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BUILDING TYPES STUDY: PLANNING THE URBAN MARKETPLACE
PHILIP JOHNSON'S AT & T BUILDING: INVENTIVE STRUCTURAL CONCEPTS
FULL CONTENTS ON PAGES 10 AND 11

ARCHITECTURAL RECORD

OCTOBER 1980

10

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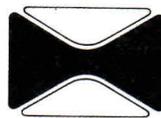
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New York Botanical Garden
Bronx, New York
Architect: Edward Larrabee Barnes
Photographer: Alexandra Timchula

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THE RECORD REPORTS

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A group of Egyptian temples along the Nile has been moved to avoid flooding from the Aswan Dam. The House agrees with the Senate—BEPS will be delayed until 1983. The Justice Department continues to prosecute organizations for mandatory codes of ethics. "Houses for Sale II" is one of the more unique exhibitions of architectural drawings.



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86 A wooden house with a brick face

Connecticut architect Louis Mackall combines the art of architecture with the craft of fine woodworking: the result is an especially well-integrated composition.

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90 Urban Marketplace

As differentiated from shopping malls, urban marketplaces mix a wide variety of activities that are social, cultural, recreational and commercial into one series of shoulder-by-shoulder and often overlapping happenings. The format has its roots in the spontaneous marketplaces of history, but today it must be carefully planned and controlled, if it is to be an urbanistic and commercial success. The examples shown in detail are:

**96 Market House,
Washington, D.C.**

Clark Tribble Harris & Li, architects.

**98 Washington Boulevard,
Detroit, Michigan**

Rossetti Associates, architects.

**100 Harborplace,
Baltimore, Maryland**

Benjamin Thompson & Associates, architects.



©Steve Rosenthal

ARCHITECTURAL ENGINEERING

**106 Behind the Renaissance facade:
structure that lets it work**

There is no granite exterior quite like that of Philip Johnson's AT&T building. Unlike either traditional or more contemporary masonry curtain walls, each of the pieces of solid granite stone is individually supported, for narrow joints and to enhance safety. The structural system is braced to prevent cracking of stone, and uses steel plate shear walls in the core to save space.

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NEXT MONTH IN RECORD

**Building Types Study:
Award-winning architecture and planning
in the Muslim world.**

In March 1978, the Aga Khan established the Aga Khan Award for Architecture designed to encourage Muslim leaders and their architects and planners to begin to pay attention to Muslim beliefs and traditions as they devise the new environments in which an ancient way of life will persist. Approximately 130 completed projects were nominated for the Award from over 30 Muslim countries. The winners are to be announced at the end of October in Lahore, Pakistan and will be shown for the first time in the pages of RECORD. The awards, selected by a distinguished international jury, should be of great interest to the U.S. and European architects and planners who are building entire cities, multi-billion dollar universities, giant airports and luxury hotels in Islamic countries.

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FORMS + SURFACES

Internship and licensing: Let's think about it from the student's point of view

For what I hope will be a fascinating and helpful article in our first issue for next year, we recently sent a survey to a cross-section of students in their final year of architecture school. It is intended to explore their aspirations, their perceptions of their strengths and weaknesses as they join the professional work force, their degree of commitment to becoming licensed.

We've asked questions about how well they did in school—their grades in architecture courses, in other college courses, and especially in design. Are grades a predictor of future success? We've asked students (and a cross-section of practitioners) what they think. We've asked students where they want to work (my guess is that a large percentage go to work in their home state or in the state where they attended school). We've asked if they want to work in the city—or in a rural or suburban setting; and whether they want to work in a small or larger firm. While I'd guess at a bias towards working for smaller firms, I find I have no guess as to the city vs. suburban/rural setting, and I'll be fascinated to see whether this pattern is different for soon-to-be graduates of large urban universities and graduates of schools in more isolated settings. I've asked them to grade themselves on knowledge and understanding not of design, but of the nitty-gritty of practice—construction documents, building cost analysis, code research, specifications and materials, bidding procedures, construction techniques, office procedures (and suspect that a fair degree of anxiety will be revealed in the survey). We've asked questions designed to determine how much students understand about the process of becoming licensed—how much they know about the internship period, the experience required by many states before taking the exam, and the licensing exam itself. A question that I think will be very revealing: "Have you ever heard of the NCARB?" We've asked the students what kind of work they hope to be given as new employees of a firm, what kind of training they think they need, what kind of work most interests them—and how much they expect to be paid (I expect a fair degree of realism—fatalism?—on this question). Finally, we've asked some "experimental questions" that I hope will indicate directions and attitudes—for example: "Who are your favorite five architects? All Frank Gehrys or Stanley Tigermans or Michael Graveses? I doubt it—but it will be fascinating

to look for different patterns from different schools and different parts of the country.

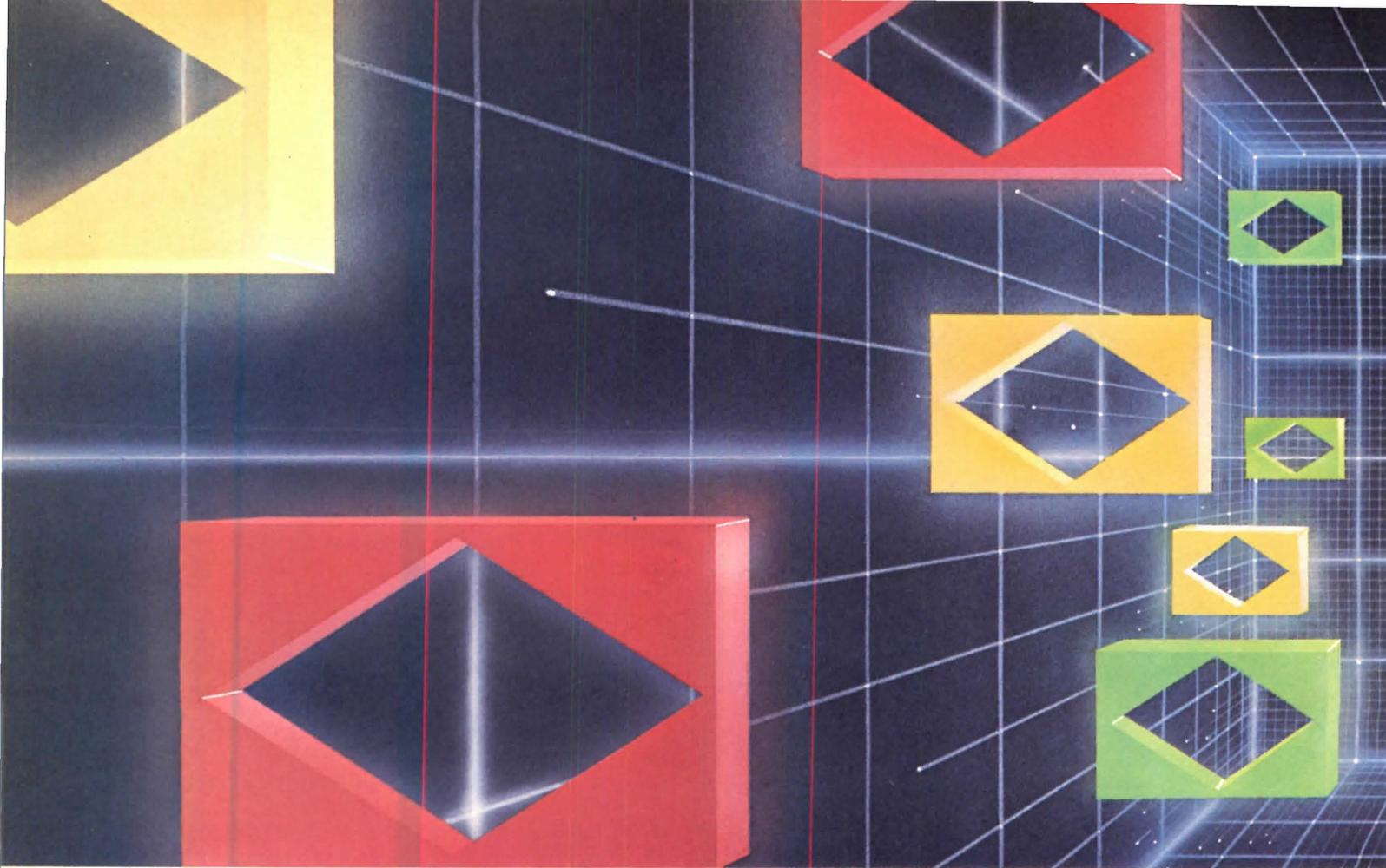
A national cross-section of practitioners has been sent a kind of "parallel" questionnaire—in hopes of comparing the students' aspirations and expectations against what they may in fact face when they are working as intern architects. For example, it will be interesting to compare the students' hopes of a particular kind of work (design, perhaps?) against the kind of work most practitioners in fact give to new employees or to compare the students' anticipated income in three or four years (when they are ready for licensing) against the typical salary in most firms.

This research was all motivated by the on-going debate in the councils of the NCARB, the AIA, and (one hopes) the colleges over the question of internship. As faithful readers will know, the NCARB has since 1974 been developing (and now in place in several states) an Intern Development Program (IDP for short) which makes specific (and in some states mandatory) requirements for experience before an intern is eligible to sit for the licensing exam. For example, it suggests (requires) 130 days of experience in construction documents; 30 days of work in specifications and materials research, and so on. AIA has supported the Intern Development Program (and is currently restudying it)—though it does not favor making such a program mandatory and has some questions about the rigidity of the experience requirements.

It seems to me that this is a very good time for all architects to consider the question of internship, and the question of what the requirements of experience and training should be for anyone to become and be called "architect."

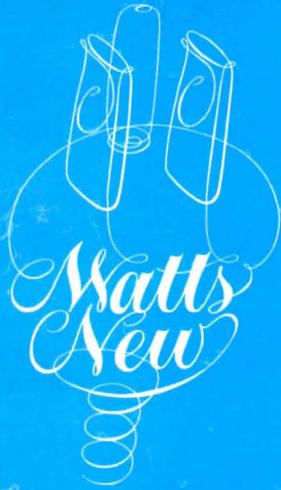
It also seems to me that these questions should not be considered primarily from the point of view of the NCARB or the AIA—but from the point of view of the young graduate. What is it he or she should be required to do/learn/practice before being permitted to take the licensing exam and be entitled to be called "architect?"

I'd welcome comment from any reader who has shared our concern with the questions of internship and licensing. What can we do to strengthen the profession by helping, by demanding more (or less) of, or by better training the students and interns who are coming along in increasing numbers. Much is at stake for them, for the profession, for clients and for society.—*Walter F. Wagner Jr.*



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Electrical Energy Views
from The National Electrical
Contractors Association
Volume IV, Number 6

Nuclear power for the 1980's and '90's? It appears that we have no practical alternative.

Our nation has emerged from the energy tumult of the 1970's with one clear objective. We must end our dependence on foreign oil and gas. How to end this dependence, however, is still a matter of great debate.

Energy strategies devised by many scientific and political leaders have called for an increase in the generation of electricity by coal and nuclear fission to meet our energy needs through the end of this century. But as we know, a great controversy has enveloped our entire nuclear industry.

The accident at Three Mile Island in combination with publicity surrounding the movie "The China Syndrome" have made the general public highly sensitive to the potential danger of generating electricity through nuclear fission. The reported potential threat of a meltdown at Three Mile Island was enough to frighten anybody.

But the fact is no meltdown did occur. No one was killed or injured. In fact, in the twenty-three years since the first commercial nuclear reactor began operating in this country, there has been no proven death or even severe injury to a member of the public due to the radiation released from these facilities. When compared to any other kind of industrial operation, the nuclear power industry is perhaps the safest on earth.

Although the nuclear industry is re-examining design and construction programs, this is not the time to stop building nuclear facilities, unless we are willing to live with the undesirable economic consequences.

As of 1978, according to the Edison Electric Institute, our nation's energy mix for generating electricity was coal, 50.8%; oil, 18.9%; gas, 15.9%; and nuclear, 14.4%. Current studies show that even with conservation measures, electric consumption will increase between 3.7 and 5.4% a year through the 1990's. This means we will have to double our generating capacity within the next fifteen years. At the same time, however, our government has mandated the elimination of natural gas as a source of electric generation by 1990. And as we all know, we cannot afford to increase the use of oil to generate electricity. So we're left with the inescapable conclusion that future growth in electric generation must come from coal and nuclear power.

What about emphasizing electricity generation from coal? While coal power will expand rapidly, it is impossible to increase coal production and to build coal-fired power plants quickly enough to meet all our projected electrical needs. In addition, electricity from coal costs more per kilowatt-hour than uranium, and operating costs of equivalent coal plants are greater than nuclear plant operations. Also the cost of constructing a new coal power facility, with its air purification equipment, is only slightly below the cost of a new nuclear generating plant.

What about solar power? The Electric Power Research Institute calls solar technologies the second-best future alternative to nuclear energy for replacing oil, natural gas, and coal in the 21st century. But, the cost of using solar energy for anything beyond low-temperature heating requires "capital investments in conversion equipment at least five to ten times greater than those needed for nuclear fission."

Other energy sources such as synthetic fuels, geothermal power, and wind power may be important in future electric generation, but they will play no significant energy role before the year 2000.

Whatever personal views we hold concerning the dangers of nuclear power generation, there are certain facts we cannot overlook. To maintain our way of life in the future, we're going to need more nuclear power plants. The construction and operation of safe, efficiently-run

nuclear facilities must continue at a rapid pace. Our society has no viable alternative, except to suffer a substantially reduced standard of living.



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The contract value of all new construction for the first seven months of 1980 has declined to \$79.8 billion, or 24 per cent below the 1979 figure of \$104 billion. According to the McGraw-Hill Information Systems Company, residential building fell 28 per cent—from \$45.5 billion to \$32.8 billion—while nonresidential building rose by one per cent—from \$29.3 billion to \$29.5 billion. Contracting for residential building has strengthened significantly since May of this year, as a result of recent easing of credit. However, two months of recovery still left July's \$6.1 billion total of residential building 11 per cent below the correspondent 1979 figure.

Michael Graves has been awarded the 1980 Arnold W. Brunner Memorial Prize in architecture from the American Academy and Institute of Arts and Letters. The Brunner Prize was established in 1955 "for contributions to architecture as an art"—previous recipients include Charles Gwathmey, Louis Kahn, I.M. Pei, Paul Rudolph, James Stirling, and Robert Venturi. Mr. Graves is a professor of architecture at Princeton University and recently won the competition for the Portland Public Service Building (RECORD August 1980), now under construction.

The American Academy in Rome announces its 78th series of national competitions for the Rome Prize Fellowships in the arts and humanities. Applications will be accepted until November 15, for fellowships in architecture that provide a one-year residence at the Academy in Rome, a monthly stipend, and a travel allowance. The Academy also offers four six-month mid-career fellowships sponsored by the National Endowment for the Arts. For more information contact: American Academy in Rome, 41 East 65th Street, New York, New York 10021. The Steedman Fellowship in Architecture, sponsored by the Washington University School of Architecture, also offers a one-year residence at the Academy. The winner will be decided after a special design competition. For more information contact: The Steedman Committee, School of Architecture, Washington University, St. Louis, Missouri 63130. And the National Institute for Architectural Education is offering a six-month traveling fellowship, with two of the six months to be spent at the American Academy in Rome. For more information contact: National Institute for Architectural Education, 139 East 52nd Street, New York, New York 10022.

The Institute of Business Designers welcomes applications for the 1981 IBD National and Regional Student Competitions. The competitions are open to all students enrolled in a program of interior, environmental, architectural, or industrial design for the 1980-81 school year. Three regional competitions will be held this spring, with the first and second place winners going on to compete at the national level. Judging for the national competition will be held next June, in conjunction with NEOCON. For more information contact: Claudia Sloan, Institute of Business Designers, 1155 Merchandise Mart, Chicago, Illinois 60654 (312/467-1950).

Building Stone Institute is inviting submissions for its Fifth Annual Architectural Awards competition. Winners will be designated in four general categories: 1) a nonresidential structure completed within the last five years; 2) a stone structure at least 25 years old and still in use; 3) a residence or residential complex completed within the last five years; and 4) landscape design. The competition is open to architects, designers, contractors, or stone-workers "who have designed an outstanding structure in natural stone." The deadline for submission is October 30. For further information contact: Building Stone Institute, 420 Lexington Avenue, New York, New York 10017.

A retrospective exhibit featuring the furniture designs of Hans Krieks will be held from November 15 to December 15 at the New York showroom of CADO/ROYAL SYSTEM, Inc. The exhibit will span 30 years of Krieks' American furniture designs from 1950 to 1980.

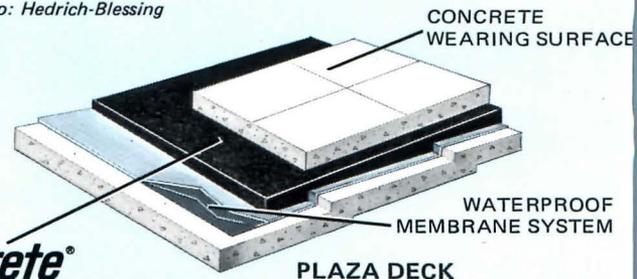
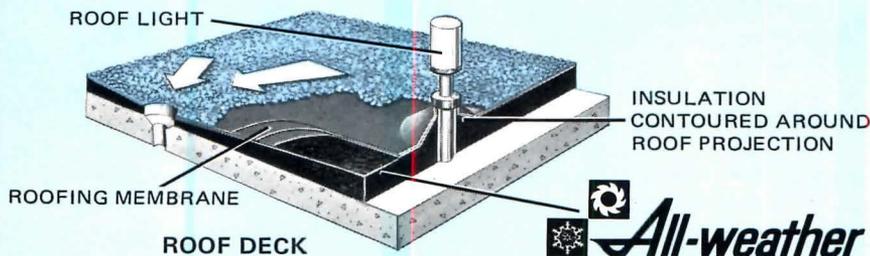
Knoll International was presented an award in the 14th annual Business in the Arts competition, co-sponsored by *Forbes* magazine and the Business Committee for the Arts. Knoll was cited for "support of the arts principally in the fields of graphic design, architecture and industrial design." According to Knoll principals Stephen Swid and Marshall Cogan: "We find it culturally rewarding to foster an appreciation of modern art and design. Just as we support promising young designers and hope that they will create tomorrow's Barcelona chair, Knoll must create a climate of appreciation in which new works of art will be well received."

Michele Conception Bertomen has won the biennial Le Brun Traveling Fellowship, sponsored by the New York Chapter of the AIA. Candidates were asked to submit a "Celebration of the Statue of Liberty," and the winning scheme proposed to drape the Statue with a star-shaped cloak. The Le Brun Fellowship provides \$5,000 for three months' travel and study of architecture outside this country, and is open to residents of the U.S. with at least 1½ years architectural experience.

A conference entitled "Making Dreams Come True: Design in Aid of Fantasy" is being sponsored by the San Francisco Center for Architecture and Urban Studies from February 4th to the 7th. The rostrum of speakers will include Sally Woodbridge, Paul Oliver, Charles Moore, Donlyn Lyndon, Ricardo Legorreta, J.B. Jackson, Juan Bonta, Reyner Banham, and Wayne Attoe. For registration information contact: San Francisco Center for Architecture and Urban Studies, 305 Charleston Building, 251 Kearny Street, San Francisco, California 94108.



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Architecture for sale at New York's Leo Castelli Gallery

On October 18, the Leo Castelli Gallery in New York City will open an exhibition entitled "Architecture II: Houses For Sale." Rather than merely parlaying the drawings and sketches of well-known architects, this exhibit proffers a complete and buildable architectural package that has as its ultimate goal "the facilitation of the realization of actual buildings." Plans, sections, elevations, and models—along with suggested construction methods and cost estimates—will be included. Anyone with the inclination and the means to build one of the houses will be able to do so.

Eight architects were invited to participate: Emilio Ambasz, Peter Eisenman, Vittorio Gregotti, Arata Isozaki, Charles Moore, Cesar Pelli, Cedric Price, and Oswald Mathias Ungers. They were each given an intentionally vague program: "To design a prototypical family house preferably for the United States . . . that will not exceed \$250,000." The siting conditions for the hypothetical houses were not given.

One of the intentions of "Houses For Sale" is to reverse the traditional method of client commissioning architect to design a particular house responsive to a specific program. But, according to the sponsors of the exhibition, this reversal is not without its justification. In the intro-

duction to a companion publication from Rizzoli International, *Houses For Sale*, B.J. Archer writes: "If one is willing to accept the premise that like the other arts, the art of invention in architecture need not always wait for a commission to breathe it to life, then 'Houses For Sale' may be seen as using the method painters and sculptors have followed for a few centuries for the presentation of their work to the public. In doing so, 'Houses For Sale' removes some of the mystery and perhaps some of the anxiety from the initial phase of the architect client encounter, while retaining the potential for amazement that can come from the revelation of an original work of art."

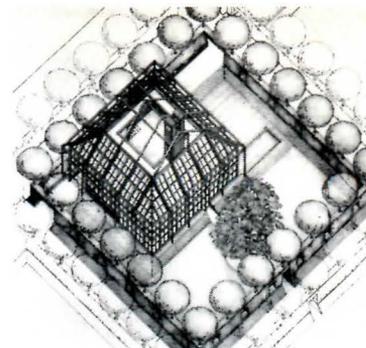
Each of the architects was also asked to write a description of his project and a statement of "architectural intention."

In conjunction with the Castelli show, an illustrated catalog—with all of the schematics, architects' statements, and an introduction by Emilio Ambasz and B.J. Archer—will be available at \$14.95 from Rizzoli International Publications, 712 Fifth Avenue, New York, New York 10019.

"Architecture II: Houses For Sale" will remain in New York through November, and then will travel to the Corcoran Gallery in Los Angeles.



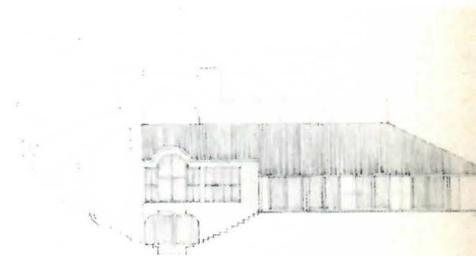
Arata Isozaki: House of Nine Squares. "Such traditional images as the roof, the window, and the fireplace are branded in the depths of the mind. . . . Despite their debasement, some of these symbolic signs are eternally required in the design of house architecture, so an attempt must be made to express them as exquisitely as possible. In this house it is the vaulted roof set over the 16 independent columns which is intended to play such a role. The vault at an intimate scale and the semi-cylindrical shape in the section express 'house form' in the design."



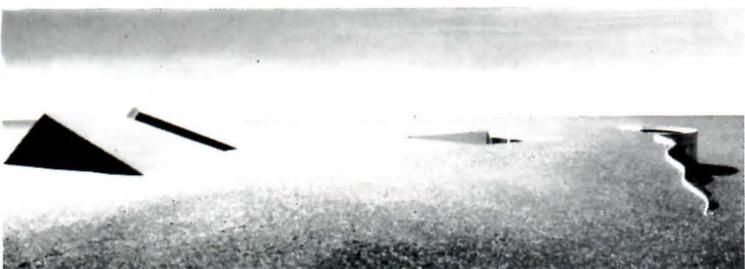
Oswald Mathias Ungers: House Within a House. "The design of this two-story one-family house is based on a square plan. The concept is that of a house within a house—actually three houses, one inside of the other: the inner stone house, which is the warm zone—the winter house; the enclosing glass house, which acts as a 'skin' that transforms with the seasons—in summer its leaves give shade, in winter it is dismantled and practically does not exist, it is the summer house; the garden house, the macro-zone, which encompasses the two house rings as a green space."



Cesar Pelli: Long Gallery House. "This house, on the street side, will have a symmetrical one-story facade of traditional materials. The long gallery is perpendicular to the sidewalk. This space has its beginning at the entrance, but, theoretically at least, no end. It structures the house and gives it its character. It is a means of circulation, the only way to reach all the rooms or to go from room to room, and it is also everything that the rooms are not. It is a center but also a void. It is a connector of different spaces or of different family members, facilitating communication among them"

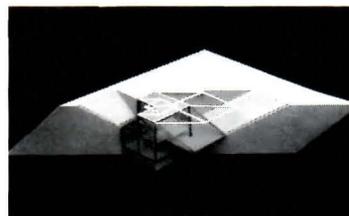


Charles Moore: Hexastyle Texas Style. "This is a house for Texas and the Southwest, with recollections of ranch houses on the outside, with a simple low sheltering porch on the periphery, and with much more flamboyant, Italianate recollections inside. The house is organized around a semicircular piazza that owes a visible debt to the Villa Giulia, with an overlay of images from the pavilions in the Farnese Gardens on the Palatine. The conceit here involves an axial plan, with courtyard pool and grotto eroded by a rough southwestern escarpment that changes seamlessly into the formal steps of the piazza. A streamlet meanders over both."

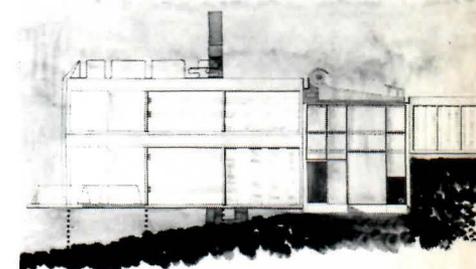


Emilio Ambasz: Arcadian Berm House. "Designed by a famous architect, this berm house is a landmark project. . . . Conceived to suit the most commonly utilized building sites, this house has been designed to be built above grade. The roof

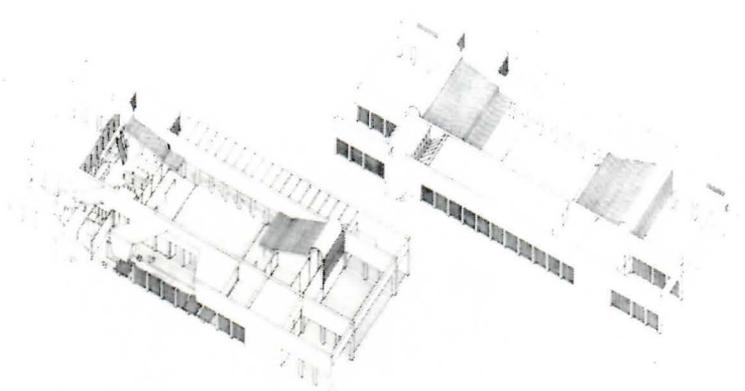
and the walls facing north are insulated by means of a gently terraced earth/berm which turns the house into an integral, unobtrusive part of the landscape. Carefully studied cross-ventilation practically eliminates the need for air-conditioning."



Peter Eisenman: House El Even Odd. "House El Even Odd begins with an el-shaped axonometric object as its initial condition of reality. Its sides are at 45 degrees to the horizontal and vertical planes. Two axonometric transformations of that object then take place. The first produces an object that is a flattened surface. . . . The second transformation produces a reversed axonometric projection, which also becomes a rectilinear el-shaped volume. All three states projected simultaneously are House El Even Odd. A model of this house appears to be simultaneously a three-dimensional object, an axonometric projection, and a plan."



Cedric Price: Pavilions, Platforms, Pylons, and Plants. "It occupies one acre and its contents include pavilions, platforms, and pylons as well as natural growths. The degree of flexibility inherent in these contents and their siting will be largely dictated by the peripheral conditions of this two-dimensionally finite site. The positioning of the pavilions, platforms, pylons, paths, and plants is within the control of the initial occupant. However, those shown are very good and at least give an initial plan to play around with."



Vittorio Gregotti: Una Casa. "This house is defined by two pairs of parallel walls. They are continuous over the entire front of the site. We present the project in this manner as one of many possibilities. . . . It may be

taken as a proposal to be completed progressively, without a loss of its architectural form. For this reason the internal supports are of light material, wood and iron, while the walls and floor are of brick."

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A new Comptroller General to be appointed next March

One of the most important appointments the next President will make is that of the Comptroller General, who heads the General Accounting Office.

In early speculation, the two names most frequently mentioned are Representative Jack Brooks and Alice M. Rivlin. Mr. Brooks is chairman of the Government Operations Committee and author of the bill carrying his name that specifies the selection of architects and engineers on Federal projects by the traditional "most-qualified" test rather than price, and Ms. Rivlin is director of the Congressional Budget Office.

Though the President will make the nomination, the GAO is an arm of Congress and the lawmakers will have a major say in who gets the post. Under law, an eight-person Congressional committee is charged with submitting at least three names to the President as candidates, and the President cannot appoint anyone not on the list. He can, however, ask the Commission to submit additional names. —William Hickman, *World News, Washington*.

Justice continues assault on mandatory ethics

The U.S. Justice Department is continuing its assault on design professional organizations with enforceable codes of ethics. A new suit has been filed against the American Consulting Engineers Council (ACEC), charging that three of their code provisions *restrain trade and thereby violate the antitrust act*.

Under attack are three provisions that bar ACEC members from:

- Proposing or accepting professional commissions on a contingent fee basis under circumstances that may compromise their professional judgment.
- Entering competitions for designs for a specific project unless provision is made for reasonable compensation of all designs submitted.
- Undertaking or agreeing to perform any engineering service on a free basis, except for civic, charitable, or eleemosynary organizations.

The AIA had similar provisions in its code of ethics, but averted a confrontation with the Justice Department by making the code voluntary (RECORD July 1980). The ACEC is planning to do likewise at its mid-year board meeting this month.

Larry N. Spiller, executive vice president of the Council, notes: "For the life of me, I cannot understand why Justice chose this time to file against us."

The Code that ACEC intends to adopt is being jointly developed with the National Society of Professional Engineers and the American Society of Civil Engineers. —William Hickman, *World News, Washington*.



Egyptian temples reassembled along the Nile to avoid flooding

The most recent effort to save the Nubian monuments of the Nile was completed in March of this year when the Societa Italiana per Condotte D'Acqua in conjunction with Mazzi Impresa Generale Costruzioni dismantled an island of ancient Egyptian temples and reassembled them on a nearby island. The project involved moving the entire temple structure of Philae Island, located 600 miles south of Cairo, to nearby Agil-

kia Island. Philae was threatened by the lake created between the 1908 Aswan Dam and the 1971 Aswan High Dam.

The project followed an international effort by UNESCO and the Egyptian Ministry of Culture to save the Isis Center of Philae, whose temples date from the 6th century B.C. to the 5th century A.D.

The key toward Condotte-Mazzi's work was not the size of the

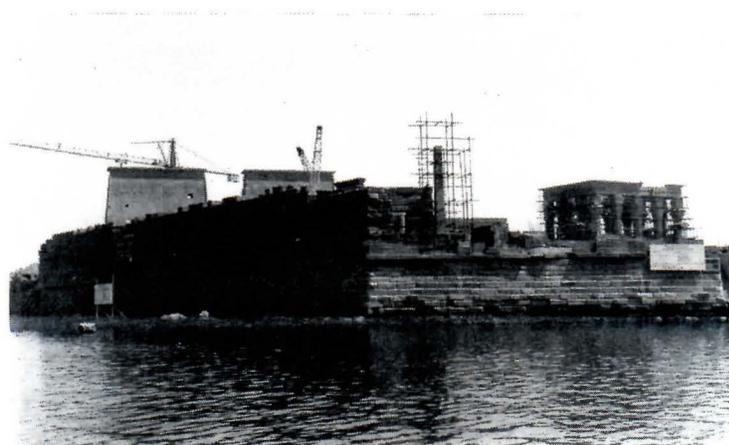
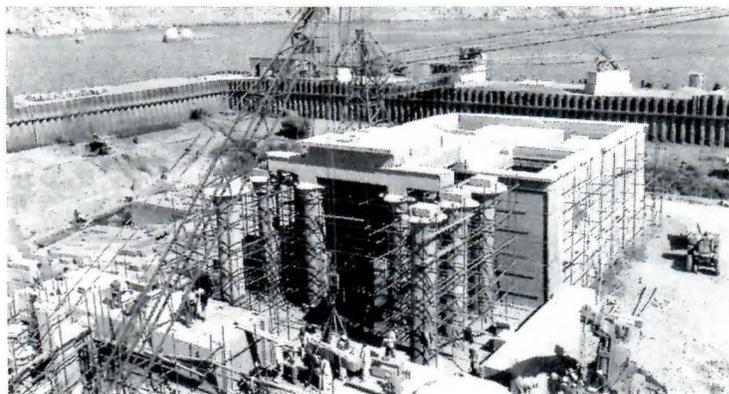
project—though Philae's 95 structures consisted of 45,000 stone blocks with a total weight of 28,000 tons. The main concern was more specific—all of the temples to be transferred had to have "the same relative position, the same relative elevation, and the same original orientation" as they had on Philae Island.

According to Maurizio Foschi, Condotte-Mazzi's project director: "Normally we would not be involved in a project like this. We're a construction firm. But it was interesting and challenging and everyone knew the prestige would be a big plus. The work had preconditions not of an industrial project, but of an architectural one."

UNESCO provided much of the \$36 million in funding for the project, though construction costs were only a third of that. UNESCO also provided two committees to oversee the work, and an international consulting committee. Preliminary on-site consulting was done by Egyptian engineers William Salim Hannah and Helmi El-Romli, and architect Moustaffa Shawky.

Work on re-assembly began in January 1977, and was completed in March 1980. Only two stones were damaged during the entire operation, despite original estimates of from one to two per cent. All the structures have been re-erected within centimeters of their old position on Philae, with the approved exception of two temples which are 165 feet closer to the main complex.

After the work was completed, Foschi noted: "It was more of a project of handicraft than of construction." —A.J. Troner, *World News, Rome*.





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"Backdoor" funding for Federal office construction

The House has agreed with the Senate in saying the financing of Federal office buildings is too important to leave to the traditional Federal budgetary process. This is evident in House approval of legislation allowing the General Services Administration (GSA) to go to the U.S. Treasury for construction loans rather than competing in the appropriations process with other Federal programs for available funds.

This backdoor funding method, now approved on both sides of Capitol Hill, is the centerpiece of legislation first offered by Senator Daniel Patrick Moynihan that totally revamps the way the GSA goes about its work.

The House bill, however, authorizes the time-purchase system and stops there, while Senator Moynihan's bill goes much further in also calling for a Federal supervising architect, setting higher architectural standards, and requiring formal design competitions for many of GSA's proposed new building projects.

It was uncertain last month whether the House or Congress

could compromise their differences before final adjournment; a failure to do so would mean the whole process would have to begin again in 1981.

Approval of the financial method will permit the GSA to spend tens of billions of dollars over the next two decades on construction of office buildings for Federal workers. Budgetary constraints currently force the agency to rely increasingly on rented office space, and the annual tab on doing so is approaching \$1 billion in lease payments. Senator Moynihan's bill specifies that GSA would gradually reverse this tide by building more of its structures to replace the rented space.

Professional design organizations, including the American Institute of Architects, look favorably on the entire Moynihan bill, except the provision ordering the design competition. In league with engineering societies, the AIA is lobbying Congress to drop this provision because it fears it could weaken the traditional "most-qualified" A-E selection process. — *William Hickman, World News, Washington.*

Building Energy Performance Standards delayed until 1983

The Building Energy Performance Standards (BEPS) will not go into effect as scheduled next August. The House has agreed with the Senate in pushing back the deadline so the Department of Energy (DOE) can refine the regulations and undertake a demonstration effort intended to prove or disprove the effectiveness of the new standards.

The AIA has fought hard to block the delay, but most other organizations representing design and construction interests have been trying to move back the deadline.

The House passed legislation saying the interim regulations—which DOE proposed to publish in January—should not come before August of 1981, and the final rules should be delayed until April 1983. Earlier, the Senate had approved a simple extension of the deadline to August 1982. Congressional conferees were still

meeting in September but were expected to adopt the House version. The conferees are also expected to approve a transfer of the enforcement responsibilities from the Department of Housing and Urban Development to the Department of Energy; the Senate version supports this position, though the House was silent on the subject.

A key to the new regulations will be the demonstration program under which the DOE will design and build buildings to proposed regulations in various parts of the country to determine their exact energy efficiency. Just how elaborate this program will be is uncertain, but some lawmakers are pressing for the construction of 22 classes of buildings in six regions of the country, though funds for the project were not included in the measure. — *William Hickman, World News, Washington.*



12 manufacturers participate in showcase "idea" house sponsored by Copper Development Association Inc.

The Copper Development Association Inc. is sponsoring its third showcase "idea" house, now under construction near Stamford, Connecticut.

The three-bedroom, 5,200-sq-ft house will receive 60 per cent of its space heating and hot water needs from copper solar collectors and other solar energy systems, including a two-story greenhouse that generates solar-heated air which then moves to other rooms through hollow, concrete "air-floors." Photovoltaic cells will be used to produce electricity directly from the sun.

The house has been designed to "nestle into the earth to shield it from the north winds." On either side of the entry doors are columns which—when repeated inside—become both decorative and functional as "energy-columns." The energy columns collect solar-heated air during the day, and distribute it at night.

The passive solar systems include a heat pipe wall in the master bedroom and a water storage wall in the family room. Both systems incorporate 12-inch copper tubing as water storage tanks which store and radiate solar heat when needed.

The rear ("sunsides") elevation of the house has redwood decking overlooking a lake, and extensive glazing including the two-story greenhouse. The copper solar collectors

and photovoltaic cells are also here.

The house is called the Sun/Tronic and will incorporate small computers that can act as "servant, nursemaid, secretary, guard, in-home entertainer, and accountant." The computers will be able to control the various solar heating systems, monitor doors and windows, oversee activity in the children's room, remember what was served at past dinner parties and who attended, and project how much income tax the family will have to pay.

Architects for the Sun/Tronic Energy House are the Berkus Group of Santa Barbara, California, and Washington, D.C. Mechanical and electrical engineers are Mueller Associates, Inc. General contractors are Walter R. T. Smith/Builder.

The house will be outfitted with products from 12 companies in the building products industry. They include: American Standard; California Redwood Association; General Electric Company; Lead Industries Association Inc.; Libbey-Owens-Ford Company, Solar Energy Systems and Glass Division; Lord & Burnham Division of the Burnham Corporation; Owens-Corning Fiberglas; Roll-A-Way Insulating Security Shutters; St. Charles Manufacturing Co.; Stanley Works, Stanley Door and Stanley Vemco Division; and Vermont Structural Slate Company.

New York architects Lundquist and Stonehill renovate former cigar factory for Sotheby Parke Bernet

The Decorative Arts Galleries of Sotheby Parke Bernet have been moved from the company's Madison Avenue headquarters into their own building on the corner of York Avenue and 72nd Street in Manhattan.

The new facility is a major renovation of a 1922 structure, originally constructed by the Lorillard Tobacco Company for the manufacture of cigars. New York architects Lundquist

and Stonehill have wrapped the block-long four-story building in gray Canadian granite and added substantially to the fenestration. The interior spaces have been completely redesigned. The new Decorative Arts Galleries will be used for exhibitions, auctions, cataloging, and storage, and its 160,000 square feet of floor space is the largest of any auction facility in the world.



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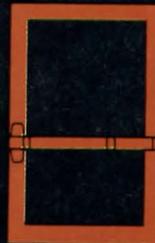
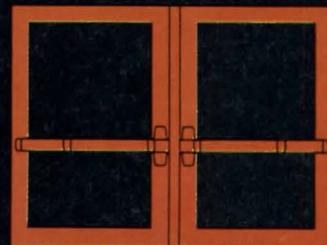
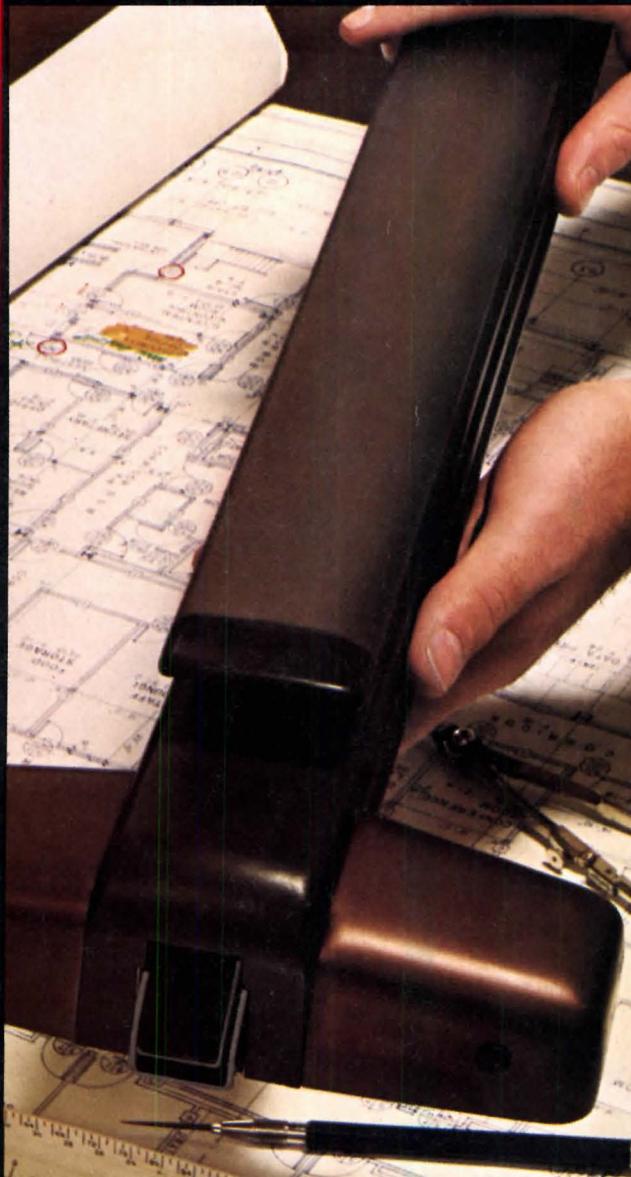
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The American Society of Interior Designers (ASID) honors designers, architects and preservationists at national conference

Five International Design Awards were presented at the 1980 ASID National Conference, held August 20-24 in New York City, to recognize "interprofessional leadership in improving design standards." The winners of the awards were: 1) Senator Paul E. Tsongas of Massachusetts, for "his ongoing interest in the designed environment through his efforts on the Senate Energy and National Resources Committee and its Parks Recreation and Renewable Resources Subcommittee;" 2) Bill N. Lacy, FAIA, president of Cooper Union, for "consistent leadership regarding the educational and cultural concerns of students of the man-made environment;" 3) Site Inc., for "contributions to the increased understanding of the built environment through its publications and projects, and for expanding the traditional definitions of the visual arts, closing the gap between construction and art provoking strong and fresh design concepts;" 4) Phyllis Lambert, president of Heritage-Montreal, for "the support and energy she has given to urban conservation activities through her work as an architect, author and lecturer;" 5) The Municipality of Jerusalem, KARTA-Central Jerusalem Development Corporation and associated architects Moshe Safdie and Gilbert Weil, for their "contributions to the Mamilla Project in Jerusalem, a major construction in the city which preserves buildings of architectural and historical significance."

The ASID also awarded

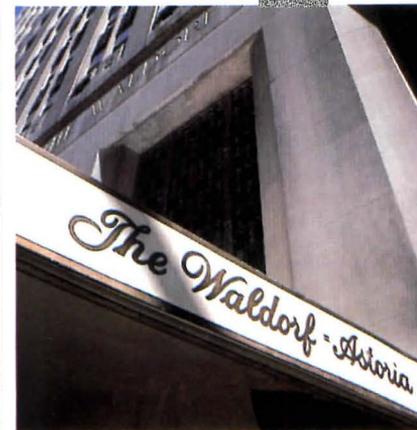
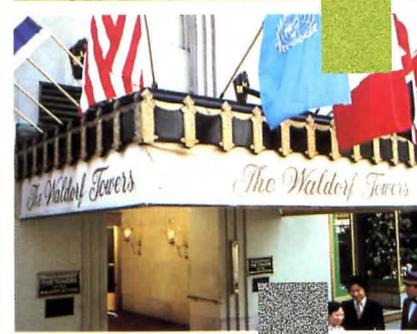
special honors to Brendan Gill, drama critic for *The New Yorker*. Mr. Gill received the ASID's 1980 Thomas Jefferson Award, which is given for "contributions to the preservation of the nation's cultural, intellectual or natural heritage." Mr. Gill is chairman of the New York Landmarks Conservancy, and he is frequently credited with rallying the support necessary to bring the Grand Central Terminal case before the U.S. Supreme Court.

This year's ASID Designer of Distinction Award was given to Everett Brown, FASID, for his work "in almost every aspect of the interior design field—a developer of new products, furniture lines and an innovator in the uses of materials."

The second annual Human Environment Award was presented to James L. Quinlan, ASID, an interior designer with the Ford Motor Company. Mr. Quinlan was cited for his complete re-design of the Henry Ford Museum Hall of Technology in Dearborn, Michigan.

Three interior design projects received ASID awards as the "best of the year" in each of three categories: 1) Business, Eric G. Engstrom, ASID, for The Top of the Hub restaurant (photo right) atop Boston's Prudential Tower; 2) Residential, Bud Merle, ASID, for the Salzman Residence (photo below left) in Ft. Lauderdale; and 3) Adaptive Re-use, M. Robbins Black, ASID, for her renovation of a warehouse on Galveston's historic Strand into the Wentletrap restaurant (photo below right).





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Child's play

CHILDREN'S SPACES—50 ARCHITECTS AND DESIGNERS CREATE ENVIRONMENTS FOR THE YOUNG, by Molly and Norman McGrath; William Morrow, \$29.95.

Reviewed by Christine Benglia Bevington

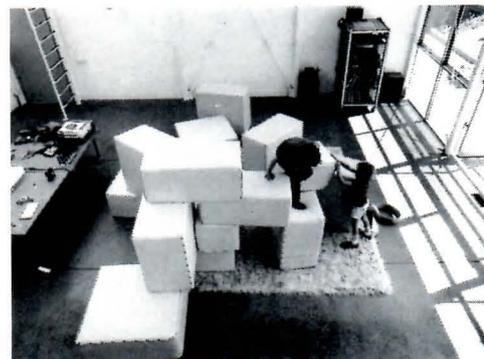
Architects and children are related. Appreciation of space is the most obvious connection: give a child a vertical and she will climb, give her a horizontal and she will run, give her a step and she will jump, give her a slope and she will slide. In short, she will do physically what the architect does conceptually. Molly and Norman McGrath's lavishly illustrated book *Children's Spaces—50 Architects and Designers Create Environments for the Young* will strike a familiar chord even among those who feel that children are not the most pressing item on the agenda.

The space connection is just one of the many aspects in which the child factor can play a major role in architecture. The fact that we cannot bill children directly for our services does not alter their quantitative and qualitative importance. Even if they are relatively invisible (consider, for instance, that most cities have more children than cars), one-third of the U.S. population is composed of minors. This would mean that, in theory at least, one-third of our clients are children, one-third of Manhattan belongs to them, one-third of our sketches are done from their perspective. Everything we plan will eventually become misunderstood, ugly, and worthless if we don't adhere to that.

But the great favor is aimed at architecture—safeguarding the delight of it. Looking at the children's drawings contributed by Nancy Renfro, we get a glimpse into a world where a massive cave houses a neat little collection of buttons, where plaster and bricks are not even noted but water and air are specified in great detail, where endless and tortuous tunnels lead to a heated bathtub. The inclusion of these children's drawings alongside works by major architects, and the general emphasis on children's participation, are what make this book much more than just another pretty book. Norman McGrath's photographs are technically excellent, surmounting the difficulty of some very

Christine Benglia Bevington is an architect practicing in New York City. She has worked directly with children in private and public schools and is a member of the AIA Committee on Education, Culture, Recreation. Ms. Bevington currently teaches architectural design at Columbia University, and acts as Design Advisor to the Pratt Center for Community and Environmental Development.

Norman McGrath photos



small spaces. The atmosphere is appropriate: surprised dolls piled into a corner, toy trucks left on the floor ready to roar off. The text by Molly McGrath is concise but well-informed. Its tone of light humor barely veils the issues which should be of great value to architects interested in the future. Finally, the interviews with each architect or designer make thoroughly enjoyable reading. Their comments, at times wonderfully subjective, are consistently in support of the child-client.

The children's spaces in the McGrath's book cover a narrow range, but they have the uncontestable advantage of having been built. They also deserve careful attention for several reasons—they convey the message that designing children's spaces is not only fun, but doesn't preclude high standards of architectural quality. They do illustrate certain design features specifically suited to children, applicable inside or outside their rooms. The diversity of solutions holds implications which no designer should overlook. There are hints of children's participation in the design process which point to fresh directions.

With respect to quality, what is most evident is that whether a designer decides to play the clown or to be highly sophisticated, the best children's spaces are consistently those with a strong architecture. What makes Charles Moore's and Richard Oliver's room for two boys so great is its happy proportions and the distinctive placement of the three windows: high, higher, highest. Peter de Bretteville's playroom, a large space with nothing in it but big movable items, is obviously terrific for the children, yet depends on free space flow and structural clarity. Attic spaces all look wonderful because of their ceiling geometry and sources of daylight, but they are also charged with attic magic.

There are of course instances where a clever decoration does enhance a space. The sloppy floor, *Jackson Pollocked* from wall to wall by Carol Levy, is the perfect prescription for a large antiseptic room—a child could have done it!

Unfortunately, there are many more instances where the interior designer does nothing but leave a heavy professional stamp in the child's room with overpowering graphics and meaningless circular motifs at every turn. A deeper concern for the user's requirements could never have resulted in such uniformity. In fact, the most serious flaw of the book—hardly the authors' fault—is the monotonous recurrence of circular cutouts and rounded details. One must look beyond these dubious souvenirs of the mid-seventies to find design features more specifically useful to children.

In most instances, design for children is basically architecture-as-usual, but in a somewhat concentrated form, and with less constrictions. The problem for the designer is not so much to add childlike features, but rather to eliminate the adult limitations which are irrelevant to children. This is indeed a liberation. A floor is no longer defined as a "surface to walk on" but becomes "the place to

continued on page 43

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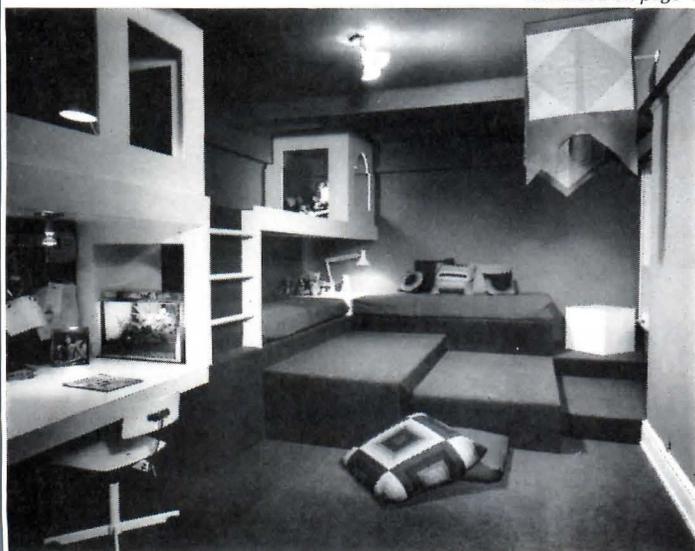
spread out." A chair is not specifically a place to sit down, but may be invaluable as a vantage point for a worthy monkey. Comfort is not the criterion for design. Passage into a room no longer needs to be of door shape, height, or mode. Ceilings are no longer perceived as passive surfaces; they may stand on an equal footing with walls in terms of display value, and even a blemish on them has tremendous daydreaming possibilities. Their height has nothing to do with the notion

of a six-foot *homo erectus* raising his left hand. Sharon Lee Ryder's scheme includes a two-foot ceiling in a little boy's hiding place: Hugh Hardy's delightful play tower is of triple-story height. Another freedom acquired is a general dispensation with cumbersome stairs. There are countless alternatives for reaching an upper level: stepping on storage drawers, going up a gangplank, climbing on the edge of shelves, walking up ample platforms, and, of course, climbing a ladder.

The implications for the design of urban family housing are many. First, the designer will note that creating an architecture with character offers more flexibility and more opportunity for adapting the interior to suit a child's particular lifestyle. Second, the diversity of arrangements between siblings (conveniently grouped by the authors in a special chapter) calls for special attention as to how adjoining children's rooms relate to each other. Some families prefer a large space with individual cubicles, others like to transform it into a self-sufficient mini-apartment, and many choose to separate the rooms with intricate custom-built constructions where the roof of one alcove, for instance, can become the upper bed in the adjacent room: a hard partition at that point seriously limits the options, as well as precludes changes in family size.

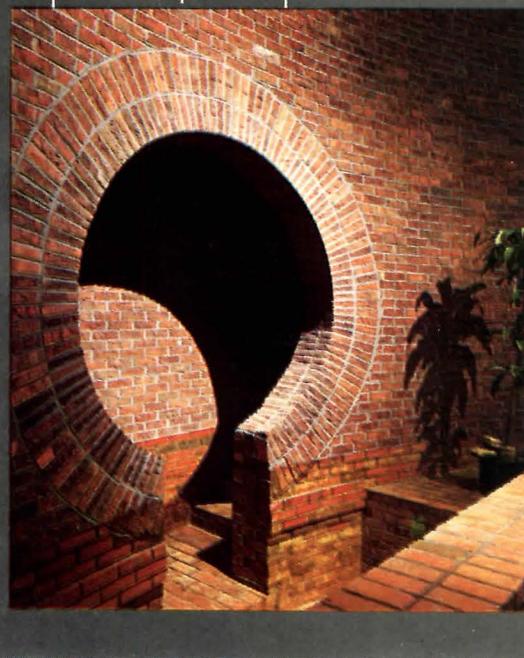
A third point: questions will be raised as to the suitability of standard code requirements as they apply to children's rooms. A ceiling height of eight feet, for instance, seems to be rather awkward—too generous for a child who uses the room as a small pied-à-terre and too skimpy for the one who lives on no more than one level, as most do in the book. Likewise a nine by twelve room generates a very limited range of furniture layout and is of no particular convenience to a child, and even less to two children. A room can be much smaller or much larger depending on a number

continued on page 45



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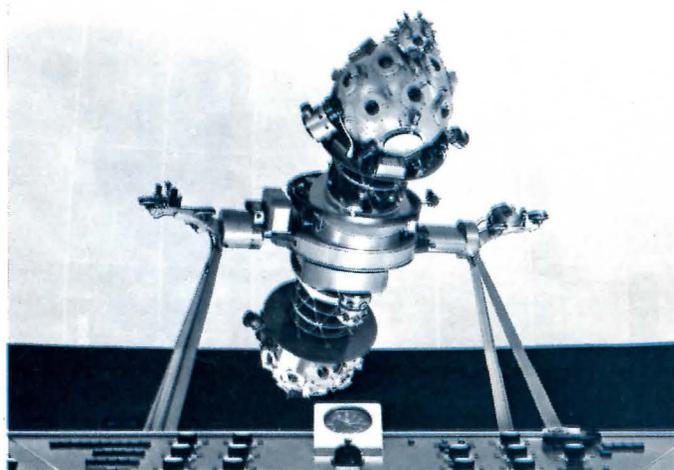
For more information about the design of the First Christian Church of Atlanta, request a free copy of *Brick In Architecture*, Volume 34, Number 2 from Brick Institute of America, 1750 Old Meadow Road, McLean, Virginia 22101.



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of factors, the most important being whether or not the occupant has access to other spaces. Leslie Armstrong proposes a bedroom which is only 6½ feet wide. Stephen Klein devises a movable screen system which only takes a few square feet of space yet miraculously unfolds to become a playroom in any corner of the apartment. It is obvious that even among what constitutes a relatively homogeneous sample of people (namely families who have access to an architect) there are many ways of housing a child. What does not vary is the child's need to interact with familiar human beings in a protected and stimulating setting—difficult to accomplish in a small apartment, and quite impossible if both parents are working.

As children get older, however, their range gradually becomes wider and the context of the building gains importance. Even if many have adequate bedrooms, few have adequate neighborhoods. Take a room like that by Dexter Inc., thoroughly informative because it is so prevalent today: the shape and size of the room, the large window in front of the desk, the bunk bed for company, the mass-produced furniture, and the efficient plastic-coated storage are all to be found in many middle-class homes from coast to coast, with minor variations. Dull perhaps, but adequate, until one thinks of having to grow in it 180 half-days plus 180 full-days per year.

If we agree that the evolution of cities, including the maintenance of buildings still on our boards, is very much in the hands of the incoming generation, we see that the problem is not restricted to "pediatric architecture" (schools, etc.) but concerns the entire profession. Nearly every building and every public space or lack of it has some impact on the quality of childhood and, it follows, on the quality of children.

Most striking in today's world is the alienation we impose on our young, a phenomenon forcefully endorsed by what we build and how we build it. What our buildings tell our children is "Don't bug us!" the streets whisper "Hurry up and get through," and the children's reservation—schools, playgrounds, bedrooms—order "Step right in. We are childproof!" Our position eventually carries with it a heavy price tag of countless urban ills—the most widespread being the common generation gap, the most costly being youth unemployment, and the most visible being vandalism. It is essential that we become sharply aware of how anything we build will be used or perceived by children. Unfortunately, it is not within the scope of the McGraths' book to address itself heavily to these issues, but the book is nonetheless relevant in the sense that it pays serious architectural attention to children with a very positive tone. The attention paid to these 50 children in the McGraths' book is inspiring, yet many millions are still backstage waiting to be noticed by the architects. Some of those not shown have physical handicaps; many have perceptual deficiencies; very many have intense social problems; and nearly all are sitting at home watching television. This book calls for a sequel.



ARCHITECT: Caudill Rowlett Scott	PROBLEM: Design a university arts center that makes a boldly contemporary architectural statement yet blends gracefully with the traditional buildings that make up the remainder of the campus.	SOLUTION: Brick
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case of attack, cannons or guns will presumably project through these gunports, ready to destroy the onrushing enemy.

The inverted truncated triangle at the front is best left without any comment. The huge ribbons on the sides would be most appropriate if they were painted yellow to represent a future homecoming of the hostages held by the Iranians. In this case, the yellow ribbons are not tied around the old oak tree but onto this civic building.

Lastly, and shockingly, it seems that Mr. Graves felt that Portland, Oregon, was the proper place to build a new Acropolis, complete with a Propylaeum and a miniaturized Parthenon.

Is this, then, the post-modern architecture that we can expect in the future? If that is the game, then I say fervently, "Deal me out of the post-modern movement."

Although I have practiced architecture for so many years, I hope to go on in my practice with a heartfelt wish that someday a brave new movement will achieve a style that will be honest, straightforward and meaningful, not this schizophrenic conglomerate of visual nonsense.

Morris Lapidus
Morris Lapidus Associates
Architects
Miami Beach

In your excellent article relative to the Portland Public Service Building, we have noted the omission of credits. Both the design and construction of this building has been a joint venture in the best sense of the word. The team members are:

Edward C. Wundram, AIA, associate architects; Emery Roth & Sons, P.C., production architects; DeSimone & Chaplin & Associates, structural engineers; Thomas A. Polise, Jr., Consulting Engineers, and Cosentini Associates, mechanical/electrical engineers; Cerami & Associates, acoustical consultants; Calvin L. Kort, Inc., and Lerch-Bates & Associates, elevator consultants; and Cini-Grissom Associates, food services consultants.

Within our office, special credit goes to Lisa F. Lee, job captain, and to Peter Arnell, Ted Bickford, Ted Brown, Dennis Cormier, Nick Gonser, Joe Mancuso, Ron McCoy, Deborah Matsios, Sharon Pachter, Stephen Perkins, Juliet Richardson, Terry Smith, Suzanne Strum, Karen Wheeler, Brian Vishne and David Zung.

Michael Graves, Architect
Princeton, New Jersey

The case for Michael Graves's design for Portland is not a case but a crock. I am incredibly disappointed in your lack of editorial conscience.

John A. Toline, AIA
Lundeen & Toline
Architects
Moline, Illinois

case for Michael Graves's design for Portland." This building, like most of his work, is grotesque, overscaled and uncomfortable. Considering that it's a government building, I think he has excelled in creating a design that conveys the building's meaning.

The explanation of Mr. Graves's design approach was also interesting. A copy should be prepared for everyone who sees the building so he can begin to try to understand why it looks the way it does.

Finally, I believe that our society truly needs humor during this difficult decade of inflation and energy shortages. I can't wait until Mr. Graves's next project is published.

Robert J. Gross
Philadelphia

In reference to your August 1980 issue and its cover and article on Michael Graves's "triumph" in the Northwest: has ARCHITECTURAL RECORD acquired the entire staff of *Progressive Architecture*?

Nick L. Warren
Peck Associates, Inc.
Architects/Engineers
Paducah, Kentucky

Gosh! This is really carrying a practical joke beyond the limit of human endurance. When is Mr. Graves going to come clean with this whole humorous affair?

Gilbert Sawtelle
Garland & Hilles, AIA, Architects
El Paso, Texas

As a sociologist with a professional interest in architecture and architectural design making, I read the August 1980 issue of ARCHITECTURAL RECORD with utmost interest and pleasure.

Of semiotics and semi-idiotics, this: Mildred Schmetz's synopsis of the Fez conference, "A search for meanings in the architecture of Islam," was brilliant at once in its succinctness, clarity and depth. The stature of RECORD and of journalism are enlarged, and we all benefit from it. *Per contra*, surely the stated rationales for the facade of Michael Graves's design for Portland are amusing—as mockery and bufoonery, even as the potpourri of WPA Modern and my building blocks when I was seven is entertaining.

Whitney H. Gordon
Professor of Sociology
Ball State University, Muncie, Indiana

The cover of your August 1980 issue—Michael Graves's Public Service Building for Portland—is reminiscent of the hideous Federal architecture Washington, D.C., was famous for. Fortunately, most of it has been eliminated, after years of protest by the architectural profession.

Featuring this building on the cover of your magazine degrades the quality of your publication and, unfortunately, may have the spin-off effect of promoting further poor

(continued on page 49)

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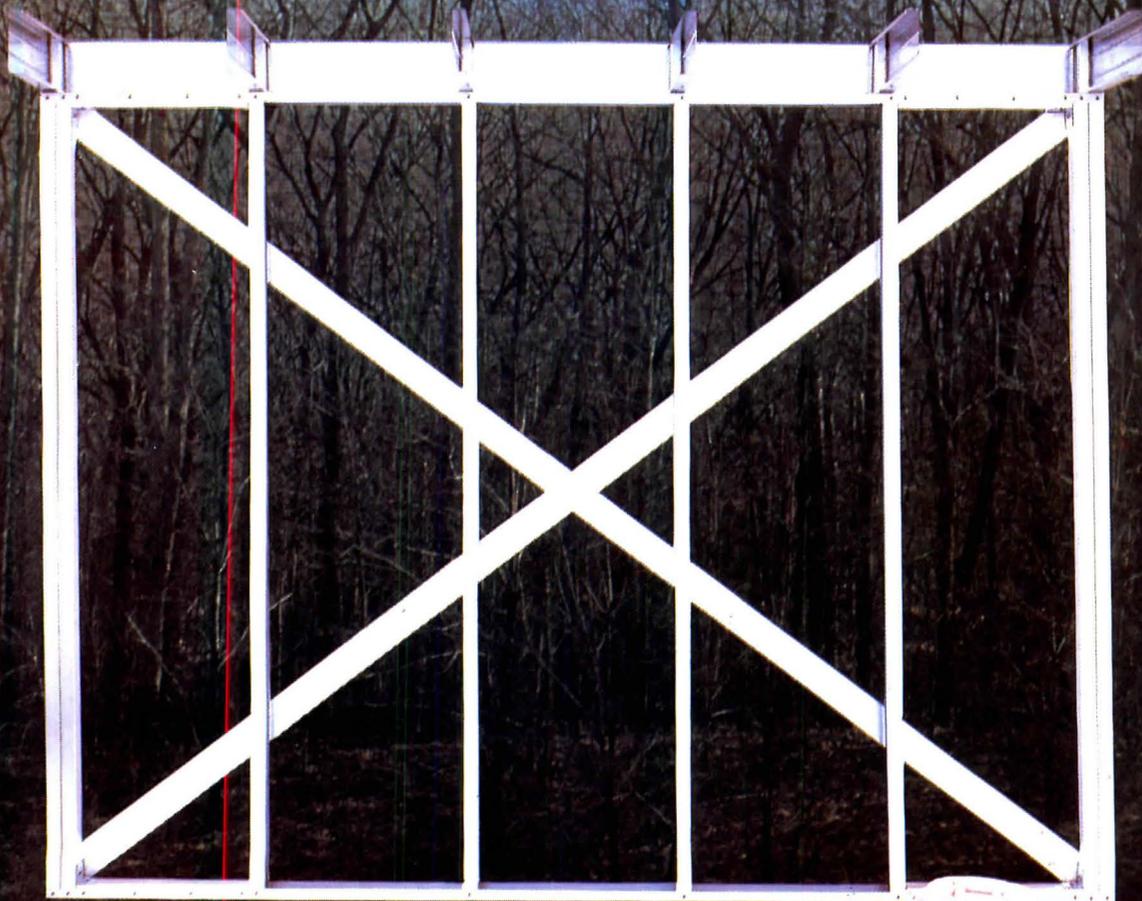
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*J. J. Peterson, Jr., AIA
Peterson Associates
Charlotte, North Carolina*

Having just finished reading your article about Michael Graves's winning solution for the Public Service Building in Portland, Oregon, I felt compelled to respond.

First, I salute you for supporting the work as you did. Second, I applaud you for the eloquent manner in which you tied your concepts and rationalizations together. Thirdly, I found the philosophic writing style entertaining. Yes, entertaining. As entertaining as a comic performance by contemporary comedian George Carlin, with or without his raincoat.

If I remember correctly, democracy is a government of the people, by the people, for the people, not of the gods, by the gods, for the gods. I am not opposed to Mr. Graves's philosophy or esthetic, but I am intensely opposed to this particular building design, and to your glorifying and rationalizing it by relating it to other buildings that were perhaps esthetic breakthroughs in their times. A building designed to represent the people, it seems to me, needs to be more in line with the thinking of the people, not an esthetic that is general hype and that is forced upon them, especially when they are paying for it with their tax dollars.

*Robert Alan Black, AIA, CSI
Creative Consultant
Athens, Georgia*

One hates to sound pedantic, of course, but the article "The case for Michael Graves's design for Portland" in your August issue contains an error that should not go unnoticed.

The caption on page 97 that reports that the city was laid out "between the Rocky Mountains and the Willamette River" conforms more closely to the geographic sense of a now famous *New Yorker* cover than to reality. The mountains, which, happily, separate Portland from the Eastern Establishment, are the Cascades, and they lie some distance west of the Rockies. The city was actually established on the west bank of the Willamette, stretching toward what are generally known as the West Hills (not mountains by accepted Northwest standards).

The error is not significant, perhaps, except for the doubts it raises about the validity of the contextual analysis on which the article relies. To those of us whose lives were shaped in the light and shadows of the mountains in question, your mistake is tantamount to locating the Empire State Building in Bayonne.

*Eleanor F. Weinl
Robert S. Taylor, Architect
Pittsburgh*

Happy to read an article by C.M. Correa, "Form follows climate," the July 1980 issue of ARCHITECTURAL RECORD [pages 88-99]. Very impressive and informative.

Though your coverage for "A report from India" was very limited, it is a good beginning. I would like to see more works of Indian architects on the pages of RECORD in future.

*Yashpal G. Tuli
Architect/Planner
Sverdrup & Parcel
Silver Springs, Maryland*



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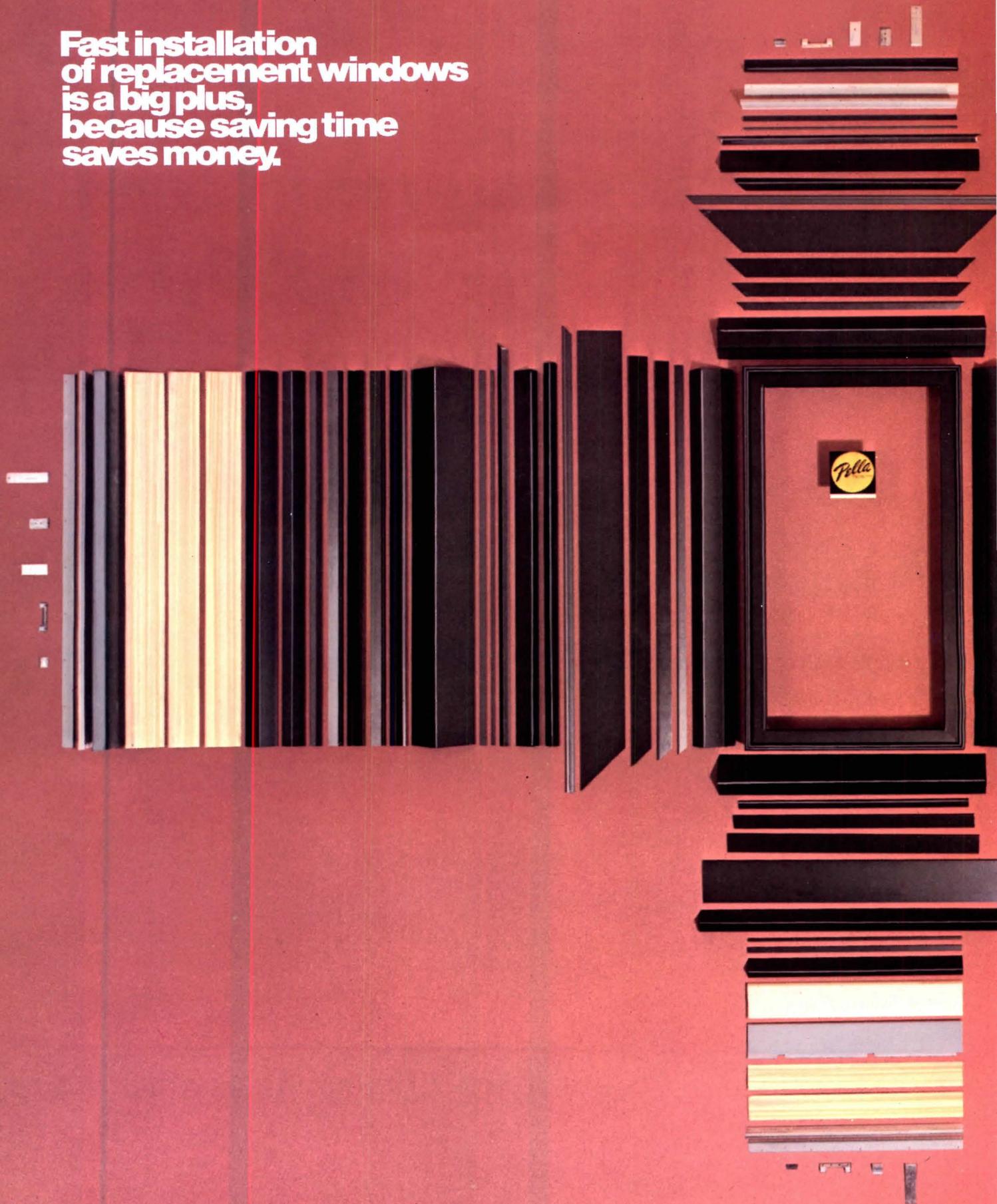
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Liability for cost estimates

Cost estimating, due to its inherent uncertainties, is a professional service that can lead to problems for architects and their clients. Many clients do not understand the difference between an architect's estimate (which is basically only a judgment being made about contractors' bid prices at some point in the future) and an "estimate" received when one inquires about the price of goods or services to be provided by the "estimator." If contractors' bids come in higher than anticipated, the client may attempt to hold the architect responsible. Some recent cases illustrate the importance of contract language and the recognition by many courts that architects are not guarantors of contractors' bid prices.

By Arthur T. Kornblut, Esq.

If an architect guarantees a client that a project can be built for a stated price, the architect can be held liable for the additional cost beyond the guaranteed amount. Thus, architects rarely, if ever, commit themselves to guaranteeing their "estimates."

The standard AIA owner-architect form (Document B141) contains important provisions in this regard to clearly state that the architect is not guaranteeing any estimates. Subparagraph 3.2.1 stipulates that evaluations of the owner's budget, statements of probable construction cost, and detailed cost estimates are based on the architect's judgment as a design professional familiar with the construction industry, but the architect does not warrant or represent that bids will not vary from the amounts given in these evaluations. The reasons for the guarantee disclaimer are also given: the architect has no control over the cost of labor, materials or equipment or over the contractors' methods of determining bid prices and competitive bidding, market or other conditions.

If an owner wishes to impose budget limitations for the project, the AIA contract requires that fact to be disclosed and the parties to agree in writing to a "fixed limit of construction cost" (Subp. 3.3.3). With a cost limitation, the architect is given latitude to adjust the scope and/or quality of the project in an attempt to keep anticipated construction costs within the fixed limit. If bids still come in too high, Subp. 3.2.4 establishes four options for the owner: (1) increase the fixed limit, if additional funds can be arranged; (2) rebid or renegotiate with the contractor within a reasonable time; (3) abandon the project and terminate the contract with the

architect; or (4) authorize the architect to revise the project scope and quality to reduce the construction cost. If the fourth option is selected by the owner when there is a fixed limit of construction cost, the architect's services are to be performed at no additional cost to the owner. In any event, the architect is to be paid for all other services rendered, whether or not the owner proceeds with construction.

In a 1978 Texas case (*Cobb v. Thomas*) an owner sued an architect and a contractor because construction costs for a house exceeded an alleged limit of \$500,000. Nothing was contained in the owner-architect agreement (which was based on an AIA form) about a maximum cost limitation. Because the contractor's price was too high, the owner instructed the architect to revise the design to meet a total budget of \$500,000. Subsequently, the owner and contractor signed a cost plus construction contract that did not contain a maximum cost for construction.

When the house was not ready for occupancy by the expected due date with costs then exceeding \$400,000, the owner stopped construction. The work recommenced eight months later. The owner moved in seven months after that, having expended approximately \$660,000.

The owner unsuccessfully attempted to recover the architect's fees in the amount of \$81,803.57, alleging among other things that he underestimated the cost and failed to design the house within a \$500,000 cost limit. Noting that the parties' contract made no mention of any specific cost, the court said: "A party who proposes to build may, in his contract of employment with an architect, state an amount as to the limit of cost of the building and provide that reasonable conformity to such cost shall be a condition for payment for services rendered by the architect . . . Where such a positive cost limitation is stipulated in an architect's contract, a substantial violation thereof will preclude a

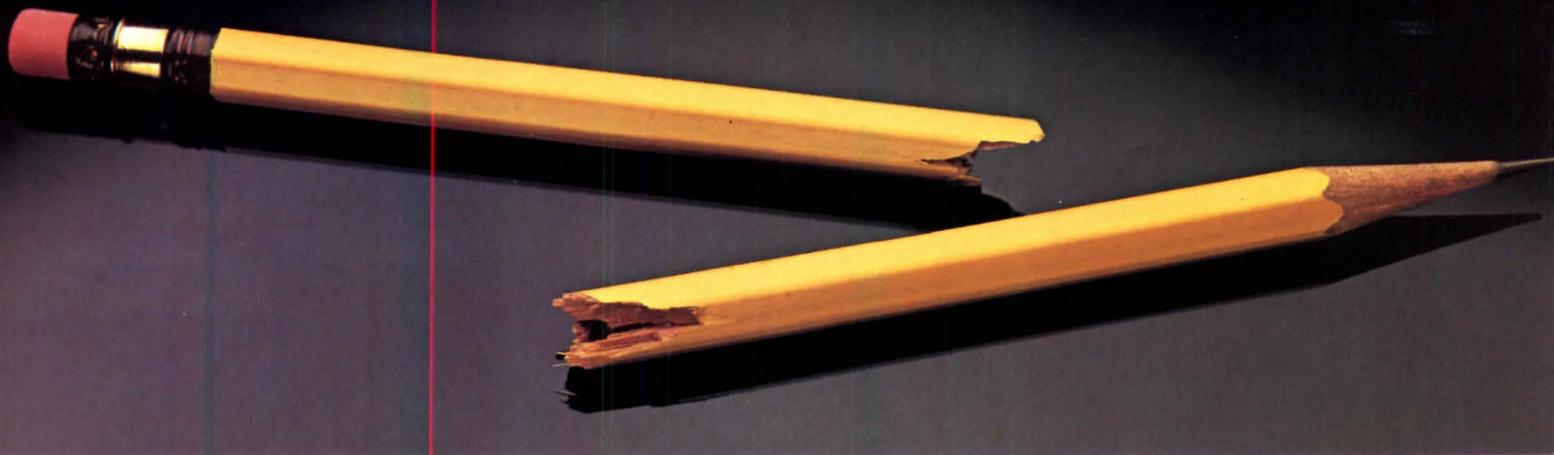
recovery of the architect's fees . . . Such rule is not applicable to the situation here because, in the present case, there is no expressed cost limitation in the parties' agreement or contract . . . Where the contract, as here, requires the preparation of plans and specifications for the construction of a building according to the express wishes of the owner as to the details of construction without mentioning a cost limitation, the mere nonconformity in the actual cost of construction with the amount so estimated does not amount to a breach of duty on the part of the architect and therefore forms no basis for a suit to recover the fees paid him . . . Under such circumstances the architect is entitled to compensation even though the cost exceeds the hopes and expectations of the owner. It follows that the [owner's] claim for recovery of the architect's fees is without foundation." In an even more recent (1980) case from Texas (*Jetty, Inc. v. Hall-McGuff Architects*), an architect was permitted to recover fees which the owner refused to pay when construction costs were higher than expected. Here, too, the parties had utilized an AIA form, and it contained no fixed limit of construction cost. The court ruled for the architect, stating: "The fact that the building may have cost more than the owner wanted is not material when there has been no fixed cost in the contract."

Recent cases in Louisiana have ruled likewise: if there are no cost limitations, an architect can recover fees irrespective of the cost of construction, and the architect has no obligation to inquire into or keep himself informed of the client's financial status.

One final note. Many architects' professional liability insurance policies exclude claims arising out of cost estimates being exceeded. One reason for this may be a concern that the insurance companies would become a convenient source for supplemental funds when the architect underestimated construction costs. Presumably, if the owner decides against proceeding with construction, actual monetary damages will be mitigated. If the owner proceeds with construction, the estimate becomes irrelevant—the owner is getting what he is paying for and is not damaged because of a variation between the estimate and actual costs. In addition to these realities, the absence of professional liability coverage for claims arising out of cost estimates may explain why there are relatively few cases on this subject.

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

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End of an era in client billing.

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The construction recovery will survive mortgage rate gyrations

The availability and cost of mortgage credit is a major determinant of the speed and vigor of a construction recovery. The late spring/early summer dive in mortgage rates boded well for future construction activity. The late summer/early fall run up in rates has tempered the earlier optimism. In a slumping economy, how can the abrupt rise in rates be explained?

One way is to look at the "crowding out" theory. Usually this theory is trotted out when the business cycle is approaching its peak, inflation is headed higher, monetary authorities are slowing credit growth, and the demand for credit is expanding faster than the supply. In the scramble for money, businesses, consumers, and state/local governments drive interest rates upward. The Federal government, which is always bidding for funds, charges into the melee, propelled by yet another surge of deficit spending. As it satisfies its needs, interest rates move still higher. Other combatants, unable to pay market rates, are compelled to give up their financing plans (they're crowded out by Federal borrowing). Business and consumer spending weakens and the economy slides from the peak into recession.

Obviously, the economy is nowhere near a peak in economic activity. Still, some aspects of the "crowding out" theory are useful in explaining the recent jump in interest rates.

Throughout the spring and early summer, as long-term rates plunged, corporations, and state/local governments roared into the financial markets to replace extremely expensive short-term funds with lower-cost intermediate and long-term monies. The corporate bond calendar set record after record and the municipal bond market perked up too. Starting in June, mortgage borrowing grew.

Meanwhile, the Federal government was revising upward the fiscal 1980 deficit from \$26 billion to \$60 billion. Initially, these revelations had little impact on interest rates because the April bulge in tax receipts limited the government's demand for credit. Once that passed, Federal borrowing increased.

Intermingled with these events were warnings from the Federal Reserve that monetary policy could remain more restrictive than in past recessionary periods because of unrelenting inflationary pressures. In August, the lusty corporate and municipal bond

demand and the expanding mortgage debt, along with market concerns about monetary policy, collided with the huge and growing credit needs of the Federal government. Interest rates rose across the board.

Immediately, fears mounted that rising rates would prolong the general economic slump, especially hindering the construction recovery. In assessing the reasonableness of those fears, the direction of monetary policy, Federal borrowing and business credit demands must be evaluated.

The Federal Reserve is likely to be restrained in supplying reserves to the banking system to avoid precipitating another burst of disruptive inflation. Federal borrowing will continue to grow, with the distinct possibility that a tax cut will swell the fiscal 1981 deficit well beyond its projected \$25 billion figure. In turn, these actions will keep pressure on the financial markets.

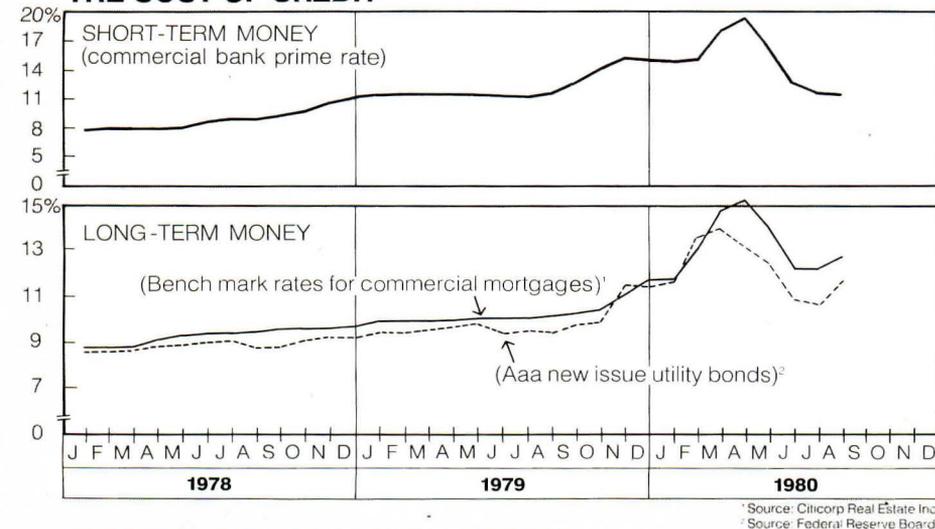
In contrast, there are already signs that businesses will be reducing credit demands. Their surge in borrowing was provoked by their needs to fund commitments for goods and services made at the peak of the cycle last winter, to lower their debt costs, and to lengthen maturities. Since the general economy is still four to six months from recovery, their demands for credit will moderate once these financing tasks are completed. This will permit an easing of rates, helping the flow of funds to the mortgage and construction markets.

Construction of several types of commercial building will benefit from any improvement in availability of funds. Demand for office space, which has remained strong because of the 1976-79 surge in white collar employments (see RECORD, June 1979), can use funds to maintain its high level of contracting. Early in 1981, the pickup in housing starts, to which credit is vital, will be reviving the demand for retail building near the new housing.

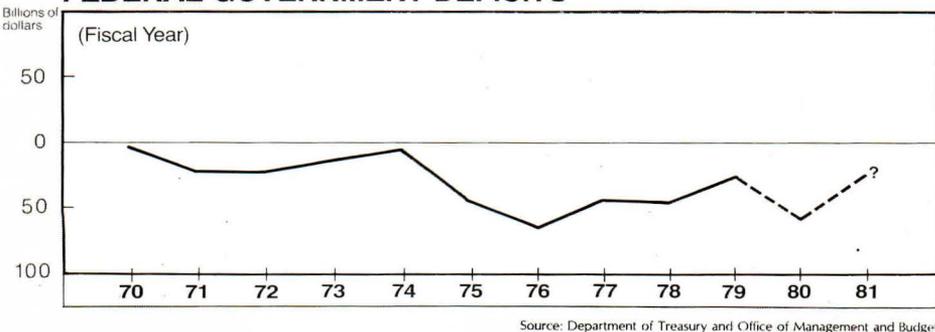
As these construction activities are translated into financial demands, they will join a firm monetary policy and growing Federal debt to increase pressure on the financial markets. In the next several quarters, mortgage rates will periodically bounce sharply upward, then sag downward as diverse credit demands collide and then subside. Despite these gyrations, construction activity—fortified by the huge demand from the post-war babies for homes, shopping facilities and office space—will maintain its place in the financial markets, extending and enlarging its recovery next year.

Philip E. Kidd
 Director of Economics Research
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THE COST OF CREDIT



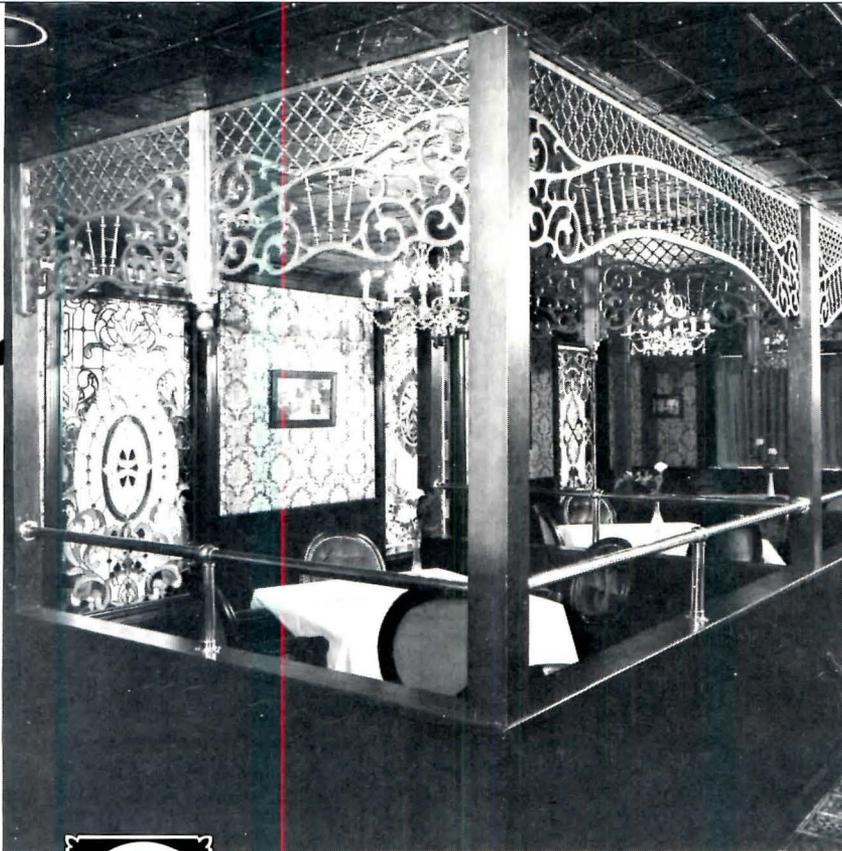
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The lively building detail above is the main entrance to the new addition to the Owen D. Young Library at St. Lawrence University in Canton, New York. Architect Don Hisaka and the University's Board of Trustees confronted a difficult site-planning problem. The solution not only defined the new building but redefined and enhanced an historic quadrangle, a quadrangle that had long been a center of campus life.



Gary Graham photo with permission of *St. Lawrence University Bulletin*

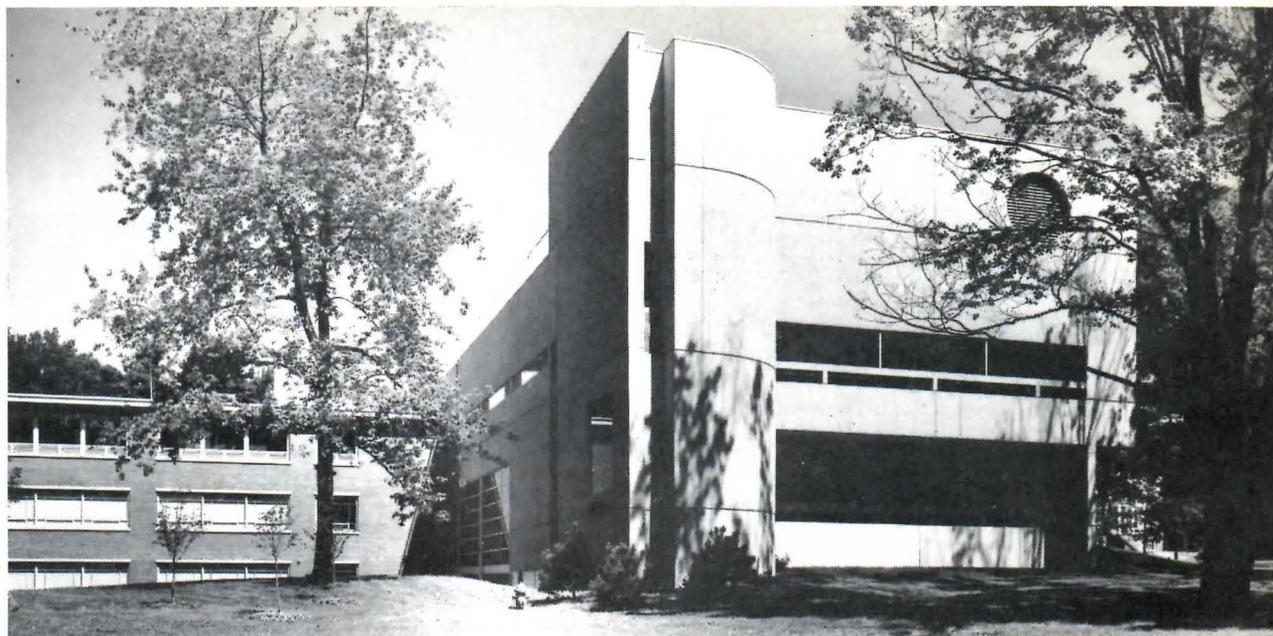
After examining several siting proposals—including one that would have sacrificed a grove of tall shade trees to the north—trustees determined that the much-needed new addition to the university library should be constructed on the eastern front of the existing library which was built in 1959.

It was a decision made with some reluctance for any new addition at this location meant taking a sizable bite out of the handsomest quadrangle on the campus, a quadrangle that was beautifully proportioned and loosely bounded on three sides by landmark buildings. The trustees' concern was not unwarranted, but events were to prove that through sensitive massing and careful manipulation of the facade elements that give the new addition its scale, architect

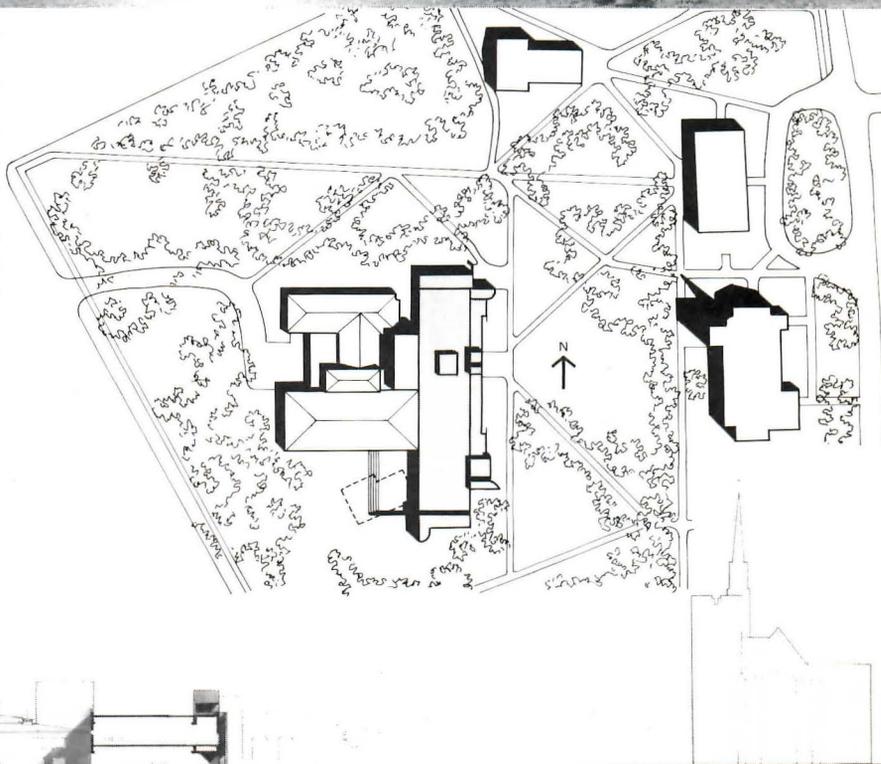
Don Hisaka was able to enrich the visual character of the whole quadrangle while providing a lively series of new spaces for both students and faculty.

In a determined and clearly successful effort to limit the extent of the encroachment into the quadrangle (see site plan), Hisaka designed the new addition as a linear, three-story mass more than 300 feet long but only 80 feet deep. It masks the old library structure from the quadrangle almost completely and, at the same time, gives the quadrangle's western edge a fuller and firmer definition.

The new wing's most assertive element is what architect and university officials smilingly call the "Torrey Gate," an allusion to the wooden gate structures that guard the entrances to Shinto temples



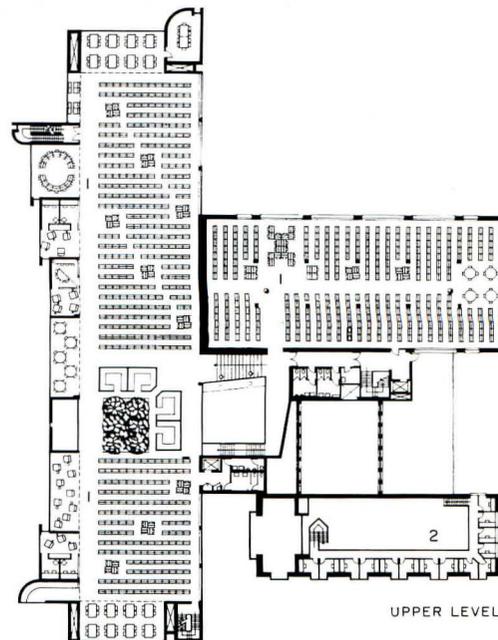
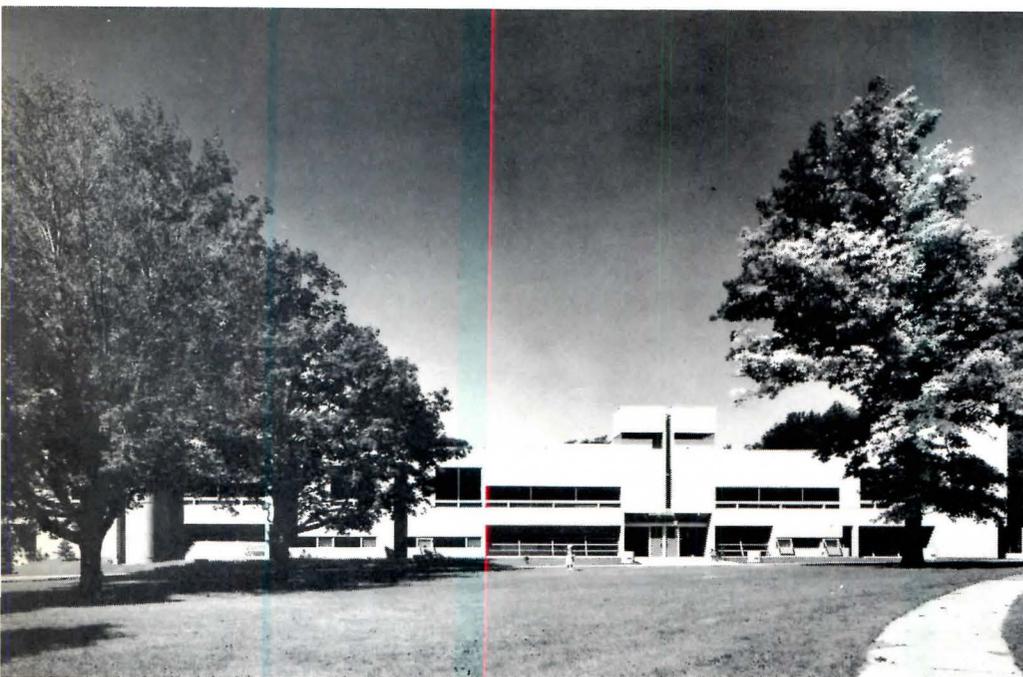
The joining of old to new (photo above) is direct and uncomplicated. The new addition (photo left) heightens the sense of activity on the quadrangle at the same time that it gives better definition to the quadrangle's western edge. Behind the addition's sculptured facade are some of the most inviting reading spaces to be found on any campus.



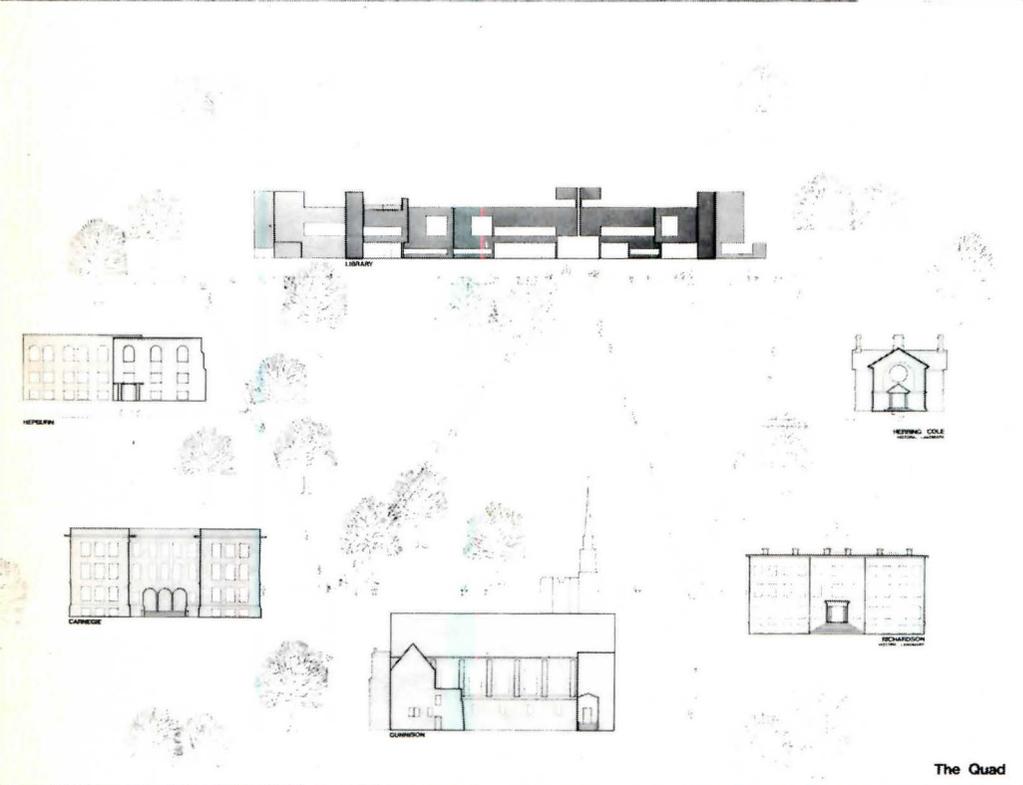
Torii gates), but here making fond reference to Arthur Starratt Torrey, former chairman of the University's Board of Trustees and the man to whom the new addition is dedicated. But whether Torii or Torrey, the sculptural superstructure clearly marks the library's main entrance on an elevation that is remarkably animated by projections, recesses, and openings of various sizes and shapes. The intense, almost relentless modeling of this elevation is Hisaka's device for breaking down the building's mass to ensure compatibility, at least in scale, with its setting and with surrounding structures. By lightly sandblasting the exterior surfaces and by selecting a fine aggregate with a dull reddish color, Hisaka further softened the visual impact of broad concrete planes. This, too, helped to achieve an integration.

That these techniques were successful is apparent from the fact that the new library, though it introduces both new materials and a new vocabulary of forms, seems in no way intrusive. It is a surprisingly calm and ingratiating presence.

In joining the old to the new, Hisaka sensibly resisted the temptation to provide an external flourish. The two buildings—the old clad in red brick, the new in the reddish cast-in-place concrete—remain distinct structures that have simply been butted together. Inside, however, it is a very different story. The juncture is celebrated with a full-height atrium, daylighted by clerestories, and given very considerable dynamism by a sequence of ramps and stairs that provide access to practically every part of the compound structure.



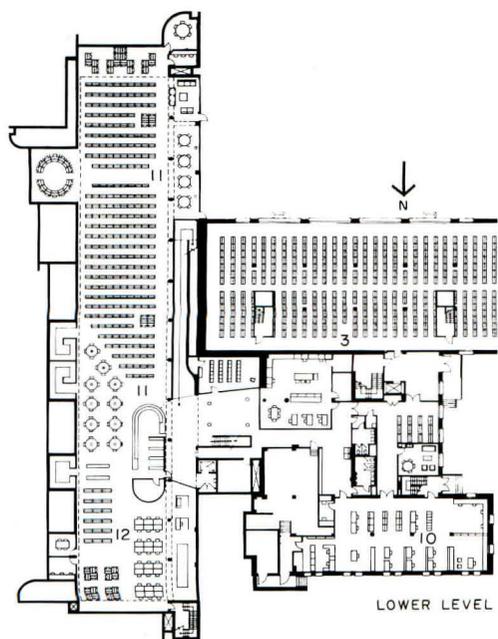
UPPER LEVEL



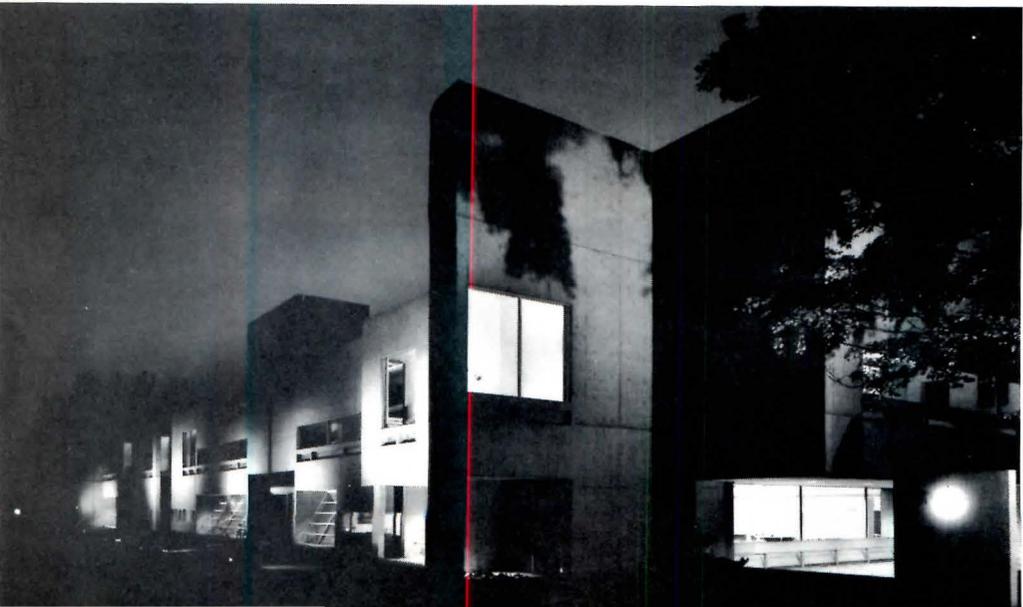
The Quad

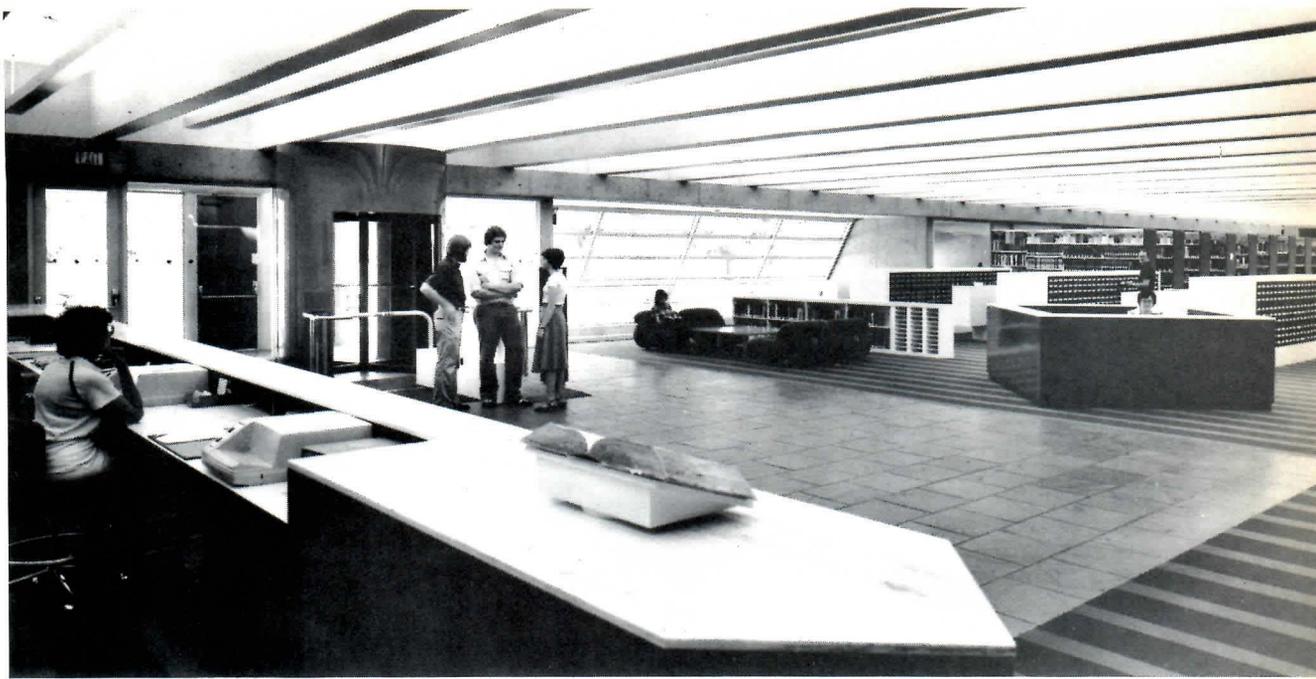


MAIN LEVEL

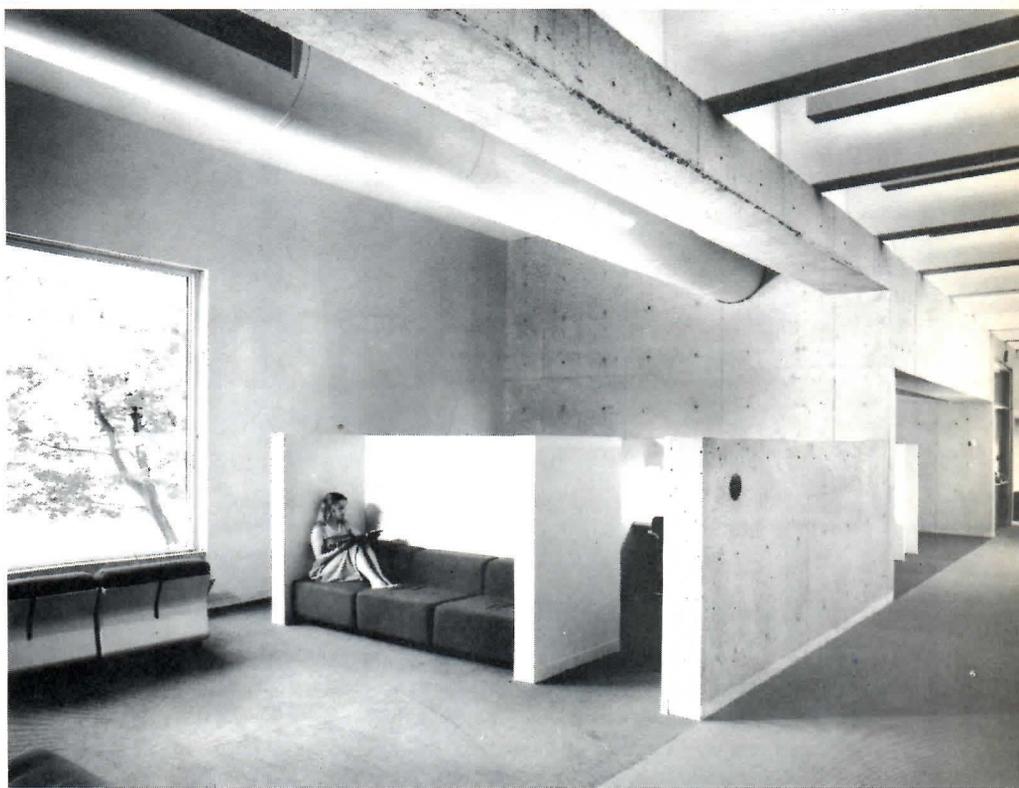


LOWER LEVEL





- 1 Open stacks
- 2 Faculty studies
- 3 Closed stacks
- 4 Indexes
- 5 Rare books
- 6 Reference and card catalogs
- 7 Main circulation
- 8 After hours study
- 9 Entry and lobby
- 10 Technical services
- 11 Periodicals
- 12 A-V and microtexts

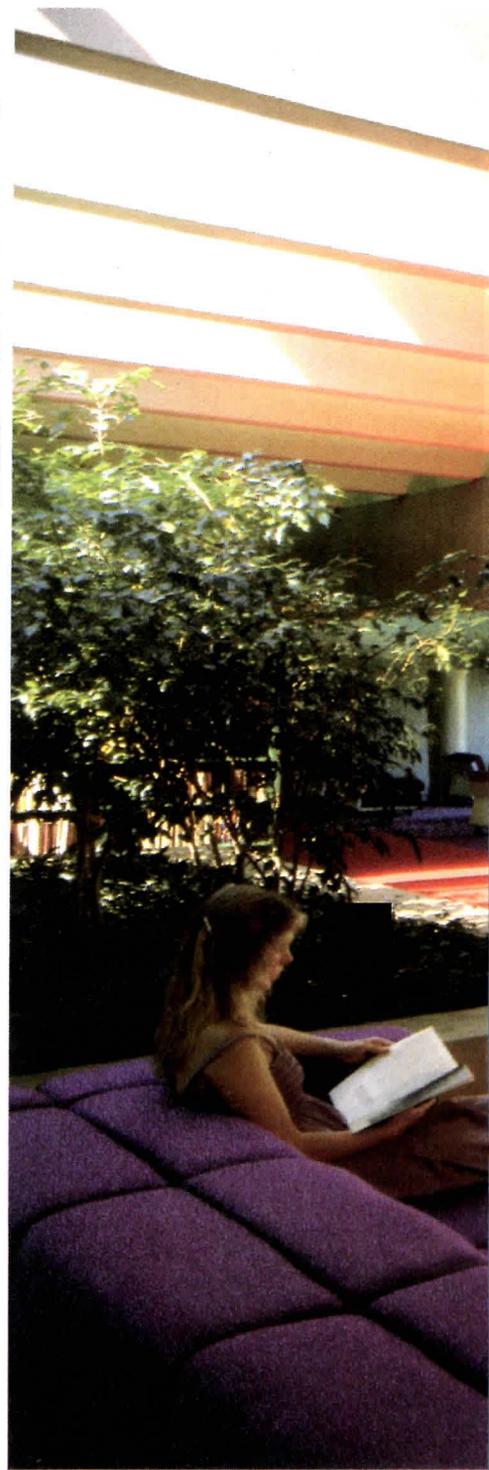


Here indeed, at least in a spatial sense, is the building's unifying volume. Surrounding spaces are keyed to it and the relationships they establish with the atrium are all important clues to the building's spatial hierarchy. These spaces range from vast reference and work spaces to intimate and luxuriously furnished nooks that open out through large glazed openings to beautifully framed views of the quadrangle. Each of these subspaces has its own character and identity but all are irresistibly inviting.

Although the vertical structure is cast-in-place, the floors are formed of precast tees selected for their long span capability and because construction continued through the long and bitter winter when pouring and curing operations would have been severely

hampered by months of sub-zero temperatures.

The library's functional organization is, of course, reflected in the disposition of its spaces. The lower two levels of the old structure, where ceiling heights are just over seven feet, are largely given over to closed stacks. Windows in these spaces have been blinded with insulating panels which gives them a baleful aspect, particularly from outside. But inside they are hardworking spaces of a kind that any library like St. Lawrence's—with its capacity of 600,000 volumes—needs in abundance. The old structure's uppermost level, where the ceiling height is raised by a gently-pitched roof, has been turned into an open stack area by the introduction of work spaces of various sorts. Side by side with the stacks is a double-tiered volume with a



separate entrance assigned to faculty members engaged in a variety of long-term research projects.

The spaces most heavily used by students, therefore, are nearly all located in the new addition. On the lower floor these include spaces for periodicals, audio-visuals, microfilms, and computer terminals. The intermediate level houses main circulation, card catalogs, reference and rare book areas, reading alcoves, and administrative offices. The upper floor is given over to open stacks. All these spaces are laid out, as librarian Mahlon Peterson observes, "so that users go from the tools of access to the materials to the work areas in an orderly flow."

The spaces flow into each other with much the same feeling of

inevitability. To walk through the library is to feel moments of spatial compression and release, confluence and estrangement. The quality of light throughout is warm and appealing. Hisaka has made abundant use of daylight which streams in from a variety of openings, and he has augmented it with reflected light from inverted troughs suspended between the tees overhead.

Against the light buff of the concrete, the architect has projected a rainbow of interior colors: red and blue stripes, vibrant red or rich green for carpets, purple for certain casework, royal blue for some desks and wall areas, bright red for many seating units, and combinations of these for everything else. And yet even with such a broad, bright palette, there is no sense of color run riot. What lingers, or

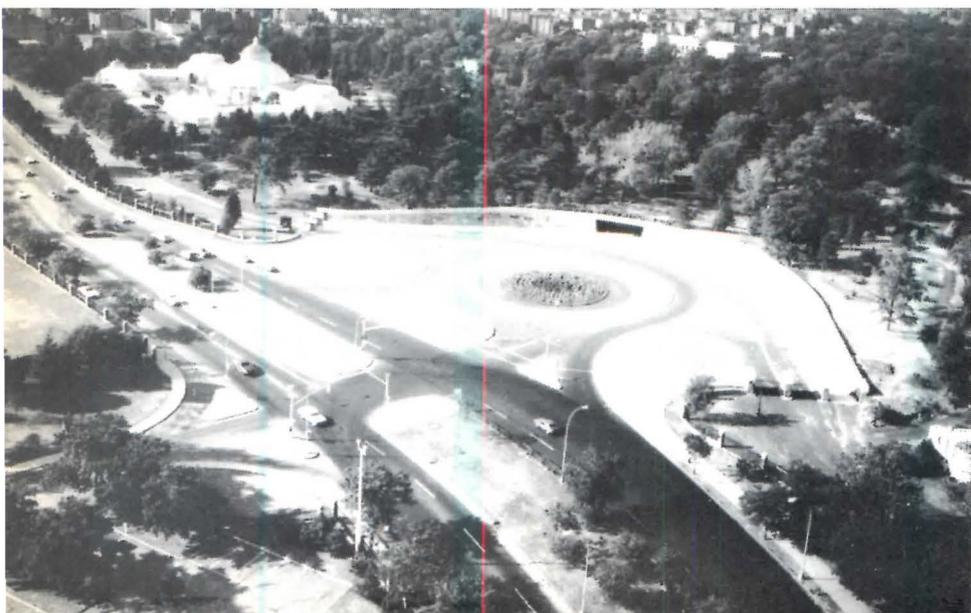


carries over from space to space, are feelings of gaiety, of celebration, of youth.

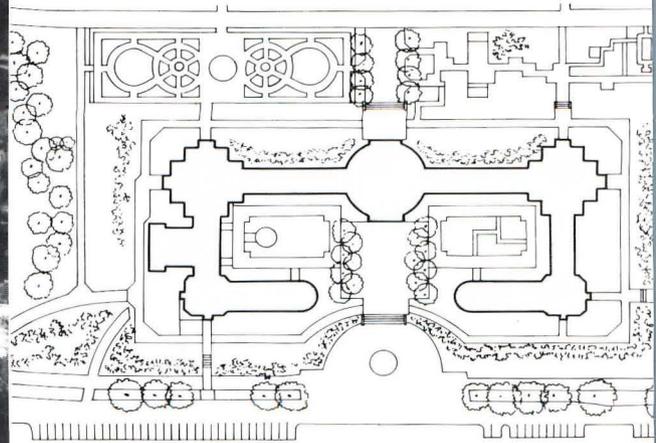
What better feelings for a library on a small campus in a pastoral setting of tumbled barns thrust deep into snow country? What better feelings for a building that by its function is both a primary symbol and a seat of learning? —*Barclay Gordon*

ADDITION TO THE OWEN D. YOUNG LIBRARY IN HONOR OF ARTHUR STARRATT TORREY, St. Lawrence University, Canton, New York. Architects: *Don Hisaka & Associates*. Engineers: *Gensert-Bretnall-Bobel* (structural); *Pasidis-Kuentz & Associates* (mechanical); *Lombardi Associates* (electrical); *David Lewin Corporation* (soils). Contractor: *Daniel O'Connell*.





Top, the restored conservatory; left, the new bus drop off; right north entrance; below, site plan. Overleaf, formal display house.





Restoring a Victorian botanical conservatory

The Conservatory of the New York Botanical Garden must be the most otherworldly place in the Bronx—or anywhere else, for that matter. Set on a formal grassed podium, the turn of the century steel-and-glass structure rises off the lawn in white-boned translucent Beaux-Arts bubbles. At once tropical and Victorian, the low, arched, domed building, full of exotic flora, seems to belong in some Jamesian era of crinolines and bizarre feathered hats. Begun in 1899 and attributed to William R. Cobb, architect for the still-extant greenhouse manufacturers Lord and Burnham, the recently-landmarked Conservatory is a rare and lovely example of a period greenhouse C-shaped in plan. The atmospheric beauty of this cathedral built to nature inspires not only fantasy but awe; the building commands respectful attention, both for itself and for the man-made Eden it shelters from the real Bronx outside.

It's hard to believe, but true, that a little over five years ago the structure was considered a white elephant by the Garden, and was threatened with demolition. After all, administrators argued, the building had been remodeled twice in 1938 and 1953, with results judged disastrous with accelerating rapidity. The '30s restoration, reflecting the drastic change in taste since the beginning of the century, stripped the building of its ornate cresting and simplified its Victorian detail; fifteen years later, the Park Service severely mutilated the building, hacking off two Italian Renaissance vestibules to replace them with a brick wall and WPA-style entry.

So, in the heyday of what New York cultural institutions remember as the Hoving era, and City Hall recalls as the Lindsay epoch—a time of grand plans for cultural facilities—the Garden called in the architectural firm of Edward Larrabee Barnes to do a new master plan with a view to eliminating the Conservatory and constructing a new building on the site. To Barnes's credit, he supported the minority preservationist call to save and renovate the Conservatory. But subsequent changes in policy and funding have meant that while the Conservatory has been restored, the rest of Barnes's plan, including his project for the new Plants and Man building, is on indefinite hold. (Barnes's original scheme is described in *RECORD*, August 1975, pages 76-82).

Begun in piecemeal fashion on a shoestring city budget, the Conservatory's restoration was completed thanks to a gift from Enid Annenberg Haupt. This funding supported a thorough structural and mechanical rehauling, but did not allow for any "luxuries," esthetic or technical.

The most devastating consequence of the cutback in the master plan was that the restored Conservatory would have to house the educational exhibits originally intended for the Plants and Man building and handle the traffic that these entail. Barnes, who looked forward to restoring the Conservatory to its former leisurely elegance, complete with decorative gar-







dens, is undisguisedly "regretful that this building had to become a large-scale teaching facility."

One particularly disturbing result of the expanded function of the Conservatory is a radical alteration of the circulation scheme. Originally, one approached the conservatory in processional Beaux-Arts style, passing between the enclosing wings, through the courtyard and into the domed central pavilion. From here one strolled through either ell, reversed direction and returned to repeat the promenade on the other side. This radial circulation pattern, however conducive to contemplation of the flora, simply won't work, the Garden realized at the last minute, for large groups. Accordingly, the Garden requested the architects to link the two end greenhouses by a tunnel, creating an efficient circulation loop (see plan page 76) but "severely damaging the architectural experience of the building"—as Barnes has pointed out.

This tunnel, done at rock-bottom cost, is a galvanized steel culvert-type connection curved in an onion shape. Necessary as it is, this crude element forms a jarring contrast with the elegant domes of steel tracery above. So, unfortunately, does a second structural intervention necessitated by the educational program: a large cement stair leading to a basement teaching area below house 1 (plan, page 76).

The damage to the Beaux-Arts axially and the sequential ordering of the spaces is compounded by the present entrance, into a corner pavilion. Barnes has, however, done a good deal to correct this problem, and to recapture the axes, in reorienting the approaches to the building. One now enters the Garden and approaches the conservatory via a new main entrance (photo, bottom left, page 72). Designed as a bus and auto drop off, the eye-shaped entrance is outlined by a curved wall, an eyebrow of Cyclopean masonry that seems to rise out of the natural rock outcroppings at the right, becoming progressively manmade in appearance. The wall, and the planted berm behind it, are pierced by a pedestrian tunnel; moving through this passage, those approaching on foot lose the roar of the street and emerge in the green garden.

Barnes has also endeavored to re-establish an axial entrance to the Conservatory itself (plan, page 76). When ongoing road work is completed, visitors will approach the building from what was originally the rear, entering on axis on the north side of the central pavilion.

The north side, however, is quite worthy to welcome visitors, being one of the highlights of the exterior renovation (photo, bottom right page 73). Both the original entrance vestibules to the central greenhouse were essentially demolished in the brutal '58 remodeling; and the original working drawings had been lost. From old photographs and a few original, not very detailed drawings, project architect Siglinde Stern reconstructed the vestibules inside and out. Because of budgetary constraints, the original cast-iron facades of the vestibules had to be rebuilt in cast aluminum, and the decorative paning, both here and in the fan windows, was replaced by sheet glass with metal filigree work superimposed. Although some corners were cut in the final realization (some of the planned filigree was omitted, leaving the larger panes a bit bleak) the effect is nonetheless one of magnificence.

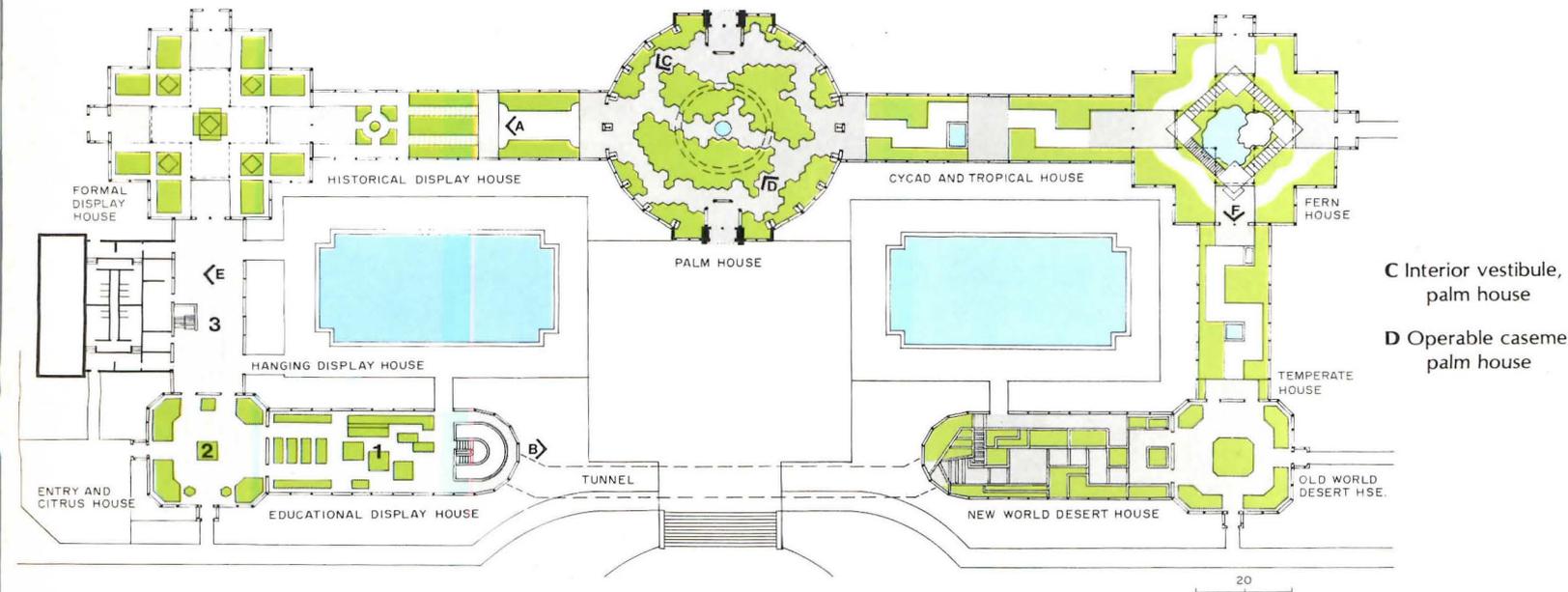
Though the restoration of the vestibules may be the most visible and, from a historical point of view, the most impressive part of the project, the fundamental, meat-and-potatoes work was concerned with the structural and mechanical systems. In a slowly-moving sequential renovation, each piece of the steel was stripped, tested, and, if necessary, replaced. The glass skin underwent a similar process. The existing mullions had replaced the original Victorian mullions in 1938, when the elaborate six-mullioned bays were altered to a simpler module of four mullions. The extant mullions, however, constituted a sophisticated response to the problems posed by the humid interior. Each of the galvanized metal U-sections had cypress inserts, into which the glass was set with putty. (Cypress is one of two woods naturally resistant to damp—the other being the much softer redwood.) Each



A Partition, historical display house



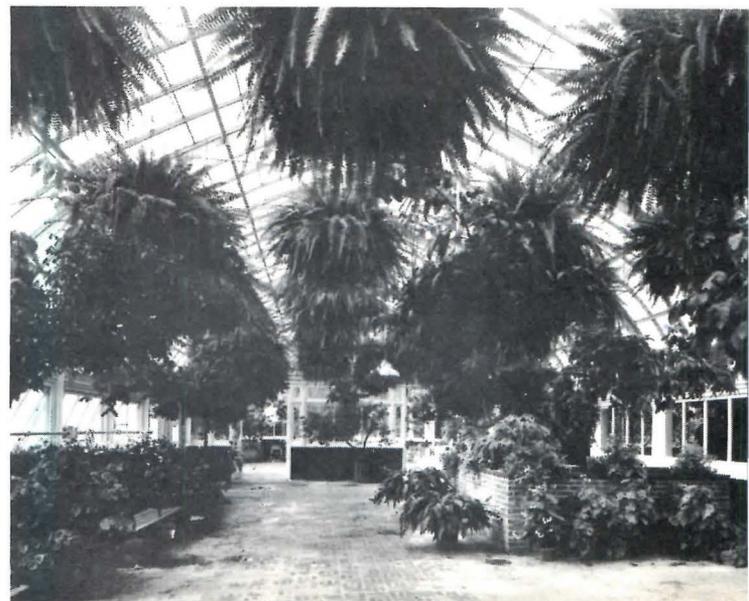
B New stairs to lower level



C Interior vestibule, palm house
D Operable caseme palm house

F Catwalk, fern house

E Mirror wall, hanging display house





cypress-lined mullion was carefully repaired and re-used: where this was not possible, redwood was substituted. The alternative—to replace the steel-and-wood mullions with modern aluminum ones—“would have made the whole building fat,” as Barnes puts it; the thicker bands of soft metal would have destroyed the fine strong lines of the steel frame.

Concentrating on essentials, the architects also modernized heating, wiring, and piping systems. In addition to replacing and repairing roof and side wall ventilators, the architects made several of the large vertical windows operable, creating badly-needed ventilation. In an intervention as simply beautiful as it is ingenious, the architects devised a manually operable wheel- and-gear system to open the huge casements. Reminiscent of early industrial window opening systems and of such famous early modern offspring of these as Le Corbusier's window systems in the *Maison de Verre*, the hand-operable, visible mechanism is a sophisticated recapturing, on a small scale, of the somewhat naive delight in the machine, and in man's ability to tune the built environment, which the Conservatory itself embodies.

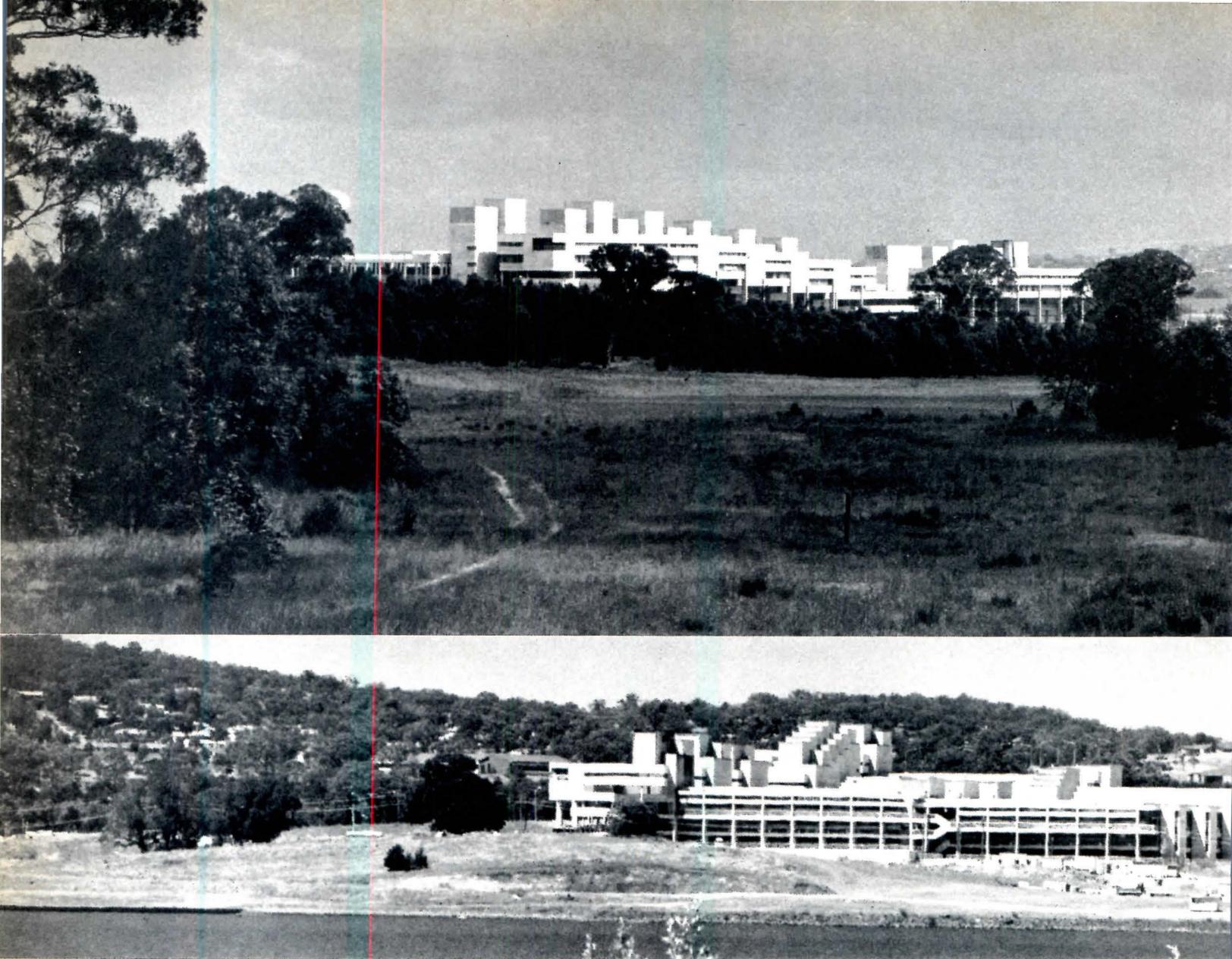
Lastly, a small and relatively spontaneous structural alteration combines efficiency with esthetics. A new boiler house, done just before Barnes came to the job, met the Conservatory with a brick-walled intrusion, enclosing a stair, and sealed off that side of greenhouse 3 (see plan) with a blank wall. Cutting down the stairwell so that its brick edge appears to be another planter, project architect Alistair Bevington also conceived of duplicating, on the partition separating the greenhouse from the offices (also housed within the walls of the boiler structure) the elevation of the glass wall opposite, which gives on to the court. The “fake,” realized in mirrored one-way glass, so that those in the offices can see without being seen, visually opens up that side of the greenhouse (photo, bottom center page 76).

Moreover, constructing an “outside” wall on an interior partition is perfectly in the spirit of the original architecture. The varied prisms of the eleven greenhouses that compose the conservatory meet each other with no intermediary concessions; the skin of the domed polygonal volumes continues uninterrupted across the space enclosed by the long vaulted elements. The outside wall, unchanged, becomes interior divider in the middle of a fan window (photo, top left, page 76). This simple additive method of construction, in which one greenhouse is just stuck on to the next, creates serendipitously sophisticated architecture by throwing into high relief the ambiguities of this glass house, inside which man makes the outside of his dreams, a nature tamed, ordered, and made to do tricks. In a greenhouse, inside *is* outside.

Details like the reconstruction of the vestibules, the window systems and the mirror wall exemplify the sensitive spirit of this restoration. The renovation of this spectacular yet terribly delicate landmark called for no grand costly gestures, no daring juxtapositions of new and old, no flamboyant innovation, but rather for a quiet, direct rebuilding of the original. Barnes's office has carried out repairs and renovations with a necessary economy of means which seems to have sparked a small wealth of invention. The restoration preserves the elusive, unquantifiable exhilaration of the architecture, and the shimmering domes retain a younger century's poignant marveling at man's capacity to fashion a machine-house for making a garden in. —*Eleni M. Constantine*



ENID A. HAUPT CONSERVATORY, New York Botanical Garden, Bronx, New York. Architects: *Edward Larrabee Barnes—associates-in-charge: Percy Keck, Alistair Bevington; project architects: Siglinde Stern, Michael Timchula, Hillary Brown.* Consultants: *Weidlinger Associates* (structural soils); *Arthur Edwards* (mechanical electrical); *David Klepper* (acoustical); *Donald Bliss* (lighting); *Vignelli Associates* (graphics). Landscape architects: *Kiley, Tindall, Walker—partner in-charge: Peter Walker.* General contractor: *Louisa Construction Co., Inc.—superintendent: Angelo Sisca.*



Architecture as urban precinct: an office block by John Andrews which eloquently reaches the high planning standards of Walter Burley Griffin's Canberra

by Jaquelin T. Robertson

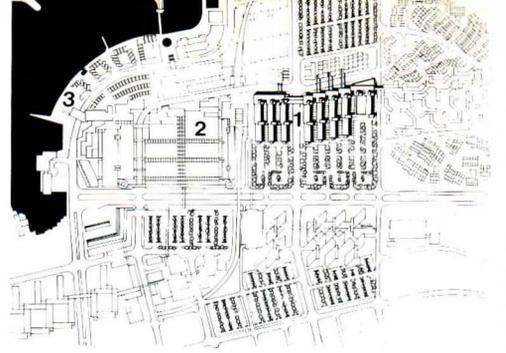
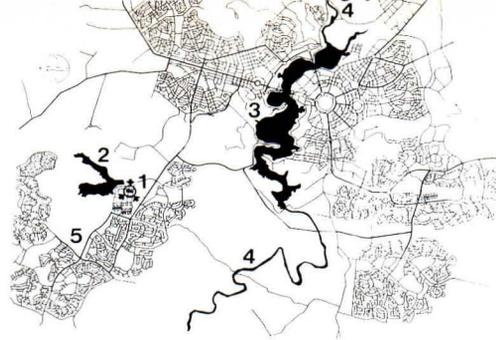
"The basic architectural issue is designing cities; not hats, or dresses or even stylish single buildings. The issue is the necessity of buildings acting together as parts of the larger pattern and creating satisfactory settings for that life." John Andrews' new urban building block in the context of Canberra meets Robertson's criteria by doing just this. Such an achievement is remarkable because it is rare. In the following critical analysis Robertson urges a little learning from Down Under.

Jaquelin T. Robertson is the new Dean of the School of Architecture at the University of Virginia, his native state, as well as a principal in the New York-based firm of Eisenman/Robertson. He was formerly director of the

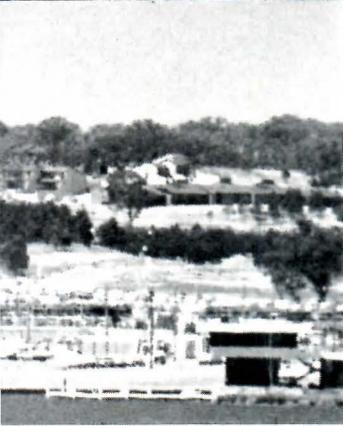
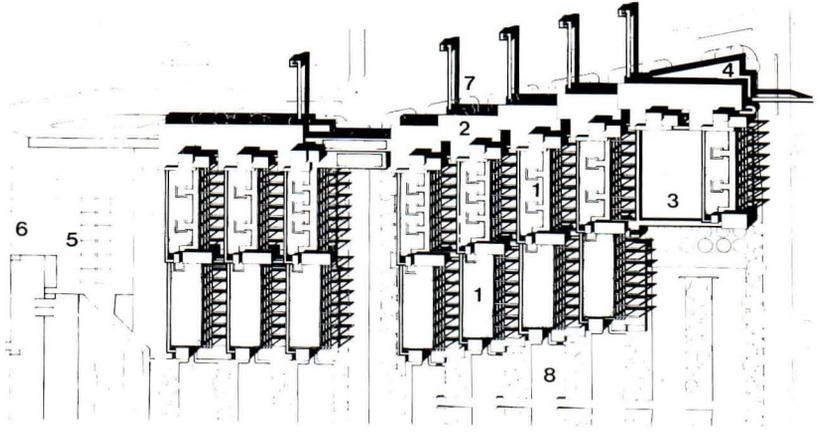
Office of Midtown Planning and Development in New York City and a member of its City Planning Commission. He has recently served as urban-design consultant to the National Capital Development Commission in Canberra.

Australian architect John Andrews' Cameron Office Block begun in 1969 and completed in 1977 is one of the most important and least publicized buildings of the last decade. It has received almost no attention in the United States—where its lessons are most needed. Few in American architectural circles seem even aware of its existence. It has taken the recent international competition for a new Australian Parliament in Canberra to refocus attention on Andrews—partly because he was (along with I.M. Pei) one of the competition assessors and partly because Cameron, his best building, is nearby and will now be seen by more "outsiders."

Andrews, who established his first office in Toronto and made his mark in North America with Scarborough College in Ontario, Gund Hall at Harvard and a passenger ship terminal in Miami, disappeared from the U.S. architectural public eye upon his return to Australia. This misfortune, if it can be considered such, was compounded by the fact that his chance in Canberra has not been in the most important part of town, so-to-speak (Much like returning to Washington, D.C. to do an important building, but finding it is in



The plan of Canberra (above) shows: 1. Cameron Office Block; 2. Lake Ginninderra; 3. Lake Burley Griffin; 4. Molonglo River; 5. Belconnen Valley. The plan of Belconnen Town Center (above right) includes: 1. Cameron Office Block; 2. Belconnen town center; 3. Lake Ginninderra. The Cameron Office Block site plan (right) indicates: 1. wing-offices; 2. mall and executive offices; 3. computer center; 4. shops; 5. Belconnen town square; 6. Belconnen retail center; 7. pedestrian bridges; 8. office parking.



David Moore photos

Alexandria, Virginia, not on Pennsylvania Avenue.) Here is Andrews, standing by and watching Walter Burley Griffin's city getting mauled with idiosyncratic "object" buildings, by people who do not understand Griffin, while carrying in his back pocket just what Griffin wanted—a low-rise, space-defining, mixed-use, suburban "office garden" complex, which not only offers an entirely new kind of working environment for the country's most important and potentially experimental new city, but is precisely the kind of "urban building block," a real precinct within the larger order, which both understands and enforces Griffin's ageless plan.

Andrews' Cameron office building thus offers us one of architectural history's greater ironies. It is Canberra's finest modern building by far, but it lies *outside* the Canberra which counts most, the magnificently conceived central area, planned by Griffin between 1913 and 1921, which, as a designed environment, is surely Australia's most important cultural artifact.

Yes, this is ironic and very disappointing, or Burley Griffin would have approved of, and has certainly needed, a John Andrews.

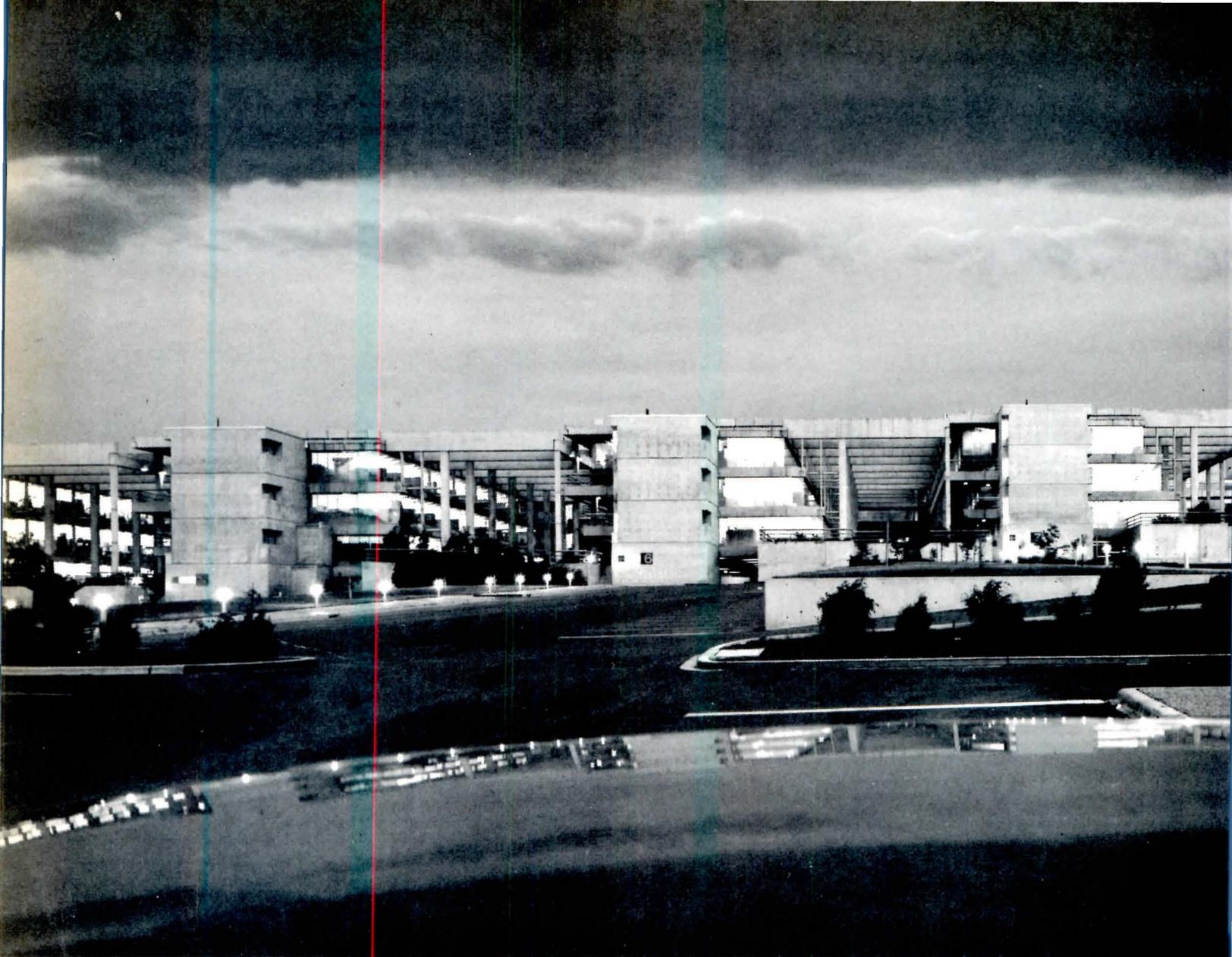
Both men (and apparently very few others) understood where they were, the rules of the natural setting, the topography, light, climate, the new Arcadian aura of the Molonglo River Basin, and what kind of long, horizontal, land-hugging buildings these implied. (It will be interesting to see how well the Parliament House Competition winners Mitchell/Giurgola understand and respond to this unique place and its subsequently imposed grand order despite the fact they were not given the site Griffin intended for this building.)

The Andrews' building is exceptional on many counts, and certainly because it is an innately correct response both to the place itself and to the precedence of the most important previous response to this same place. Andrews intuitively has respected the great man who preceded him. The building, excellent in its own contemporary terms, also establishes an historical continuity so very important in a young country. It meets its own program in an innovative way and embodies all the most important of Griffin's previously established urban design intentions and ideas. Separated spatially as it is from the planned central area of Canberra, it some-

how transforms the original Canberra drawings by Marion Mahoney (Griffin's wife and architectural collaborator) into reality; and the building's major shortcoming is probably that it is in the wrong place; that it is denied union with the very context which its contextual virtues best understand and explain. As a low-rise, garden-oriented, office which creates courts and streets, the building is a model for how the urban part goes to make up the urban whole, just the kind of building block Griffin intended but did not get. But there has been an exchange between the two men, and the more you are in Canberra, the more you begin to think of Andrews and Griffin together—both famous as expatriates—and of Cameron as their offspring.

The site

The Cameron offices form the centerpiece of Belconnen New Town, one of five satellite communities in the Canberra Master Plan. All of Canberra, both Griffin's center and the surrounding new towns, has been developed on a large scale since the end of World War II. They are part of the Australian Capital Territory where planning, design and devel-



opment are under the jurisdiction of the National Capital Development Commission (NCDC)—a powerful, highly professional, planning and development agency not unlike a British New Town Corporation or the New York State Urban Development Corporation. While NCDC initiates and directs all projects within the area—from planning, site selection and programming through construction—private consultants are used to carry out architectural projects. The entire Territory has a very neat and tidy, controlled development, look, which gives way immediately to the more familiar roadside shabbiness as one passes into the surrounding state of New South Wales. Private development in Australia seems messier than elsewhere—perhaps because of this contrast with Canberra.

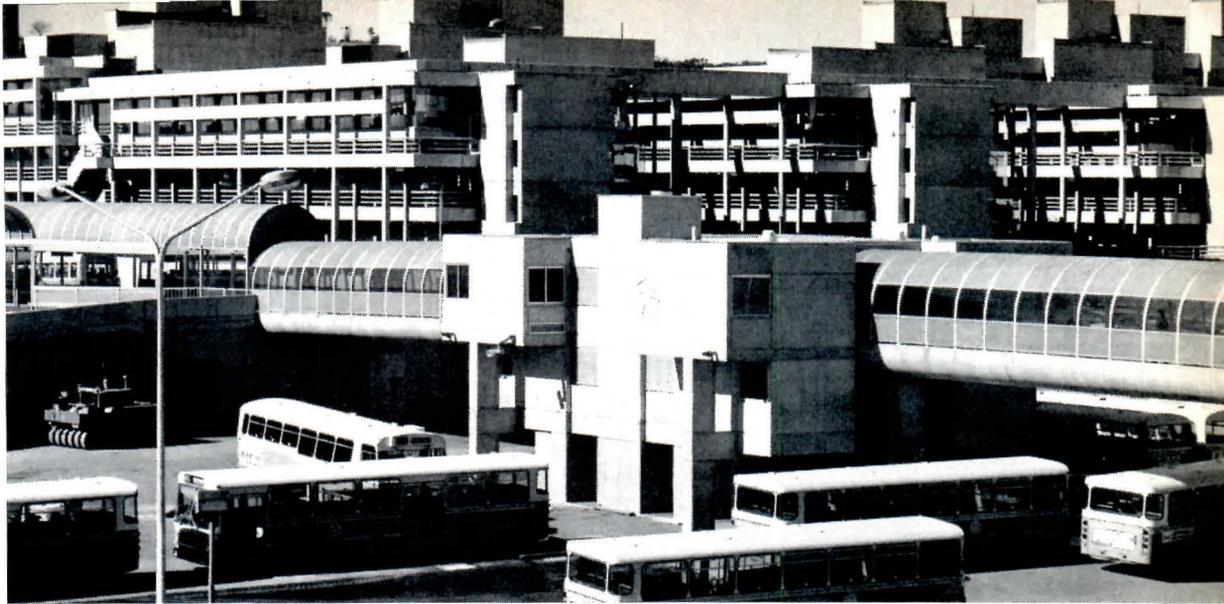
Belconnen itself lies about 11 miles northwest of Lake Burley Griffin and the Parliamentary Triangle (the site of the proposed new Parliament House), separated from this central civic area by a greenbelt of lovely, open, rolling land. Like Griffin's Canberra, the community is organized around an informal, picturesque, lake man-made by damming a river, with a town center straddling a

north/south spinal ridge and oriented toward superb views over the water and the silhouette of rising ridges to the north (a pastoral setting not unlike that of a small lake town in Switzerland, but in a much gentler, less manicured and vaster terrain). In Belconnen, under an endless and crystal sky, one feels the extent and the space of the great Australian subcontinent. The place seems, in fact, much more like a designed encampment than a domesticated, modern new town. There is no sense, yet, that man controls (or has ruined) the land; and certainly no city sense; empty and tacky-tacky cute as most of it is, there is less of the polished synthetic feeling of Reston, Virginia, or Columbia, Maryland. Rather, Belconnen has the reality of a familiar but faded image, an Australian version of an idealized prairie-town-in-the-fields, bringing to mind, not in style, but in feeling, both Frank Lloyd Wright's Broadacre City and the parched, white, wooden towns of the great out-back. It is a curious blend of the vernacular and of images from other lands. And always, just beyond the new shopping mall and sticky-new parking lots and homey bungalows, there is the endless wave of rusty hills

where eucalyptus groves dry in the sun like skeletons from prehistoric times. This soft prairie casts a great calm, and the planner have responded with great restraint.

An intensive and sophisticated landscape program gives Belconnen, like the nearby Capital itself, a sense of unobtrusive and informal cultivation amidst the wilder rug of nature—so one is never sure where town ends and fields begin. Landscaped edges define built-up areas but these edges are subtle and blurred, natural in fact, surely an exceptional achievement for modern city design. Certainly, the most noticeable planning success in the Capital Territory as a whole is the pervasive sense of being in a vast, yet natural garden city—an urban design landscape of the highest order.

Sitting astride this bucolic setting, like the aircraft-carrier-in-the-fields visions of Har Hollein, are the rising, concrete terraces of the Cameron office complex; one million square feet of offices, shops, meeting hall and pedestrian streets, an office city; the single building as a town center. One-half the size of New York's Pan Am Building and housing 4,000 government workers, the con



The Cameron Office Block's order and structure separates through from local traffic; it operates a proper hierarchical circulation system in which there is great variety and flexibility. One can get in and out of it easily and almost anywhere, like an orthogonal grid. The scheme is additive, open-ended, and accommodates changing terrain.



plex covers one-half of its six-acre site in a single three- to four-story building comprised of a mall, the major pedestrian spine, and attached office wings. These offices have been organized around a series of courts, which serve as both an entrance system from the flanking parking lots and as protected garden atria around which all circulation and outlook are oriented. The building is the town center's main street as well as its garden district.

In a sense, Andrews has done for offices what John Portman did for hotels—turned them inside out and made them the focal point of downtown activity. Once you have seen Cameron it is hard to go back to any central core system, low- or high-rise, no matter how handsomely designed, and you begin to think of Houston, with all its sleek modernity, as being very old-fashioned. For Andrews, like the pragmatic Portman, this seems to be a further development of an attitude about organization first started at Carborough College, and not just a response to a particular program and site. Only time will tell. Certainly, to the outside observer, it is the generic rather than the idiosyncratic

aspects of the building which are so powerful. As fine as it is on this Belconnen ridge, overlooking Lake Ginninderra, one senses what Andrews has really done is given us all an important new *type* of office building, a model for city building in other places. In this sense, it takes its place alongside Wright's Larkin and Johnson Wax buildings and Herman Hertzberger's *Centraal Beheer* in Amsterdam. It is an assemblage of rationally conceived additive parts which gives paramount importance to light and nature and human scale at its core and enhances the circulation system so the building is appreciated through its use. It can—like the great models of the past, with modifications—go on almost any site.

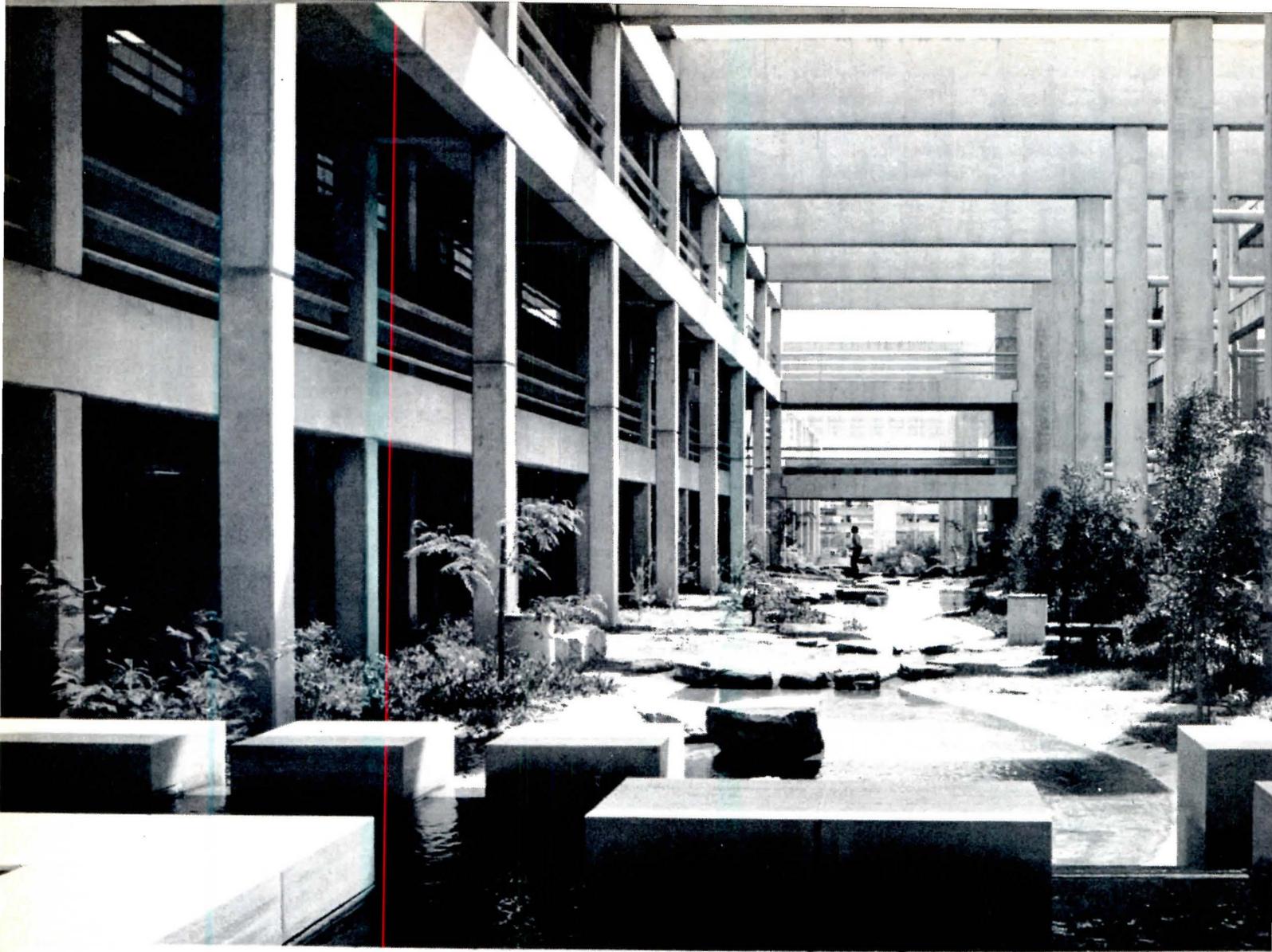
And yet, as we have said before, this particular site, this prototypical Australian landscape *cum* climate was the incubator; the building was in response to the stimulation of a specific setting and purpose which shaped the more general characteristics. The "type" was neither conceived nor imposed from outside, from neutral, formal considerations alone; rather its formal propositions grew together with the data of place and program.

And this, of course, is part of its subtlety and challenge: Andrews has produced a kind of unselfconscious and unreferential vernacular within the general language and intention of Modern Architecture. And while it is clear where he comes from architecturally (he has been influenced by Paul Rudolph), it is equally clear he is a child of a countryside, unknown to most of the world, which he understands and loves dearly; and which has given his "International" building its regional peculiarity, i.e., its character.

The building

The Cameron offices were intended, in the original plan prepared by the NCDC, to link the town center's southern residential area with a bus station and large shopping center above the lakefront. They were to be government offices housed in six towers along the top of the north/south ridge spine—the traditional vertical markers of Modernism. The plan was thoughtful if not compelling.

Andrews, in an effort to humanize the often bleak, bureaucratic office environment, to respond to the challenge of making a piece of a town while making a better place to



work, and to reinforce—much the same way as Griffin—the low, rolling profile of the surrounding land, chose a brilliant alternative which, in turning away from the County Council type “point block” planning approach, produced a quite different kind of urban design. Instead of towers, he made a single, great, low building to serve as street, office community and public park system all in one. Rather, it is a network of linked, similar buildings, a skeleton with joints which can adjust to topographical and programmatic changes easily; and where spatial voids are as important as the built areas. It can both step down the ridge along its north/south axis spanning major east/west streets where necessary, and put out lateral fingers, like limbs to a trunk, along the flanking slopes. This produces a comb-shaped building with teeth pointing west, which is the backbone for a great part of the town center. While following and echoing the natural terrain, it also sets the pattern of building for everything around it. The office function is thus used not only to create a larger mixed-use framework whose focus is a town-wide pedestrian circulation and park system, but

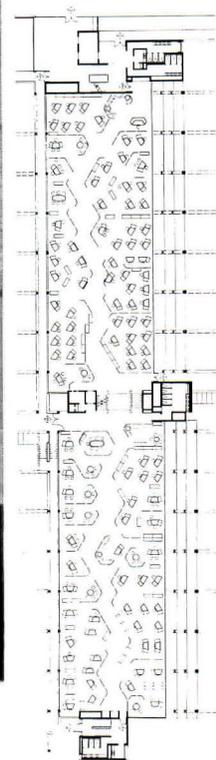
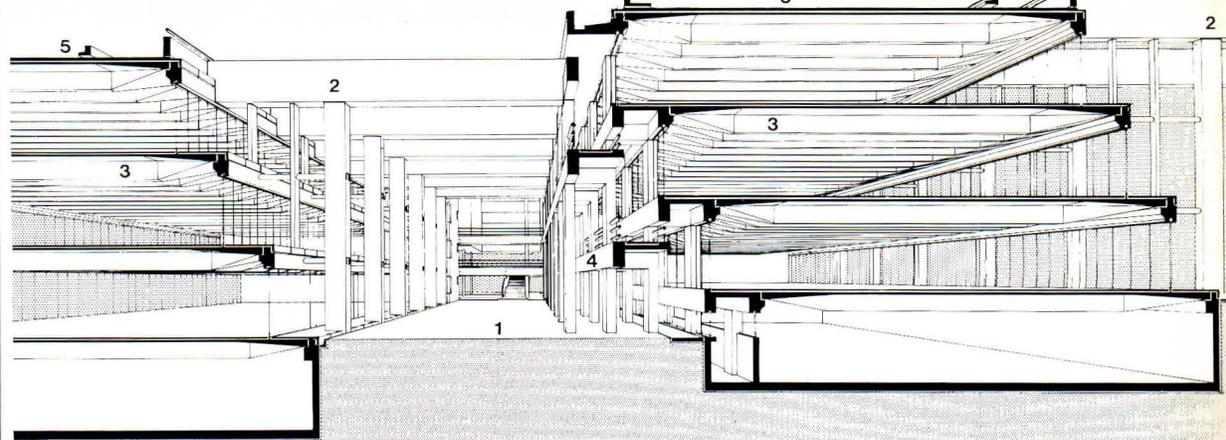
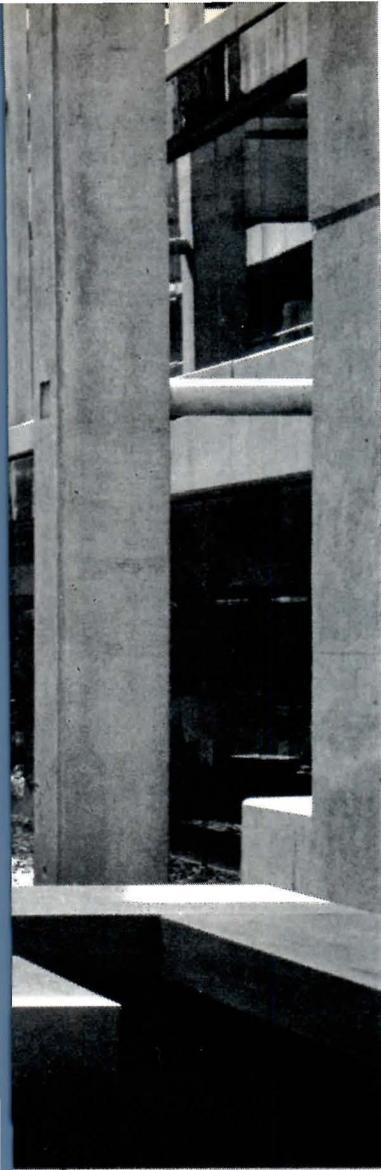
also to establish rules about how others who come after should build.

Parking, generally the forgotten child of urban design, becomes part of the total design without resorting to expensive structures or too-tricky landscaping. It is an on-grade lot running the full length of the building just beyond the office wings on a gentle western slope. The lot is simply landscaped to break down its scale (in one place a grid street cuts across it) and is narrow enough to permit easy walking into the sheltered courts and sectioned so one can park opposite one’s own office wing. Another parallel strip of automotive service stations and showrooms separates the lot from the town center’s major access boulevard in the valley, thus creating a graded circulation pattern which is very logical: roadway, service area, parking, pedestrian precinct.

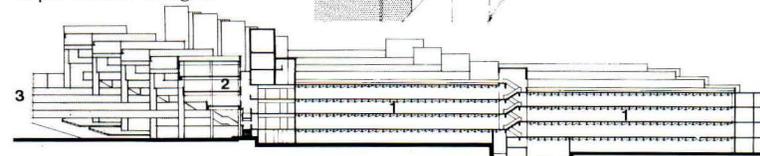
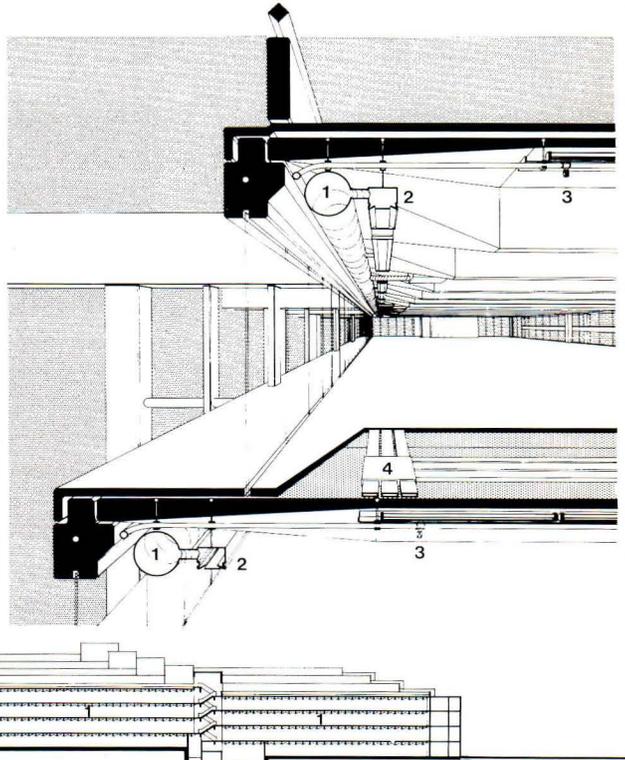
One can only applaud the essential rightness of a plan which puts people and buildings and parks on ridges with views, and cars and parking in valleys where they are out of the way, easily serviced by the grid, yet conveniently close by, in their own precinct. Canberra is an automobile city still, despite

the centrality of public transit to the planning of the new towns and the cleanliness and efficiency of the buses, and it is reassuring to see what is so often lacking in planned communities—a straightforward, thoughtfully designed approach to cars and parking. The parking lot is a ubiquitous and generally unpleasant modern environment and its placement and design a central task in city design. Too much “Learning from Las Vegas” has begun to mean that Johnny can no longer read a good parking scheme. Better to look at Belconnen. The key, of course, is that unlike Las Vegas and most of “the American Strip,” the parking is in the back, conveniently where it belongs. The high street on the ridge, parallel to the pedestrian spine, has defined building frontage and a human scale. One wants to be there on foot.

It is this paralleling and defining of Belconnen’s main “high street” which becomes the spine’s urban function, offering shops and special meeting rooms along its length as well as grade-separated crossings—both a re-“building as street” (new idea) and a building which makes a street (old idea). In a sense the mall is a kind of super sidewalk which



The photo (left) with the landscaped courtyard corresponds to the section through a typical office wing (above) which includes: 1. landscaped courtyard; 2. precast concrete frames; 3. precast concrete T-beams; 4. cast-in-place concrete walkways; 5. roof garden. The plan (left) shows a typical low partitioned workspace arrangement. The detail (right) shows the basic mechanical equipment for each wing: 1. exposed air-conditioning duct; 2. exposed air supply duct; 3. combined sprinkler and indirect lighting system; 4. sub-floor electrical and communications system. The section (below) includes: 1. office wings; 2. the mall with executive offices above; 3. pedestrian bridges.



very naturally connects residents on one end with a transit terminal on the other.

The lateral teeth of the comb—there are seven of them now, and since this is an additive or indeterminate design, there could be more designed later by other people—are the various departmental offices, with vertical circulation and service knuckles at the joint where they meet the spine. Between these office ranges are long, narrow, open-ended courts, each landscaped differently. These spatial fingers, which interstitch building with garden in an extraordinarily pleasing way, also provide lateral circulation from the parking areas to the mall.

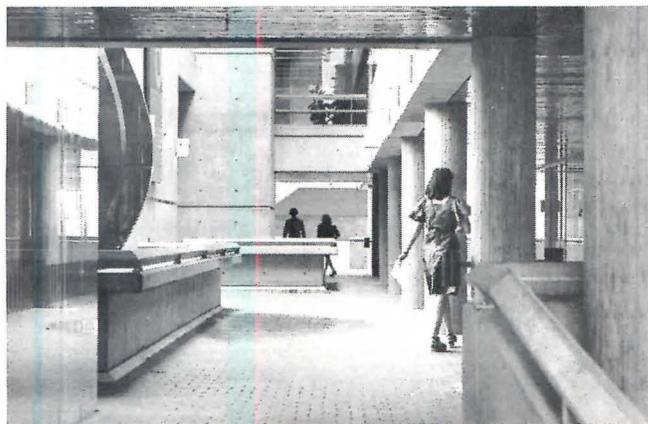
Since the building is laid along a rising ridge, its long axis steps up the hill incrementally and offers a great variety of continually changing views out through the courts and from underneath the overhang of the pedestrian street of the "high street" and beyond, into what is now mostly surrounding countryside. Similarly, each office wing, following the upward slope of land from parking to mall is broken in two parts at half levels to one another with secondary service cores between. Thus, as one moves through the

stepped terraces along either axis (mall or office wing), one gets the impression of an ordered, yet complex, interlocking three-dimensional net of building and space, each part inextricably derived from and related to the other. The very act of circulation—one's daily round—reveals slowly and wondrously both the structure of the building and of the land it sits upon, eliminating, in the process, the potential boredom of institutional corridors and their inside versus outside enclosure. It only takes one trip through the staggered plan with its stepped sections, pierced through by fingers of space, to reveal how a 1,000-foot-long building can be gracefully articulated into a *series of buildings*, each having its own sense of place and scale distinct from the whole, yet which is clearly part of the larger order. And this quality of three-dimensional unity and cohesion, (despite minor disorientations, too many level changes and entry options, and the by now familiar drabness of "Brutalist"-designed exposed concrete) gives Cameron—potentially an enormously ungainly block—a sense of architectural balance almost unrivaled in modern building design. The building is an

established city precinct.

Visitors' parking and the "front door" to each wing is off the pedestrian street (each department is color-coded) while employees enter from the parking lots through the gardens, i.e., visitors in front, staff in back. Thus, while office-destined trips can go directly to a traditional street address, pedestrian through-traffic can by-pass the office courts completely by staying on the mall—which means the building really does serve both its general and its specific users quite well (in much the same way as good traditional streets and unlike most modern "island"-in-plaza-or-parking-lot schemes).

The offices themselves are columnless "trays" that open on both sides to views of landscaped courts. Floor-to-ceiling mullionless glass gives an extraordinary sense of transparency with glare controlled by a stepped section which lets the projected soffit of each floor shade the floor below. Since the office plan is *bureaulandschaft*, all working stations are literally between two gardens, with restrooms and secondary vertical access occurring like bookends at the half level breaks between the sections of each wing (in this



The building acts as a grade-separated pedestrian street with built-in shops and as a public park system. The open spaces—the mall and courts—are an internal part of the complex and are part of the street structure—not merely left over space.

John Andrews, Peter Courtney; project architects: Bruce Lincoln and Geoff Willing. Landscape architects: Richard Strong and Associates—Richard Strong, partner-in-charge. Consultants: Miller, Milston and Ferris—Peter Miller, partner-in-charge (structural); D.S. Thomas and partners—Don Thomas, partner-in-charge (mechanical/electrical); D.R. Lawson and Associates Pty. Ltd.—Don Lawson, partner-in-charge (quantity surveyors). General contractors: T.C. Whittle Pty. Ltd.

way, departmental expansion is possible either horizontally or vertically, but always within the same wing). The repetitive nature of the wings allowed for a simple and very elegant precast system of 50-foot-long span "T" beams supported by a ladderframe structure of poured-in-place concrete, which spans the courts and walkways. That is, the structure for the building is *outside* in the courts, leaving the office walls unpierced and the interior space entirely open—another example of the kind of inside/out feeling present in the whole project. A by-product of this is that the courts, rather than being entirely open to the sky are shaded with a trellis of beams important both in terms of light control and defining the outside space as part of the building proper. Each court has been landscaped to represent a different Australian environment and while this sounds a bit corny, in actuality, it works very successfully and avoids the monotony of repetition with a variety which has cultural meaning. In many ways, it is these courts which are the building's finest achievement. Rarely has outdoor space been so successfully scaled and integrated into a building proper, where it

serves both the public and the specific tenant equally well; is both looked at and used. The courts are Cameron's treasure as are London's Georgian squares.

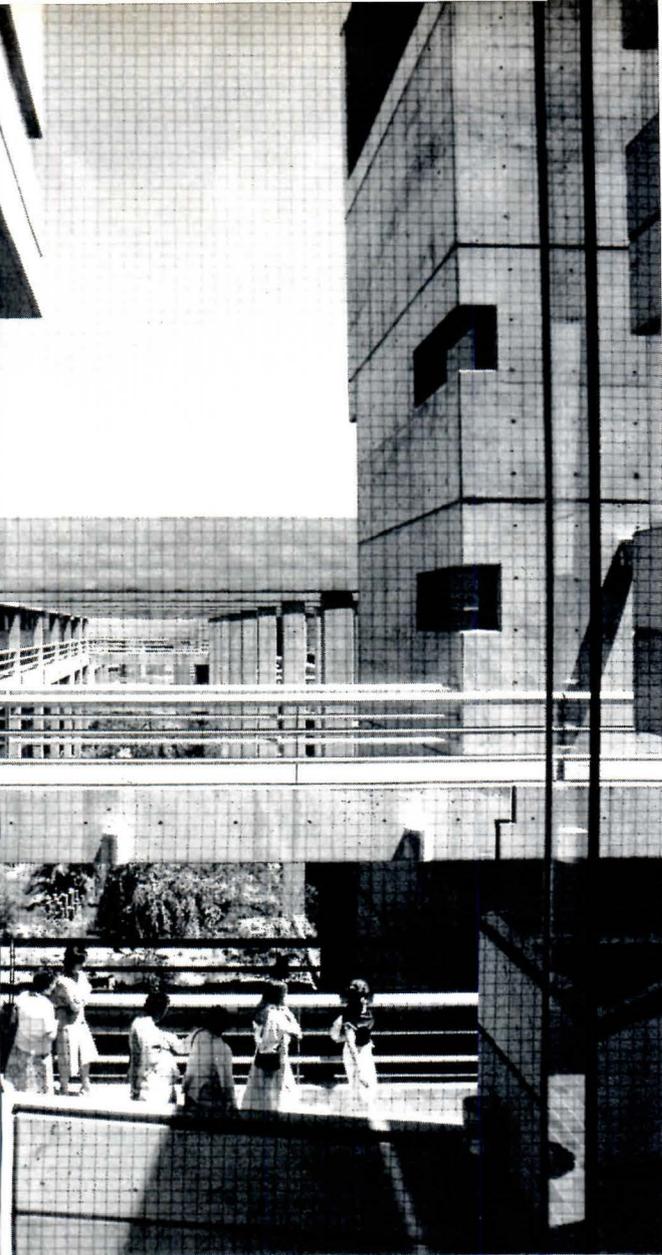
Services come from a central plant located near the transit stations, also Andrews-designed, at the north end of the Mall (the station serves as link both to the north and west). Heated and chilled water are delivered from there to decentralized plants in each wing. Trash collection is via an underground vacuum tube system, also with a central plant. Both the heating/ventilating plant and the garbage system are oversized, designed to handle the needs of the surrounding development so Cameron is not only the town's major transit, circulation and employment center, but also its mechanical plant. It is not for nothing that Andrews is called a megastructure man. Certainly, Cameron is much more than your ordinary large building; it is truly a working part of town.

Critique

Why do I believe this to be such an important building? For many reasons, but primarily because it is conceived of and works in urban

design terms. Not just another well designed object in itself, all technics and forms, it is meta-architecture which provides us with lessons about a meta order. It is saying something about old and new, about how to make connections. It carries with it both an understanding of and respect for traditional city-making rules, yet generates at the same time its own new rules which change in an evolutionary way the old ideas. It is a community building; social; an order with civic responsibilities. It is a city building.

Architecture's central task is the making of urban precincts; buildings are the means to that goal; not ends unto themselves. "Post-Modernism," like most garbled messages, concentrating primarily on symbol, style and pattern rather than on the crucial issues of meaning and order, has confused priorities and will produce, most probably, only a scattering of historically quaint enclaves—not because the intentions are so wrong (i.e., history is important), but because the focus is. The battle of styles always has to do with surface glitter, not fundamentals. But glitter is seductive so the natives will continue to give their land for useless trinkets. No, more se-



ously, the kind of *nouveau riche* pillage now taking place, is the sign of continual cultural insecurities and vulgar impatience—not confidence or refinement or insight. Throwing out Modern Architecture is as childish as was the Bauhaus' erasure of History—with the same results. The basic architectural issue is designing cities; not hats or dresses or even stylish single buildings. The issue is the necessity of buildings acting together as parts of the larger pattern and creating satisfactory settings for that life.

John Andrews' achievement at Cameron is remarkable. He has created an entirely new and attractive working environment well-suited to local contemporary tastes and conditions, and in the process has given us a general type of low-rise office accommodation which is a model city building block for use elsewhere. This means he has changed the way we think both about office buildings and how they go to make up cities. And almost all this with almost no attention given to style or fashion—only fundamentals. Indeed the building's greatest weakness is its "fashion," particularly, the neo-Rudolphian excesses of the pedestrian mall: too many

columns and levels and jutting soffits and entry options at a slightly pompous scale (i.e., too much "architecture"). And, of course, the Brutalist color and material palette is increasingly hard, and hard to take. Yet, oddly enough, these shortcomings that would destroy a building which was only another building, become of secondary importance to the essence of what's been done—which is an innately correct structure and type.

Postscript

The Cameron offices represent the coming together of Australia's two most important architectural protagonists. Griffin was a Midwestern American and little-known apprentice to Wright, a romantic, almost mystic architect/landscapist. (It is important in understanding Canberra to know you cannot separate these disciplines, landscape and architecture; in Griffin, as in Wright, they are one.) Griffin, city designer, famous only when he goes to Australia, needed only the proper buildings to complete his vast, magical, three-dimensionally conceived mandala city. Griffin prepared the ground. Fifty years later came John Andrews.

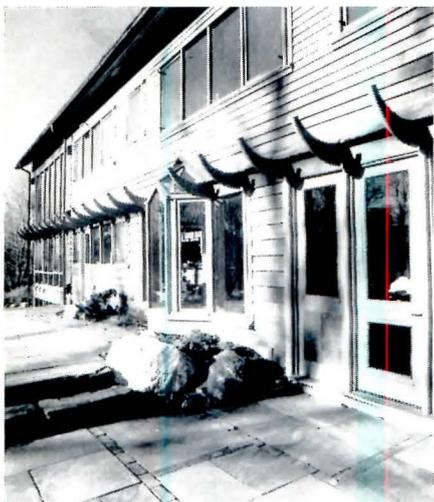
Very much the Australian, prematurely famous in America (Scarborough was, after all, the first modern megastructure in North America; what everyone tried to design in school), Andrews is probably his country's finest contemporary architect. Finally, he got his big chance in Canberra, his nation's capital. And almost in the right place—almost.

Griffin and Andrews, famous away from their own countries, are together here. They survive the "unnatural" spatial separation of the Cameron offices from the Central Area. Their similar qualities, their *excellence* and *vision* and a kind of primitive innocence unite them. And coming away from Australia, one feels that although Andrews was not able to build where he should have understood intuitively, "the spirit of the place" which Griffin, the foreigner, had first captured and articulated so tellingly. Andrews gave to that spirit a real building. There is Canberra, one of the world's most sensitively, ambitiously and superbly planned cities and there, nearby, is the Cameron Office Block, a building which responds eloquently to the Capital's high standards; a new kind of city building for a new kind of city.

The fine art of woodworking:

a Connecticut house

by Louis Mäckall



Early in this century, before the advent of industrialization, this house in Connecticut would have caused no particular stir. It was a time when the English Arts and Crafts movement, begun by William Morris in the nineteenth century, was finding a following in the United States; Bernard Maybeck was promoting the virtues of handmade houses, using natural and unadorned materials in his Bay Area style; Gustav Stickley was creating the Mission oak furniture that has since made his name a standard for fine woodworking; and the Greene brothers had determined that "the noblest work of art is to make common things beautiful." But what was "common" in 1908 (stone, brick, wood) is near precious in 1980, and few people have access to either the materials or the craftsmanship to continue the tradition.

In this light, Louis Mäckall is something of an anachronism. His work recalls a time when architecture and craftsmanship were inseparable, when the materials of a building were as carefully wrought as its forms, and, most important, when the visual stimulation aroused by form was sustained by the tactile satisfaction of appropriate materials.

From an architect's office/carpentry shop in Branford, Connecticut, Mäckall and his staff devote themselves to the fine art of woodworking. When they receive a commission to design and participate in the construction of a house, the result is an extraordinary piece of work.

For Mäckall, the art of architecture lies in the harmonious whole of a properly crafted house—a whole in which the materials and forms work together in concert: "edge, joint, surface, texture, face . . . all of these are as important as the [house] of which they are a part." Mäckall's unique position as both architect and craftsman allows for what he considers to be a critical factor in the success of any project—"the ad hoc give and take between maker and object" that allows "materials in and of themselves [to] best suggest their own potential."

The house shown here is Mäckall's ninth (see RECORD mid-May 1976). A young family of five with an idyllic site in rural Connecticut gave him the opportunity—and the financial leeway—to explore what he considers to be the *raison d'architecture*, a two-part hierarchy against which a good house can be judged: "1. That the house is indeed a shelter in the best sense. This means that it stays cool in summer, warm in winter, and the roof lasts a long time. 2. That the pieces, spaces, and materials converse in a civil manner with each other and the humans passing by."

Mäckall believes that people and houses bear no small resemblance, that they are

ready game for simile: he likens the public vs. the private elevations of a house to the public vs. private behavior of people. The street (public) elevation of this house (photo far right) is enclosed, secure, and fortress-like with a heavy brick veneer and high narrow windows cut under the low hanging eaves. It is a polite, conventional elevation that fronts the street with modesty. Conversely, the rear (private) elevation (large photo right) is all glass and expanse with large bay windows crafted in Mäckall's shop. Though the street elevation gives the appearance of a single-level house, the rear elevation reveals that there are three levels. The difference between the low-slung front and the high-reaching back is made up at each end by graduating the roof lines—balconies and porches supported by heavy timber construction lend a chalet quality to these sections and for the owners evoke memories of a former residence in Switzerland.

A rather eccentric bit of craftsmanship can be found in the wooden horns that extend along the garden side of the house (photo top and bottom left). One might fairly assume that the architect was grasping for some esoteric Nordic connection. But Mäckall aspires to no such distant allusion—the wooden horns were designed to be strung with wire that will eventually hold deciduous vines for providing shade in the summer and sunlight in the winter (see section overleaf).

The exterior of the house is clad in used brick and horizontal cedar siding with a companion cedar shake roof. All of the downspouts, flashing, and metalwork are of copper. The extensive application of these unadorned materials provides a level of richness for the house. And with age, these materials will change dramatically, acquiring a patina and texture of their own.

To achieve the desired quality of finish, architect Mäckall divides the work into two parts: the "straight stuff" is handed over to the general contractor, and the "oddball stuff"—doors, windows, detailing—is built in either Mäckall's shop or farmed out to another craftsman. And once the various parts are assembled on the site, Mäckall oversees their final installation. He notes with some pride, the satisfaction of such complete involvement: "Any vocation worth its salt nourishes the doer. There is something about drawing and then actually making things which feels good. . . . By comparison, pencil sharpeners only pretend." —Charles K. Gandee

PRIVATE RESIDENCE, Connecticut. Architects: Louis Mäckall & Company—partner-in-charge: Louis Mäckall. Landscape architect: William D'Andrea. General contractor: Tudisco & Diehl Inc.



Robert Perron photos

A low brick wall (photo below left) extends the street facade into the garden to shield a stone patio that serves the master bedroom. On the third floor, behind the oversized cedar louvers, a sleeping loft provides extra space for the children's overnight guests.

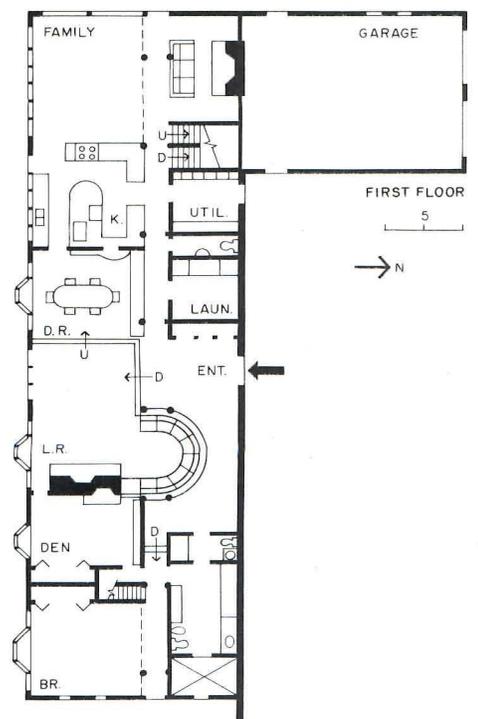
Two Y-shaped windows, adjacent to the front door (photo below right), provide relief from the fortress-like appearance of the street elevation. For Mäckall, the windows also represent "the husband and wife welcoming friends into their home."

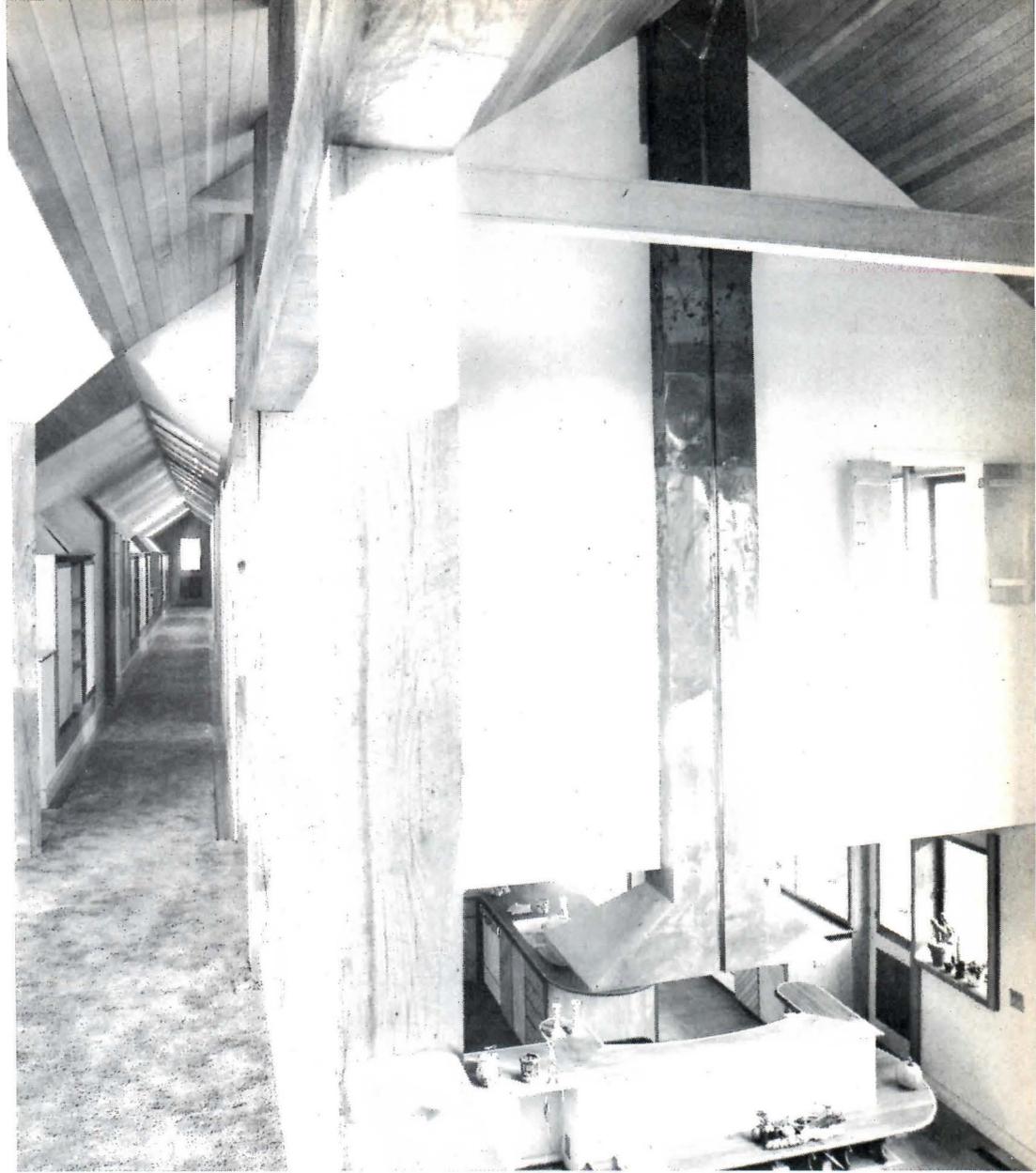
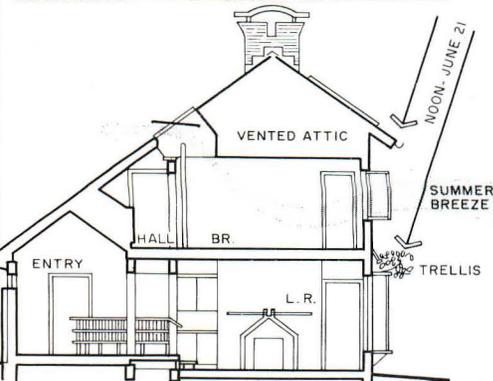




A semi-circular bookcase (photo above) designed and crafted by Mäckall, becomes a seating alcove for the living room. The two small photos (opposite page top left) show the painstaking attention lavished on even the smallest detail. Mäckall uses suspended

fabric panels (photo above) to counter and soften the effect of the rough timber construction in the main hallway. The kitchen cabinets (photo below) are topped with teak, and the narrow band around the perimeter is holly.





The two small photos and the section at left detail the system of ventilation for the second floor bedrooms—roof windows (intended for attic applications) open to the hall, and transom-like windows, between bedroom and hall, let breezes pass through.

The "pigeon hole" windows in the family room (below) are rigged with wire so that they can be opened. The shape of the bookshelves echoes the shape of the ceiling in the family room—consistently horizontal shelving would have bisected the space.



PLANNING THE URBAN MARKETPLACE

Urban marketplaces are as old as towns themselves. Those being planned and built today, however, give form to new merchandising ideas. They generate new and profitable ways to sell goods and bring life as well as money back into cities. They still need the excitement that comes from a mix of social, cultural and entertainment activities—as well as commerce—all happening in one place at the same time; here, one meets friends, has new experiences, sees and is seen while conducting one's business. But today, the urban marketplace reflects greatly altered economic and social climates. Basic necessities can be bought elsewhere. The new downtown market has to offer something special.

As an assemblage of diverse small entrepreneurs, marketplaces seem to buck recent planning thought that has separated retail, entertainment and cultural functions in different locations. They also challenge typical chain store and bulk sales operations. But while consumers may be falling into increasing conformity in their buying habits, they appear to want more diversity of choice. Cash register receipts attest to this at San Francisco's Ghirardelli Square and Seattle's Pioneer Square. So does International Shopping Center Council president James Wilson Jr.: "The smaller centers with smaller stores serving more clearly defined trade areas are going to be the order. There will be a decided move back to urban areas. And rehabilitation, conversion and expansion is already the dominant character of shopping center investment." Of course, true marketplaces are more than shopping centers, but the message is clear.

The successful urban marketplace is as much spirit as it is planning. In fact, to be really successful, it will hardly *seem* to be planned at all. According to Wendy Tsuji at ELS Design Group: "Mixed uses have always been with us, until modern planners planned them away." But even the term "mixed use" may seem too much like planning to catch the spirit. Jane Jacobs would have put it more bluntly, when she said that people must have old-fashioned streets and cities to survive. "Damn the planners." Nonetheless, planning is vital. And this is what separates modern markets from historic ones. Underneath the exuberance, rational control has to be firmly at work. Lack of planning produced such spontaneous successes as St. Louis's Gaslight Square, and as quickly destroyed them. Accordingly, the following pages will thoroughly explore the new, more responsive kind of planning behind many examples of the new kind of marketplace.

Another word of caution involves imagery. Because marketplaces are an historic building type, there is a strong tendency to make them look the part. In fact, many of the successful early examples are admirably located in old, picturesque, recycled buildings. This suits the public and architects. But marketplaces do not always have to be in old buildings; Baltimore's Harborplace (pages 100-105) is a successful alternative. Because the architects, Benjamin Thompson Associates, understand what made historic marketplaces work, their new construction captures the spirit of an old marketplace without the literal trappings.



A marketplace can be a building like the Victorian structure recently renovated in Salem, Massachusetts (below), or the Bank Center in Pittsburgh (above). In the Center, archi-



Clemens Kalischer

itects IKM Partnership and Lorenzi Dodds & Gunnill have used 100,000 square feet on three levels in the original banking room and surrounding spaces for a well planned mix of uses. True marketplaces have many activities which are highly visible at once, such as open stalls exposed to view. A lively center of attraction can also be created within a dramatic space such as the Cleveland Arcade (right). According to architect Herbert McLaughlin, reviving the ailing fortunes of a mixed retail and commercial building like this can often mean little more than new approaches to merchandising. The original building was completed in 1980 by architects John Eisenman and George Horatio Smith.

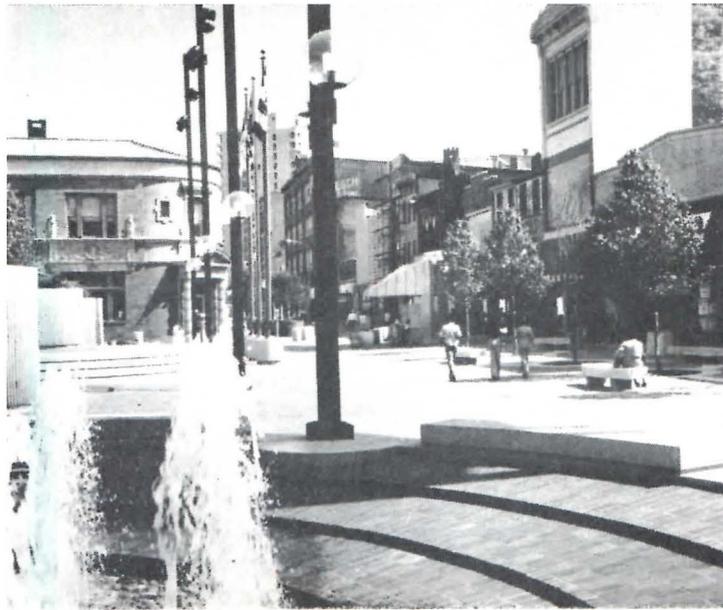


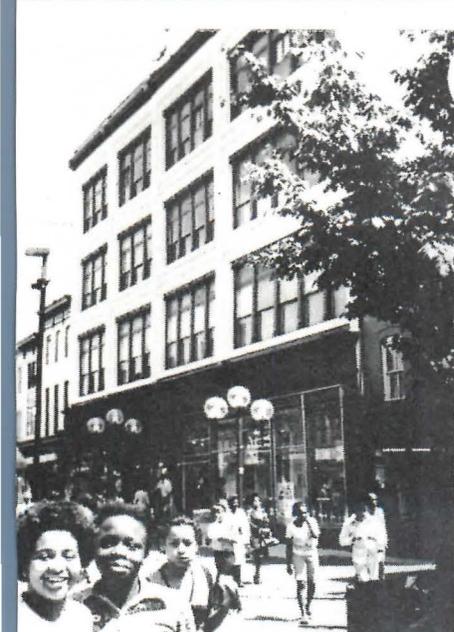
John Landsberg

There are three basic forms that marketplaces can take—sheds, arcades and streets. Washington's Market House (pages 96-97) is a classic example of the shed. But the really ambitious nineteenth century city looked to the dramatic galleries and arcades of contemporary Europe for inspiration. The Cleveland Arcade in Cleveland, Ohio (see photo previous page) is the largest such arcade in the United States. Architects Kaplan/McLaughlin/Diaz are in the process of restoring it to its former grandeur. Herbert McLaughlin has a dual role as architect and partner in developers Cohnner & McLaughlin. He says that the Arcade is really more of an ancestor of the shopping mall than a market, because its commercial activities were discreetly concealed behind storefronts that ringed the multi-story central space. Still, the drama of this space and the social activities that occur in it give the building a focus that must have been even more pronounced when it was "the only show in town." McLaughlin's work is both physical and financial. By a basic renovation, steadily upgrading graphics and seeking more profitable tenants (the developers started three stores on their own), they have managed to bring the once-deteriorating building back into solvency again, although they are far from finished. Indeed, architects all over the country are becoming involved in a direct financial way in re-cycling older buildings. One, William Downing, bought the massive surplus high school in Ithaca, New York and has converted it into apartments, offices and a shopping concourse, which has contributed to the downtown area's revival.

Another building that has been converted to a market, the Bank Center in Pittsburgh (see photo on page 90) also has a dramatic space that was a former banking room. Architects IKM Partnership and Lorenzi Dodds & Gunnill have used three levels in this room and surrounding spaces to full advantage for a well planned mix of uses. Here, forty per cent of the floor area is devoted to food and entertainment, ten per cent to two movie theaters and the remainder to open retail stalls. According to architect Jim Morgan, who is executive vice president of the client firm, Pittsburgh Real Estate Services Corporation, the initial popularity of the market part of the Center carried adjacent renovated offices through a weak market period, and stimulated their eventual success.

Another way to create a marketplace is to design a street to be one. Washington Boulevard in Detroit is an example (see pages 98-99). One of the first to be completed as part of a community renewal project is Oldtown Mall in Baltimore by architects O'Malley & Associates (right bottom). It is different from the usual market, because it is located in a disadvantaged neighborhood instead of a central business district, and it fulfills more traditional roles of providing basic necessities. It is the extension of two long existing market sheds to benefit neighboring retail establishments. Several blocks of an intersecting street were closed to all but pedestrian traffic, and an intensive program of improvement was aimed at facade renovation, graphics, lighting and street furniture. The renovation spurred sizable private as well as public investment.





At Oldtown Mall in Baltimore, (photos left) architects O'Malley & Associates have extended two existing market buildings by closing an intersecting street. The Prospect of Westport restaurant in Kansas City (right) has been remodeled by the Architects Co-partnership/McCoyHutchinson Stone as part of the Westport Square Shopping District in a newly revitalized historic district. Salem, Massachusetts (RECORD, December 1977) may become one of the first cities in the U.S. to complete its downtown redevelopment plan. The sensitive mix of new and restored commercial residential and retail buildings (above) has just won an environmental award from HUD.

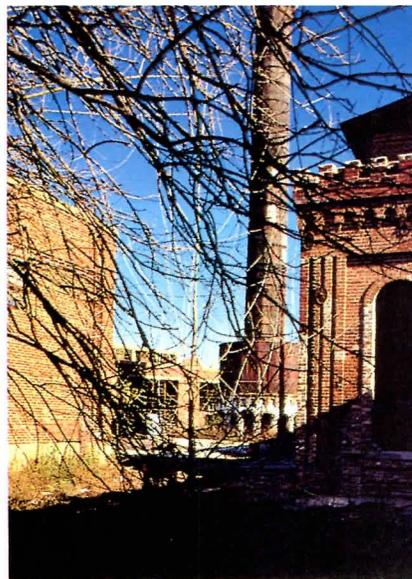
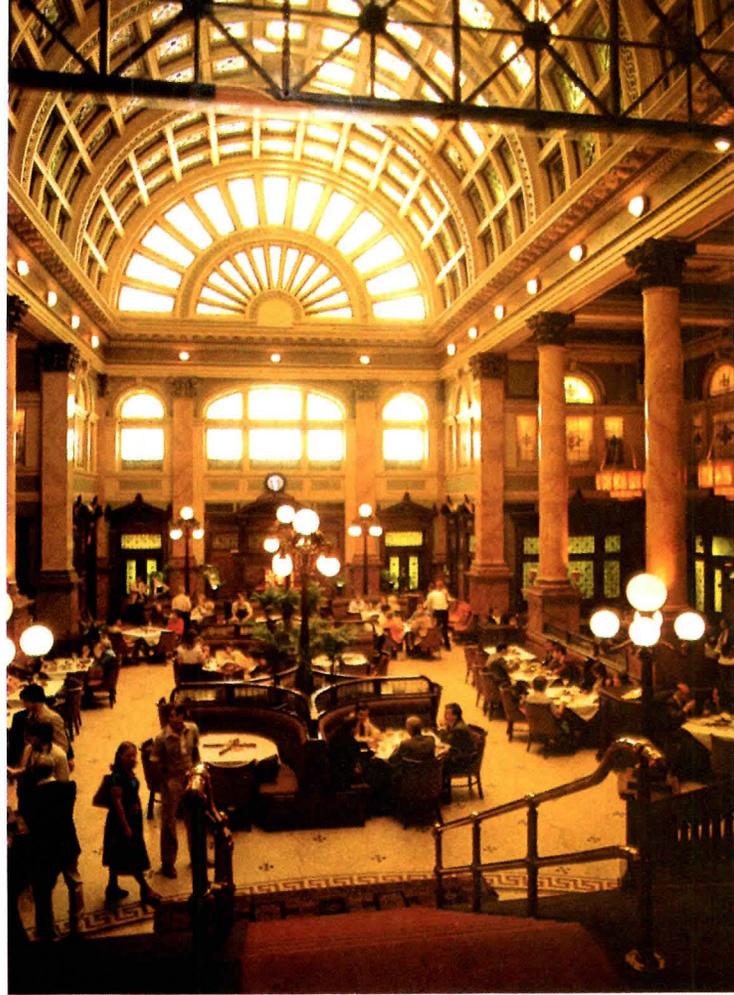
Dan Whitney



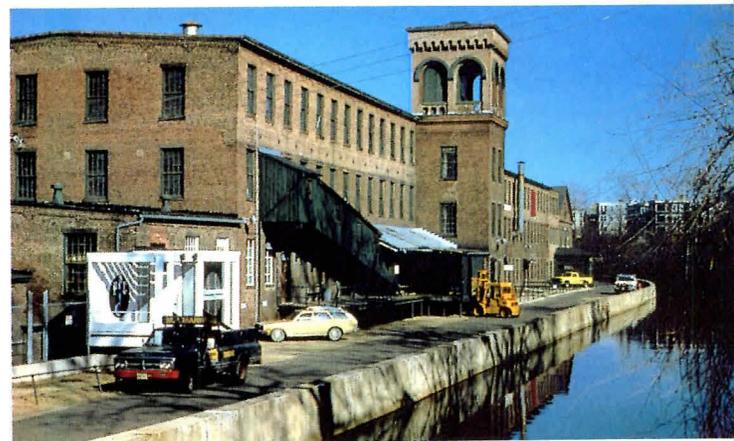
Perhaps the most important contribution that the marketplace concept can make to a city's economy is the revival of underloved or derelict areas. The President's Advisory Council on Historic Preservation recently completed an exhaustive study of four restoration-oriented efforts to show just how large these contributions might be. In Galveston's Strand, retail sales rose 125 per cent over a four-year pre-inflationary period. Property values and tax revenues rose almost 50 per cent in Alexandria, Virginia. And the nine square blocks of Seattle's Pioneer Square—once a derelict and run-down area—have been turned into a safe and prosperous marketplace. Savannah, the fourth city studied by the President's Advisory Council, has already spent massive amounts of money on its historic downtown business district, with highly successful results. Now, Savannah has a new plan by the Parsons Brinkerhoff Development Corporation to turn its extensive unused railroad yards on a nearby 40-acre site into a new \$70-million urban center with an emphasis on tourism. Called Battle Park, it is to have hotel, residential, office, convention and performing-arts facilities. These are to be given focal liveliness by a retail-entertainment marketplace located in some of the currently most dilapidated maintenance buildings, which include a romantic roundhouse (see photo and rendering right). Almost all of the site's impressive array of early nineteenth-century industrial architecture will be retained. Included are a handsome group of period administration buildings facing the downtown area at the site's edge, which are to be renovated for their original use as offices. Also along this edge is the original terminal building, which has already been recycled into Savannah's visitors' center (RECORD, December 1975).

Architects Perry Lord, the president and Richard Heidelberg, the project director for the Development Corporation are pursuing such building reclamation projects all across the country. According to Heidelberg: "The complications in the process are enormous, but the rewards can be as well." On the Savannah proposal, he went through six months of public hearings on alternate plans to get the many public groups to give approval to the final scheme. With both development and design arms in a single organization, and considerable financial backing, the Corporation promises great things for both conservation and profit efforts. Other projects currently in the works include the conversion of Bridgeport, Connecticut's 1929 Hotel Barnum into housing for the elderly, retail and commercial space, and a similar conversion of a factory building in Ozone Park in New York City. Another project in Massachusetts is described in the caption. The first such reclamation project that the firm has completed is a restaurant and office complex in a former industrial building built in the 1880s in Concord, New Hampshire, where the firm is active in other downtown revival projects.

Such are the elements which make the new urban marketplaces work. On the following pages, three projects are shown in more detail that adds up to successful formulas for reviving downtowns by giving them some great attractions. —Charles Hoyt

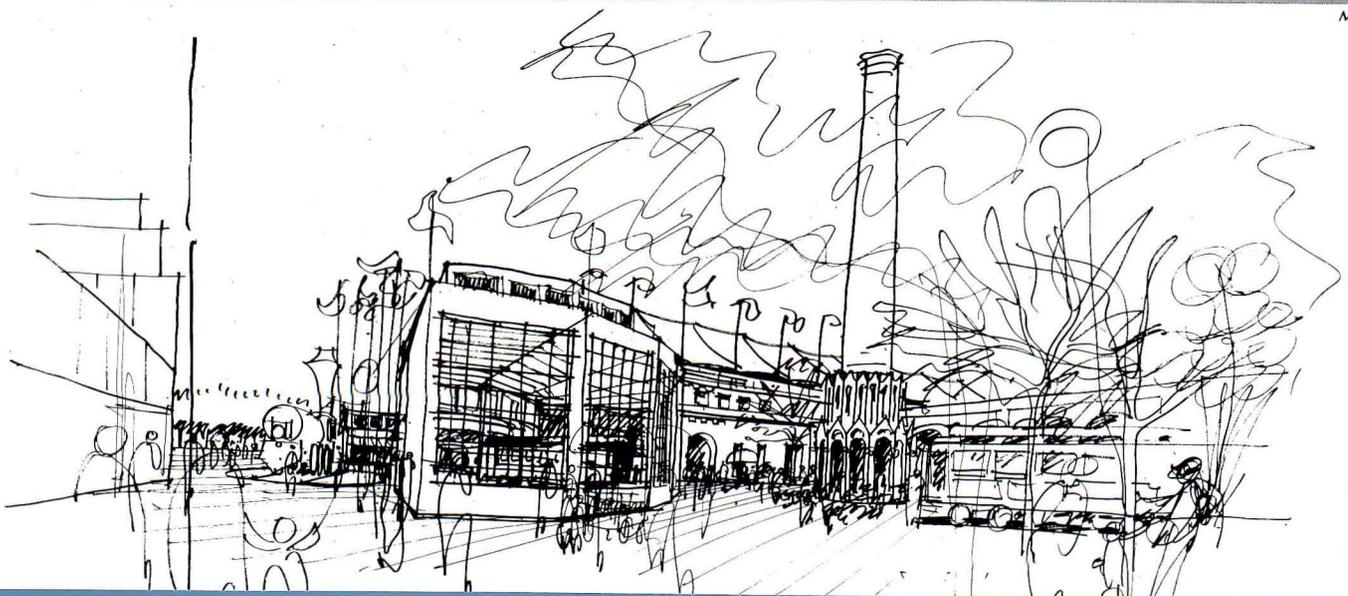


Unused railroad yards and structures can make marketplaces. The buildings are available, often sturdy, and can have large dramatic spaces—such as the former concourse of Pittsburgh's P&LE railroad station (above), now a restaurant by architects Roger Sherman Associates. Plans for Nashville's Union Station (right) call for an extensive mixed-used development. Savannah's railroad yards (left) are to be turned into another mixed-use development by the Parsons Brinkerhoff Development Corporation (rendering right). Another project being planned by PBDC is the recycling of a mill in Chicopee, Massachusetts (below) into housing and shops.





Mark Johnson



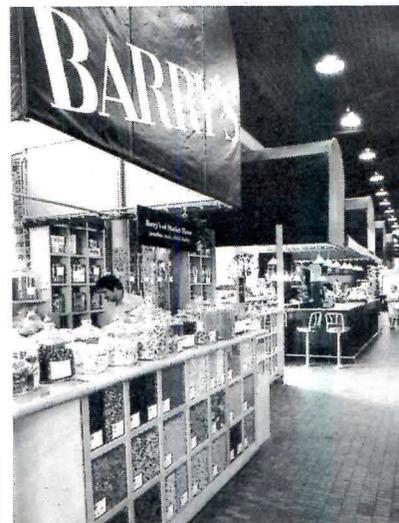
CONTEMPORARY MERCHANDISING PRINCIPLES REVIVE AN HISTORIC BUILDING TYPE: MARKET HOUSE IN WASHINGTON, D.C.

Built as a market in 1865 for what was then the separate suburb of Georgetown, this small building is a classic survivor of the covered centralized marketplace boasted by most small towns in the United States at that time. Despite its relatively modest size—40 by 200 feet—it was long the local hub of commercial and social activity. Because farmers stopped coming there to set up their stalls around 1935, its existence was threatened. It was protected, however, by covenants on site usage in the original deed, and it stumbled further into the twentieth century as the Square Deal Supermarket and then as a wholesale auto-parts distributorship.

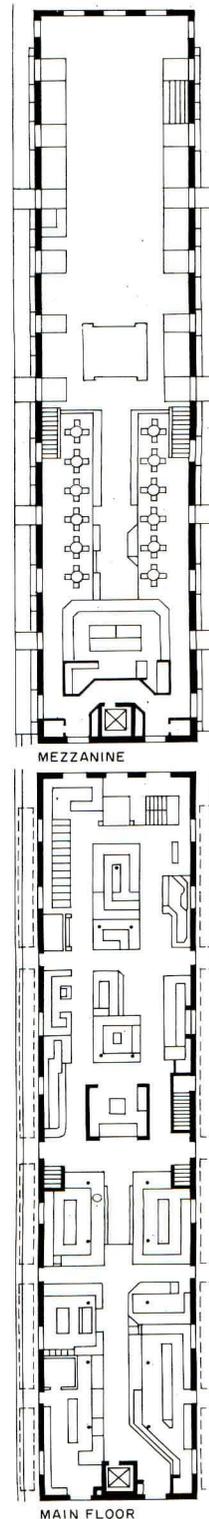
In their plan to revitalize Markethouse on more traditional lines, architects Clark Tribble Harris & Li have employed current retailing techniques that once more make a social setting work. According to partner Jerry Li: "You have to give the clientele what it can't get in supermarkets—whether it's a special ambiance or unusual merchandise." The architects have opted for a lot of both. And it is interesting to compare the ways they have done this here to similar patterns at the much larger Harborplace to be discussed later on. As discussed in the caption, there are careful controls of lighting and tenant graphics and a tight circulation system that is uniquely desirable in this type of retailing. Awnings both inside and outside of windows help to control natural light in order to heighten the theatrical effect and to present a consistent design.

At the official opening recently, nineteen diverse food operations occupied spaces ranging in size from 72 to 530 square feet. These included butchers and green-grocers, purveyors of condiments and ready-made hors d'œuvres to full meals, and a restaurant on the mezzanine to overlook the whole busy scene. The colorful result has a rich vibrant character and a liveliness that make it a place where people want to be.

THE MARKET HOUSE, Washington, D.C. Owner: joint venture of the Western Development Corporation and the Donohoe Companies. Architects: Clark Tribble Harris & Li. Engineers: Tadjer-Cohen (structural); Gormley-Wareham Associates (mechanical/electrical) Vinsant Associates (tenant mechanical/electrical). Consultants: Peter Barna/Lighting Design (lighting); Design/Joë Sonderman Inc. (graphics). General contractor: Western Construction Company.



Despite the seeming casualness here, there is a design formula that similar plans would do well to heed. Architect Li likens the result to a stage set. Instead of supermarket-sized corridors, there are narrow ones that invite people to see the merchandise and each other at close range. Instead of bright even lighting, there are directed pinpoints that highlight the special nature of what is being sold. Instead of rows of standardized displays, there is a variety of stands with individual graphics, both encouraged and controlled by the architects to add to the bazaar-like flavor.





NEW IMAGERY AND PLANNING BRING BACK A TRADITIONAL SHOPPING STREET: WASHINGTON BOULEVARD IN DETROIT

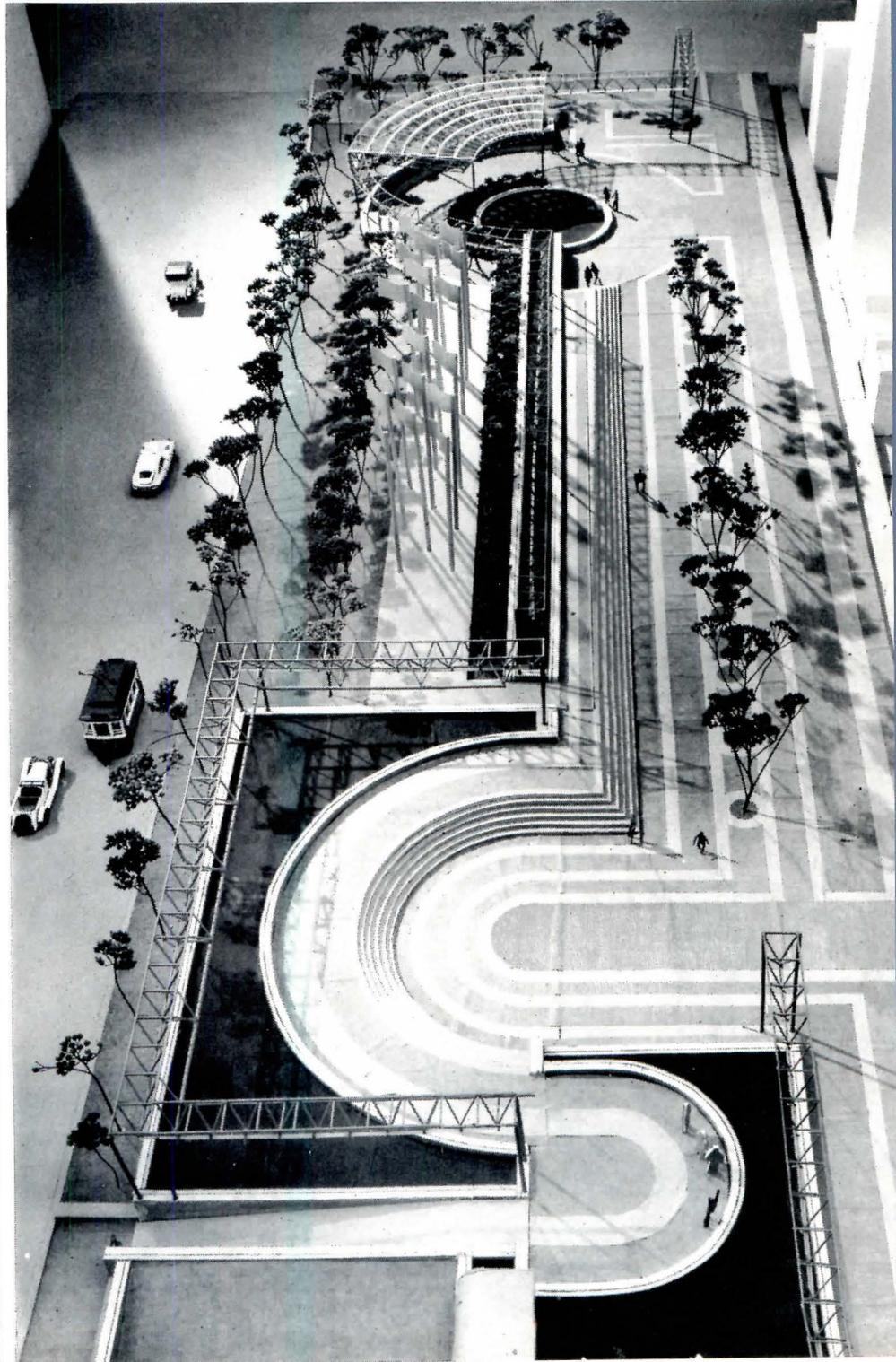
©Timothy Hursley/B. Korab, Ltd.

One of two similar projects by architects Rossetti Associates for contiguous streets meeting at Cadillac Square, this dramatic transformation was done to re-establish two qualities that were seen as vital to the once-fashionable thoroughfare's revival. One quality involved imagery; it was elegance. Until the early 1960s, this had been spelled out by islands of flowers and bronze statues down the center of an eight-lane Baron-Haussmann style boulevard, once bordered by stylish shops and cafes on wide sidewalks occupied by a bustling clientele and leisurely strollers. Such places fulfill an elite variation on the urban marketplace as defined in the introduction to this Study. And especially for large cities, such a variation is no less important to the lifeblood of excitement.

But because times had greatly changed for Washington Boulevard, more was needed than to re-establish imagery. Accordingly, the second thrust of the architects' work involved planning that would bring back a street life. The basic planning decision was to put the pervasive automobile at arm's length for some space to breathe and move. Accordingly, the width of the street was shrunk to four lanes of two-way traffic on the western side of the original central islands. And the land thus retrieved was combined with that occupied by the islands to form a five-block-long urban park, full of varied pedestrian spaces, and projected cafes.

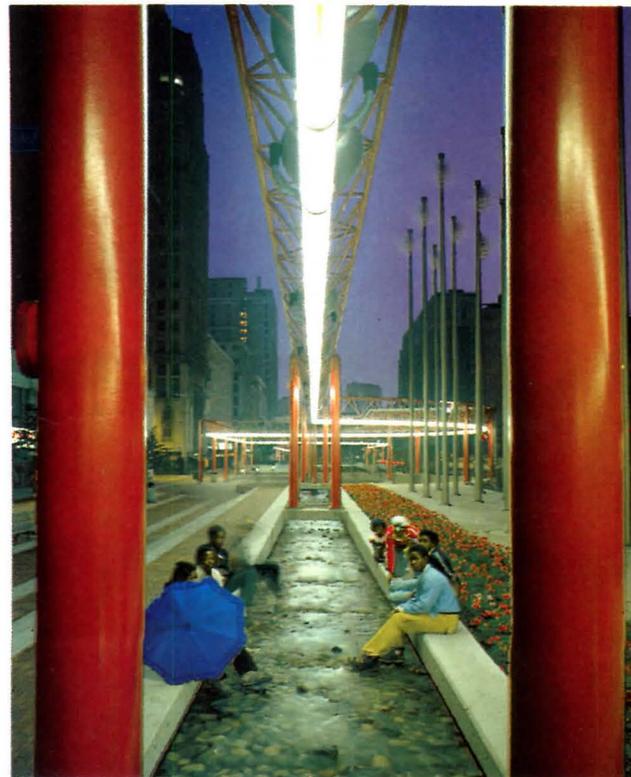
According to project designer Jim Amdal: "Rossetti's work here will not be judged in terms of design, but in terms of the influence it has in turning around the decline of a once-great avenue." And things are happening. While there are still lots of empty retail and commercial space, a new residential project is beginning construction, and hotel occupancy has stabilized, both bringing the promise of a renewed liveliness to the boulevard.

WASHINGTON BOULEVARD IMPROVEMENT AREA, Detroit, Michigan. Owner: *City of Detroit*. Architects: *Rossetti Associates/Architects Planners—Gino Rossetti, Jim Amdal (designers); John Malak (production/project management); Al Fraser (project management)*. Engineers: *McClurg and Associates, Inc. (structural); DiClemente-Siegel Engineers (electrical/mechanical); Urban Engineering Company (civil)*. Landscape architects: *James C. Scott and Associates*. General contractor: *Waterford Construction*.





The imagery that architect Rossetti has brought to Washington Boulevard is both elegant and definitely of the twentieth century. Over 3,000 feet of red-painted steel trellis-like structures contribute to the style of the project and help to define the various spaces. They also carry a strip of distinctive lighting. The central block (seen in the aerial view) employs water in varied pools and fountains that extend up into the trellises. At the Grand River intersection (background of aerial and photo left) a circular light sculpture by Jim Pallas responds to motion and sound. One location for the projected outdoor cafes, that will complete the desired liveliness, is under this sculpture. An old-fashioned trolley threads through the whole, and encourages decreased dependence on automobiles. The result is meant to be a high-quality framework for a linear version of the urban marketplace.



A NEW MARKET COMPLEX WITH THE VITALITY OF AN OLD LANDMARK: HARBORPLACE IN BALTIMORE

Baltimore has poured a lot of energy and money into building a new center for its business district near the harbor. Starting in 1958, some \$180 million of private and public pre-inflationary monies were spent on the 33-acre Charles Center alone. Current plans for the downtown area project an ultimate investment of \$1.25 billion. But until now, the missing ingredient has been a sense of marketplace liveliness that would provide a focus, and unify downtown.

Harborplace is such a focus. Thanks to architects Benjamin Thompson & Associates and the developer, the Rouse Company, two new waterside pavilions are already functioning as a traditional marketplace—an active town center, although problems of access across the busy surrounding streets have yet to be resolved. Almost 250,000 square feet of restaurants, cafes, retail stores, stands and kiosks are producing at last a vivid street life. And the fact that they can do this is a major part of the story of their design. It is a story that proves that—in the right hands—completely new construction can fulfill historic roles, without necessarily bringing along the historic trappings.

In form and scale, the two new buildings of the complex have a strong resemblance to the wharf buildings that once occupied the site (bottom photo). Even the pennants that fly from the new roofs are replicas of those once used to signal which ships were berthed at the moment. According to Jane Thompson, "We remembered the tradition of commercial waterfront construction: shed-like warehouses and covered piers, ferry terminals, yacht clubs and waterfront grandstands for viewing races and regattas. We also remembered the great tradition of America's major city parks, once animated by dramatic greenhouses, horticultural halls and exposition buildings. There is no attempt at an architectural 'style' here. If anything, it is post-post modern. There are no tacked-on decorations. Everything you see comes from basic considerations of how the project would work best for its modern purpose."

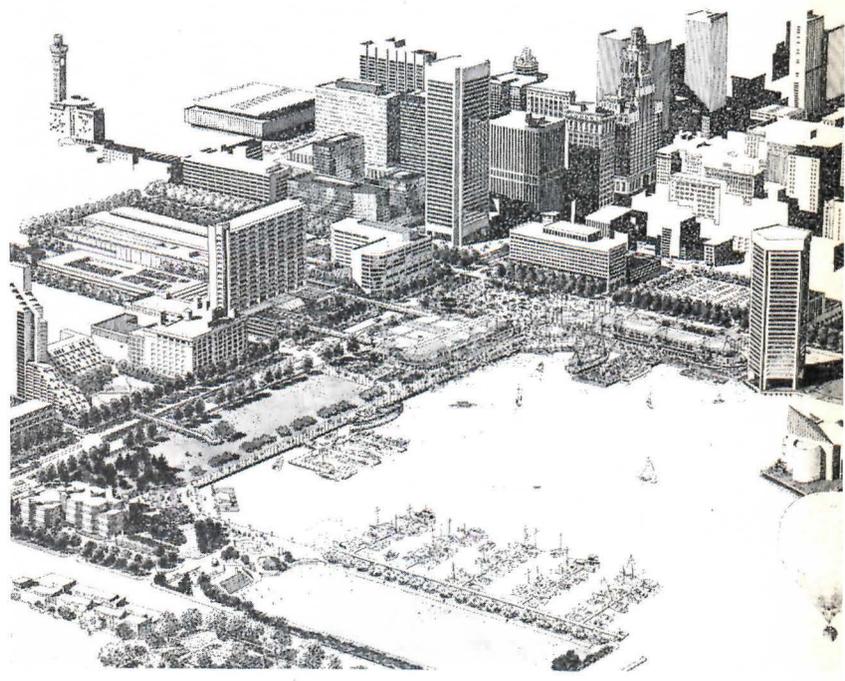
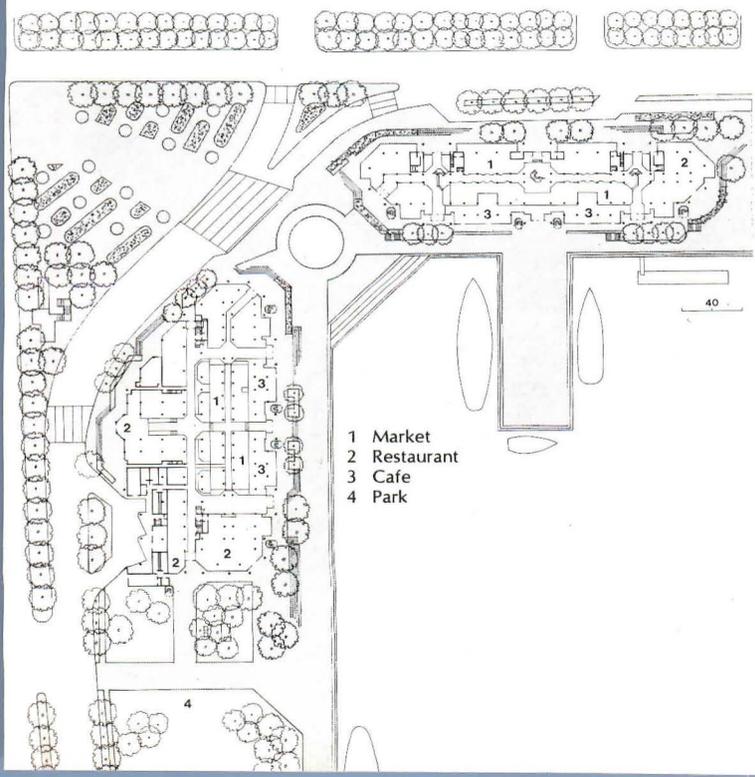
For instance, the "porticos" that interrupt the linearity of the shed-like roofs make places for people to see through the buildings, and encourage them to come in from both sides. The transparency of the exterior walls allows views of interior activity, and—at the porticos—helps to carry through one of



Clemens Kalischer



The concrete and steel-roofed pavilions are a major part of an ambitious people-oriented waterfront development planned by Wallace Roberts & Todd. This includes a park that is to stretch from the western building (left in aerial view and sketch perspective) around two sides of the harbor. It is to be lushly planted with trees. And according to Benjamin Thompson: Both the trees to be planted in front of the new buildings and the color of the new standing-seam aluminum roofs are meant to carry the future belt of green along the shore on this side of the harbor. The historic frigate *S.S. Constellation* is permanently moored, and the wide plaza between the two new buildings is meant to open diagonal vistas to the harbor and the frigate from the center of town.



the basic design considerations: "to embrace the shore without blocking it." The promenades that connect these porticos at the second-floor levels reinforce the nineteenth-century proportions, and fulfill both the historic and modern functions of giving people places to view the passing scene, while they stroll or relax in outdoor cafes. The sloping roofs of the exterior "greenhouses" came from the need for temporary structures over utility easements in some locations. The high sloping roofs of the main buildings conceal mechanical equipment.

Roughly the size of Thompson and Rouse's prototypical (and enormously successful) Faneuil Hall Marketplace in Boston (RECORD, December 1977), Harborplace has already achieved a comparable volume of business. It is an instant commercial as well as social success. All of this is due to some very careful and by now expert decisions by both architects and developers. A variety of businesses was encouraged, and those most different from each other were often placed side by side. The architects call it "a mixed-use marketplace." There is a distinct difference, however, in the commercial thrusts between the two buildings which constitute the market.

The northern pavilion has a narrow central corridor that widens where it meets the vertical circulation inside the porticos. The purpose is both social and commercial: to bring people close to each other and the merchandise. This pavilion houses established specialty shops and some of the more formal restaurants and cafes.

More open in plan, the western pavilion mostly houses food: quick service stands and kiosks, produce, fish and meat markets, more restaurants and various food specialty shops. In order to ensure the sale of less profitable produce, fish and meats, a raised low-rent aisle especially for their display runs down the center, and ties in with fast-food operations on the sides. One section of this pavilion is devoted to craft sales, and can be rented on a trial basis with one-month leases. Here, the architects have supplied complete facilities, while the spontaneous natures of some of the businesses, such as a kite store, have supplied some of the more novel graphics.

With such a mix in the western building there was a chance that both the quality of the stores and their graphics might not be up

Clemens Kalischer



Clemens Kalischer



Clemens Kalischer





According to Ben Thompson, It was very important that the new buildings have equal faces with no fronts or backs. This was a major reason for their pavilion-like qualities, that work so well for both their planning and functional roles. Still, the concept was not easy to sell to even such astute clients as Rouse. The traditional shopping center has a back for garbage and deliveries, and a front with limited entrances, so that people will pass by all of the shops to reach the anchors at the ends. Of course, this would have worked against the site's basic assets and tended to block the harbor from downtown, instead of opening it up.



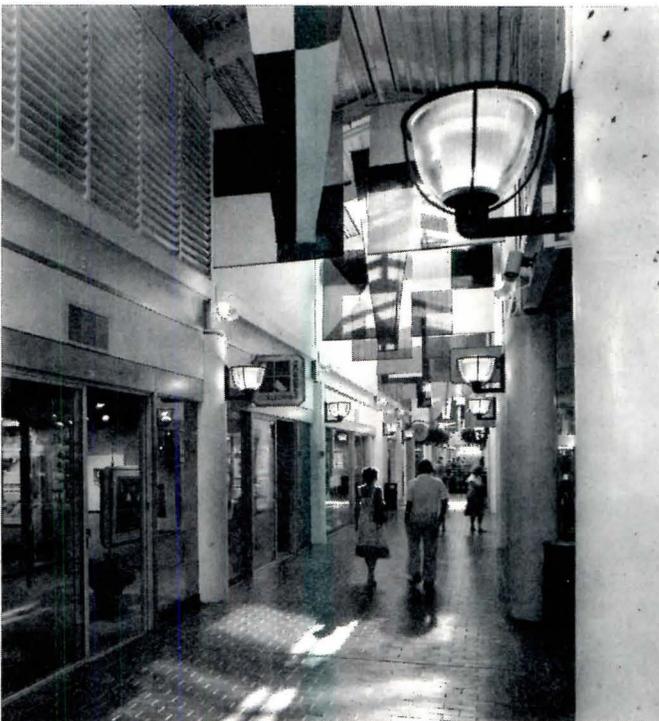


to standard. But the commercial and visual planning success at Harborplace results from careful control of what businesses may lease and how they should look when they get there. According to Thompson's associate-in-charge Bruno D'Agostino: "The rush to get occupants in may have helped us even on the long-term shops. All of the storefronts, basic stands and storage facilities were provided by the developer as we designed them. Unlike the practice in shopping centers, there was a basic framework for individual additions and modifications. These facilities were sold to the tenants as they moved in."

Where did all the seemingly pent-up demand at Harborplace come from? According to Sandra Hillman, director of the Baltimore Promotion and Tourism office, fully 50 per cent of the people who came to the adjacent World Trade Center observatory are from out of town. Clearly, the critical mass of such attractions grouped together can become a tourist magnet—and will become more of one when a new aquarium is completed on a nearby site next year.

Considering its vast popular success, it is surprising that there was so much opposition to the project before it was built. According to Ben Thompson; "We exhibited a model for three months before a referendum occurred in an anti-construction atmosphere. A lot of people thought there shouldn't have been any construction on the site at all—that it should be left open for the people." But it is clearly not just the architects and the developer who won the referendum; it was people as well. Overnight, Harborplace has become the major cultural and recreational activity in a downtown that desperately needed one.

HARBORPLACE, Baltimore, Maryland. The Rouse Company. Architects: *Benjamin Thompson & Associates, Inc.*—partner-in-charge: *Bruno D'Agostino*; project architect: *Charles Izzo*; interior architect: *Wendy Tinker*; project team: *E. Diehl, J. Thompson, J. Piatt, K. Shapiro, T. Quirk, J. Van Sickle, D. Chilinski, R. Bernstein, B. Millham, I. Bereznicki*. Engineers: *Gilum-Colaco* (structural); *Robert G. Balter Co.* (soils); *Poole and Kent* (plumbing); *Joseph R. Loring & Associates* (mechanical/electrical). Lighting consultant: *Valley Lighting*. Landscape architects: *Wallace Roberts & Todd*. Photo murals: *Ashton Worthington*. General contractor and cost consultants: *The Whiting-Turner Contracting Company*.



By careful design control with a broad approach, the architects have created interior spaces that are neither rigid nor disordered. The results are what was wanted—a fresh and festive air. And from noon to late at night, when the buildings are often mobbed, the bright but controlled graphics clarify the rich visual impressions. A view of a cross aisle in the western building (right) and other views in the same building (top and bottom) reveal the high level of visual control, despite the input of many individual entrepreneurs, often in open stalls. A more closed plan with narrow aisles in the northern building (left and below) is meant to bring people in closer proximity to the merchandise and each other.







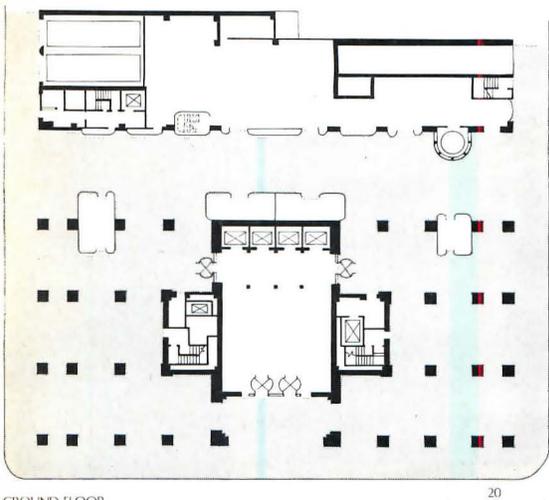
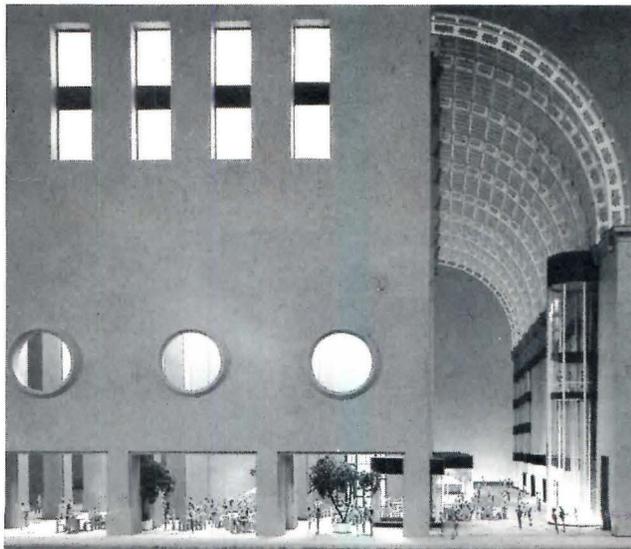
Behind a "Renaissance" tower: a contemporary structure that lets it work



The granite exterior of Philip Johnson's AT&T corporate headquarters in New York City is quite unlike any other—in esthetics and in engineering. Though Johnson has unabashedly borrowed from the Renaissance revivalists, he has designed an eye-catching wall texture—a subtle rhythm of granite blocks and glass that offers a contemporary expression on a classical theme.

At the same time the exterior is a very carefully engineered granite curtain wall—it had to be so that rigid pieces of granite could clad a flexible steel frame. As structural engineer Leslie E. Robertson observes, the design is "... an attempt to reconcile the application of materials not used in some time with the kind of structural systems that we know today."

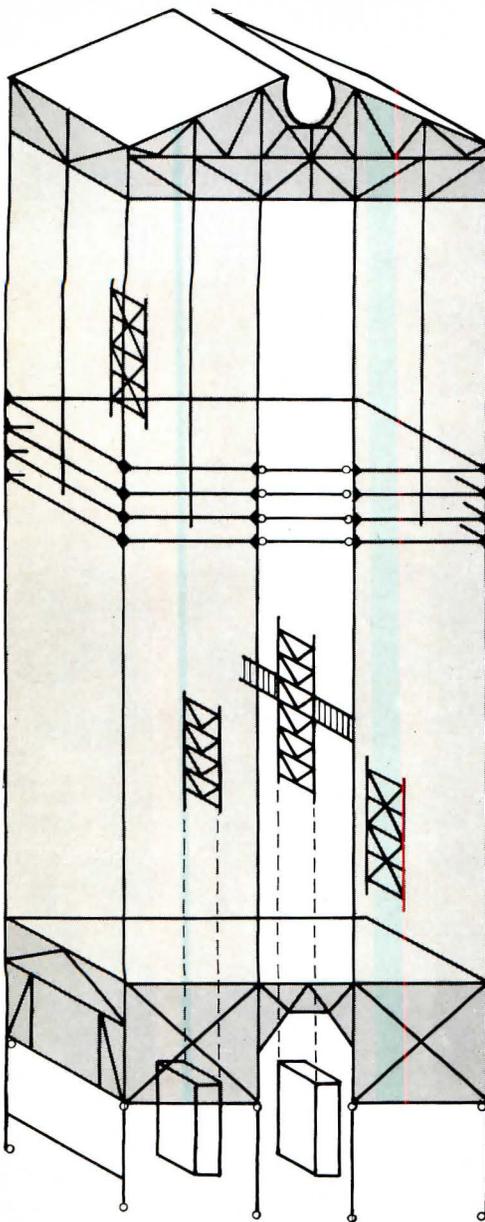
The pieces of granite are individually attached to the building to minimize thickness of joints and to enhance safety against the possibility of progressive failure. With multiple joints provided vertically and horizontally, structural and thermal movement can be accommodated in a series of small increments. For this reason, joints needed to be only $\frac{3}{8}$ in. which the architects wanted. These are "soft" joints of silicone sealant, which is used for both granite to granite and granite to aluminum joints.



GROUND FLOOR

20





SIMPLIFIED STRUCTURAL DIAGRAM

The structure can be considered as a series of tubes: the cross-braced sections at the top and bottom of the building and the two vertical tubes on either side of the center arch connected by "soft" 50-ft beams. Outrigger trusses convert wind forces into axial forces in the columns.

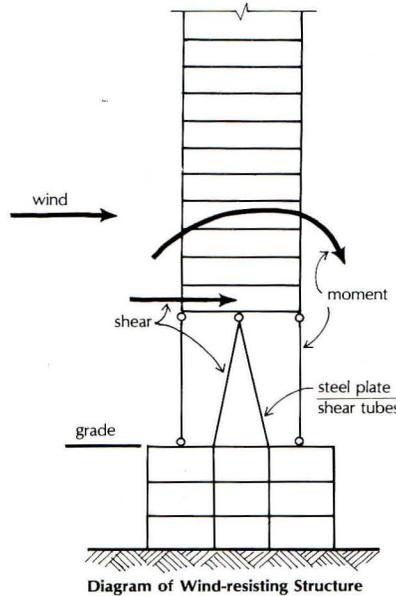
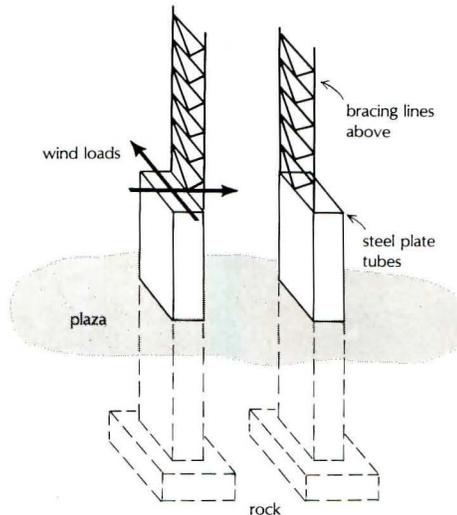
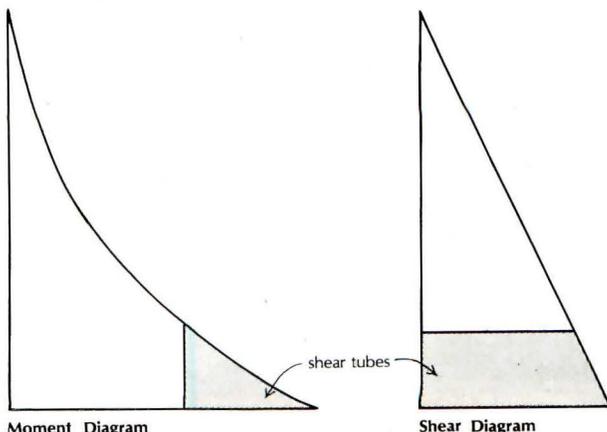


Diagram of Wind-resisting Structure



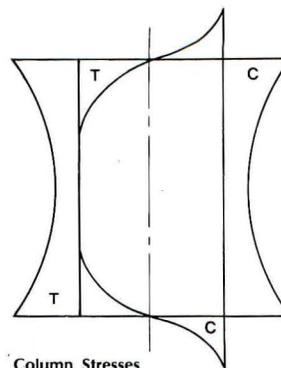
Shear Transfer to Ground

Shear from the overturning moment is taken by the shear tubes in the core so that it can be avoided in the stilt columns. The shear tubes in turn transfer shear to the ground floor slab and other slabs below and then to rock. The overturning moment creates tension and compression in the stilt columns. Moment is constant in the stilt columns because the shear tubes have picked up the accumulated wind forces.



Moment Diagram

Shear Diagram



Column Stresses

The architectural design very much affected the methods for attaching the granite to the building. And the architectural design and building shape set up conditions requiring resourceful, innovative solutions for structure. For example, the engineers were able to keep the dimensions of the two structural core units within the architects' prescribed limits by utilizing steel-plate shear walls from the foundation to the sky lobby 77 ft above grade.

No ordinary office building this, for the architects hoisted the office tower 134 ft in the air like a tree house for security purposes, and to create an open plaza at the base for the public—in effect returning the building to the city. Occupants and visitors take shuttle elevators to the sky lobby where they change to local and express tower elevators.

Because the tower perches on stilt-like columns, the engineers could utilize them only for axial load—gravity load and direct tensions and compressions induced by wind overturning forces. The wind shear forces that accumulate from the top down are transferred to two shear tubes in the core that in turn dissipate the shear forces through the grade slab and basement slabs to the rock at the perimeter of the site.

Only half facetiously, Robertson calls the building frame a "cuckoo" of a structure—mainly because of varied and complex interactions. Yet, in many ways, it comprises simple elements—a child, he says, could construct it of dominoes.

Robertson describes the structure as a series of tubes (see diagram top left, this page): The first tube is the lower cross-braced portion of the four walls supported by the stilt columns. A second short tube is the cross-braced portion at the top. The rigidity of these two tubes limits deformation of the frame where fields of granite occur to avoid cracking. Next, two tall vertical tubes are formed at the ends of the building by a combination of the narrow end walls, and the side walls up to the 50-ft beams in the center. In a sense these are "partitioned" tubes because wind bents with outrigger trusses (see diagram again) section them.

In plan the building is long and narrow because little interior office space was needed. To decrease deflection of the build-

ing in the narrow direction, the engineers provided outrigger trusses eight floors apart at four bents in the office tower. These trusses throw direct tension and compression forces into exterior columns when wind forces are transmitted to the core.

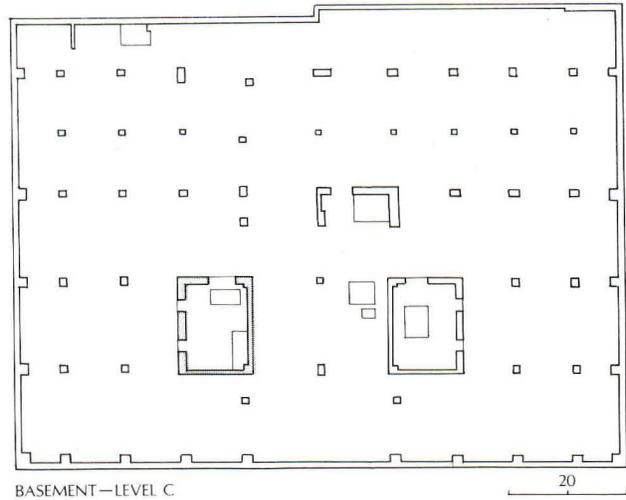
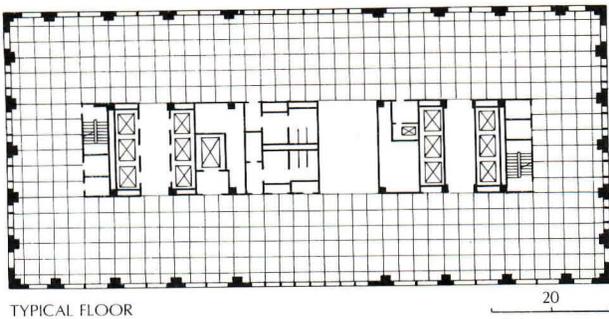
The granite masonry of this building does not restrain movement of the steel frame as does the masonry of older buildings in which the masonry and its back-up engage the exterior steel frame, stiffening the structure.

In the AT&T building, the walls are solid granite with an expression of horizontal joints 2½ ft apart and vertical joints 2 ft apart. The reality is the solid stone; but some joints are real and others are simulated by kerfing to have larger pieces of granite for economy in handling and attachment. For example, the field ashlar pieces at the base are 2½ ft high by 10 ft wide and 2 in. thick. The pier ashlar pieces are 4 ft or 2 ft high and 5 in. thick at window jambs and 2 in. at spandrels. Mullions are 6 by 6 in. and 10 by 10 in., and 6 or 8 ft high. Spandrels are 2 in. thick, and hookers (L-shaped corner pieces) are 3-in. thick. Hooker pieces avoided joints at the corners, enhancing the massive feeling of the stone.

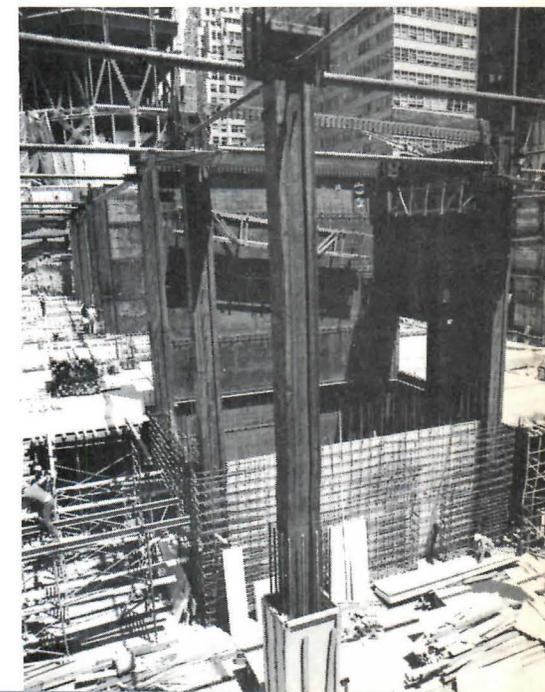
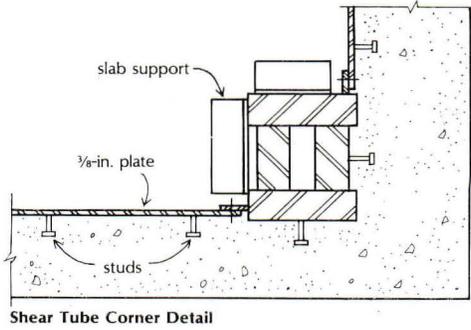
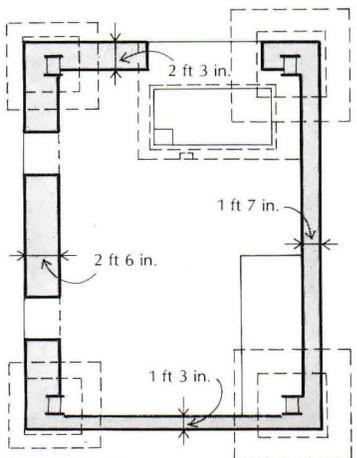
Johnson/Burgee's concern for ways to work stone to express light and shade and patterns was serious indeed, reports partner Alan Ritchie, principal in charge on AT&T. Their concern resulted in meetings over an 18-month period, some with old hands in the industry such as architect Howard Swenson who once worked for Bertram Goodhue and Raymond Hood.

The stone is Stony Creek granite, pink in color, from a quarry near Branford, Connecticut. It has very little veining, says Ritchie, so that the kerfed joints (filled in with silicone sealant) will be indistinguishable from the real joints.

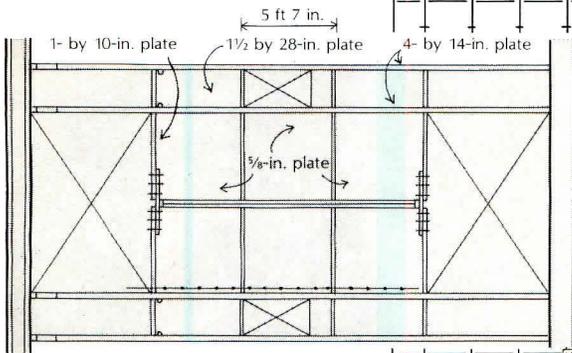
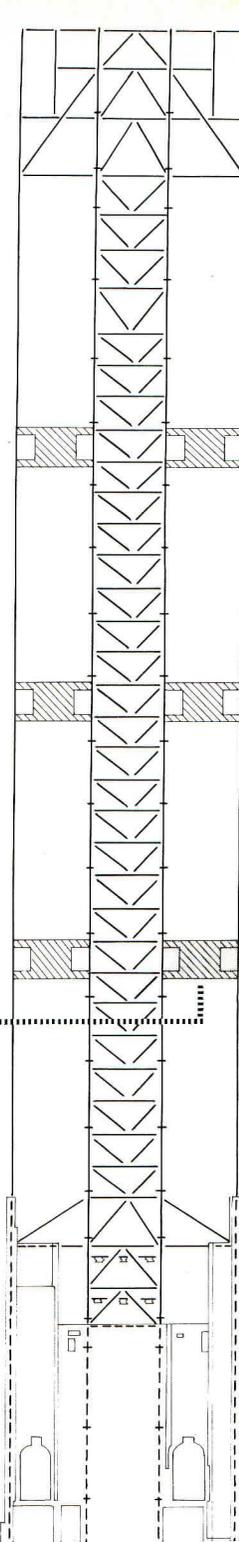
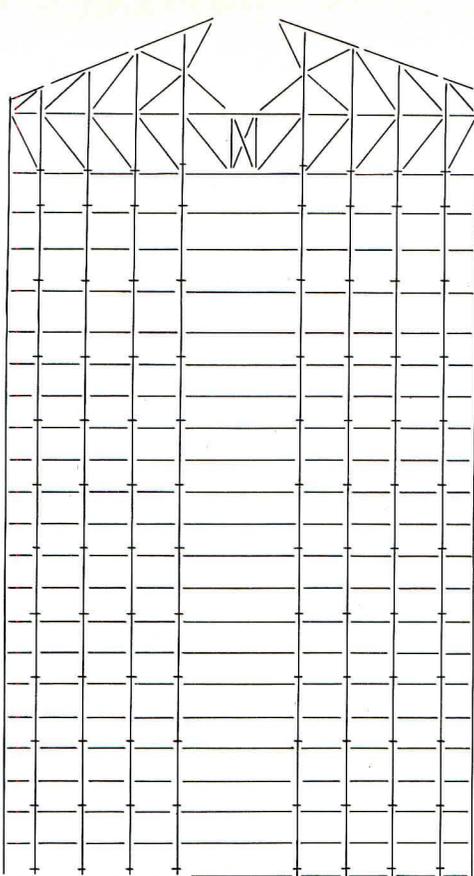
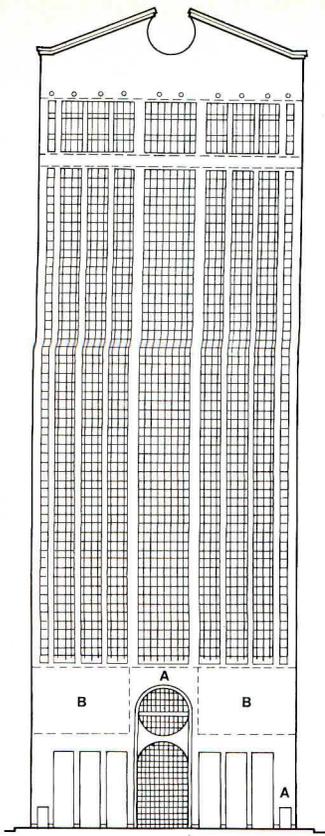
The granite curtain wall hangs from the structure in two basic ways. Above the central arch up to the fifth floor, the field ashlar pieces are supported by angles bolted to inserts set in the solid concrete wall backup. On either side of the solid wall, where the backup is concrete block, the masonry angles are supported by vertical steel tubes. (See elevation upper left on page 110 and partial elevation on page 111). In the tower portion all



The structural cores were tight for space with the need to accommodate stairs, freight elevator, pipes and ducts. The engineers saved precious wall space by using steel plate shear walls on two adjoining sides. They work compositely with concrete through use of stud connectors, spaced 2 ft o.c., except at floor slabs where they are 8 in. o.c.

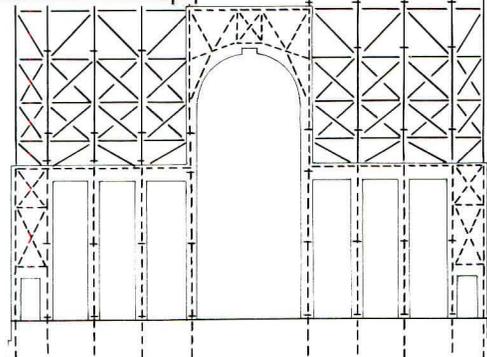


Robert E. Fischer photos



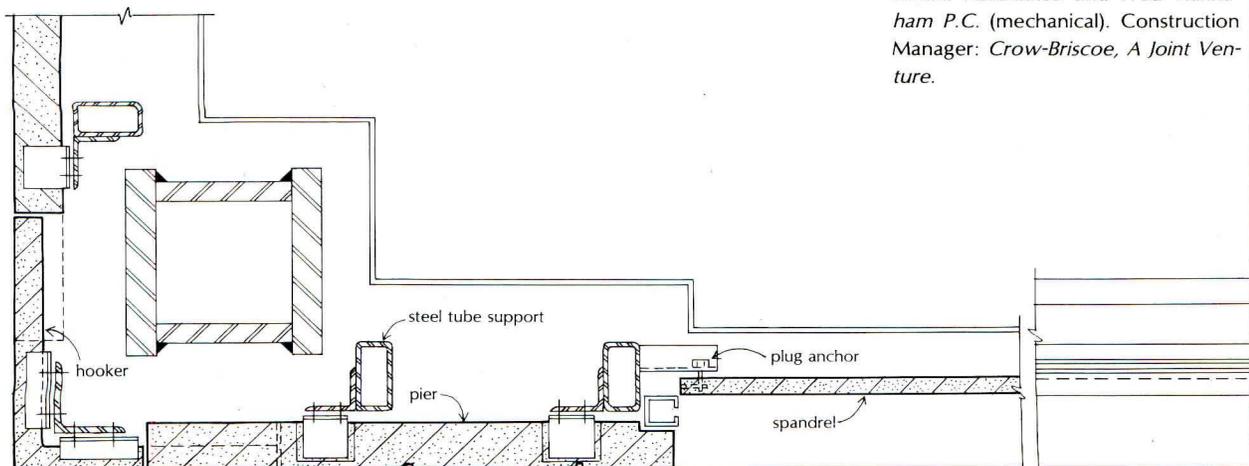
Outrigger Girder

The structure is cross-braced at top and bottom where continuous fields of granite occur so as to minimize deformation and prevent cracking of the stone. The designers avoided pilasters in the center section over the arch by using 50-ft spandrel beams. Wind forces are converted to direct tensions and compressions in columns by outrigger girders.



Structural Bent A (at east face)

Structural Bent 5 (at shear tube)



Section A-A

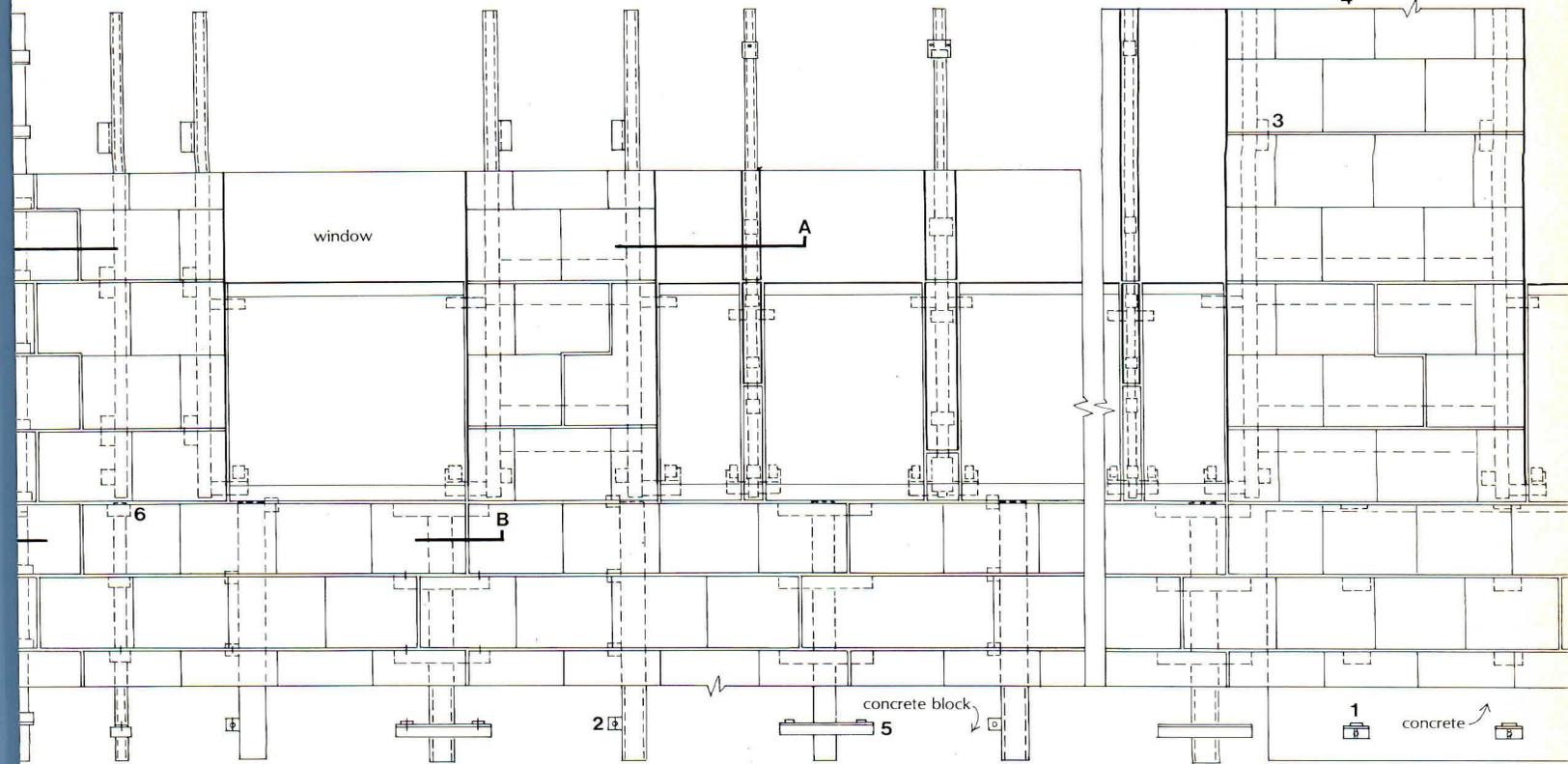
granite pieces are hung from steel tubes.

The steel tubes are interrupted at each floor by expansion joints from 1 to 2 ft below the bottom flange of spandrel beams to divorce movements of the tubes and the building frame. The reasons are: 1) building columns will lengthen or shorten depending upon wind load, 2) columns will shorten because of fixed gravity load and the addition of live load (furnishings), 3) the steel support tubes will experience greater thermal movement than building columns because they are in front of building insulation and nearer the granite.

As insurance against rainwater leakage, the horizontal joints have stainless steel flashing, which abuts scuppers at the guide rails which in turn are connected to scuppers at the windows where leaked water can drain. Stainless steel evaporator pans are provided below the windows.

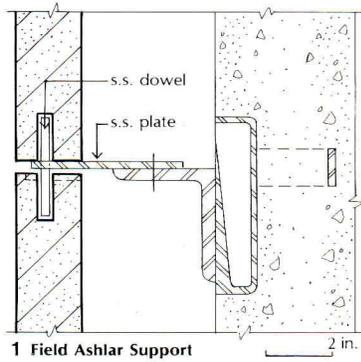
Collaborators on the granite wall, in addition to the architects and structural engineers, were Peter Bratti Associates, Inc., the masonry contractor, Castellucci & Sons, Inc., granite cut-stone contractors, and Hohmann & Barnard, Inc., manufacturers of the stone anchors and supports. Originally the architects selected a 3-in. thickness for the ashlar granite, but this was reduced to 2 in. because of cost. Hooker stones were made 3-in. thick for added strength of these corner pieces. Pier pieces were made 5-in. thick for reveals at window jambs.

AT&T CORPORATE HEADQUARTERS, New York City. Associated architects: *Johnson/Burgee Architects* and *Simmons Architects*. Associated engineers: *Skilling, Helle, Christiansen, Robertson P.C. and Leroy Callender, Consulting Engineer* (structural); *Cosentini Associates and Fred Hannaham P.C.* (mechanical). Construction Manager: *Crow-Briscoe, A Joint Venture*.

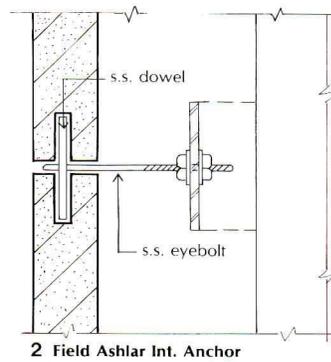


ELEVATION OF EAST WALL AT LOWER BUILDING

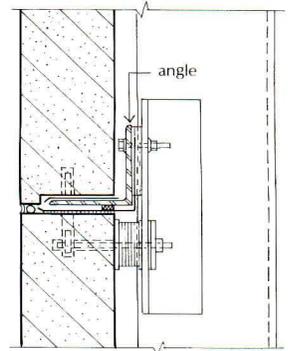
All stones are individually anchored to the building. In the elevation, double lines indicate individual stones, single lines kerfed false joints. At the lower building in the areas marked "A" in the elevation across page, walls are solid concrete and angle supports are bolted to inserts (detail 1). In areas marked "B," where concrete block backup is used, the granite is supported by steel tubes. At office floors all stone is anchored to steel tubes which are supported by angles at floor slabs.



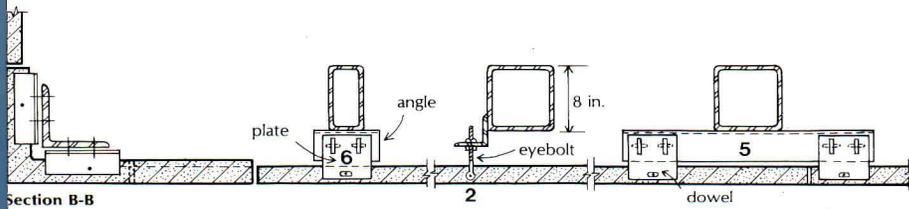
1 Field Ashlar Support



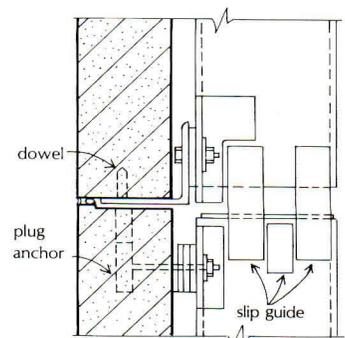
2 Field Ashlar Int. Anchor



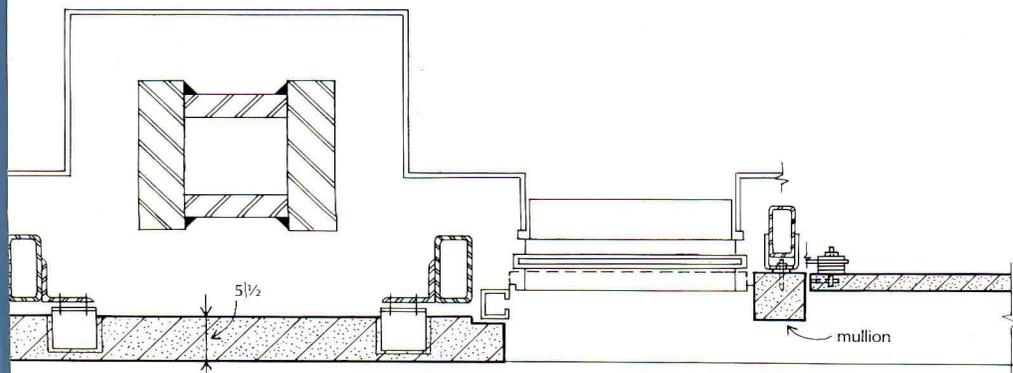
3 Pier Ashlar Support



Section B-B



4 Expansion Joint at Piers



WOOD FASTENERS / "Energy Conservation through Innovative Wood Framing Techniques," an illustrated folder, describes a construction method using 2x6 members, to provide space for six-in. of insulation instead of the conventional three-in. Studs are spaced on 24-in. centers to help compensate for the increased cost of the 2x6. Roof framing is revised as well to provide greater depth for insulation. Various types of metal connecting or support devices tie wood members together. ■ Teco, Washington, D.C.

circle 400 on inquiry card

LIGHTING CONTROL / Brochure describes an energy-saving interior lighting control system, designed for use in areas where exterior light can contribute to total interior illumination. Photoelectric sensors transmit light level data to the control, which turns lights on or off as required. ■ Tri-Tronics Co., Inc., Oak Brook, Ill.

circle 401 on inquiry card

ELECTRICAL INSTALLATIONS / A two-volume, 1,316-page text, the "Electrical Installations Handbook" by G. G. Seip is written as a guide and reference for all those specifying, designing and supervising electrical supply systems and equipment. A free brochure describes the "Handbook," which is priced at \$96.00. ■ Heyden & Son, Inc., Philadelphia.

circle 402 on inquiry card

EMERGENCY LIGHTING / Literature describes the AS-BC Series of six- and 12-volt emergency units for industrial and commercial applications. Self-contained lights use sealed lead batteries which require no maintenance over a normal 15-year life. ■ Dual-Lite, Inc., Newton, Conn.

circle 403 on inquiry card



ARCHITECTURAL FOUNTAINS / Color brochure describes how fountain components are combined into a packaged system at the factory for simplified installation. Information is included on maintenance, reliability, and fountain controls. ■ Imperial Bronzelite, San Marcos, Texas.

circle 404 on inquiry card

FLUORESCENT TROFFER / A 14-page catalog insert describes Guth's line of static and air-moving troffers, including a UL-listed "enclosed and gasketed" unit for wet locations. ■ Guth Lighting, St. Louis.

circle 405 on inquiry card



COMMERCIAL FLOORING / "River Drive" and "Classic Square" New Era Vinyl Corlon floors are shown in a brochure. All color options are illustrated, and physical test and technical data are supplied. ■ Armstrong Cork Co., Lancaster, Pa.

circle 406 on inquiry card

LAMP GUIDE / A revised edition of the "Westinghouse Guide to Incandescent Lamps" includes 24 pages on lamp parts and manufacture, filament design, bulbs and bases, lamp types and classes, operating characteristics, economics, and efficiency. Service hints are provided. Information is generic, rather than limited to this maker's products. ■ Westinghouse Electric Corp., Lamp Commercial Div., Bloomfield, N.J.

circle 407 on inquiry card

CONCRETE POLES / Color brochure covers eight different designs and 39 models of American concrete poles for area and street lighting. Poles range in height from 10- to 32-ft, available in a variety of colors and base configurations. ■ Union Metal Mfg. Co., East Stroudsburg, Pa.

circle 408 on inquiry card

LAMINATING ADHESIVES / Tycel one- and two-part urethane adhesives laminate a variety of substrates: plasticized vinyl film to metal, foam and wood; Korad film to metal; metallized polyester to metal and PVC; fabric to fabric; rubber to metal; and transfer films to metal or hardboard. A tabular chart covers adhesive selection, application techniques, bonding conditions, etc. ■ Hughson Chemicals, Erie, Pa.

circle 409 on inquiry card

SECURITY GUIDE / An illustrated brochure, "Full Circle Concept of Security" describes what a business or institution can do to protect property, personnel, and themselves against major hazards such as arson, burglary, hold-ups, attacks on people, and fire. It covers Diebold's security product line, and explains services offered. ■ Diebold, Inc., Canton, Ohio.

circle 410 on inquiry card

LAMP BALLAST / A cross-reference guide lists the Universal "Service Guaranteed" fluorescent lamp ballast numbers with other makes, including energy saving products. Also included are a ballast rating table, mounting information, CBM certification and code dating. ■ Universal Mfg. Corp., Paterson, N.J.

circle 411 on inquiry card

VANDAL-RESISTANT LIGHTING / The Parkpak luminaire features rugged construction, durable finish and excellent light control, according to a brochure on the vandal-resistant HID indoor/outdoor fixture. ■ Johns-Manville, Holophane Div., Denver.

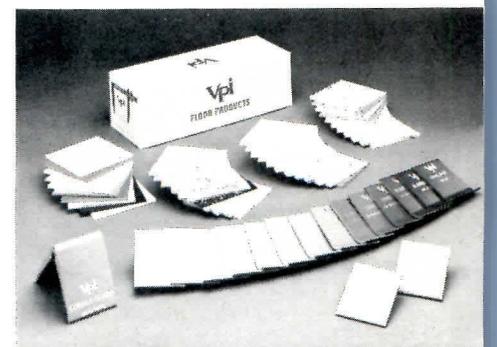
circle 412 on inquiry card

DRAFTING SUPPLIES / Catalog offers discount priced items from major manufacturers. Over 125 new products include vellums, electric erasers and overhead transparencies. A section explains Saga's custom printing services. ■ Saga Div. of Dade, Inc., Minneapolis.

circle 413 on inquiry card

STRUCTURAL ADHESIVES / A selector guide for Versilok acrylic structural adhesives suggests the products best suited for bonding dissimilar metals, such as aluminum to steel. The booklet lists and describes various adhesives, suggested bondable substrates, viscosities, cure times, and other data. ■ Hughson Chemicals, Erie, Pa.

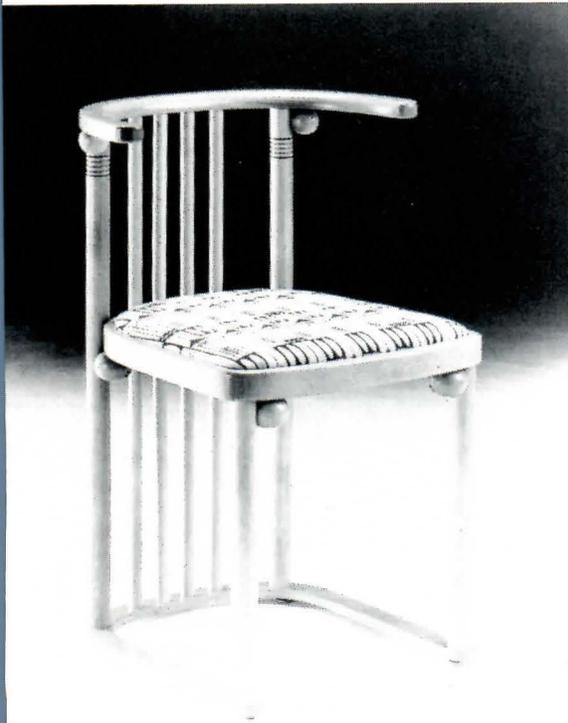
circle 414 on inquiry card



SOLID VINYL TILE / An expanded sample kit includes examples of all VPI solid vinyl floor products, wall base, and corner guard. Catalogs cover both Floor Product and Conductile lines. ■ Vinyl Plastics Inc., Sheboygan, Wisc.

circle 415 on inquiry card

For more information, circle item numbers on Reader Service Inquiry Card, pages 167-168



circle no. 303

Three Josef Hoffmann designs resurrected for current production

circle no. 301 for chair and no. 302 for settee



In keeping with ICF's belief that great furniture designs from the past should continue to be offered, three famous chair designs by Josef Hoffmann are being re-introduced this month at Designers' Saturday in New York City.

In 1903, Hoffmann with Koloman Moser and Fritz Wärndorfer founded the Wiener Werkstätte, a group of artisans seeking through design and manufacture of furniture, and other objects, "an outspoken mark of individuality, beauty and most exact execution . . . yet [furniture] which lies within the buying range of the poorest. . . ." Two of the most well known of Hoffmann's commissions are the Settee (left) and Spindle-back Chair (top left), designed in 1909 for the Fledermaus Café in Vienna, a favorite bistro for Viennese literati. The Adjustable Rocking Chair (above), designed in 1905, pre-dates mechanical recliners, as the seat flips over to support feet and legs. ■ ICF, New York.

more products on page 121

FLEXCO **Radial** Rubber Tile and Stair Treads

For safe footing and good looks in high traffic interiors . . .

This unique new rubber floor tile is designed especially for interior floors where safe footing is required and handsome, easy to maintain appearance is desired. 1" diameter raised studs molded onto a special compound of tough, extra resilient rubber provides greater traction by allowing dirt and spilled liquids to drain off the walking surface. Extra resilience contributes substantially to safe footing.

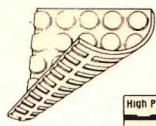
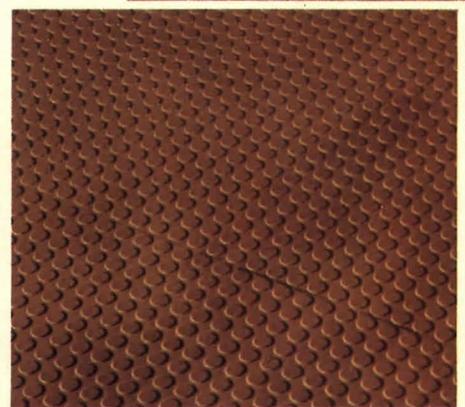
Radial rubber tile is recommended especially for high traffic areas such as air terminals, shopping centers, ramps, elevator lobbies, stair landings and offices. It is made in two profile designs and in overall thicknesses of 1/8" and 3/16" with smooth back, and .210" and .235" with Acoustibak™.

Flexco also makes matching radial rubber stair treads as well as a complete line of rubber and vinyl treads, risers and stringers, rubber tile, conductive vinyl tile, cove base and vinyl carpet accessories.

🔥 For areas which require Class A fire rating, Flexco can supply on special order Radial Tile, Stair Treads and accessories which meet ASTM-E84-77A flame spread rating of 25 or less and smoke density of 75 or less.

For samples and information, write or call (toll free):

FLEXCO™ division of Textile Rubber Co., Inc., Tuscumbia, AL 35674 ☐ 1-800-633-3151

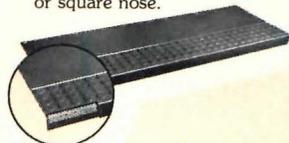


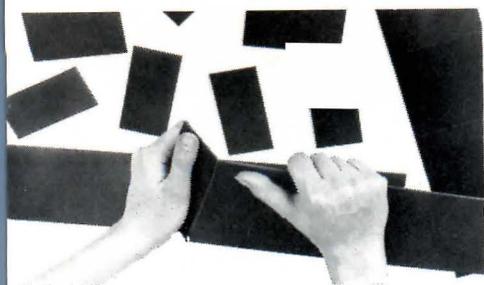
Tiles available with Acoustibak™.

High Profile (.050 raised design)

Low Profile (.025 raised design)

Exclusive reinforced metal nose. Available in round or square nose.





LEVELING SHIMS / *Korolath* plastic shim strips are used to align precast panels, tilt slabs, and level other architectural and structural components. Offered in various widths and thicknesses, the shims are scored to let users snap-off pieces as required. Designed to replace rust-prone steel shims, the strips resist fractures and have a 5,000 psi compressive strength. ■ Koro Corp., Hudson, Mass.

circle 304 on inquiry card

ROOFING STAPLER / The "Neptune 49" stapler is a "bottom Load" pneumatic fastening tool that flush drives 16-gauge, flat-crown staples in lengths up to 1½-in. Tool is said to increase production up to 10 squares a day. Features include hardened safety triggers, back and front plates; shingle guide; and constant, positive control release, assuring maximum shingle holding power along with uniformity. ■ Power-Line Sales, Inc., El Monte, Calif.

circle 305 on inquiry card

STACKABLE UNITS / Individual components of Giotto Stoppino's "Stackable" unit work easily as occasional tables. Several "Stackables" stack and line up to form portable book and display cases for home, office or store. The system is molded in durable polypropylene, and comes in white, red, leather and sand colors. ■ Beyerlian Ltd., New York City.



ANTIQUE BRASS FAUCET / "Model 952" is an antique brass version of this maker's most popular chrome widespread faucet. Washerless faucet is designed for top mounting, with installation from six- to 16-in. centers through use of flexible water supply tubes. ■ Delta Faucet Co., Indianapolis.

circle 307 on inquiry card



SITE FURNITURE / Constructed of 11 solid 2-by-3-in. redwood center rails individually fastened at the rear to heavy formed steel bands, the *Balus-trade* bench is said to provide comfortable, moderately-priced seating indoors or out. Standard length is 72-in.; pedestals are available in either freestanding or permanent-mount versions. ■ Landscape Forms, Inc., Kalamazoo, Mich.

circle 308 on inquiry card

MODULAR FILING / Space-saving *ThinLine* "Conserv-a-file" units are available in the standard letter depth of 13⅜-in. Modules are designed with tiers that save space by eliminating the "lip" found on conventional lateral shelves. Units are offered with tiers for use with tip tab or side tab folders, expandable folders, binders, EDP tape reels and forms. Systems can be expanded to create movable "Roll Away Bi-file" and "Tri-file" for two and three-row high-density filing. ■ Supreme Equipment & Systems Corp., Brooklyn, NY

circle 309 on inquiry card
more products on page 123

Specify Aiphone. The intercom that's as good as your design.



Circle 49 on inquiry card

You're the one who's put all that talent and effort into the project. So follow through, by specifying equipment of comparable quality. Specify Aiphone (say A-phone).

Aiphone means intercom, and only intercom. We're specialists, and we have been for 30 years. And we're versatile. We have 20 different intercom systems and over 120 items, so that you can have exactly what you want. And, thanks to our factory direct source of supply, our equipment is readily available. In fact, we ship the very day the order comes in to us.

Reinforce your quality with our quality. Maintenance-free Aiphone intercom systems.

We're the talk of the town.
AIPHONE U.S.A., INC.

Call or write us for the name of the Aiphone specialist near you.
1700 130th Ave. N.E., Bellevue, WA 98005
Telex 32-0288 or phone (206) 455-0510

Wash more hands per gallon.

Getting more use out of water that used to go down the drain. That's the money-saving Bradley Washfountain.

When compared to standard lavatories, a Bradley Washfountain can cut water consumption from 30% to 70%. Lowering water usage to lower water-heating costs.

The saving starts by delivering water in a spray pattern rather than a solid stream; a pattern that allows the Washfountain to handle more hands

at once. With water that is thermostatically controlled to eliminate water wasted while adjusting temperature. And foot-operated or push-button valves to prevent the water from running after washing.

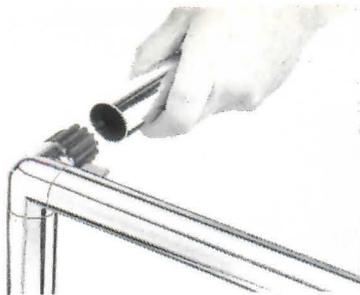
Bradley Washfountains also cut installation costs by as much as 30%... save an average of 25% in floor space. And cleaning one Washfountain instead of multiple lavatories cuts costly maintenance time.

Find out exactly how much of a savings a Washfountain can hand you. Contact your Bradley representative or write: Bradley Corporation, 9101 Fountain Blvd., Menomonee Falls, WI 53051. Look for our catalog in Sweet's File Section 15.7/Br.

Circle 50 on inquiry card



BRADLEY SAVES WATER, ENERGY AND MONEY.



BUILT-IN FIREPLACE / The "Energy Max" zero-clearance fireplace features an internal insulation system which allows installation in direct contact with combustible walls and floors. A dual damper-control maximizes combustion efficiency and fuel economy; tempered glass doors and fire screens are standard. Room air is drawn in through bottom vents, reheated and recirculated into the room via the top vents; outside air is used for combustion. An optional fan increases the warming effect of the fireplace. ■ D. G. Shelter Products, Portland, Or.



circle 314 on inquiry card

COMMERCIAL VINYL / A flagstone slate pattern, "Quincy Slate" solid vinyl tile has a deeply textured surface to conceal scratches, indentation and scuff marks common to floors in heavy trafficked areas. "Quincy Slate" is available in four natural slate tones which can be laid either in a uniform color or in random combinations. The size is 11- by 16 1/2- by 1/8-in. plain or beveled, to provide flexibility in choosing either stacked, ashlar or herring bone floor designs. ■ Kentile Floors, Brooklyn, N.Y.



circle 315 on inquiry card
more products on page 125

DISPLAY SYSTEM / A versatile merchandise display structure, Unicub's "Le Brass" components are made of brass plated steel tubing in 1/2, 3/4, 1 1/4- and 2-in. diameters. The plating process used is said to produce a uniform, consistent look that will not rainbow; tubes are given a clear, baked-on lacquer finish. ■ Unicube Corp., Bronx, N.Y.

circle 310 on inquiry card



SAUNAS / The "Energy-Saver" prefabricated sauna series operates on substantially lower energy costs, the result of smaller heaters, superior interior and exterior surfaces, and 1 1/2-in.-thick foam insulation. These saunas, a commercial 8- by 8-ft model and a 6- by 4-ft residential unit, are said to have the lowest heat loss of any sauna on the market. The foam insulation creates a vapor barrier that eliminates moisture penetration. For indoor or outdoor installations, "Energy-Saver" saunas have an interior finish of top grades of pine or redwood. ■ Am-Finn Sauna, Valley Forge, Pa.

circle 311 on inquiry card

PATIO DOOR SECURITY / The "Safe-T" lock system is a new feature available on a redesigned line of Marvin wood patio doors. Operating from a single "no-strike" latch, the lock secures both the top and bottom of the door, and is capable of resisting 1,000 lb or more of pull. Located in the central handle as shown, the "Safe-T" lock assures a strong, positive closure that cannot be jimmed from the outside. ■ Marvin Windows, Warroad, Minn.



circle 312 on inquiry card

VINYL TILE / "Terresque" flooring with the look of clay tile is now available in two low-key natural colors, almond and tan. The solid vinyl tile has a durable, non-porous surface that resists grease and stains. The heavy-gauge tile is suitable for residential and commercial applications, and comes in a 9- by 9-in. size. ■ Kentile Floors, Brooklyn, N.Y.

circle 313 on inquiry card



QUME, INC., Hawley & Peterson Architects.

KALWALL®

The most highly insulated light transmitting material.
Saving energy for 25 years.

KALWALL CORPORATION

1111 Candia Road, Manchester, NH 03103, 603-627-3861
See Sweet's 8.14 / Ka, 7.8 / KaL, 13.11a / Ka, 13.2c / Stu.

Circle 51 on inquiry card



The natural look of aluminum... works beautifully in Denver.

The Denver National Bank Plaza is a beautiful example of the use of Alcoa® architectural sheet in a major curtain-wall project. An office complex consisting of a 26-story tower and two adjacent buildings, it was designed to meet the Denver Urban Renewal Authority exterior facade specifications.

Alcoa supplied approximately 400,000 lbs of specially controlled 5005 alloy sheet to PPG Industries for fabrication and finishing of the spandrel panels. The pleasing natural aluminum finish is Alumilite 215, Alcoa 1 etched and anodized (AA-M10C22), providing a long lasting, corrosion resistant protective coating.

Bill Manning, PPG Branch Manager, sums up Alcoa's contribution to the project: "The Denver National Bank Plaza is typical of the quality and service we continually receive from Alcoa. From the supplying of high quality aluminum sheet to the furnishing of fine technical information and service, Alcoa plays an important part in our success in this field."

Let Alcoa help you on your next curtain-wall application. For more information, write Aluminum Company of America, 1012-K Alcoa Building, Pittsburgh PA 15219.

The Denver National Bank Plaza,
Denver, Colorado
Fabricator: PPG Industries, Inc.
Architect: Skidmore, Owings and Merrill
Contractor: N. G. Petry Construction Co.
Developer: N. G. Petry Construction Co.
Owner: L. C. Fulenwider, Inc.

We can't wait for tomorrow.



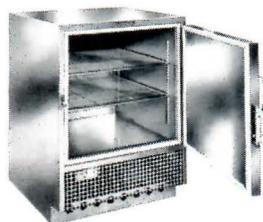
WE PUT IT IN

STAINLESS STEEL UNDER COUNTER LAB REFRIGERATORS AND FREEZERS



UC-5-BC refrigerator has a blower coil cooling system with automatic off-cycle defrosting and condensate evaporator in condensing unit compartment. Two adjustable stainless steel shelves are provided.

UC-5-F-BC freezer is equipped with automatic timer electric defrost. Capacity—5.4 cu. ft. (155 ltr.)



UC-5-CW* refrigerator with cold wall cooling system is equipped with push-button defrost, automatic reset and condensate evaporator. Capacity—5.4 cu. ft. (155 ltr.)

UC-5-F-CW* freezer is equipped with manual hot gas defrost. Capacity—4.6 cu. ft. (130 ltr.)

UC-5-CW-E refrigerator has the same interior features as the UC-5-CW but modified to make it *totally explosion-proof*. Capacity—4.9 cu. ft. (140 ltr.)

*With explosion proof interior only.



UC-5 features a two-tray ice cube cooling system with manual defrost and stainless steel defrost water tray. The cooler section has two adjustable stainless steel shelves. The entire UC-5 series features polyurethane insulated thin wall construction and air-tight neoprene thermo-break door seals. Capacity—5.4 cu. ft. (155 ltr.)

Jewett also manufactures a complete line of blood bank, biological, and pharmaceutical refrigerators and freezers as well as morgue refrigerators and autopsy equipment for world wide distribution through its sales and service organizations in over 100 countries.



Refer to Sweet's Catalog 11.20/Je for quick reference.

Circle 52 on inquiry card

LIGHTING CONTROLS



Designed for use in both new and existing commercial and industrial buildings, the total command "Programmable Lighting Control System" features complete flexibility by providing the

right amount of light where and when it is needed. It not only permits automatic time scheduling of all lighting loads, but also includes a manual override function for individual loads using telephones and standard wall switches. The three basic elements of the system are the compact, easy-to-program controller shown here; a transceiver with power supply, and relays. Control commands are multi-plexed over a single pair of low voltage control wires. ■ The General Electric Co., Providence.

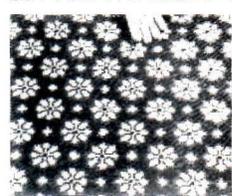
circle 316 on inquiry card



ACCESS CONTROL / The "Interrogator 890" has extensive capabilities, including controlling, monitoring and documenting, from one central location, access to doors, turnstiles and mantraps, elevators, parking facilities, office machines and equipment, fuel pumps, and related facilities. It can also monitor hundreds of environmental and security alarm conditions, providing an audible warning and immediate printout to describe any problem. Access parameters are regulated by the individually programmed authorization on individual *Securiti-Cards* inserted into any of 128 access points, located across town or across the country. ■ Card-key Systems, a VSI Co., Chatsworth, Calif.

circle 317 on inquiry card

CUT-PILE PATTERN



A new design in the six-carpet "Spectra-Graphics" carpet line for commercial and heavy-traffic residential interiors, "Snowflake" is a cut pile print tufted of Anso nylon. It is available in six colorways, and carries a

five-year warranty. ■ Wellco Carpet Corp., Chahoun, Ga.

circle 318 on inquiry card

PORTABLE CART



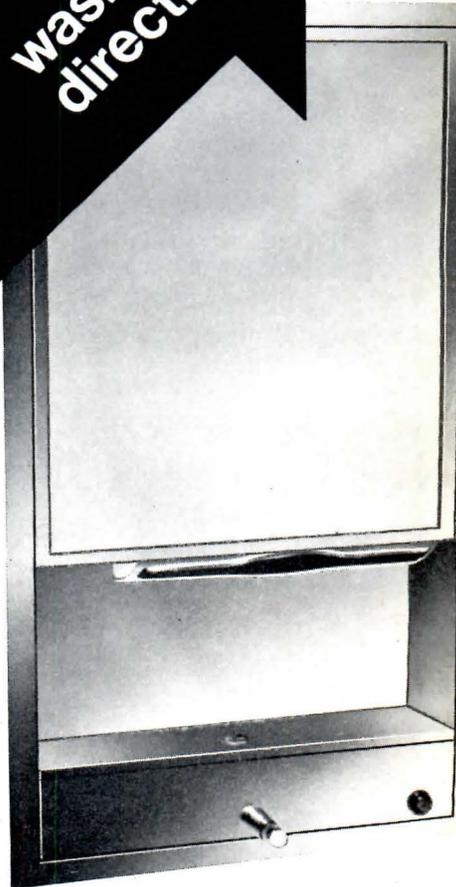
Sturdy cart is equipped with heavy-duty ball caster sets, which allow the cart to move easily over such obstacles such as thresholds and carpeting. Casters are almost invisible and will carry weights up to 200 lb. Cart is finished

in white lacquer, oak or walnut, and has three shelves and two drawers. ■ Intrex Inc., New York City.

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Designing a washroom was never easier.

Washroom directions



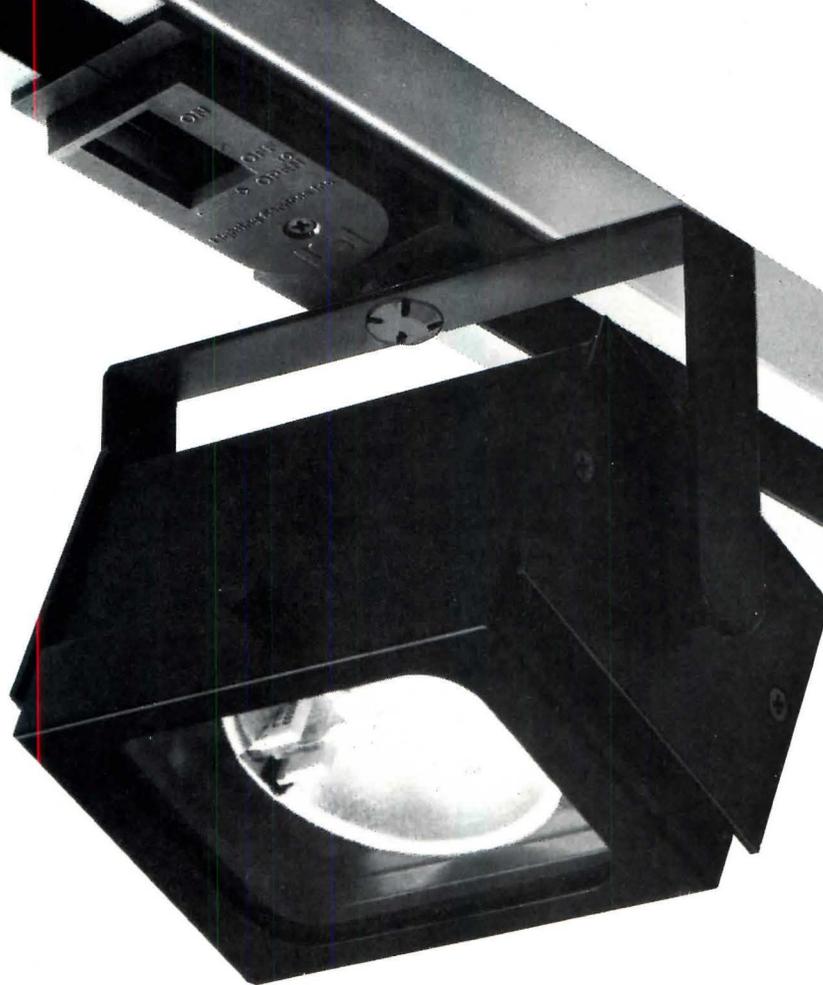
WASHROOM DIRECTIONS are reference manuals designed to guide specifiers in the right direction when selecting Parker washroom equipment. First in this series is the **WASHROOM DIRECTIONS for Public Buildings**, which recommends essential and optional Parker units for use in the various types of washrooms and service areas found in these buildings. For each location given, it provides checklists in each of five design categories — recessed, surface mounted, space-saving, barrier-free and concealall. With a **WASHROOM DIRECTIONS**, you'll find it's easy to provide Parker convenience for whatever type of washroom you design. Send for yours now.



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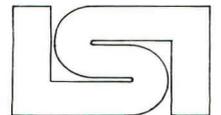
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LSI Track



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- 1) UL LISTED
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- 3) STANDARD 4', 8' AND 12' LENGTHS
- 4) 1 OR 2 CIRCUIT WITH ADDITIONAL 6 #12 WIRE FEED-THRU OPTION
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- 7) FIELD CUTTABLE
- 8) SEPARATE NEUTRAL BUSBAR FOR EACH HOT BUSBAR
- 9) SEPARATE GROUNDING BUSBAR
- 10) ON/OFF FIXTURE SWITCH
- 11) MECHANICAL INTERLOCK FOR NON-ENERGIZED MAKING AND BREAKING OF FIXTURE CONTACT
- 12) OPTIONAL FIXTURE FUSING
- 13) MANUFACTURED IN U.S.A./IBEW UNION



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A photograph of the Saks Fifth Avenue building in New York City. The building's facade is a grid of glass panels that reflect the surrounding city buildings and sky. The name 'Saks Fifth Avenue' is written in a large, white, cursive script across the middle of the glass facade. The building is situated on a city street with a traffic light and a 'No Left Turn' sign visible in the foreground.

Saks Fifth Avenue

Architect: Robert Bridges Associates, New York

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