets, bid lavatories, and kitchen sinks.

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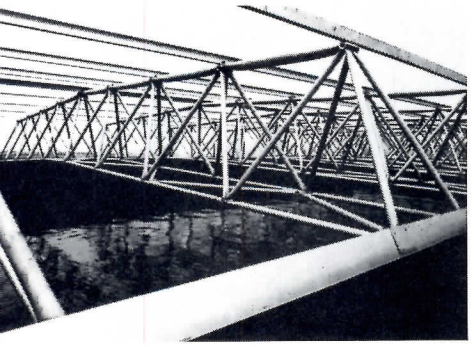
Aspen Green by Kohler.
It's forest fresh.

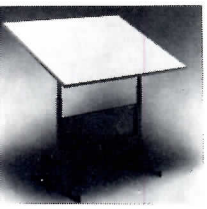
THE BOLD LOOK OF KOHLER



ALUMINUM TANK COVERS / Pre-engineered aluminum roofing systems are specifically designed to cover large tanks where long spans are necessary. Low-profile design, with or without headroom, incorporates access hatches or walkways. Tank covers are bolted together on-site from lightweight, corrosion-resistant components; roof cladding may be enameled or stucco embossed aluminum sheet, or fiberglass or acrylic panels where light transmission is required. ▪ AEF Aluminum Structures Ltd., Scarborough, Ont.

circle 315 on inquiry card

DRAWING TABLE / A lightweight, economically priced table for the student or hobbyist, the "Junior" drafting table has a white coated fiberboard drawing surface supported by a metal frame. Available in 24- by 36-in. and 31- by 42-in. sizes, the top is adjustable for most drawing positions at stool or chair height. Base and top are easy to assemble; all necessary hardware included. ▪ Plan Hold Corp., Irvine, Calif.



circle 316 on inquiry card

VINYL GYM FLOORING / A heavy-duty sheet vinyl material in a simulated maple pattern, *Loncourt* flooring was developed to conform to NCAA basketball bounce rules while providing a resilient, abrasion-resistant playing surface in gyms and other indoor sports facilities. *Loncourt* is available in rolls 6-ft wide by a maximum of 50-ft lengths, trimmed true at the edges to simplify installation. Court lines can be painted or inlaid. ▪ Lonseal, Inc., Torrance, Calif.

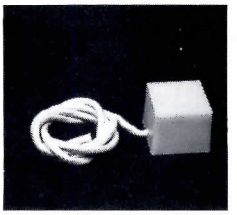
circle 317 on inquiry card

PREFINISHED PANELING / Plywood panels with a roughsawn cedar plank design and detailed surface embossing, "Bandsaw Cedar" prefinished paneling has a thermal fused vinyl finish. The plank pattern allows its application in herringbone and diagonal wall designs. "Bandsaw Cedar" carries a UL-Class C flame spread rating; lightweight panels measure 4- by 8-ft. ▪ DG Shelter Products, Portland, Ore.

circle 318 on inquiry card

64 on inquiry card

GLASS BREAK DETECTOR / Used to monitor the security of glazed areas, *Glass Gard* glass break detector features Piezoelectric construction, responding only to the intermolecular frequency of breaking glass. With no mechanical or vibrating parts, the *Glass Gard* device eliminates the possibility of false alarms caused by shock, vibration, bending or temperature. Each unit protects up to 120 sq ft; ULapproved sensors come in three models for compatibility with any control panel from 4- to 18-vcd. ▪ International Electronics, Inc., Brookline, Mass.



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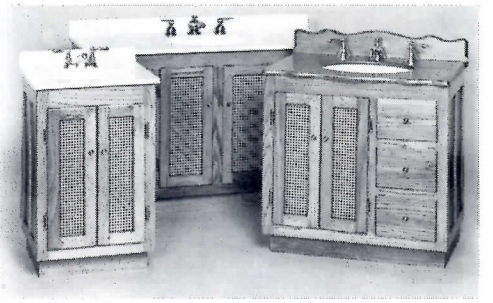
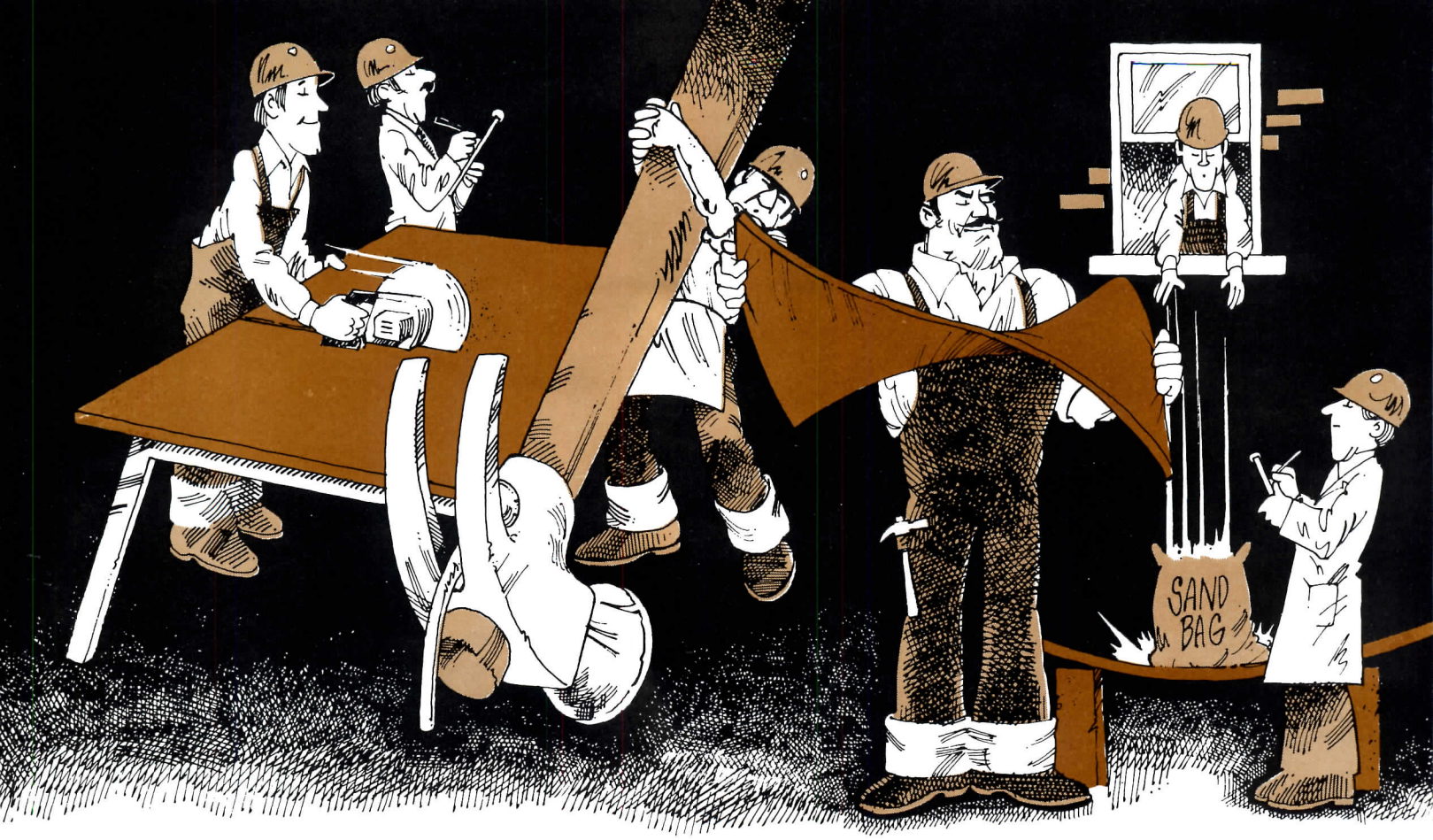


VANITY CABINETS / The "Harvest" oak and cane vanity line consists of 14 models, offered in a total of five widths, from 19- to 48-ins. Various drawer and door combinations are available; most vanities come either complete with solid oak top and vitreous china bowl or as a cabinet only. ▪ Heads Up, Inc., Santa Ana, Calif.

circle 320 on inquiry card



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Firm changes

Charles L. Frazier has been appointed an associate in the firm of Allen & Hoshall, Inc.

Anderson-Nichols & Company, Inc. announced the election of Lloyd F. Thompson as a vice president.

Harry A. Koenig, Jr., AIA has been named executive vice president for production at Benham-Blair & Affiliates, Inc.

Eugene W. Betz Architects, Inc. announce that George M. Clinton, AIA has joined the firm as architect-in-charge of the Winter Park, Florida office, and Judy Sharp will be marketing coordinator. D. Scott Wallace, AIA, Thomas Stephen Szumlic, AIA, Steven M. Winegar and Lawrence D. D'Amico have recently joined the firm.

Beyer Blinder Belle, Architects and Planners announce the appointment of Dr. James Marston Fitch as the firm's first director of historic restoration.

William H. Hover has joined Briggs Engineering and Testing Company, Inc. in the capacity of geotechnical manager heading up the soils department.

Brown, Daltas and Associates Inc. announce the appointment of the following associates: Robert A. Broder, Alan L. Butler, Dimitri Gregoriadis, John J. Molloy, Vassili Nicolaou, Gundega Mara Ogulis, C. Ron Ostberg, Duncan Pendelbury, Peter Roudebush, Raj Saksena, N. Scott Smith, Theodore P. Streibert, Peter C. Sugar and John M. Thornley. The firm also appoints Carl von Stetten as research director.

Buss Silvers Hughes & Associates announce the addition of the following people to their staff: Ron Gross as principal-in-charge of architectural design and Dale Jenkins as principal-in-charge of production and planning.

CUH2A announce the addition of three new partners: Marvin B. Jacobson, AIA, S. Louis Kelter, PE and Ronald F. O'Brien, PE.

Cauble Hoskins Architects announces the appointment of Bill R. Pruett as project manager.

Coder Taylor Associates, Inc. has announced the election of D. Coder Taylor, FAIA as chairman of the board; Eugene P. Holland, ASCE, NSPE, FACI, as president; and Raymond B. Christensen as vice president.

Craig B. Kelford, PE has been elected president and chief executive officer of Conceptual Engineering, Limited, and John R. O'Connell, Jr. has been named to fill the post of vice-president-architecture for the firm.

Robert A. DeNyse has joined the New Orleans architectural firm of Curtis and David Corporation as a senior vice president.

Dames & Moore has named S. K. Djou manager of the firm's Honolulu office and George D. Leal has been named managing partner of the firm's client development division.

Joseph F. Alibrandi has been elected to the board of directors of Daniel, Mann, Johnson, & Mendenhall (DMJM). Richard F. Garfield has been named director of architecture for the Portland office.

Day & Zimmerman, Inc. announced that Valentino Gannotti has been appointed vice president of the engineering and construction division.

Environmental Planning & Research, Inc. is pleased to announce that Peter Gordon, AIA has been appointed vice president responsible for architectural and interior design projects. Gregory B. Putnam, AIA has joined the firm as administrative vice president responsible for personnel recruiting, staff coordination and project assignments.

continued on page 157

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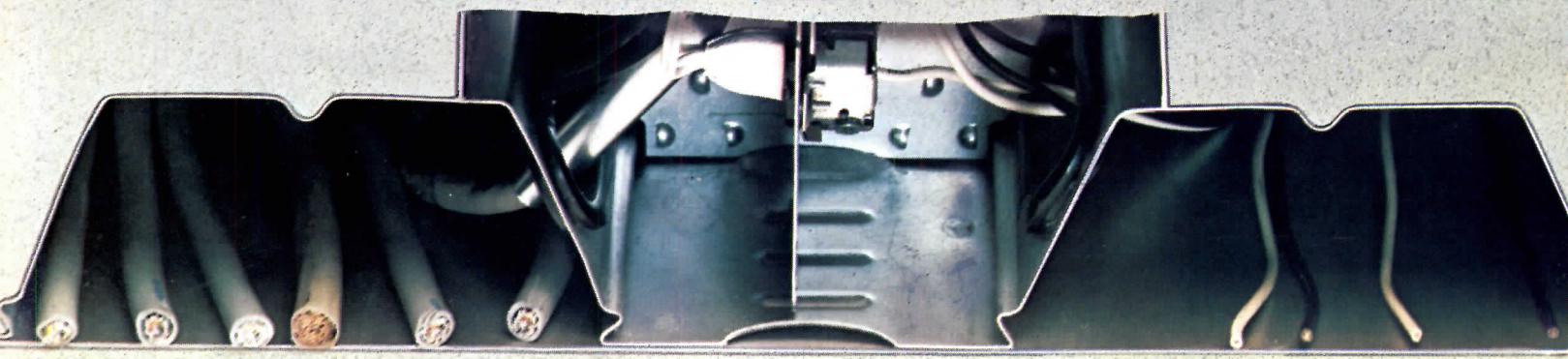

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Esherick Homsey Dodge and Davis Architects and Planners announce that Joseph Esherick, FAIA has been elected chairman of the board of directors; Peter H. Dodge, AIA has been elected president; Charles Davis, AIA has been elected to the board of directors.

Fisher-Friedman Associates has the pleasure of announcing that Peter D. W. Moe has been named an associate in the firm.

Richard DeCoste had been named an associate of Earl R. Flansburgh and Associates, Inc.

Fouts Langford Gomez Moore recently announced the addition of Eberhard Hansel to the staff.

Friedman and Jobusch, an architectural and engineering firm, has announced a new partnership structure for the company and name change. George H. Keim, Jr., AIA and George H. McFerron, AIA have been named as partners. The company will assume the name of Freidman, Jobusch, Keim & McFerron and retain their present offices at 2233 East Broadway, Tucson, Arizona.

Howard A. Friedman and Associates Architects & Planners announce a change in their company name to Friedman•Sagar•McCarthy•Miller and Associates Architecture Planning & Engineering. They have also elected Peter Kämpg, AIA as a new associate.

Leslie C. Gates and Associate announce that Edward R. Bergmark, AIA has joined the firm as chief architect.

Gensler and Associates/Architects announce the following appointments in their San Francisco office. As vice presidents: Gordon T. Johnson and Terry R. Stephens. As senior associate: Kenneth A. Morrison. As associates: Garry L. Baker, Christine L. Banks, Rachael L. Hagner, Harry B. Haimovitch, Jean Harrigan, Ray F. Henry, Kerwin Lee, Healy Leong, Nancy S. McKay, Dennis R. Smith and Darlene A. Weidert. Daniel B. Gale, AIA has joined the firm as managing principal, and William O. Smith as director of interior design in the Houston office.

John C. Thomas, has been named a partner in the architectural firm of Ronald D. McMahon Architect & Associates.

The architectural firm of Metz Train Olson & Youngren, Inc. announce the election of Robert J. Schill as a new principal of the firm.

Andrew J. Lauf has been named vice president, manufacturing, for Peabody Engineering.

David R. Porter has joined the Washington, D.C. office of Perkins & Will, architects/engineers/planners, as vice president.

Ken Pfeiffer & Associates announce the appointment of Fidel Miro as a principal.

James D. Leake, AIA has been appointed director of architecture for the norther California offices of Reel/Grobman and Associates.

Robinson & Mills announce that David Watson Williams, Glenn E. Bauer, Andrew Belschner, Samuel W. Hanna, Marjanne Pearson and Jeffrey L. Teel have become partners in the firm. They have also announced that Robert Calderwood, CSI, AIA, Ed Fernández, Richard Hannigan and Beverly Thome have been named associates. The firm has also changed its name to Robinson Mills & Williams.

Rogers, Butler, Burgun & Shahine and Bernard M. Deschler Associates announce that they have merged. The new name of the firm is Rogers, Burgun, Shahine & Deschler, Architects, 521 Fifth Avenue, New York, New York.

Vincent L. Pelfini has been named president and chief executive officer of SMP-CM Corporation. The new firm, a subsidiary of Stone, Marraccini and Patterson, Architects, was established to provide construction management and project management services.

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The persistence of inquiry

LOOKING AT ARCHITECTURE WITH RUSKIN, *by John Unrau, University of Toronto Press, $15.*

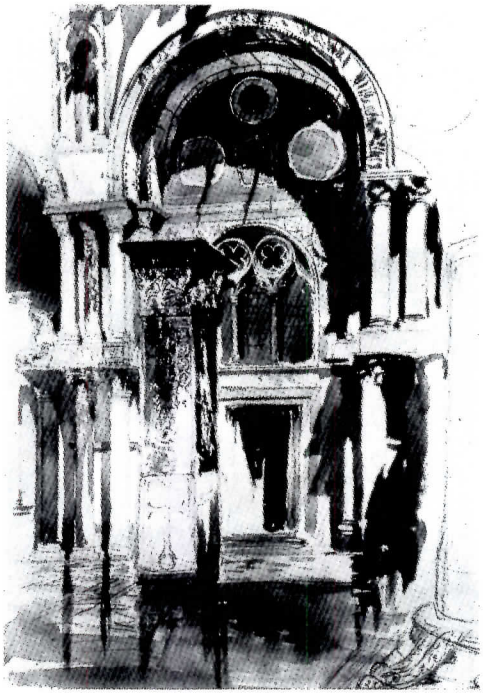
RUSKIN, *by Quentin Bell, George Braziller, $8.95.*

Reviewed by Stanley Abercrombie

A century ago John Ruskin was at the peak of his eminence, and a very high peak it was. Hardly a civilized English-speaking household was without his books (preferably bound in limp leather); William Morris was reading him; so was Sullivan; so was the young Frank Lloyd Wright; George Bernard Shaw and Gandhi were to be influenced by him. "For almost fifty years," Sir Kenneth Clark has written, "to read Ruskin was accepted as proof of the possession of a soul."

But by the time of his death in 1900, the eminence had begun to evaporate. His ideas, suddenly, were no longer of interest. The striking thing, then, about these two new books about Ruskin is simply that there *are* two new books about him. They are very welcome: Ruskin may have once been overrated; certainly he can be tiresome; but he was absolutely brilliant in his way, and he deserves more than neglect. (He can even be dragged into service as scriptural authority for some of our present design shenanigans. Venturi has written that "It is now time to re-evaluate the once-horrifying statement of John Ruskin that architecture is the decoration of construction," and Robert Stern has identified a Ruskinian "Ornamentalism" as one of the "three principles, or at least attitudes" that "characterize Post-Modernism at this time.")

Ruskin wrote so much, indeed, that his writings can be made to support many different interpretations. John Unrau's book, presenting an admiring view of Ruskin's knowledge of architecture, is directly at odds, for instance, with Kristine Garrigan's 1973 *Ruskin on Architecture.* Garrigan emphasized Ruskin's interest in details rather than in whole buildings, in planes rather than volumes, in decoration rather than structure; Unrau has found passages that speak eloquently about whole buildings, volumes, and structure. Garrigan was right that Ruskin was concerned, even obsessed, with detail ("even the roses of the pendants of the small groined-niche roofs. . ."); nevertheless, Unrau is a more graceful writer than Garrigan,



South side of St Mark's. 1846. Pencil and Watercolor.

his more positive attitude is appealing, and his book has the very great advantage of being richly illustrated with Ruskin's astonishing drawings, a few of them reproduced in color. No one can deny Ruskin that he looked at buildings with remarkable attentiveness, and his drawings, even more convincingly than his writings, prove it. Their perspective is sometimes dubious, but their rendering of detail is a wonder.

Bell's book, new, in fact, only to American readers (it was first published in England in 1963) is a model of economy. It tersely outlines Ruskin's three successive writing styles and six stages of his professional life. It deals as succinctly as a biography could with his notorious private life—his restricted childhood, his curious marriage (six years without consummation), his clumsy forays into social reform, his tragic desire for young girls (most of all, for one with the magic name Rose La Touche), his final madness. Bell's simplifications deny his book the richness of John Rosenberg's admirable 1961 biography, *The Darkening Glass: A Portrait of Ruskin's Genius,* but for those who want a readable overview it is—as the jacket blurb says—"the perfect introduction."

Both Unrau and Bell quote generously from Ruskin, and both books do us the great service of persuading us to read him again, particularly *The Seven Lamps of Architecture* and *The Stones of Venice.* We find him cranky—at times his tone can seem petulant, his manner avuncular, his opinions self-contradictory, his judgments unfair, and his concerns (for the happiness of the builder, for example, rather than for the product of his building) almost incomprehensible.

And the famous prose style, admired by Proust, by Tolstoy, by Virginia Woolf, that might have been expected to make this cranky content at least a pleasure to read—what of that? There are stunning phrases, and there are exquisite passages, of course, that still impress us with the precision of their description and their passion for their subject, but, taken as a whole, Ruskin's style has become, for modern readers, exasperating: its convolutions, its digressions, its ornamentation are nearly beyond the patience of those trained to scan for facts. Reading Ruskin is a pastime to be saved for an ocean voyage or a languorous month in a mountain retreat—in short, for a situation that simulates a return to the last century.

But it is not a pastime to be avoided. For the reader patient enough to forgive some crankiness and to drift with the prose, the reward is much greater than an occasional beautiful passage. The reward is contact with a very sharp mind dedicated to a personal ideal of architectural beauty. Ruskin is old-fashioned, indeed, and not least in that he was fiercely—religiously—independent, thorough, and serious. As Unrau says, "One cannot help but marvel at the persistence of inquiry." Above all, Ruskin felt (and was able to convey) an intense *excitement* about architecture; it is too rare a quality to be kept on the shelf.

Stanley Abercrombie practices architecture in New York. He has won awards for both design and journalism.

Books received

A CONCISE HISTORY OF AMERICAN ARCHITECTURE, *by Leland M. Roth; Harper & Row, $25.*
This valuable handbook explores the many factors and influences that have shaped American architecture. Covers the major developments from the 17th century to the present. Individual buildings are discussed in depth with attention to both planned and natural environment. Contains over 300 illustrations integrated with the text.

BUILDING CONVERSION AND REHABILITATION: DESIGNING FOR CHANGE IN BUILDING USE, *edited by Thomas A. Markus; Newnes-Butterworths, $39.95.*
A combination case study and theoretical treatment of building re-use. The emphasis is on the fitting of new activities into existing buildings and less on the traditional aspects of restoration.

Books received continued on page 209

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ENGLISH ARCHITECTURE, *by Bruce Allsopp and Ursula Clark; Oriel Press, $16.95.*
An introduction to the history of architecture in England, from the Bronze Age to the present. Relates buildings to people and shows how changing conditions are expressed in architecture. Interprets the facts of architecture and puts them into social and historical perspective. Includes more than 300 photographs.

LIVING WITH DESIGN, *by David Hicks; William Morrow and Company, $29.95.*
A personal account of the design of David Hicks. Includes memorabilia from Hicks's very successful career as interior designer and fashion savant. Generously illustrated with photographs of Hicks's interiors, wallpaper, carpeting, and accessories.

PRIDE OF THE SOUTH: A SOCIAL HISTORY OF SOUTHERN ARCHITECTURE, *by Wayne Andrews; Atheneum, $10.95.*
A photo-essay of Southern architecture ranging from Thomas Jefferson to John Portman. Includes an informative text and 170 photographs.

REAL ESTATE INVESTMENT BY OBJECTIVE, *by Judith Creedy and Norbert F. Wall; McGraw-Hill, $17.50.*
Designed for both the novice and the veteran, this helpful guide clarifies the four basic investment objectives: income, turnover, tax shelter, and long-term gain. Includes detailed information on how real estate investing operates and highlights the professional skills and know-how necessary for investment success.

RESIDENTIAL CROWDING AND DESIGN, *edited by John R. Aiello and Andrew Baum; Plenum, $24.50.*
Summarizes the wide range of research on residential crowding conducted during the 1970s. Presents new perspectives on residential density and examines the implications for the present and future design of residential environments. Discusses the physical concept of density and the psychological experience of crowding, including its effect upon health and education.

RUSTIC FURNITURE, *by Sue Honaker Stephenson; Van Nostrand Reinhold, $15.95.*
A social and esthetic history of the craft movement in furniture. Also a do-it-yourselfer's manual for building the familiar resort and garden chairs, settees, and tables made from unhewn wood and gnarled roots.

THE COLOR SOURCE BOOK, *by Margaret Walch; Charles Scribner's Sons, $55.*
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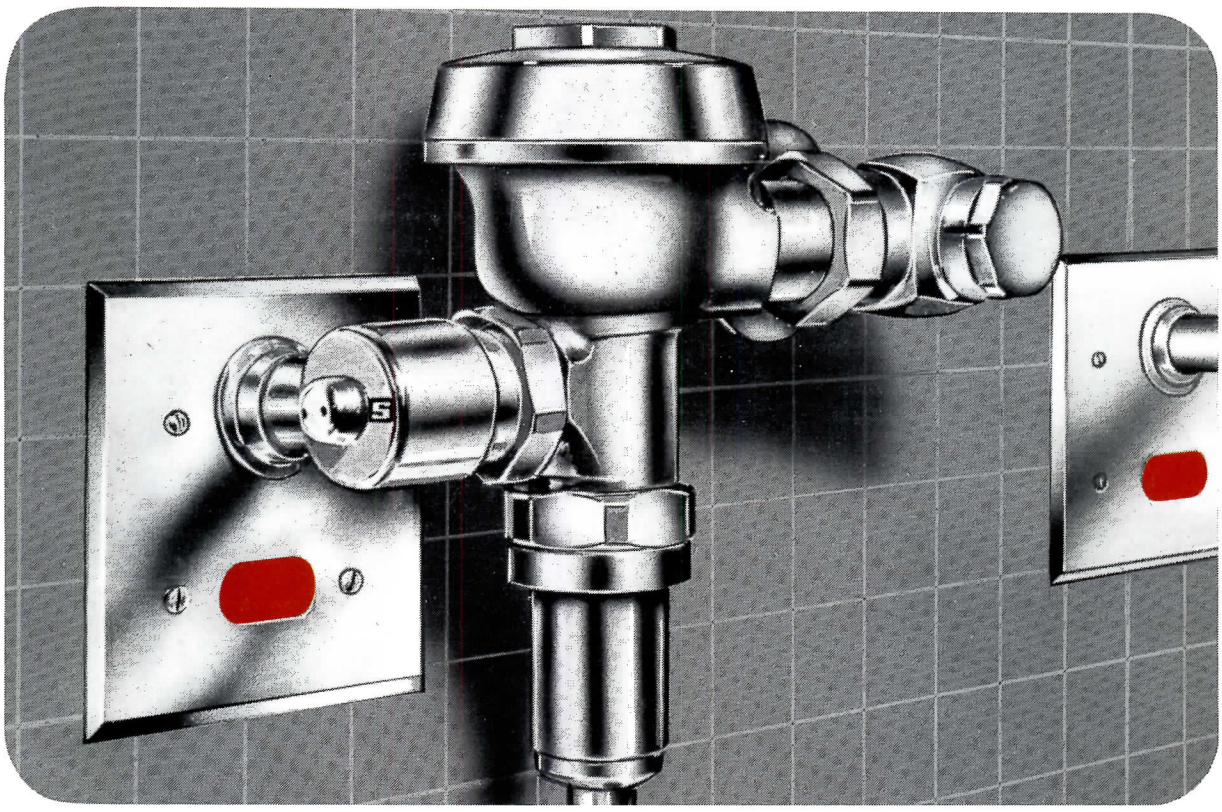

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