



CASE WESTERN RESERVE UNIVERSITY IN CLEVELAND, BY DON M. HISAKA & ASSOCIATES
"THE TROUBLED STATE OF MODERN ARCHITECTURE," BY ADA LOUISE HUXTABLE
TV PRODUCTION FACILITIES FOR ABC, BY KOHN PEDERSEN FOX ASSOCIATES
PROFILE OF THE 1981 GRADUATES: CONSERVATIVE, ON-TRACK, MAIN-LINE MODERNISTS
BUILDING TYPES STUDY: COLLEGE BUILDINGS
FULL CONTENTS ON PAGES 10 AND 11

ARCHITECTURAL RECORD

JANUARY 1981

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New Era—Classic Square

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Armstrong

Circle 1 on inquiry card

Square is the world's most energy-efficient building.



Calgary, Canada, has a cold, energy-draining climate. But despite the -40° temperatures, Gulf Canada Square, a remarkable new building there, was built without a heating plant. Instead, it uses heat sources that are often wasted — lights, electrical equipment, and people. By gathering, storing, and redirecting the heat they produce during the normal workday, its HVAC system makes a conventional furnace unnecessary.

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C-60 incorporates acoustical-control, fire-protection, and air-diffusion features to make buildings quieter, safer, and more comfortable. And your ceiling layout won't have to be changed whenever spatial changes have to be made.

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Circle 2 on inquiry card

FROM THE  INDOOR WORLD[®] OF

Armstrong

Letters to the editor

Re: "Internship and licensing: Let's think about it from the student's point of view" (ARCHITECTURAL RECORD, October 1980, page 13).

I, like you, am looking forward to your January issue, which should reveal a wealth of information concerning the architectural profession [see pages 84-89]. Several items, however, do disturb me. Why did the architectural profession wait till 1974 to develop an Intern Development Program? Why now, as opposed to always, become concerned over the quality of the profession?

My current goals include architectural licensing and establishing myself as a competent professional. Disturbing to me is the lack of concern by the profession for proper schooling and background. Knowing now what I should have known in 1976 would have produced a much better prepared individual. Virginia Polytechnic Institute and State University, from which I graduated, ranks reasonably high in educational standards, but like most schools falls short on practical field experience. Schools in general, for architecture, should offer a six-year program only, resulting in a M. Arch. degree. Mandatory office experience, increasing toward the sixth year, should be a top priority. To prepare graduates further, architectural offices should plan a program, in-house or by NCARB, to expose individuals to all facets of architecture.

It's frightening to realize that a student, in theory, can go to school, graduate in five years, take his exam in three years, and be held legally accountable for the safety and well-being of those people who use or dwell within his architectural dream.

*George T. Butler, III
Architect-in-Training
Edmunds & Hyde, Inc.
Baltimore*

In response to your October 1980 editorial on internship and licensing, I must admit that the firms across the nation are about as varied as those who run the firms. It becomes increasingly difficult to judge just what type of firm offers the qualities most inherent in me, let alone to figure out what NCARB and AIA designate as pertinent to one who wishes to sit for the licensing exam.

According to those with whom I have spoken, many schools have yet to incorporate such a program as IDP, and emphasis seems to be placed more on the qualifying and design portions of the exam. This exam may be taken two or three years after graduation and after professional internship, without the candidate's considering what a particular firm has

to offer and how well his knowledge parallels the requirements for the licensing exam.

Having graduated at a time when jobs were fairly tight, I was also confronted with the fact that one was lucky to have a job in an architect's office, not to mention the luxury of being in the "ideal" office. I have worked in six different offices, ranging from SOM in Chicago to a three-man firm in this city.

Because of the extremes in these practices, I am still left with the question how well prepared I will be for the exam, and how much of an emphasis should be placed on the exam *versus* what I personally seek to achieve as a professional architect. This, of course, can only be answered by me. However, additional information from NCARB and AIA could definitely set a truer course for finding an answer.

*Calvin M. Singleton, Jr.
Shaker Heights, Ohio*

I should like to add some observations to your September 1980 editorial with the quoted comments of Charles E. Schwing, FAIA, on professional ethics, and to the responses of others in your Letters column of the same issue.

What appears to be overlooked by those who criticize the change I witnessed and voted for in Cincinnati is the legal turn created by Nader's forces. It appears to me that their stand, supported in the courts, reduces to a very simple statement.

The exercise of disciplinary action by our national organization to enforce the rules established in our membership constitutes a restraint of trade. Lawyers have reached an accommodation which we need: the national bar disciplines no one, and the state bars carry out all this work through the courts.

We may well find a way to place all supervision of ethics in the hands of our various state boards. This may spell the modification of our regions and bring a simple state-by-state structure in the AIA. Action like this has already taken place on our Florida State Board of Architecture, on which I had some service years ago. We then exercised the discipline, but today the Board of Architects, with lay members, does the research and makes a recommendation, with the action carried or dropped by the state officers and staff attorneys.

We no longer live in a society that will accommodate legalistic or courtlike actions in private organizations, whether they are of voluntary membership or not. Almost nothing can be controlled without lawyers, court action and judicial review.

*Francis R. Walton, FAIA
Daytona Beach, Florida*

Calendar

JANUARY

2-30 Architecture exhibition, "Mario Gandelsonas/Diana Agrest," retrospective of projects from houses to large urban complexes; at the Yale School of Architecture, 180 York St., New Haven, Conn.

23-25 37th convention and professional program of Alpha Rho Chi Fraternity, at the University of Houston Continuing Education Center, Houston, Texas. Contact: R. Wayne Burford, AIA, 3333 Eastside St., Suite 142, Houston, Texas 77098.

26-27 "Passive Solar Workshop," Portland, Ore. Contact: Passive Solar Associates, P.O. Box 6023, Santa Fe, N. Mex. 87501.

29-30 Conference on solar energy technologies, sponsored by the U.S. Department of Energy and supervised by the Florida Solar Energy Center; to be held in Orlando, Fla. Contact: Lillie Green, Florida Solar Energy Center, Cape Canaveral, Fla., at 305/780-0300.

FEBRUARY

8-12 The 1981 World of Concrete Exposition, at the Dallas Convention Center, Dallas, Texas. Contact: Hal Copeland, 109 Meadows Building, Dallas, Texas 75206.

MARCH

Through March 31 "Holabird & Roche and Holabird & Root: The First Two Generations," architectural exhibit at the Chicago Historical Society, Clark Street at North Ave., Chicago. Contact: Diane Ciral at 312/642-4600.

1-3 The 1981 Annual Construction Industry National Legislative Conference, at the Hyatt Regency Hotel, Washington, D.C. Contact: Construction Industry Legislative Conference, 5530 Wisconsin Ave., Suite 750, Washington, D.C. 20015.

3 through May Oakland Museum Council on Architecture exhibition, "Solar Age Architecture," at the Museum's Natural Sciences Gallery. Contact: North California Chapter/American Institute of Architects at 415/788-2644.

23 through April 1 "Batimat," the 1st North American Construction Show; at the Olympic Stadium, Montreal, Que. Contact: Intercommunica, 2050, rue Mansfield, Montreal, Que. H3A 1Y9.

26-27 The ninth annual Federal Programs Conference on engineering/architectural concerns, sponsored by the Committee on Federal Procurement of Architectural/Engineering Services; held in Orlando, Fla. Contact: COFPAES Federal Programs Conference, c/o NSPE, 2029 K St., N.W., Washington, D.C. or call 202/463-2340.

ARCHITECTURAL RECORD (Combined with AMERICAN ARCHITECT, ARCHITECTURE and WESTERN ARCHITECT AND ENGINEER) (USPS 132-650)

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1980

OWENS-CORNING ENERGY CONSERVATION AWARD WINNERS.



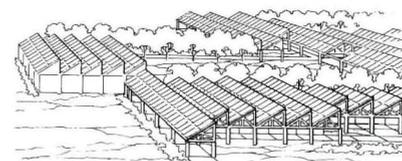
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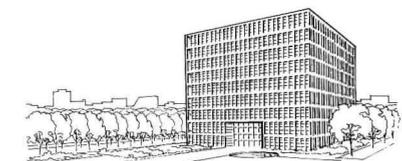
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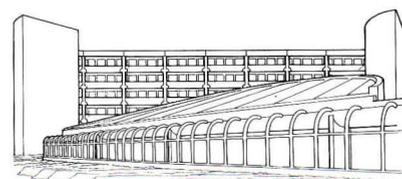
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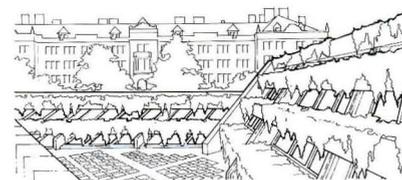
PRISON



HEADQUARTERS



OFFICE



COLLEGE



• The ninth annual Owens-Corning Energy Conservation Awards honor those who have proved, once again, that there are always new, ingenious and elegant ways to conserve energy.

• 1980 Judges:
C. William Brubaker, FAIA, Perkins & Will, Chicago, Ill., Ezra D. Ehrenkrantz, FAIA, The Ehrenkrantz Group, P.C., N.Y., N.Y., Masao Kinoshita, AIA, ASLA, AIP, Ohio State Univ., Columbus, Oh.

William J. Coad, PE, Charles J.R. McClure & Assoc., Inc., St. Louis, Mo., John K. Holton, AIA, PE, Office of Bldgs. Mgmt. GSA-PBS, Washington, D.C., Arthur E. Wheeler, PE, Henry Adams, Inc., Baltimore, Md.



WILLOW CREEK OFFICE BLDG./IDAHO FALLS, IDAHO

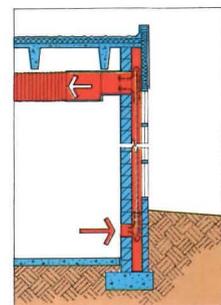
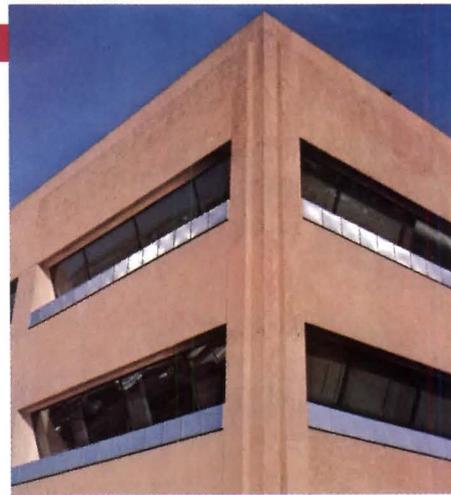
• *Architect, Engineers and Owner:*
 Max Flatow, FAIA,
 Pres., Flatow Moore
 Bryan and Assoc.,
 Frank Bridgers, PE, Prin.,
 Bridgers & Paxton,
 Consulting Engineers,
 Albuquerque, N.M.
 Ronald W. Kiehn, Gen.
 Mgr., EG&G, Idaho, Inc.,

Idaho Falls, Id., Joseph
 Lopez, PE, Prin., Uhl &
 Lopez Engineers, Inc.,
 Albuquerque, N.M.

• *Judges' comments:*
 "In moving to a new
 building twice the
 size of their old one,
 they reduced their
 actual out-of-pocket
 energy costs by 21.4

percent. And these are
 real numbers—not
 guesses. They used a
 very efficient light
 source: high pressure
 sodium lighting. A
 200,000-gallon
 storage tank saves
 the excess heat
 generated during
 the day to warm
 the building at
 night."

• *Exterior:* Note the
 angled windows with
 stainless-steel window
 sills that reflect
 diffused light into
 the building and
 eliminate the need
 for artificial lighting
 within 20 ft. of
 the perimeter.



• *Cross section of the modified Trombe wall:* Sunlight passing through windowed wall heats stainless-steel collector plate. Ductwork above brings heated air back into building.

SPORT OBERMEYER/ASPEN, COLORADO

• *Architects and Engineer:*
 Tim Hagman, Prin.,
 Copland Hagman
 Yaw Ltd, Aspen, Col.,
 Bob Clarke, Prin.,
 Solar Pathways Assoc.,
 Glenwood Springs,
 Col., Larry Yaw, Prin.,
 Copland Hagman
 Yaw Ltd, Aspen, Col.

• *Judges' comments:*
 "What is attractive
 here is that they took
 a simple building—

the walls are concrete
 blocks—and integrated
 a solar air-heating
 system: a Trombe wall.
 It is worked in very
 well with the overall
 appearance of the
 building. It's basically
 an inexpensive
 solution. A working,
 economical use of
 solar energy for
 warehouse heating."

SMITHKLINE PHARMACEUTICAL RESEARCH LAB/UPPER MERION, PENNSYLVANIA

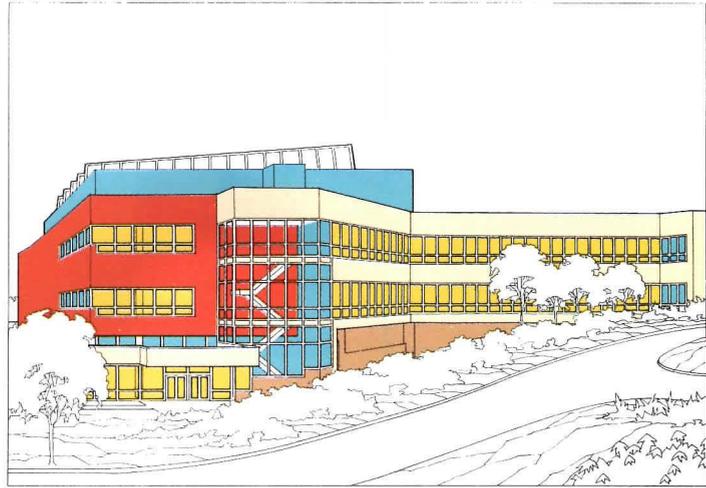
• *Engineer and Architects:* Russell M. Keeler, PE, Dir. Mech. Engineering, Louis deMoll, FAIA, Prin. and John B. Dillio,

RA, Proj. Designer, Ballinger, Philadelphia, Penna.

• *Judges' comments:* "This is a laboratory with very demanding environmental criteria and intensive energy use. The designers have tried very hard—and succeeded—in recovering much of this energy./ They've used special air-conditioning concepts, a high temperature heat pump and active solar

systems. They even have a system for reclaiming the heat from the water they use to wash down the cages. Many designers would have avoided this issue and wasted the heat. But they didn't here."

• *Architect's model:* Note how the glazed corridors light both the hallways and the interior offices. This saves energy by reducing the outside fenestration.



FEDERAL CORRECTIONAL INST/BASTROP, TEXAS



• *Architects and Engineer:* Franklin D. Lawyer, FAIA, Sr. VP, Paul Kennon, FAIA, Pres., E. Bruce Appling, PE, Sr. VP, Caudill Rowlett Scott, Houston, Tex.

• *Judges' comments:* "This building was designed with a full sense that an active solar system was going to be a major part of the design—integrated into the project rather

than being added on./ The solar collectors come out higher than the building next to them. They are used for shading both walkways and buildings./ Even the pipes and ducts are handled in a straightforward way that enhances the design of the building and the atmosphere within it."



• Model (at right) shows the double wall of windows. The site (above) overlooks Niagara Falls. The building (still under construction) can be seen above the Falls.



• Owner, Engineer and Architect: Marvin W. Voelker, VP, Hooker Niagara Office Corp., Niagara Falls, N.Y., Alan M. H. Sloan, VP, Engineering and Mark R. Mendell, AIA, Sr. VP, Cannon Design Inc., Grand Island, N.Y.

• Judges' comments: "We have here a highly innovative, highly technological solution. Essentially, it's two walls of glass

four feet apart. In between there are adjustable louvers and moving air, so when the sun moves around the building, goes up and down, or goes behind the clouds, the building adjusts to the changing climate. The double wall is key to

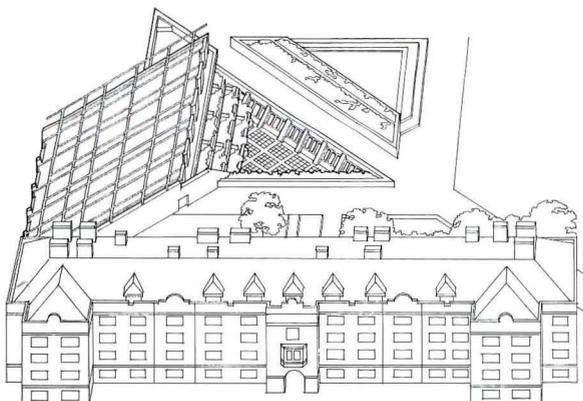
keeping unwanted heat out and letting wanted heat and light in.

"One of the things that's very attractive about this building is that in a time when we often find ourselves going to smaller window areas and less glass to save energy, this building has a total glass envelope and is still energy-efficient. It means one does not have to sacrifice a view, daylight, the interaction between inside and outside space for energy efficiency.

"One good idea, from an engineering standpoint, is that they've decentralized their domestic hot-water heating system. We've found that if you have a central hot-water heating system in an office building, your efficiency is about five percent. You keep the whole system hot 8,760 hours a year and all you do is occasionally use a little hot water in a washroom. Instead of putting in a central system, they use small hot-water heaters all around the building.



• An energy-efficient building in a crowded area: The right side of Williamson Hall is set into an earth berm. The active solar collector system is at left. A cross-campus walkway forms part of the roof.





SHELL OIL CO. OFFICES/HOUSTON, TEXAS



• *Owner, Architect and Engineer:*
Edmund V. Pearson, General Mgr., Shell Oil Co., James B. Gattton, AIA, Sr. VP and John Kettleman, PE, VP, Caudill Rowlett Scott, Houston, Tex.

• *Judges' comments:*
"The Shell project is extremely interesting in that it was designed with the basic building structure itself acting as a major element in the daylighting system. The mechanical ductwork

enclosures were located on the perimeter wall so they would act as a reflecting element to bounce light back into the rooms. The inside corridors are lit by the office lighting and by daylight bounced off the mechanical enclosure ducts. The result is very efficient lighting — only 1.3 watts per sq. ft. installed, with annual operations projected at less than 1 watt per sq. ft."

• *Triangles and atriums.*
The company needed a large number of small offices. The solution: Closely grouped triangular buildings with central atriums for an efficient combination of light and shade.

WILLIAMSON HALL/UNIVERSITY OF MINNESOTA



• *Architect, Owner and Engineer:*
David J. Bennett, AIA, Prin., Myers and Bennett Architects/BRW, Clinton N. Hewitt, Asst. VP Physical Planning, Univ. of Minnesota, Max Oftedal, PE, Prin., Oftedal, Locke, Broadston & Assoc., Inc., Minneapolis, Minn.

• *Judges' comments:*
"This is a building that is largely underground. It is worked very nicely into an old part of the campus, a crowded area. The architects recognized what we call the soil temperature. If you go down so far, the earth has a constant temperature. Utilizing that as a base, they organized the design concept to use that temperature for more efficient heating. This is really tied into the urban environment — into

the many different walkways that cut across the campus. If you look at it from the side, it's something like a terrace walking into the ground. They used natural plants in a very imaginative way for external shading — the leaves providing added shade in summer, the bare branches letting in more light in winter."

• *For a free booklet with highlights of this year's winners, write A.W.X. Meeks, Owens-*

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THE RECORD REPORTS

13 Editorial

For the first issue of a brand-new year:
The inaugural of two new
editorial efforts

4 Letters/calendar

33 News in brief

35 News reports

The winner of the 1981 AIA Gold Medal is Josep Lluís Sert of Cambridge, Massachusetts. A consultant to the FTC offers "judicial remedies" for battling building codes which stifle design innovation. The Moynihan Bill did not pass the 96th Congress, but a similar bill will be introduced in the new Congress. The U.S. Commerce Department releases its annual "industrial outlook" this month, forecasting the strengths and weaknesses of the 1981 construction market.

47 Buildings in the news

Library complex for the Jewish Theological Seminary in New York. A 46-story office and retail tower in Pittsburgh. A major corporate headquarters along the banks of the Brandywine River in Wilmington, Delaware.



40 Design awards/competitions

The inaugural of a new section, within the news pages, devoted to "the recognition of excellence." Covered this month: the Honor Awards programs of the Kansas City Chapter, the New England region, and the Michigan Society. Also: a calendar of upcoming competitions.

51 Required reading

Architecture 1970-1980:
A Decade of Change by Jeanne Davern
and the editors of ARCHITECTURAL RECORD,
reviewed by Frederick Gutheim.

ARCHITECTURAL BUSINESS

56 Photomontage broadens the spectrum of design

Ithaca architect Jerome Sirlin illustrates the adaptability of photographic simulation at every stage of design, from schematics to detailed color and lighting studies.

59 Building financing

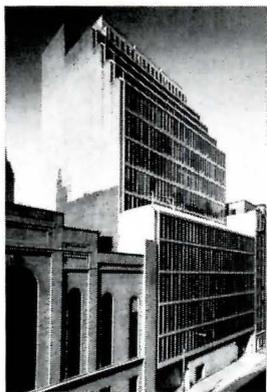
Rising short-term interest rates continue to discourage long-term lending, posing an obstacle to the ongoing building recovery.



FEATURES

65 ABC television production facilities

Architects Kohn Pedersen Fox have designed three technical buildings to answer the needs of a complex technology and the needs of a very influential community in New York.



©Wolfgang Hoyt/ESTO

72 "The Troubled State of Modern Architecture"

The New York Times architecture critic Ada Louise Huxtable assays the stylistic revolution now in progress, and the offerings of its vanguard.

80 Suburban renewal

Two bright and imaginative transformations of "dumb and ordinary" buildings reinterpret the Spanish traditions of Miami in an altogether fresh way. The architects: Bernardo Fort-Brescia and Laurinda Spear of Arquitectonica International Corporation—a bright and imaginative young firm.

84 Profile of the graduating students: Conservative and on-track

The results of a survey of students in their final year of almost every architecture school pictures a group who are intent on becoming licensed, who want their own firm, who are strong on design (but not so strong on the nitty-gritty), and who are far from the frustrated and angry students of not so many years ago. A parallel survey of practitioners serves as a check on student perceptions and expectations.

BUILDING TYPES STUDY 554

90 College Buildings

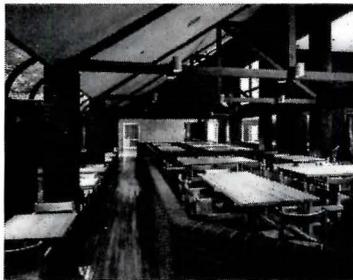
In the course of time, colleges find that their buildings, worn out by generations of students, grow decrepit, or that changing curricula change a building's utility. This study considers four examples of renovation and addition, all combining antiquated buildings and modern architecture with uninhibited *joie de vivre*.

**90 Thwing Center
Case Western Reserve University
Cleveland, Ohio**

Don M. Hisaka & Associates, architects

**96 Donaldson Commons
Yale University
New Haven, Connecticut**

Herbert S. Newman Associates, architects



©Nick Wheeler

**100 Harriet Newhall Center
Mount Holyoke College
South Hadley, Massachusetts**

Ericson Associates, architects

**104 Hall of Languages
Syracuse University
Syracuse, New York**

Sargent-Webster-Crenshaw & Folley, and Architectural Resources Cambridge Inc., architects

ARCHITECTURAL ENGINEERING

108 Where does the energy really go?

Because no one really knows for sure, the Department of Energy funded a million-dollar study in a new 26-story office building in Newark, New Jersey to find out. A team headed by Tishman Research Corporation will study data on hvac and lighting energy usage acquired over eight seasons.

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NEXT MONTH IN RECORD

**Building Types Study:
Urban Housing**

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For the first issue of a brand-new year: The inaugural of two new editorial efforts

The first new editorial effort for 1981 begins on page 40 of this issue—a new section, within the news pages, entitled “DESIGN AWARDS/COMPETITIONS.” These new pages are devoted, as the initial piece reads, “to the recognition of excellence.” Each month we’ll be publishing the premiated designs from AIA honor awards programs, from other honor award programs of the government and some major corporations, and the winners of the increasing number of design competitions being sponsored by serious clients.

We’ve long published the results of the AIA national Honor Awards program (and enjoyed checking—at least most years—to see how many of the fine buildings chosen by the juries we had published). We published the winners of many state and regional programs, and some of the more prestigious (and properly judged) industry- and government-sponsored honor-award programs such as those organized by Reynolds, by Owens-Corning Fiberglas, by the Department of Housing and Urban Development, by the American Institute of Steel Construction, by the American Plywood Association, and by the Red Cedar Shingle and Handsplit Shake Bureau.

Our new attempt is to make a systematic research into as many such programs as possible—and to devote the space (six pages this month) to publish a broad cross-section of the results. We can’t publish the results of all honor award programs—most state AIA organizations, for example, have one yearly; as do many local chapters. But we’ll be making an effort to show what the juries have chosen as the best work from all across the country. If (as we’re often accused) it is true that we have an East Coast (or an East Coast/West Coast) bias, a study of the premiated designs from the great spaces and places between should serve to alert us to places and names to which we have not paid enough attention in our travels. And surely—perhaps in a single group of buildings, but more likely with careful thought over a period of time—this new program will help us and you readers see developing design trends that need to be noted. For instance, one hears more and more about a return to regionalism. What better place to search it

out (and search out its vocabulary and meanings) than in this new section. And if it is true (as we believe) that the most important design trend for the future is a broader palette, the acceptance of a more pluralistic definition of “what is good design?,” this new section should reveal it over the months. If it is true, as we have written more than once, that the Federal government has set “an agenda for quality”—and that an important number of Federal buildings are designed by first-line architects up to that standard of “the finest contemporary American architectural thought;” then the results should begin to show up not just in the award programs sponsored in-house by HUD and other agencies, but in state and regional and national honor award programs. We’ll be watching—and from time to time hope to editorialize within the new section on trends that we see developing.

Further, given the increasing number of design competitions that are and will be taking place for important government (and, probably, private) buildings, we intend to publish the winners. Such competitions have gained new interest given the controversies swarming about, for example, the Portland, Oregon, Public Service Building (RECORD, August 1980) and the Bunker Hill Competition in Los Angeles (September 1980). It should prove fascinating to report on the winners, and the near-winners, in an attempt to see whether competitions—as their supporters argue—bring out fresh design ideas and most especially new talent that might otherwise never get a chance at such a commission.

And finally, we hope to publish each month in the new “Design Awards/Competitions” section a good calendar of “up-coming opportunities” for any reader who wishes to submit his work to an honor-awards program or to risk his time and talent in a design competition. Anyone (or any organization) who wishes to bring an upcoming competition to our editorial attention need only write or call Douglas Brenner, a new associate editor on RECORD’s staff. His phone number is 212/997-2398. He gets the credit for what I think is a fine first-month effort (again, page 40). Complaints should be addressed to me.

■ The other new editorial effort for 1981 has been mentioned on this page before—the almost-every-school survey of final-year students, intended to test their expectations and attitudes. The results (beginning on page 84) suggest a group of young people entering the architecture work force who are dedicated and devoted to architecture, who are intent on becoming licensed (and to an astonishing extent want their own office), who (like generations before them) are strong on design and not so strong on the nitty-gritty, who are astonishingly conservative in listing their “favorite architects”—a question intended, of course, to see to what extent today’s graduates are turning away from main-line modern design and toward “pluralism” or “post-modernism.” It turns out—surprisingly to me—that they just plain aren’t. Charles Moore comes up No. 7 on the list—but Robert Venturi is No. 11, Michael Graves No. 15. And what’s to be made of that? What’s to be made of the fact that few students indicated the kind of deep interest in urban problems that so dominated the schools not so many years ago? Many in the profession will take this news with, if not a cheer, a sense of relief. But it just doesn’t seem—well—very spirited. And that worries me, a lot.

So what was previously announced as an important article for the January issue is clearly going to become the first in a series of comments on those graduates and their expectations. I expect the results of this inaugural survey—entitled “Profile of the 1981 graduates: Conservative, on-track, main-line modernists”—to generate a fair amount of mail, and perhaps a follow-up piece will grow out of that comment. Given the surprising conservatism pictured by the survey, I want to dig back into the raw data of the survey and see if there are regional patterns; or whether post-modernism doesn’t emerge as a stronger force at, say, Princeton; or whether there isn’t one body of students who are not so interested in their own firm but would rather tackle the large-scale problems most often in the bailiwick of the large-scale firms.

At any rate, this month’s article is a beginning; and—like all our futures in the year 1981—we shall just have to see what we see. . . . —Walter F. Wagner Jr.

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Experience makes the difference.

Construction contracting stalled in October, as rising interest rates and restraint on public works programs held the value of the month's new projects to last year's level. According to the F.W. Dodge Division of McGraw-Hill Information Systems Company, the value of October's newly-started construction of all kinds, at \$13.9 billion, was unchanged from the year-ago amount: adjusting for inflation over the past 12 months leaves the current physical volume of new construction approximately 10 per cent below the year-ago amount for October. At the end of ten months, the cumulative value of all construction started in 1980 was \$121.4 billion, down 17 per cent from 1979.

New York City's Max Protetch Gallery will open an exhibition of drawings by Leon Krier on January 15. Mr. Krier is an architectural theorist and urban designer. He has worked with James Stirling in England, and has taught at the Architectural Association and the Royal College of Arts in London, Cornell University, and Princeton University. The exhibition will focus on his urban design projects of the last ten years, and will be accompanied by a catalog published by Maurice Culot.

The Association of Collegiate Schools of Architecture is sponsoring a competition—DESIGN + ENERGY 1981—open to upper division students in U.S. and Canadian professional schools of architecture. Student winners and their schools will receive cash awards totaling \$10,000. For a program document contact: DESIGN + ENERGY, Association of Collegiate Schools of Architecture, 1735 New York Avenue N.W., Washington, D.C. 20006.

The jury has been selected for the Vietnam Veterans Memorial design competition. (see RECORD, News in Brief, November) The jurors are: architects Pietro Belluschi and Harry Weese; landscape architects Garrett Eckbo and Hideo Sasaki; sculptors Constantino Nivola, Richard H. Hunt and James Rosati; and writer/editor Grady Clay. Architect Paul D. Spreiregen, author of *Design Competitions*, will serve as competition advisor.

Godfrey F. Hohn has been named manager of standards of ASHRAE. Mr. Hohn will be responsible for the management, coordination, and promotion of ASHRAE's domestic and international standards program.

Harvard University's Fogg Art Museum is featuring an exhibition entitled "Autonomous Architecture: A Selected Group of Contemporary Architects." According to its sponsors: "The concept behind 'autonomous architecture' is that architecture has a particular quality, an essence, that is specific to it and no other art form. Autonomous architecture is an architecture which recognizes itself as an independent discipline, with its own history and principles of production. In developing their philosophies of design, these architects have drawn on such diverse sources as linguistics, structuralism, and architectural typology." The exhibit includes drawings by Diana Agrest, Mario Botta, Peter Eisenman, Mario Gandelsonas, Rodolfo Machado, Jorge Silvetti, Aldo Rossi, and O.M. Ungers. The exhibition closes January 18, but the drawings will be published next fall in the *Harvard Architecture Review*.

Joseph H. Newman was reelected as chairman of the National Institute of Building Sciences, by the NIBS board in November. Mr. Newman is president of Tishman Research Corporation in New York City.

The Catholic University of America has awarded honorary degrees to architect Harry M. Weese, who designed Washington's Metro system, and Benjamin T. Rome, whose company served as a major building contractor for Metro. Messrs. Weese and Rome received their awards December 10, at a convocation given by the School of Engineering and Architecture. According to George E. McDuffie, dean of the school, "both men are being cited for their efforts in helping Washington realize a rapid transportation system that is transforming the metropolitan area into an increasingly vital and vibrant community."

Robert A. Rosenfeld has been appointed to the newly created position of Director of Internship Programs for NCARB. Mr. Rosenfeld was formerly Assistant Director of Professional Development Programs for the AIA. NCARB president Dwight M. Bonham, FAIA, noted: "Rob Rosenfeld's new role is a signal to the profession and the public that we are determined to make the Intern-Architect Development Program a complete and unqualified success." Mr. Rosenfeld is the first professional to be employed to assume the day-to-day responsibilities of directing the development of IDP.

The American Consulting Engineers Council will award the Woodward-Clyde Fellowship in Applied Earth Sciences to an engineering graduate student. The fellowship provides \$2,700 per year for two academic years, plus full tuition and academic fees. In addition to the Woodward-Clyde graduate studies fellowship, ACEC will award a \$4,000 scholarship to an undergraduate student pursuing a degree in engineering. Deadline for submitting applications is March 13. For further information contact: Connie Neuman, Information and Communications, American Consulting Engineers Council, 1015 15th Street N.W., Washington, D.C. 20005 (202/347-7474).

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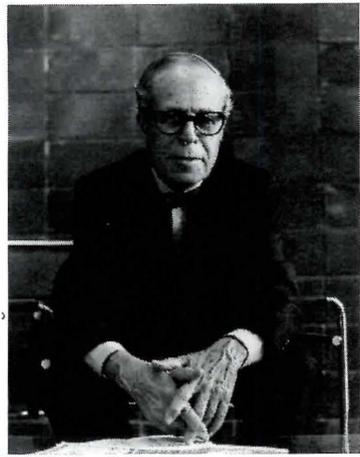
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The AIA presents 1981 Gold Medal to Josep Lluís Sert



José Lluís Sert, FAIA, of Cambridge, Massachusetts, has been named recipient of the American Institute of Architects' 1981 Gold Medal. The award is given by the AIA Board of Directors in recognition of "most distinguished service to the architectural profession or to the Institute." Mr. Sert will be presented with the Gold Medal at the 1981 AIA National Convention this May in Minneapolis.

The nomination statement cited *Current Biography's* description of Mr. Sert: "So influential and far-reaching is the work of Josep Lluís Sert that the social awareness and concepts of artistic collaboration that he brought to the practice of architecture have become almost commonplace. His early development coincided with the dawning of a new era in art and architecture, a time of revolutionary ferment that called upon the architect to use building techniques and designs and urban planning to help solve the problems of dehumanizing industrialization."

Mr. Sert is the 42nd architect to win the Gold Medal since its inception in 1907. The most recent winner was I.M. Pei in 1979.

The Gold Medal is Mr. Sert's fourth major AIA Award in four years. In 1979, his Cambridge firm of Sert, Jackson and Associates received two Honor Awards; one for the Center for the Study of Contemporary Art/Joan Miró Foundation in Barcelona, Spain (RECORD, March 1977); the other for Harvard University's Undergraduate Science Center in Cam-

bridge (RECORD, March 1974). When the firm received the AIA Architectural Firm Award in 1977, its works were cited by the AIA Jury on Institute Honors as "a humanistic endeavor to enrich the quality of life throughout the physical environment."

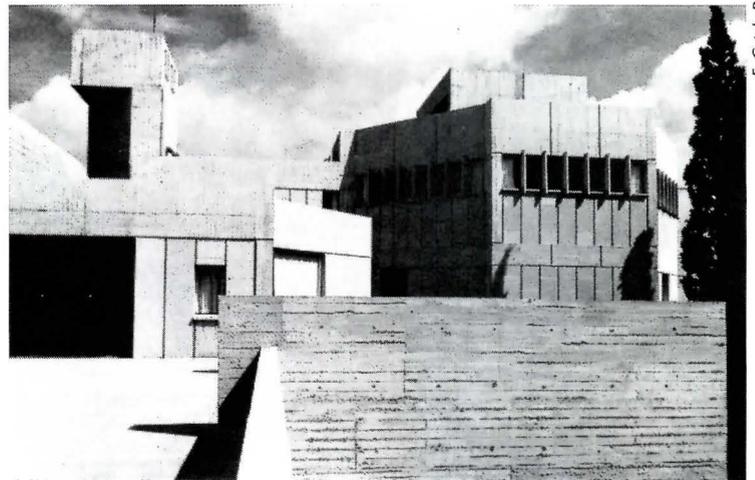
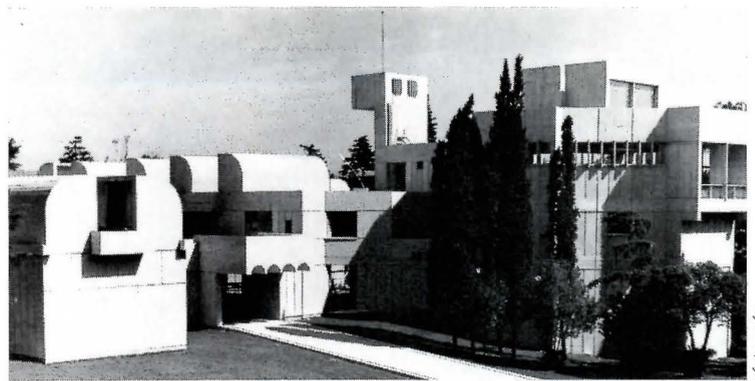
Sert, Jackson and Associates also received an AIA Honor Award in 1965 for the Francis Greenwood Peabody Terrace married students housing for Harvard in Cambridge. Other major works include housing designs for New York City's Roosevelt Island (RECORD, August 1976); urban development complexes in Boston, and university buildings for Harvard, Boston University, and MIT.

Mr. Sert is a native of Barcelona, Spain. He came to the United States in 1939, 10 years after he received his Master of Architecture degree from Barcelona's Escuela Superior de Arquitectura. During that decade (1929-1939), he joined an international group of experimental architects in Paris (at Le Corbusier's atelier) and helped form the International Congresses of Modern Architecture (CIAM).

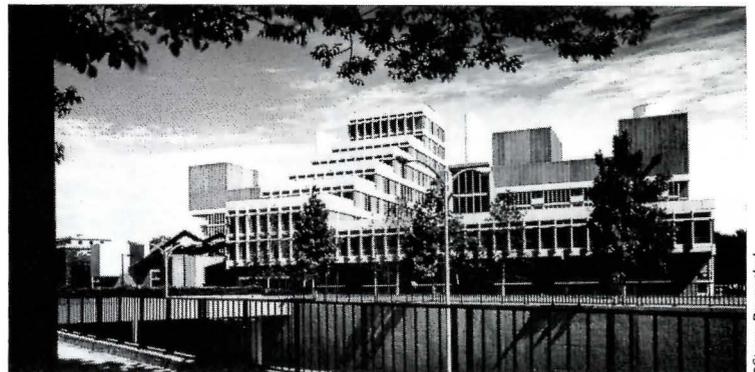
In 1944-45, Mr. Sert was professor of city planning at Yale University; from 1953-69 he was professor of architecture and dean of the Harvard Graduate School of Design; and in 1955, he opened his own office in Cambridge. Shortly afterward, he formed the partnership of Sert, Jackson and Gourley, which in 1963 became Sert, Jackson and Associates. After leaving his academic post at Harvard in 1969, Mr. Sert lectured as the Thomas Jefferson Memorial Foundation Professor of Architecture at the University of Virginia.

In a recently published compendium, *Contemporary Architects* (St. Martin's press), RECORD executive editor Mildred F. Schmetz wrote: "Josep Lluís Sert, as a disciple of Le Corbusier, and former president of CIAM, played an important role in the development of the early planning theories of the Modern Movement and through his design projects and writings contributed significantly to their acceptance. For example, he helped prepare the Modern Movement's seminal planning manifesto,

will be released this month, closely coincide with those of other economic forecasters such as George A. Christie, vice president and chief economist for the McGraw-Hill Information Systems Company. (Mr. Christie's analysis was covered in the November RECORD.) The Commerce Department, however, makes a bigger point of the continued strength of certain building construction markets which outpaced all others in 1980: "Nonhousekeeping residential buildings—such as hotels, motels and dormitories—are experiencing a 45 per



Center for the Study of Contemporary Art/Joan Miró Foundation



Undergraduate Science Center, Harvard University

the Athens Charter of 1933, which formalized and codified the new concepts. . . . With the exception of Le Corbusier, Sert has had more influence upon the built world of housing and planning than any other CIAM member and as much as any architect of his generation. In his long career, he has collaborated in the prepara-

tion of approximately 12 master plans at the scale of the city or town, at least three within the scope of a neighborhood or district, six for large scale housing developments and two for entire campuses."

Mr. Sert is 78 years old and is currently involved in projects in Spain, France and this country.

Commerce predicts rise in 1981 construction

The bright spots for construction activity in 1981 will continue to be in office and hotel construction, says the U.S. Commerce Department. Only a modest growth in construction volume—some 8 per cent in inflation-adjusted dollars—is expected in the new year, with a sharp down-turn in shopping center construction.

The findings in the department's annual "industrial outlook," which

cent rate of growth (in 1980); office buildings are up by 40 per cent; and miscellaneous nonresidential buildings such as theaters, recreational centers, bus and airline terminals, and radio or television stations are up by 30 per cent."

These same categories—and particularly the nonhousekeeping structures and office buildings—will continue their strong growth rate in 1981, though perhaps at a somewhat lower percentage annual gain, the forecast adds.

The lag in suburban shopping

center construction is attributed to a shortage of mortgage money and attractive sites.

The report was essentially completed before the Federal Reserve Board began its post-election credit tightening, but it still expects housing starts in 1981 to hit about 1.5 million—a modest gain from the 1980 1.2 million level. The relative strength, despite the high cost of mortgage money, is credited to pent-up demand, plus a high rate of household formation. —William Hickman, *World News, Washington*.

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How to challenge building codes in the courts

The courts may be the answer to the age-old frustration of building codes which stifle design innovations. A consultant to the Federal Trade Commission (FTC) has spelled out "judicial remedies" to deal with "controversies involving innovators who seek building-code approval for their products or construction methods."

Charles G. Field, an attorney specializing in building-code issues, counsels designers, builders and building material suppliers to ask the courts to ensure that due process is followed in the adoption of codes, to establish rules for the acceptance of evidence and the introduction of expert testimony, and to make sure that building codes are technically feasible. Neither Mr. Field nor the FTC is opposed to building codes, but the report, filed on the basis of the consultant's study, does say that few local building officials chose to exercise the flexibility permitted under regulations. This puts the burden on the designer, builder or supplier to see to it that flexibility is allowed. The problem is that the cost advantage motivating the innovative approach is often erased during prolonged battles with the code officials.

According to Mr. Field, most applicants for a code variance "would rather go along, use inefficient methods, and pass the cost on to the consumer, than fight City Hall."

FTC has no direct jurisdiction over building codes. But the commis-

sion's policy-planning director, Thomas H. Stanton, reports that his office had asked building industry officials what could be done to help reduce costs that were being kept unnecessarily high by what they saw as restrictive codes. In his report, Mr. Field quotes independent estimates saying building codes can increase construction costs as much as 20 percent and can increase the price of homes by 2-5 percent.

Copies of the study—"Building Regulatory Practices and the Courts"—are available from the Public Reference Branch of the Federal Trade Commission, Room 130, 6th Street and Pennsylvania Avenue N.W., Washington, D.C. 20580.—*William Hickman, World News.*

The Moynihan Bill: round two

Congress will quickly try again to enact legislation rewriting the Federal building laws. Senator Robert T. Stafford, a Republican from Vermont—who this month becomes chairman of the Public Works Committee—says he will introduce a bill similar to the one that Congress grappled with for 14 months in its last session.

The central elements of the new measure are expected to be the same: lessen the government's dependence on leased office space for its workers, and instruct Federal building officials to pay more attention to architectural quality.

This hotly debated bill—known last year as S.2080 or the Moynihan

Bill for its chief sponsor Senator Daniel Patrick Moynihan—came close to approval in the final days of the old Congress. In the end, however, House and Senate conferees could not agree on its "pork barrel" aspects.

The Senators, led by Messrs. Moynihan and Stafford, insisted upon a single lump-sum annual-authorization for General Services Administration (GSA) building, leasing, and site acquisition plans, as a means of depoliticizing the process and thereby rendering "pork" from the programs.

House members favor continuing the practice of piecemeal approval of each project throughout the year by the Public Works Committees of both lawmaking bodies—a process that makes GSA more accountable to the Congress, but also makes the agency more subject to Congressional whims. This issue aside, the conferees were close to agreement when they "agreed to disagree" for the 96th Congress.

The basic premise that Federal lease payments—nearing the \$1-billion per year level—must be checked through the construction of more government buildings received general agreement; so did the notion that the Commissioner of Public Buildings be a statutory office and that GSA designate a supervising architect for the government.

As last year's bill was debated, Senators backed away from earlier demands that a statutory timetable be set for moving government workers out of leased space and into government buildings. They reasoned

that an orderly process of approving construction and leasing efforts—where the consequences of each are realistically weighed—would have the same affect. But to the chagrin of most members of construction/design fraternities (including the AIA), the Senators remained adamant about requiring formal competitions for many of the buildings GSA plans to build. Organizations representing architects and engineers argue that design competitions for routine projects are too costly and could weaken the Brooks Law (most-qualified selection procedure).

Last year's debate over the bill was frequently acrimonious; it ended, however, on a conciliatory note: the Senators were so eager to set the stage for a cordial relationship with the House that they even agreed to approve construction of a building they believed to be unneeded.

The \$12.8-million building planned for Redding, California, (the home district of defeated House committee chairman, Harold T. Johnson) is seen mainly as a tribute to Mr. Johnson, who served in Congress for 22 years. It was approved in the interest of clearing the hostile relationship between the committees. Senator Alan K. Simpson, a Republican from Wyoming, said that he would have preferred giving Congressman Johnson "a \$50,000 gold watch." Doing so, he said, would be cheaper for taxpayers.

The Redding Building will provide office space in a sparsely settled area of California.—*William Hickman, World News, Washington.*

The Philadelphia story: the Art Institute of Philadelphia schedules relocation to 1932 WCAU-TV building for spring of '81



Philadelphia's prime example of Art Deco architecture is being transformed into an educational center for the visual arts. The former WCAU-TV building is being completely restored as the new home of the Art Institute of Philadelphia.

The Art Institute's present building is on the site of a planned hotel/office tower development. "When we needed to relocate," said Art Institute President Philip Trachtman, "we went directly to this building because it was unique, dramatic and had the space to accommodate

our growth. Architecturally, it seemed no other structure in the city expressed our function so well—to prepare creative designers for the fields of commercial art, interior design and photography."

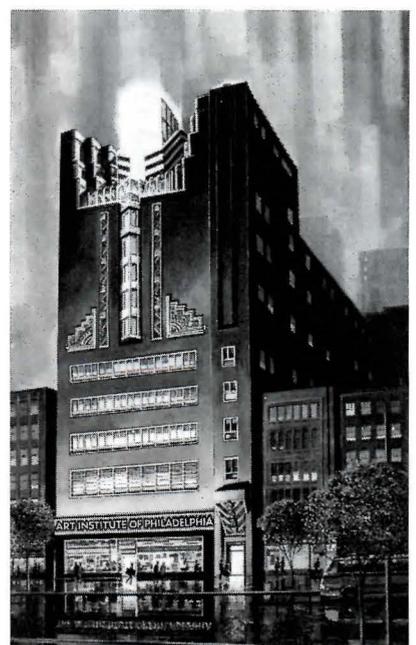
Keith Carney of Denver, architect for the Design Schools (a group of six art schools with which the Art Institute is affiliated), is working with local architect Richard Sheward of Kopple, Sheward & Day on the project. The architects intend to retain the "integrity" of the original design, including restoration of the 10-story facade with its "jazzy" decor. What were once radio and television studios—originally designed by Robert Heller—will become art classrooms, multi-media and video studios.

The WCAU-TV building was designed by architect Gabriel B. Roth in 1932 as the flagship affiliate of CBS Radio. Television arrived in the late '40s and when the station relocated in 1952, the building turned to office use and finally neglect.

The cost of acquisition and renovation/restoration is expected to be \$3½ million, and occupancy is planned for the spring of 1981.



The rendering above (left) shows the building as architect Roth envisioned it in 1932. Unfortunately, the detailing along the facade (between the ribbon windows, and including the oversized WCAU vertical lettering) was never executed. And, alas, the tower was removed 10 years ago for safety reasons; the Art Institute's budget does not allow for its reconstruction. The rendering above (right) shows the renovation, as envisioned by the architects.



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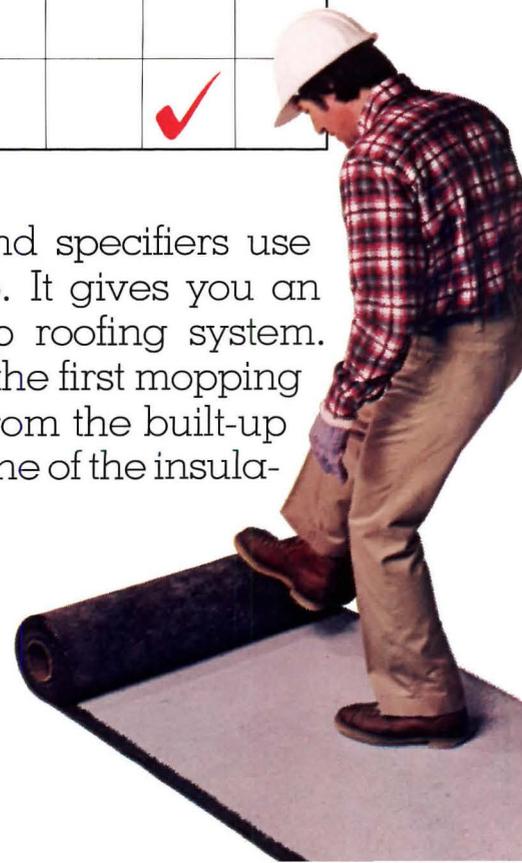


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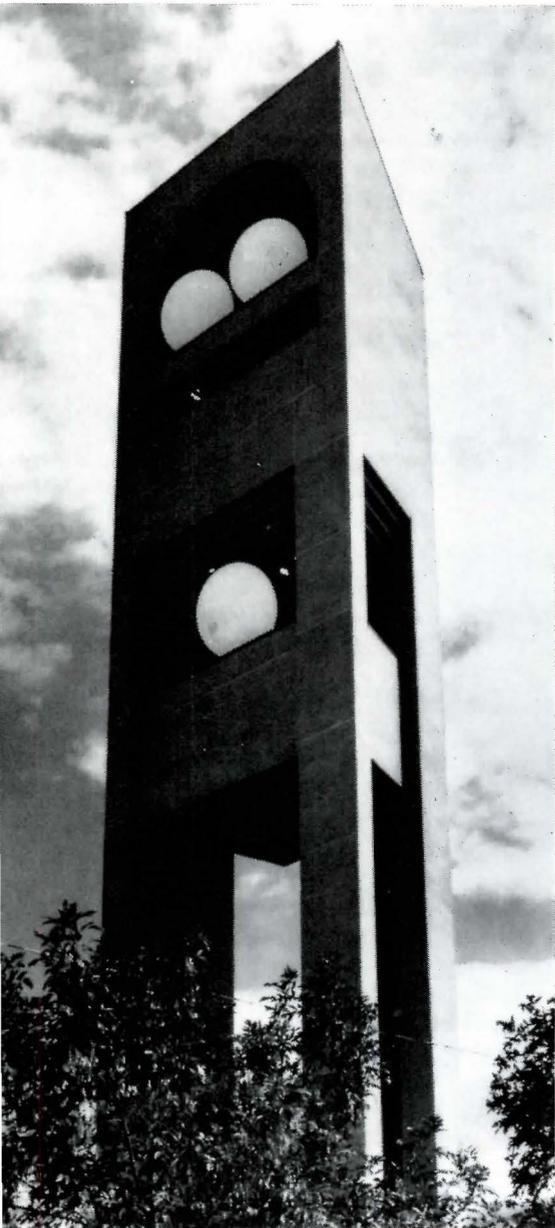
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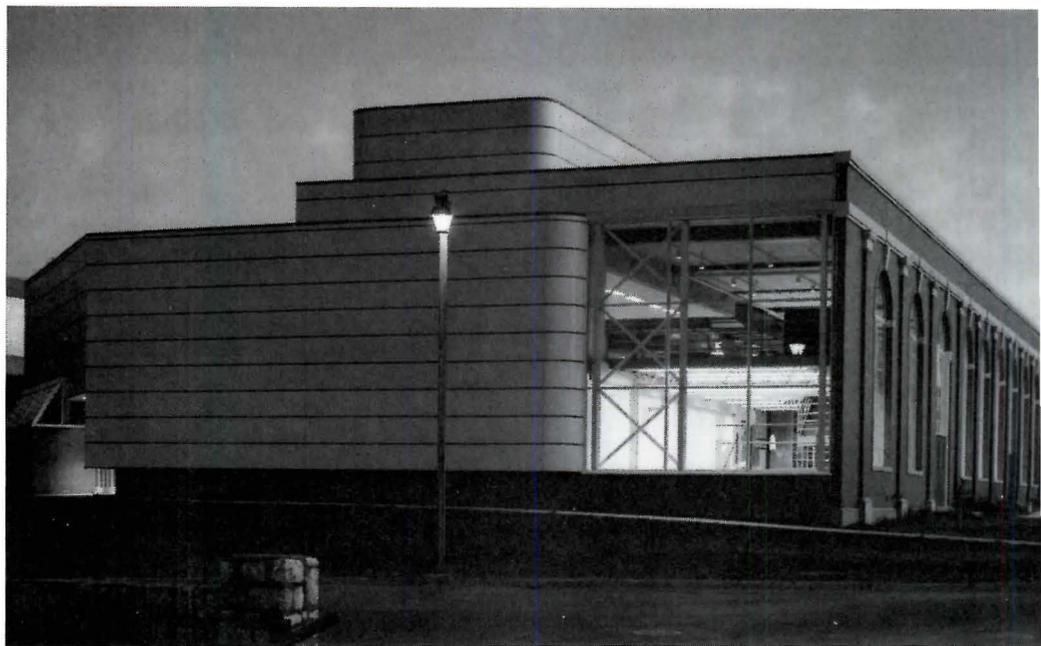
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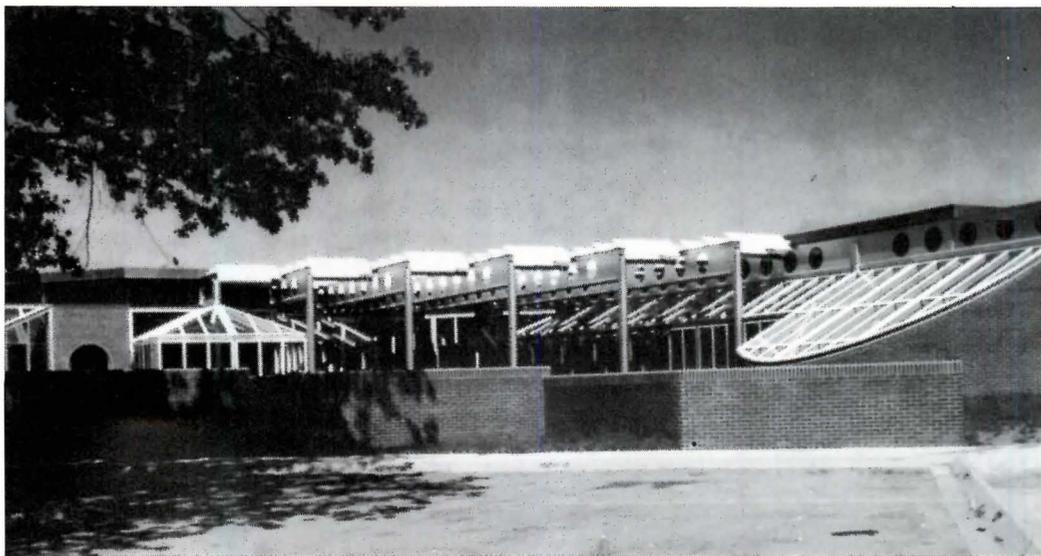
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Paul S. Kivett

KANSAS CITY AWARD WINNERS SHOW "LANDMARK" QUALITY

The Kansas City Chapter of the AIA announced the results of its 1980 Design Awards Program on October 21. Winning designs were selected from a total of 75 entries in two categories: "Completed Projects" and "Future Projects." The jury consisted of three New York-based architects: Robert A.M. Stern, James Ingo Freed, and Peter Samton.

1 Telecommunications Tower, Lawrence, Kansas; Design Build Architects. The Southwestern Bell Telephone Company's 156-foot tower for microwave equipment stands barely half a block away from the

two- and three-story buildings of a typical Main Street. The architects adroitly tackled this disjunction in scale, incorporating sloped walls and roofs that echo the gables of nearby houses. The jury praised Southwestern Bell for "not putting up just an industrial tower. It's a landmark . . ."

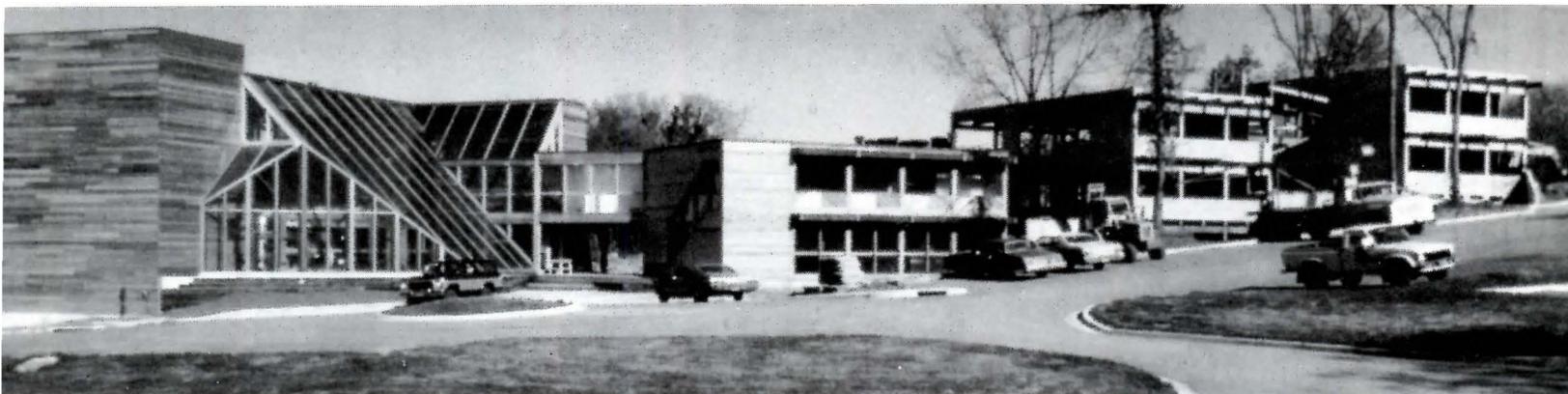
2 Roger T. Sermon Community Center, Independence, Missouri; Midgley Shaughnessy Fickel & Scott, architects. This adaptation of a 1902 power plant juxtaposes turn-of-the-century masonry facades and new insulated metal panels to dramatic effect. "The handling of the existing wall

with the new as a pure skin is very nice," commented one juror. "The bands lend scale and act as a tie."

3 Nevada Medical Services, Nevada, Missouri; Abend Singleton Associates, architects. "For a medical building, this has a lot of verve," noted the jury. The client requested a one-story nursing unit for ambulatory patients that would take maximum advantage of sunlight for supplementary heating. Adjustable solar control towers are part of a brightly colored network of exposed components.

4 Stewart Office Building, Independence, Missouri; Abend Singleton

This is the first in a series of reports devoted to the recognition of architectural excellence across the country. Every month, we will feature winners in recent honor-award programs and design competitions—AIA award programs at local, state, regional, and the national level; and award programs and design competitions sponsored by the government, major corporations, and industry groups. This inaugural report features buildings premiated by the Kansas City Chapter, the Michigan Society, and the New England Regional Council of AIA. A calendar of up-coming awards programs and design competitions—with the requirements for submission—appears on page 45. (See also News In Brief, page 33.)—*Douglas Brenner*.



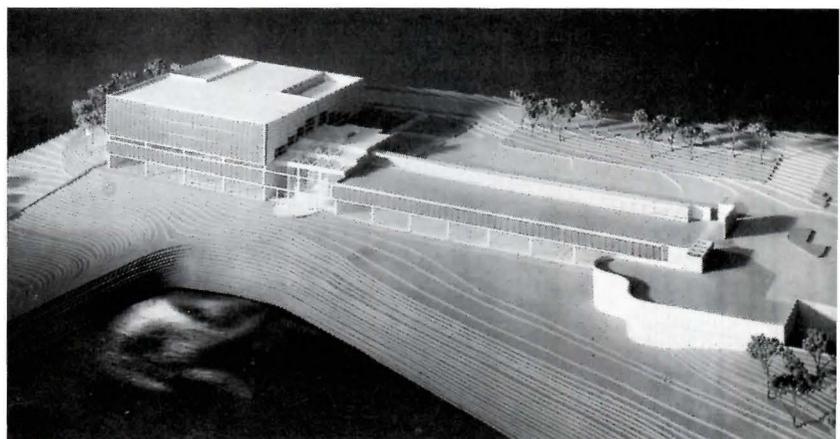
Abend Singleton Associates



Paul S. Kivett



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Associates, architects. Solar heating is a key element in this cluster of timber post-and-beam frame condominium office buildings, sited on the ridge of a wooded slope. Each unit is equipped with a greenhouse to admit natural light and serve as a passive solar collector. The jury welcomed this project as "a much more pleasant alternative to the typical two- or three-story highway strip."

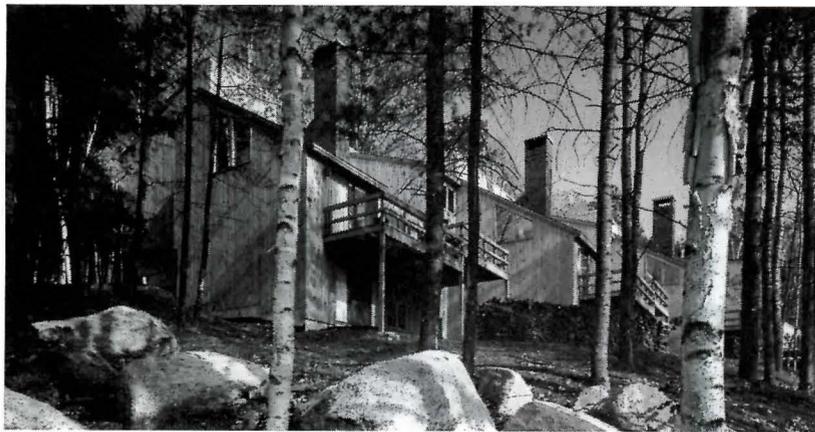
5 Opti-Copy, Lenexa, Kansas; Midgley Shaughnessy Fickel & Scott, architects. The building houses a camera assembly plant alongside offices and camera demonstration rooms. Al-

though the nature of photographic equipment demanded that illumination be readily controllable in dark-rooms and demonstration areas, the architects have subtly modulated daylight in the rest of the building through the use of skylights, a courtyard, and a screen wall of windows.

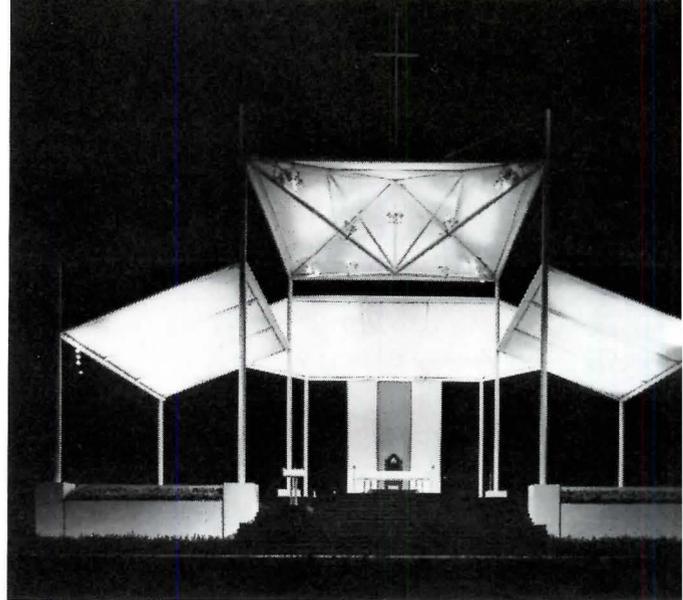
6 North Supply Office Building, Olathe, Kansas; HNTB Architects, Engineers, Planners. Flexibility is the essence of this as-yet-unbuilt project. A rapidly expanding telecommunications company needs 450,000 square feet of open office space and support facilities that can be enlarged to

1,000,000 square feet in 1995. The complex has been organized as an additive series of structures, "plugged into" four service cores.

7 Sheet Metal Union #2 Offices and Trade School, Kansas City, Missouri; Midgley Shaughnessy Fickel & Scott, architects. The client's interest in solar power and energy conservation encouraged the architects of this "Future Project" to build the offices and school into a south-facing hillside. The jury observed that vertically mounted solar collectors "become the building material rather than being added on."



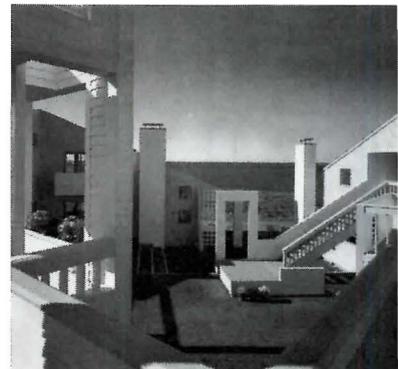
1 Nick Wheeler



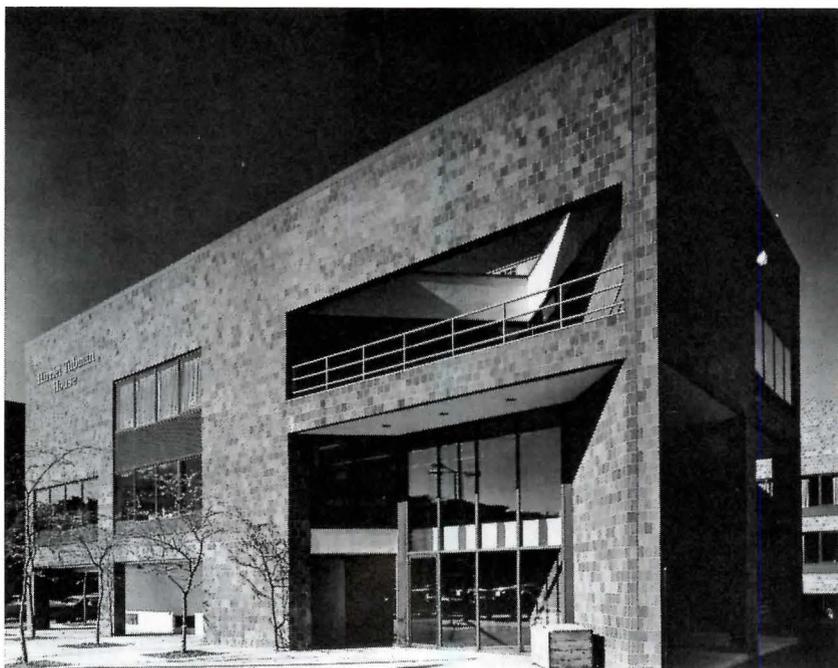
2 Edward Jacoby



3 Robert Perron



4 Steve Rosenthal



5 Andrew Oldman



6 Nick Wheeler



7 Edward Jacoby

INNOVATION AND EXTENDED USE HONORED IN NEW ENGLAND

Nine firms received awards for "Excellence in Architecture" at the annual conference of the New England Regional Council of the AIA, held in Burlington, Vermont on September 27, 1980. Entries were judged by Gridley Barrows, an architect in Lewiston, Maine; William Le Messurier, structural engineer and lecturer at Harvard's Graduate School of Design; Richard Janson, professor of architecture and historic preservation at the University of Vermont; and David Sellers, an architect and teacher at Yale. A photographic exhibition of the winning designs is currently

being displayed by New England AIA chapters in public and educational buildings.
1 Cranmore Woods Condominiums, North Conway, New Hampshire; Banwell White & Arnold, architects. The jury commended these 15 three-story dwellings for their "good use of exposure and daylighting, and interior spaces." Each house centers on a glass-roofed solarium, equipped with a motorized insulating shade controlled by a photo cell.
2 Pavilion for Pope John Paul II, Boston; Glaser/de Castro Associates, architects. Designed for a lifespan of

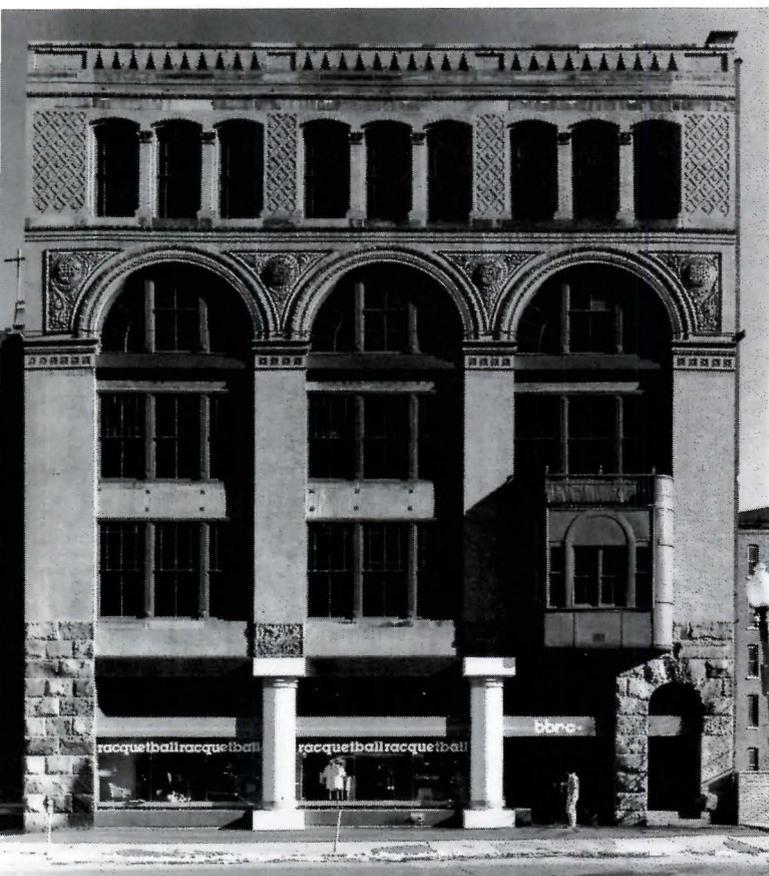
only a few hours (the duration of an outdoor mass celebrated by the visiting Pontiff) the canvas-roofed shelter "achieved a visual hierarchy of order appropriate to the faith," while satisfying a complex program for shelter, security, and television coverage.
3 Crowell House, Vermont; Mark Simon of Moore Grover Harper, architect. "The architect took a chance and pulled it off," said one juror. "Simon's design takes another look at vernacular architecture and makes it look part of the land."
4 Shapleigh Residence, Massachu-



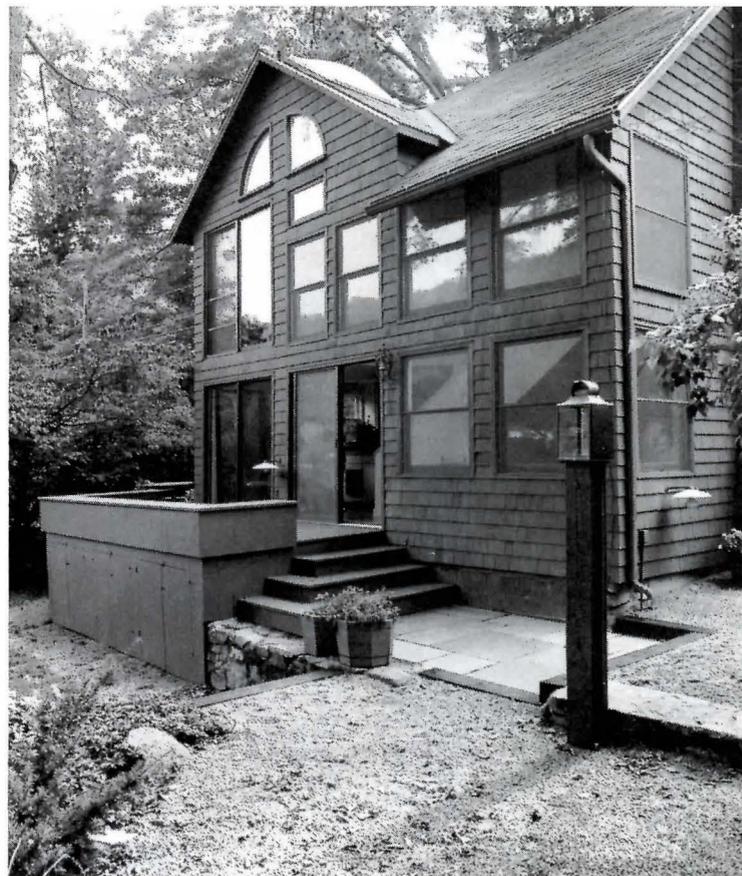
Norman McGrath



C. Richard Malm



Paul Ferrino



Robert Perron

sets; Graham Gund Associates (see RECORD, Mid-May 1979, pages 50-53). The panel cited this "whimsical" house on the coast for its "clean plan, with the delightful qualities of a sand castle or ruin."

5 Harriet Tubman House, Boston; Don Stull Associates, architects. United South End Settlements wanted new headquarters for its medical assistance programs, day care center, and other community outreach activities. The organization's new home was cited for its "well articulated relationship to the street" and conceptual clarity.

6 John Fitzgerald Kennedy School of Government, Cambridge, Massachusetts; Architectural Resources Cambridge, architects (see RECORD, June 1979, pages 99-106). "A totally appropriate solution for the program," the jury concluded, "with a ravishing interior creating a real sense of excitement."

7 Nathan Marsh Pusey Library, Cambridge, Massachusetts; Hugh Stubbins Associates, architects (see RECORD, September 1976, pages 97-102). The 87,000-square-foot subterranean library within Harvard Yard impressed the jury with its calculated simplicity.

8 Jackie Robinson Middle School; New Haven, Connecticut; Don Stull Associates, architects. High-tech forms rise abruptly from marshy parkland, with a visual impact that the panel likened to the effect of monumental sculpture. The architects strove for economy by specifying pre-assembled building components and repetitive modules.

9 Bowl and Board Store, Bar Harbor, Maine; C. Richard Malm of Krumbhaar and Holt Associates, architect. Oiled South American mahogany, copper, and brick are combined in a remodeled store that updates time-

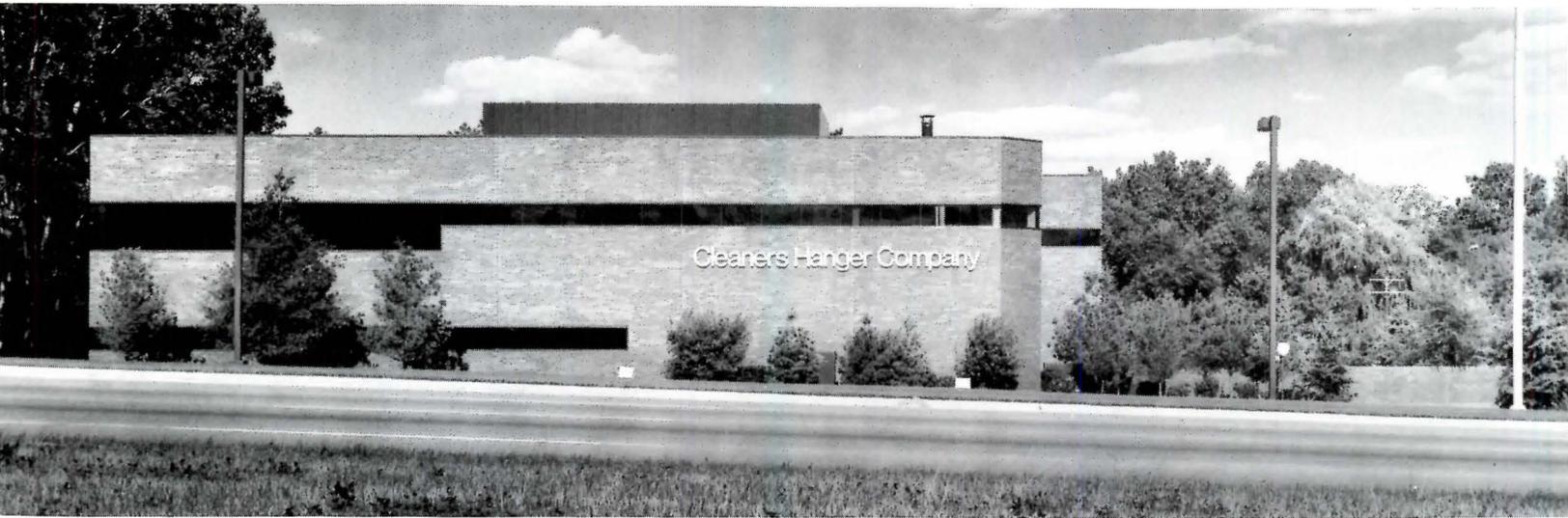
honored patterns of New England architecture.

10 Back Bay Racquet Club, Boston; Payette Associates-Graham/Meus, joint architects. A recycled Victorian ink factory provides elegant quarters for an athletic club, restaurant, bar, and pro shop.

11 Slater Residence, Old Lyme, Connecticut; Jefferson Riley of Moore Grover Harper, architect. An ingenious space-saving layout, skylights, and a two-story court, turned "a building probably considered not worth saving" into a comfortable dwelling.



Greg Hursley



Balthazar Korab



Balthazar Korab



Edmund London



Balthazar Korab

MICHIGAN SOCIETY CITES SEVEN PROJECTS BY STATE FIRMS

Straightforward approaches to a variety of building types and programs characterize the seven projects honored for "excellence in design" at the Michigan Society of Architects' 65th Annual Convention, held in Dearborn from October 15 to 17. Architects Lawrence Booth, Helmut Jahn, and Benjamin Weese—all practicing in Chicago—chose the winning designs.

1 Gull Lake Country Club, Richland, Michigan; Robert Lee Wold & Associates, architects. Wood siding and uncomplicated horizontal massing relate the clubhouse to its lakeside site.

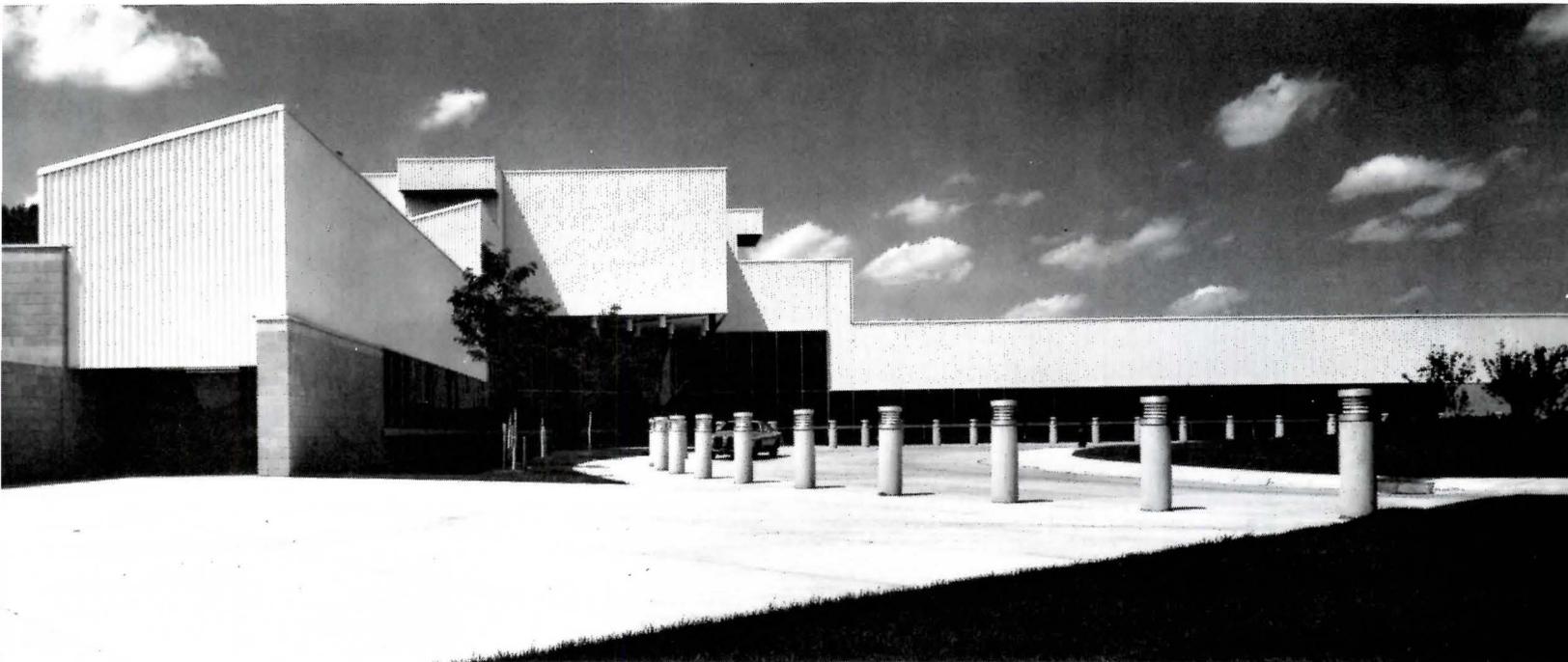
The jury remarked on the project's "low-keyed, residential scale."

2 Cleaners Hanger Company, Bloomfield Township, Michigan; Rossen/Neumann Associates, architects. This 10,000-square-foot brick and glass office building won the panel's approval for its "simplicity, directness, and pleasant sculptural shapes which break down the mass of the structure."

3 Detroit Receiving Hospital/Wayne State University Health Care Institute, Detroit; William Kessler & Associates, Zeidler Partnership, Giffels Associates, associated architects, en-

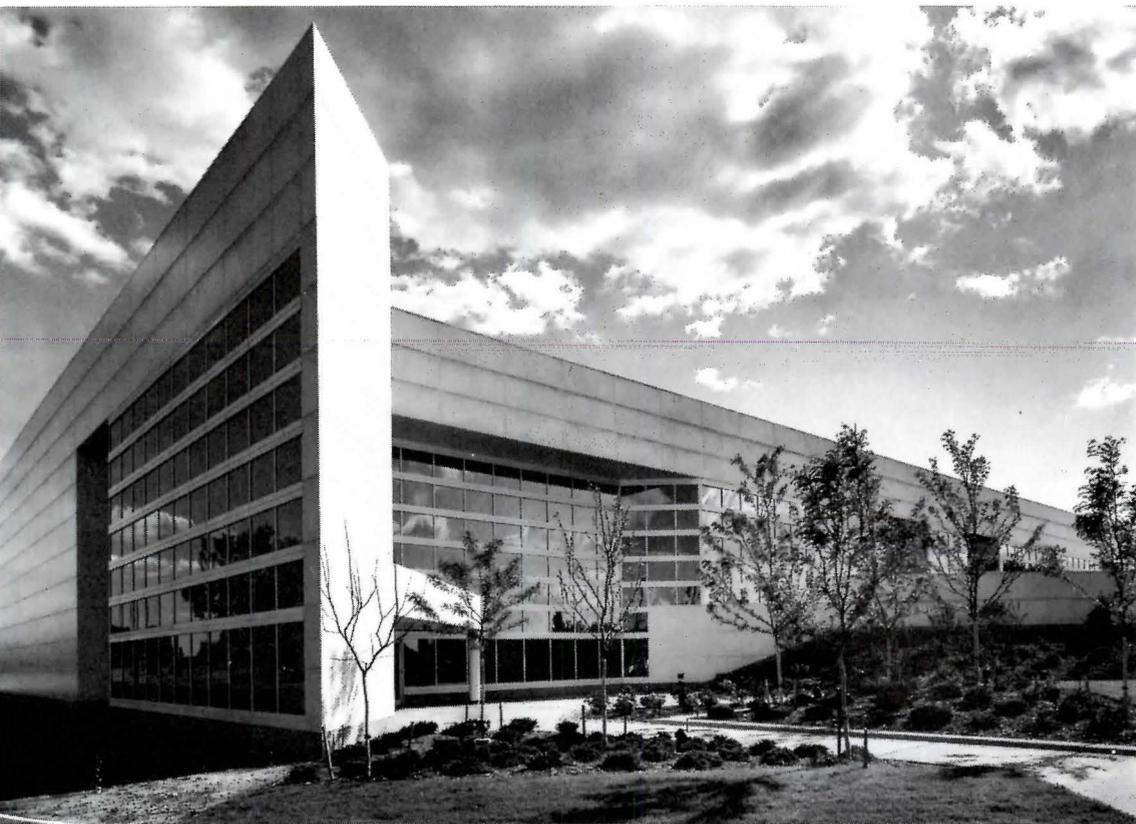
gineers, and planners (see *RECORD*, April 1980, pages 83-90). Adding further distinction to the Honor Award bestowed on this project at the AIA's 1980 National Convention, the Michigan jury lauded the 1-million-square-foot, \$120-million medical complex for its "celebration of mechanistic design and beautiful detailing."

4 Las Vistas Town Houses, Santa Fe, New Mexico; Volk & London, architects; Richard Halford, associate architect. The style of these 34 houses, arranged in an irregular circle in the foothills of the Rocky Mountains, recalls the plain, cubic massing and



6

Balthazar Korab



7

Balthazar Korab

Calendar

The Louis Sullivan Award and Prize.

Sponsored by the International Union of Bricklayers and Allied Craftsmen, and administered by the AIA, the award is presented every two years to an architect practicing in the U.S. or Canada. Jury decisions are based on review of three to five completed buildings by each entrant. Deadlines are January 5, for entry forms, and February 23 for submissions. All material should be sent to the AIA, 1735 New York Avenue, N.W., Washington, D.C. 20006.

California Affordable Housing Competition.

California residents and corporations based in that state are eligible for awards totaling up to \$300,000, presented for innovative approaches to affordable housing. The program is being conducted jointly by the Governor's Office of Appropriate Technology and the Department of Housing and Community Development. May 1 is the closing date for entries. For a program workbook, write to California Affordable Housing Competition, Office of Appropriate Technology, 1530 Tenth Street, Sacramento, California 95814.

American Institute of Steel Construction 1981 Architectural Awards of Excellence.

The biennial program honors "outstanding architectural designs in steel." Submissions must be received by May 22. For further information contact Orley Vaughan, AISC, The Wrigley Building, 400 North Michigan Avenue, Chicago, Illinois 60611 (312/670-2400).

adobe walls of local Pueblo and Spanish Colonial architecture. This "relaxed use of traditional regional forms" was commended for its appropriateness to the terrain and cultural heritage of the area.

5 IBM Office Building, Southfield, Michigan; Gunnar Birkerts and Associates, architects (see RECORD, October 1979, pages 87-92). "Rational solutions to office design and concern with innovative methods of energy conservation and lighting" gained special praise for this suburban building. Notable technical features include curved stainless steel

exterior sills that reflect light through insulated glass onto interior reflectors above the windows.

6 Wayne County Community College/Taylor Core, Taylor, Michigan; William Kessler & Associates, architects. Designed to accommodate about 5,000 students, this technical-vocational college combines industrial training workshops with studios for ceramics, sculpture, and the graphic arts, a day care center, bookstore, and library. One juror observed that "the use of industrial materials not only befits the educational purpose of the building, but results in hand-

some sculptural forms."

7 United Technologies Automotive Group, Dearborn, Michigan; Rossen/Neumann Associates, architects. In spite of its uncompromising, hard-edged geometry and sleek surfaces, this 250,000-square-foot office building and research facility makes the most of its natural environs. Silver insulating glass walls mirror neighboring woods, and a landscaped earth berm increases energy efficiency while shielding research areas from parking lot noise. "A dynamic composition, notable for its consistent use of materials," the jury concluded.



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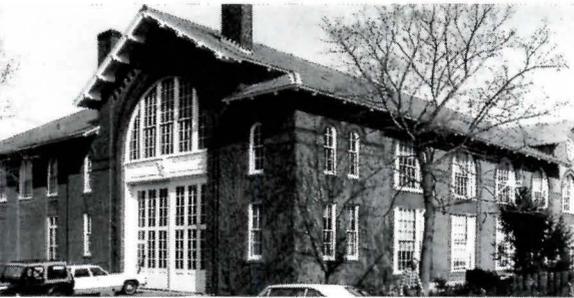
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Liberty Center: \$126-million mixed-use for Pittsburgh

The Architects Collaborative, Hart Hill Kosar Rittelmann Associates, and Urban Design Associates comprise the winning design team for the \$126-million mixed-use Liberty Center in Pittsburgh's Golden Triangle. The Pittsburgh-based Liberty Development Group is the owner/developer, chosen in a city-sponsored competition. Liberty Center is the newest addition to Pittsburgh Mayor Richard S.

Caliguri's Renaissance II—a \$4-billion Urban Revitalization Program—which includes the development of a 615-room luxury hotel, 500,000 square feet of office and 65,000 square feet of commercial space, parking for 600 cars and a city park. The 2.5-acre site is adjacent to Pittsburgh's new David L. Lawrence Convention center. Liberty Center is scheduled for spring 1983 occupancy.



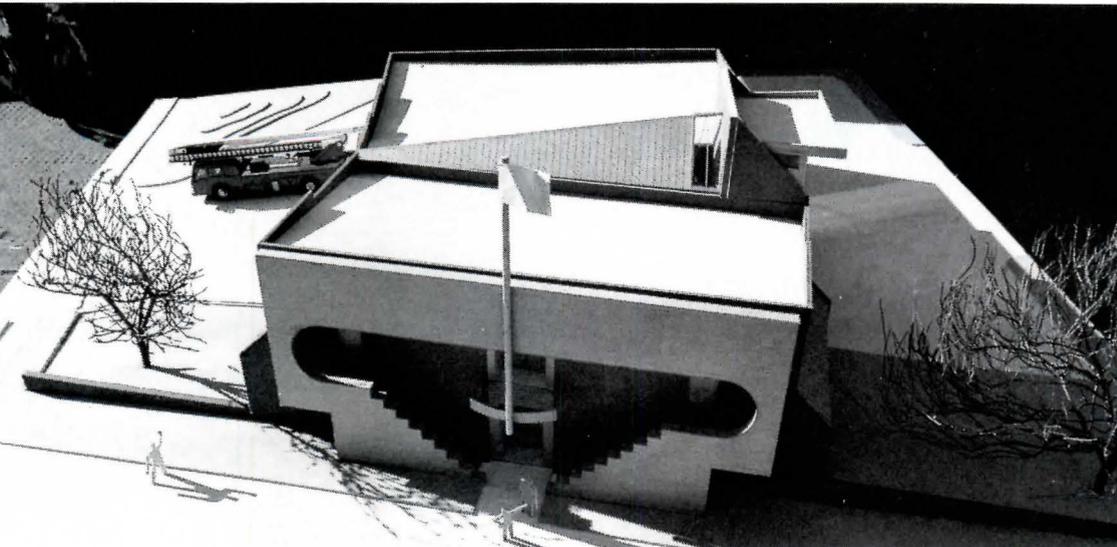
Goody, Clancy update a 1907 laboratory

Innovation of Atwater Kent Laboratories, built in 1907 at Worcester Polytechnic Institute in Massachusetts, is currently under way by Boston architects Goody, Clancy & Associates, Inc. The \$3-million

project will upgrade laboratories and classrooms for electrical engineering and provide the first permanent spaces for the department of computer science at WPI. Occupancy is slated for August 1981.

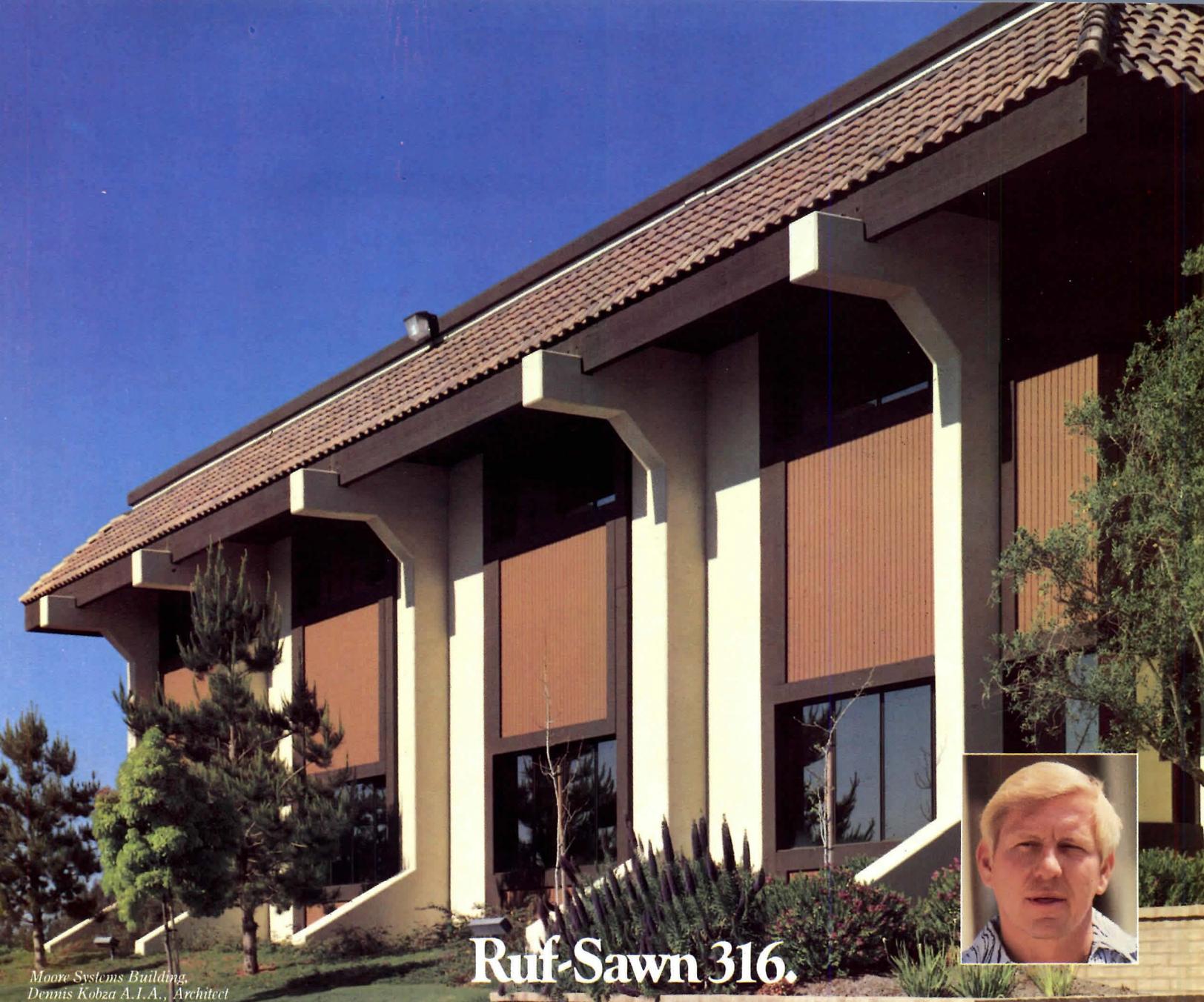


Henriquez & Partners' firehouse for Vancouver



Residents of an established neighborhood in Vancouver were concerned that a proposed firehouse would be an unwelcome intrusion. Architects Henriquez & Partners have attempted to integrate the new facility—in both scale and massing—with the existing neighborhood. They have split the brick building into two rectangles (one for the firemen, and one for the equipment), and provided a "circulation atrium" with skylights and glass block to let light into the interior spaces. The peaked aluminum roof of the atrium angles up to form a hose tower.

continued on page 49



Moore Systems Building,
Dennis Kobza A.I.A., Architect

Ruf-Sawn 316.

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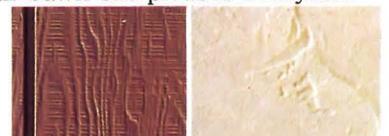
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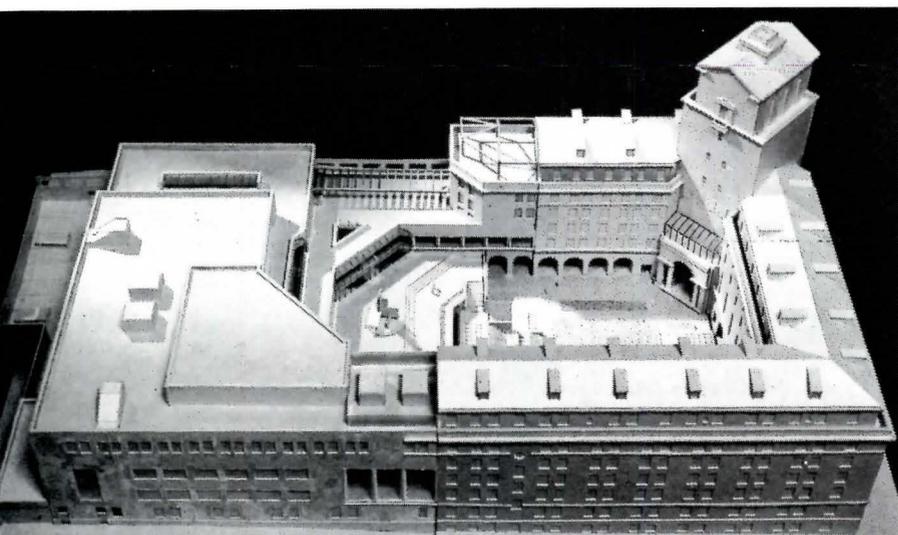
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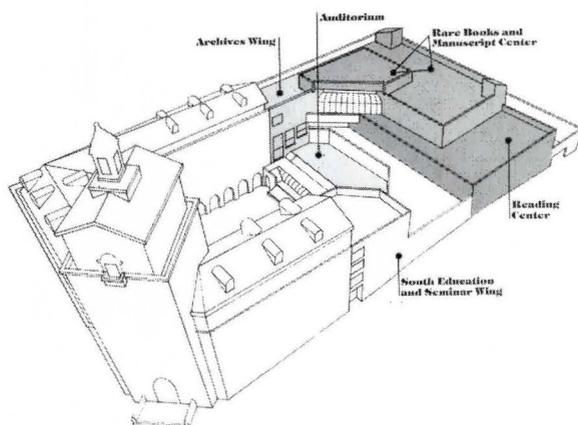
Simpson

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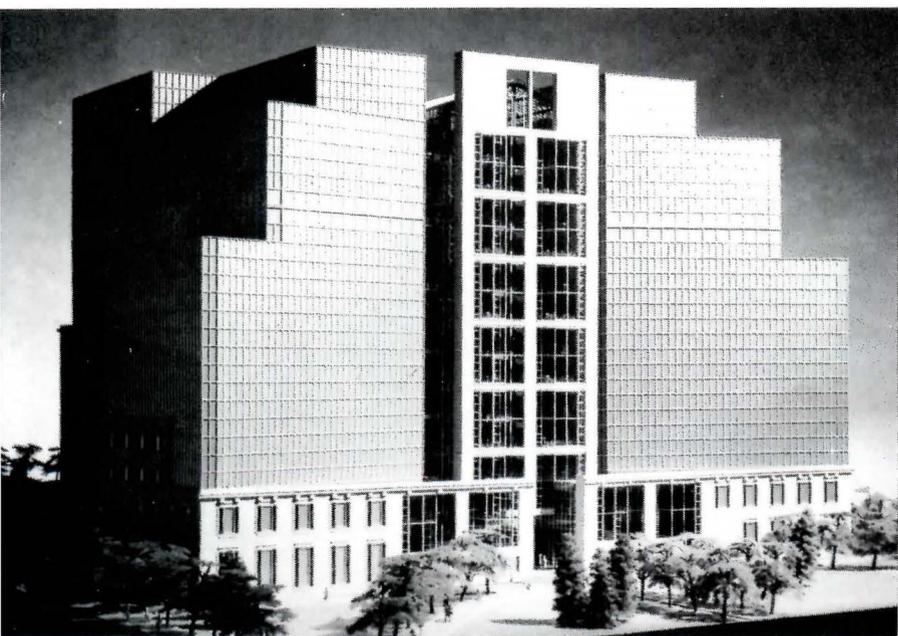
The Jewish Theological Seminary doubles its size

The Jewish Theological Seminary of America broke ground in November for a library complex to rehouse the library destroyed by fire in 1966 and to provide classrooms, studies, offices, and a scholarly and spiritual center for Conservative Judaism. The new building will also house the Seminary's collection of Judaica. The library complex will almost double the space on the Seminary campus at 122nd Street and Broadway in New York City. Completion of the building program is expected in 1983, at an estimated cost of \$18 million. Architects for the project are Gruzen and Partners.



A 46-story mixed-use tower for Pittsburgh

Construction has begun on One Oxford Centre, a 46-story office and retail tower in downtown Pittsburgh. The mixed-use facility is the first phase of a complex that will ultimately occupy a six-block area; future plans include a second office tower and a 900-car parking garage. Approximately 100,000 square feet of retail space will occupy the first five floors of the 1-million-square-foot building. Architects for the project are Hellmuth, Obata & Kassabaum, and tenant space planners are Interspace, Inc. One Oxford Centre is scheduled for completion in the spring of 1982; it will be the city's second tallest tower.



A stone and glass corporate headquarters in Wilmington

Project team members for the corporate headquarters building of Hercules Inc. are Interspace Inc. and Kohn Pedersen Fox Associates. The 620,000-square-foot building, now in construction, is along the Bran-

dywine River in downtown Wilmington, Delaware. The new facility will have a U-shaped office area surrounding a 12-floor open atrium. The outside of the lower stories will be of stone and the

upper floors of reflective glass. The approximately \$90-million project will be financed in part by a \$12-million loan from a \$16-million Urban Development Action Grant given by HUD to Wilmington.



Craig Buchanan photos

This is a factory?

Strong forms and bold colors give the Qume Corporation facilities in San Jose, CA, a distinctly un-factorylike appearance. On the outside, Inryco/wall IW-11A panels in postal blue and boysenberry are curved in graceful contours to break up the geometric rectangles of long, low sandstone beige walls.

Inside, the same type of panels in boysenberry and suede brown frame a skylit garden atrium

that runs the full length of the building between office and plant areas. Qume Corporation wanted a pleasant atmosphere for its employees, and the design team won a 1980 AIA Honor Award in providing it.

The energy efficient Inryco/wall panels are coated with long-life, low-maintenance, two-coat Duofinish over a galvanized steel base. For more data contact your Inryco representative or INRYCO, Inc., Building Panels Div., Dept. A-4033, P.O. Box 393, Milwaukee, WI 53201.



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Traveling the distance

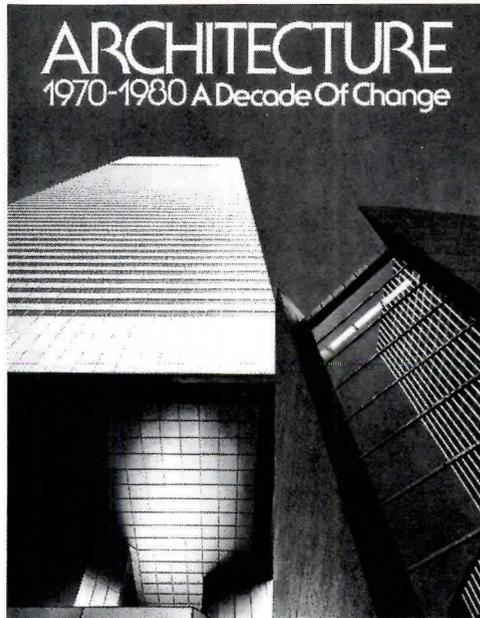
ARCHITECTURE 1970-1980: A DECADE OF CHANGE, by Jeanne Davern and the editors of ARCHITECTURAL RECORD; Architectural Record Books, \$29.50.

Reviewed by Frederick Gutheim

Jeanne Davern has attempted to do the impossible: to tell what happened to architecture in the 1970s, year by fleeting year, by means of 150 buildings, the work of 100 architects. The problems of selection are appalling, but the editor's act of selection is decisive for the book. This is not a critic's choice of "the best." It is not an historian's designation of "the most significant." And it is not an editor's selection of the buildings that make architectural "news." It is further a question-begging exercise. Should one treat the buildings alone or venture into those squashy issues that helped shape architecture in these years, the energy crunch, historicism, the *Bozarts* (as Mencken derided the *Ecole*) and "post modernism" (thus sanitized in quotation marks). Just what is architecture, anyhow? Should one narrowly interpret our national architecture or look farther abroad? What about the embassy building program, the increasing amount of work by American architects abroad, the important buildings by Aalto, Nervi and other foreign architects in the United States? Perhaps more to the point, should one deal with those architectural fads with their mirror glass facades or tiresome atriums, those buildings so totally indifferent to social or public values, those egocentric monstrosities that flashed through on their way to oblivion? Well, the answer is none of the above. When faced with the impossible, Miss Davern has not panicked. She has behaved like the superb editor she is, thrown out the rulebook, and trusted her own judgment. This book does not set out to prove anything. It is a book of well-balanced examples. It illustrates what went on in the seventies. And it arrives at a shrewd appraisal of where architecture stands today and whither—indeed, whether—it is tending. What we have here is a thought-provoking book of sustained interest and ready reference, not infrequently of warm recollection of the ten years just past.

Before mounting her editorial horse, to gallop off in all directions, Davern begins with an even more limited selection of eight full-

Frederick Gutheim is adjunct professor of American history at George Washington University, and a principal in the firm of Gutheim/Seelig/Erickson.



page color photographs to further compress the decade and announce this handsome volume. Prefatory remarks highlight the period and give it definition. They also clear a space in the theater of architectural events where theorists and historians are excluded, and Davern is on her own. Here are cataloged those changes whose pressures have moved architecture forward: energy; the regulation of environmental impacts; the preservation of historic buildings and districts; urban revitalization; neighborhood conservation; the assertion of many new public interests; consumerism and consumer protection; widespread participation in architectural decision-making; increasingly numerous public reviews, added to which was the media's own voice. This catalog is not all-inclusive and it is not pejorative. Most architects would add that public reviews are burdensome and inconclusive as well as numerous, that the single event they felt most keenly in the seventies was their increasing professional responsibility and liability, that the profession has been losing its battle against interfering bureaucrats and many other forms of harassment. Davern's finding is both humanistic and hopeful. She believes architects are emerging as synthesizers of these new forces, and from the experience a new architecture is being created. She is also optimistic that once it understands how architecture happens, the public will "use its own involvement in its own best interests." She hopes for a rising standard of architectural and public debate. In the eye of the architectural storm we thus hear this small quiet voice of calm and encouragement.

Davern's own presence is buried in the quotations of others—Gerald Allen, Carl John Black, Lois Craig, Barclay F. Gordon, William Marlin, Mildred F. Schmertz, Vincent Scully and other writers who appear as the principal commentators on individual buildings that comprise the passing architectural scene. She provides the interpretations, the headline generalizations, the historical continuity and the themes that weave together these accounts of individual buildings—and the editorial skillfulness that make of it all a book, something different and something more than the month-by-month treatment most of these same buildings have earlier received. Such a reconsideration also invites the separation of the architectural buzz words and vogues from the more durable architectural characteristics.

In his range and scope it is the work of Louis Kahn (1902-1975) that best illustrates the decade, and between the romantic end of his spectrum (the Kimbell Art Museum) and the classical opposite (the Yale Center for British Art) we can find most of what is best in this period. In such a framework one must approach not only those established figures and firms like Pei, Barnes or Davis, Brody, but less formed reputations such as Stanley Tigerman, Robert Stern, Michael Graves, and others who must build more before their opinions and sketches can be tested by the acid of architectural reality.

All this is simply food for thought. Davern has chosen not to take the stronger critical line that would have revalued such buildings as Gio Ponti's Denver Art Museum or Breuer's Y-shaped HUD building that do not seem to have worn very well. Whatever happened to Gund Hall? It is here that one faces the criteria and judgments implicit in a review of this sort. Should "projects" such as Paul Rudolph's Buffalo Waterfront Development or Michael Graves's Fargo-Moorhead Heritage and Cultural Bridge have been included at all? In such constricted space would it have been wiser to exclude such work as the Osaka exposition, the redundant Miesian Toronto Dominion Centre, or that metabolic branch bank in the Pedregal?

While the year-by-year arrangement does not really prove anything, the chronological arrangement does. Architecture ended the seventies as something other than it was at the beginning—many things other. There was evolution; but it has been recognized that architecture does not evolve that steadily or that rapidly. Buildings designed in 1970 may not have been completed and photo-

continued on page 52

graphed until ten years later.

The decade commences with recreational buildings and housing for the elderly, and its architectural design is well represented by Roche and Dinkeloo's Oakland Museum, a positive building that well describes what architecture contributes to conceptualization, location, planning and design. The following year shows new approaches to the design of university buildings (Ulrich Franzen's agronomy building at Cornell) and local government. Preservation here emerges as one of the characteristic developments of the period with the restoration of Sullivan's Auditorium Theater in Chicago and James Stewart Polshek's New York State Bar Center which is a better example of extended use.

In 1972 Edward Barnes started his new campus for SUNY at Purchase, a unifying plan that orchestrated the subsequent efforts of several other architects. The first of several pioneering housing projects by Davis, Brody also appeared in Riverbend. Stanley Tigerman's appealing Abbey Church at Benet Lake, Wisconsin announced the wave of below-ground energy-conserving structures. Although they are hardly to be mentioned in the same sentence, Barnes's Crown Center in Kansas City, and Portman's Hyatt Regency in San Francisco, lead into many projects of the same types in the following years.

A good illustration of the many buildings in this collection that reward a second look is

the well planned New York City Police Headquarters that Gruzen and Partners designed in 1974. The first glimpse of Arthur Erickson's British Columbia provincial government center in Vancouver—later more widely recognized—also shows the concern for planning at nearly megastructure scale but with more strongly articulated architecture. Preservation continued to grow in importance as the decade reached its midpoint with the Butler Warehouse in Minneapolis, a brilliant example designed by Harry Jones. The development of the townhouse building type, often associated with the condominium form of ownership, is represented as well.

Further advances in housing were recorded in 1976 by Davis, Brody's Waterside development (New York City), squeezed in between the East River and the F.D.R. Drive and coping successfully with the problems of creating a human and urbane environment for its 1,440 families.

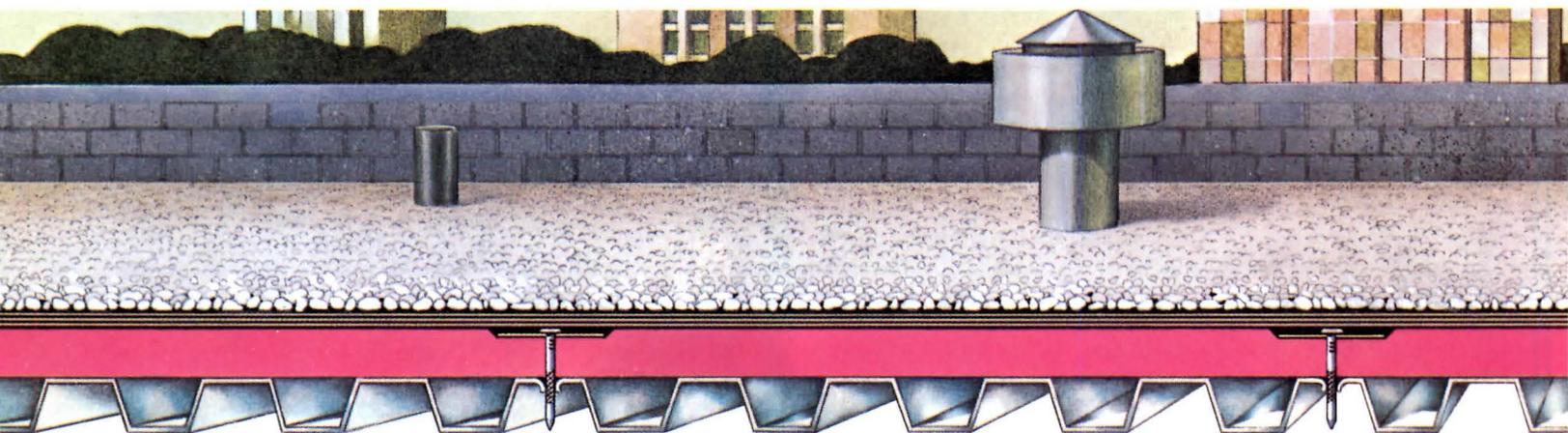
Kahn's last building, the Yale Center for British Art, completed the year after his death, could reasonably be pointed out as the building most representative of the decade—although, like Pei's East Building for the National Gallery of Art, it is inseparable from the unique Mycenaean support of Paul Mellon. More factory-made and typical in its aluminum and glass facades is the competition-winning Johns-Manville World Headquarters in Denver, Colorado designed by The

Architects Collaborative.

Growing interest in competitions, mixed use and multiple purpose buildings and a movement of Federal government design in these directions was clearly evident by 1978 in such a structure as the Federal Home Loan Bank Board Building in Washington produced by Max Urbahn Associates. This complex, which also manages to incorporate the preservation and extended use of the historic Winder Building, marked an auspicious beginning for the 1976 Cooperative Use Act.

A new look in office buildings, illustrating the many influences toward flexible building design regulation that were introduced by Mayor Lindsay's administration, was marked by the Citicorp Building, a ribbanded effort by Hugh Stubbins, topped by a would-be solar collector of heroic size. Citicorp also invites a reassessment of the atrium.

The concluding group of buildings, some of them still unrealized projects, and interviews with their architects look forward to the eighties. (Jaquelin Robertson and I. M. Pei also were interviewed.) In many respects their selection appears to have been determined by the answers Davern, now joined by the editors of ARCHITECTURAL RECORD, were seeking, but the proof was found. Civic design, as illustrated in San Francisco's Market Street, Paul Rudolph's New Haven Government Center and Mitchell/Giurgola's Westlake Park in Seattle support the contention



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that architecture is moving into these larger dimensions. But that there are those who "think otherwise" is suggested by the inclusion of Johnson/Burgee's Pittsburgh Plate Glass Building, Barnes's IBM Building, Ulrich Franzen's Philip Morris Building and other candidates for future fame.

At the end of this architectural journey through the 1970s one looks back to the opening pages, aware now of the distance traveled in the last decade but equally alert to the future direction. A new architecture has emerged, one having little to do with the clichés of architectural theory and criticism, formed by new circumstances and architecture's response to them. This architecture that will be characteristic of the eighties is set in urban contexts, responsive to social concerns, reflective of the public interest; an architecture of mixed use and multiple purposes; an architecture of greater stylistic freedom, awareness of historical values and aspiring to preserve them; an architecture commanding unprecedented powers of building technology but subject to increasing restraints and countervailing powers.

But while this survey arrives at such a view of the future, its title correctly describes its content—a close examination of the past decade in which these new directions have appeared. Year by year, in carefully selected buildings, most of them drawn from the pages of ARCHITECTURAL RECORD, the great repu-

tations, the important building types, and the forces that shape contemporary architecture pass in review. The rising costs of land, building and energy, growing public involvement, increasing regulation of construction and design appear and take their place in the historical past. Anyone who attempts a thoughtful view of where we are going will want to consider this record of architectural experience.

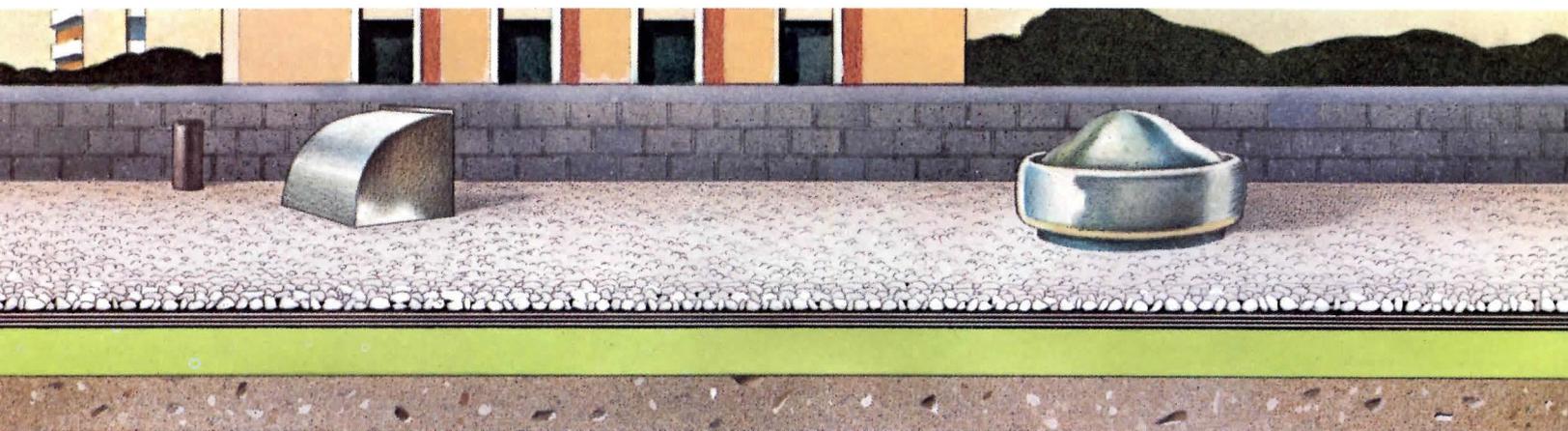
Among all the hard facts that are represented by the reality of individual buildings there is the great soft fact, as Henry James phrased it, that architecture gained in the seventies. New building types, new forms of architect selection and building regulation, and new ways to design and control building work were given lasting significance, particularly as they received institutional form.

What Davern emphasizes in her preface, however, is the new populism, participation, the public review process as illustrated in mandated public hearings, environmental impact statements, restraints on the demolition and alteration of historic buildings, awareness of social impacts on low income and racially composed neighborhoods, consumer protection. What needs further to be recognized is the enormous fragility of architecture when buffeted by such changes, the ease with which it can be stifled, the vulnerability of building projects. Optimism may be buoyed by innovations such as New York

City's urban development task force and its sophisticated bargaining for development rights, but these may or may not—given the politics of the situation—produce architecturally desirable solutions.

Progress was good but, as we will increasingly be hearing, it went on too long. One should approach this record with some better evaluation of what is important and what is not. Energy concerns have changed buildings fundamentally; environmentalism has not. Mixed use has emerged as a durable consideration in both public and private building. Historicism is reflected in both preservation and new design, but most of all at urban scale. Architecture evolves not from within—the influence of other buildings—but from the society it serves and its thought as reflected in books, the arts and social reality. Miss Davern's selection does not explore these themes, but perhaps it is her service to have posed the questions. Rather than the historian's preoccupations she has exercised the editorial prerogative, selecting what to her seems best, most interesting or most characteristic products of the period.

The decade which began with a West Coast museum thus comes to an end with a gallimaufry of corporate office buildings. Is this New York editorial myopia? Time alone will tell, but I suspect more is going on "out there" west of the Hudson than has yet been recognized.



ARE WEARING THESE DAYS.

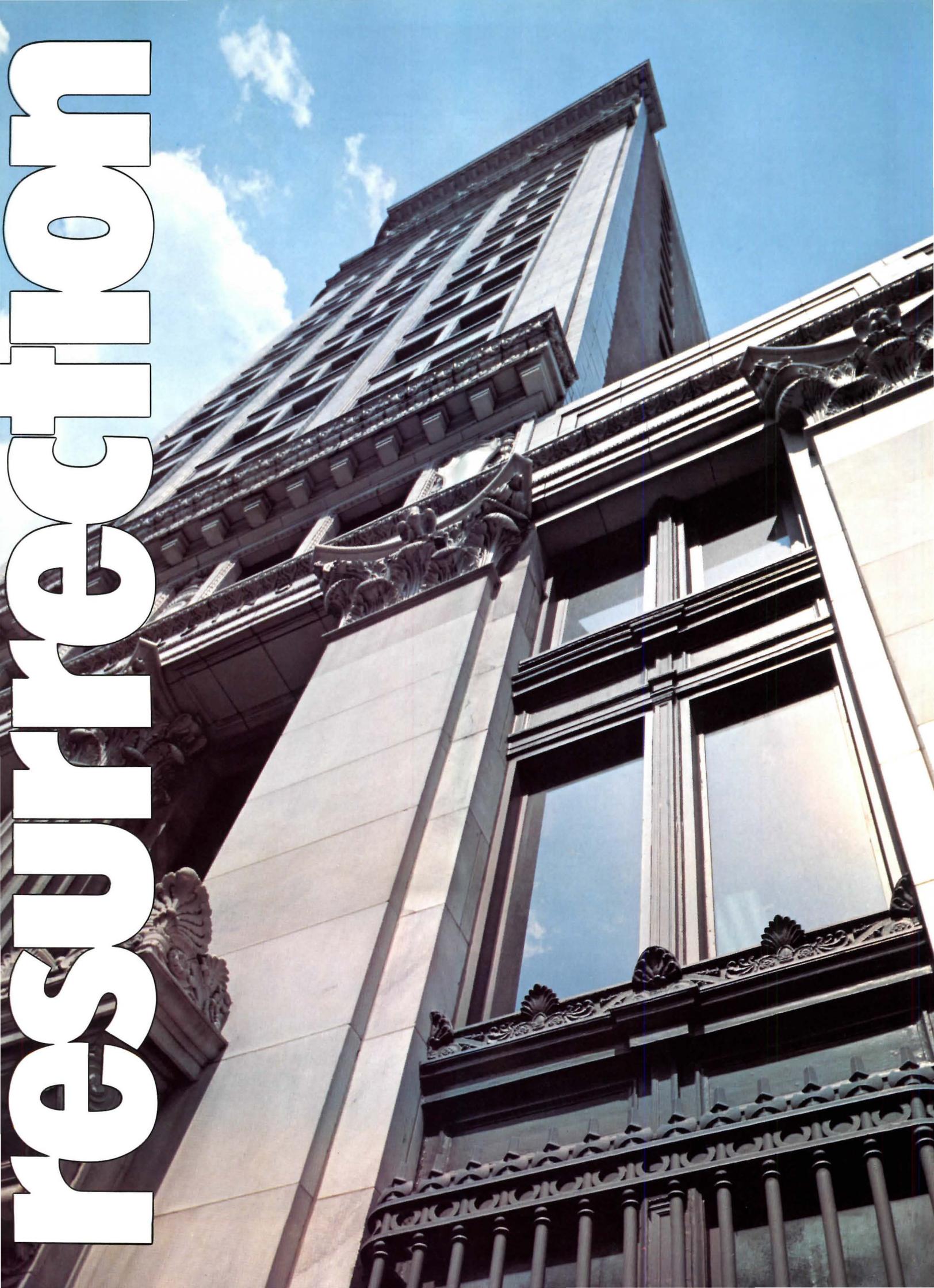
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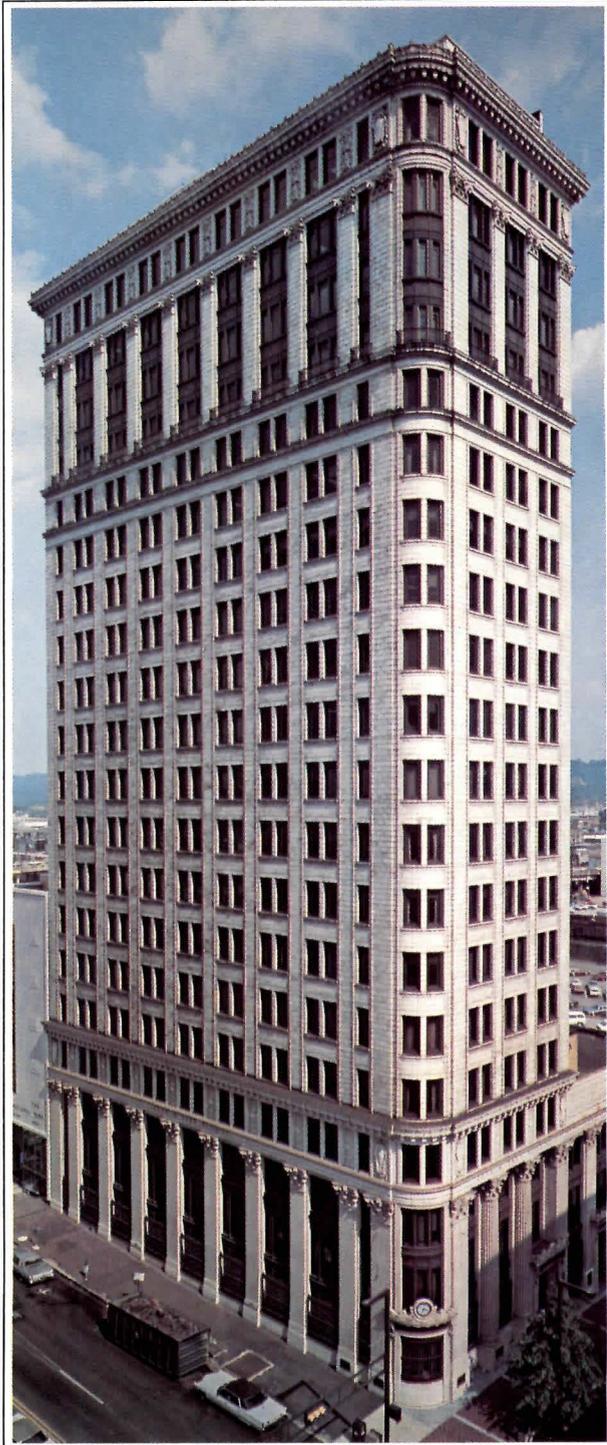
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Photomontage broadens the spectrum of design

The camera imagery that confronts us daily through television, cinema, and the press plays so important a role in our perception of reality that, for many of us, the photograph virtually *is* reality. Because it is universally comprehensible, photography is now employed as a primary means of communication in nearly every professional discipline. Yet architects, who make full use of photographs of finished work, have done little with photography as a design tool. One of the more promising areas for further exploration is a new system of photomontage, or Composite Image Design. This method not only conveys visual ideas clearly, accurately, and rapidly, but encourages participation by clients who may be unfamiliar with the abstract conventions of architectural graphics.

by Jerome Sirlin

Composite Image Design is the product of nearly ten years of research into the adaptation of photographic techniques to architecture and environmental design. Based on the juxtaposition and overlay of multiple photographs—slides as well as hard-copy prints—this method has proven its effectiveness in building design; renovation and restoration; interior, lighting, color, and graphic design; and other environmental arts. Photographic simulation has also been useful in searching out various design options and sets of values that may in turn suggest relationships of form and function before either element is absolutely defined. The ongoing search for new meaning in architecture, and order in the chaos of our cities, relies upon the generation of new ideas, images, and metaphors. Composite Image Design can effectively extend architecture in all of these directions.

Photography has been a major force in

the visual arts for well over a hundred years. It exerted a profound influence on nineteenth-century artists such as Courbet, Degas, and Eakins, and its potential is just as rich for architects today. Through photographic resolution of images, the architect, no less than the painter, can gain a highly articulated understanding of light intensity, silhouettes, and reflectance, for example, that evokes a range of subtle alterations to the landscape.

This critical awareness of environmental detail encourages a very different view of a site from the perspective developed through measured drawings produced in the studio. Just as the photograph represents a greater degree of "reality" than the drawing, the combination of many images in a photomontage opens up far more diverse opportunities for conceptualization, visualization, and illustration at every stage of the design process—from schematics to detailed studies of color

and graphics. In the initial phase of project analysis, when the architect begins to familiarize himself with the visual context of a project, manipulation of documentary photographs can clarify basic components of design, such as traditional regional forms, building typologies, massing, and exterior finishes. Specific features can then be photographically intensified for emphasis or overlaid to illustrate combinations or contrasts of elements. This system is equally valid in pre-design, when the search for imagery and symbols may be crucial to the subsequent evolution of a design concept; in schematics, where displays of site plans, functional diagrams, and rough partis need to be established; and in design development, when critical sections and elevations must be explored fully.

In a 1979 proposal for the Ithaca Commons shopping plaza, in Ithaca, New York, I employed photomontage both to compose the over-all design concept and to present its various transformations to the client. The major emphasis of the design was variability, a guiding principle of American retailing. The photo-composites created for this project (see Figures 1, 2, and 3) incorporate contemporary as well as historical architectural symbols, ceremonial memorabilia, and a complex neon "extravaganza."

One of the most exciting aspects of this design study was the discovery, through the



generation of many options, of a "metabolic" facade, a multi-faceted billboard that could change daily or seasonally, according to the needs of the community. While the facade would be part of a transparent domed enclosure for retail facilities, it would also function as a giant public bulletin board, a retail display system, an outdoor movie theater, and a stage set for live performances. The idea of the metabolic facade resulted directly from the spontaneous nature of Composite Image Design, a process which the director of the Ithaca City Planning Department praised as a "stimulus for public imagination." Impact on the public domain was also a central consideration in assessing the merits of an exterior mural proposed for Ithaca's venerable Strand Theater. Because the theater is one of the city's most prominent landmarks, it was essential to visualize alternative images in context before any design could be selected—a procedure that was facilitated by photographic simulation.

Alternative designs can be "tried out" against the backdrop of an actual site

For another project in Ithaca, the Hangar Theater, a facility that operates only during summer evenings, alternative facade designs were produced with nighttime viewing in mind (Figures 4, 5, and 6). In attempting to select a single elevation, it became evident that *all* of the schemes suggested could be

realized. Through indirect exterior illumination, the back-lighting of large glass doors, and the installation of a new marquee, the facade was transformed into a dynamic theatrical production in its own right.

The applicability of the composite image technique to color selection was demonstrated in a facade study for a building designed by Gruzen and Partners for York College in Jamaica, New York (Figures 9, 10, and 11). Photomontages yielded a broad range of options for masonry finishes, window reflectance, and trim in diverse color combinations. The same approach has been applied to color analysis of the exterior of a three-story, 1880s Italianate commercial block in downtown Ithaca and to a study of power line design funded by the Federal Department of Energy. In the latter project, photographic simulation was used to determine suitable designs for power transmission systems across the country. By superimposing structures of different shapes and colors against the background of sample landscapes, it was possible to gauge viewer preferences. In the course of testing these responses, it became clear that color was as significant a variable as geometry, scale, or silhouette.

The effects of variable lighting and the spatial qualities of color are difficult to project with any degree of accuracy in conventional renderings, models, or the paint chip evaluation process. But the Composite Image

Design system may generate the entire spectrum of feasible color combinations, from which a final choice can be made. In the time required to produce a single highly detailed rendering—one that resembles a photograph—numerous photo-images can be reviewed by the client.

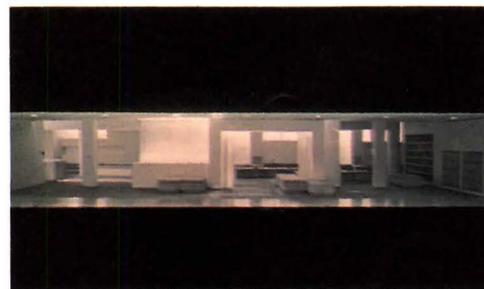
Photographs help clients visualize—and take part in—every stage of design

One of the most important objectives of the composite method is to increase the level of client involvement in design. The closest the client usually gets to making critical design decisions is in a preliminary conference when he and the architect attempt to verbalize visual concepts and reach some agreement on objectives. In the final analysis, the architect hopes to satisfy basic functional requirements and "sell" the client on a particular image. The client has had little input into image development—the most enjoyable phase of the process, yet one that is left entirely to the professional judgment of the architect. It is hardly necessary, or even beneficial, to deny the client a role in the most exciting stages of design—a role that is facilitated by photographic simulation. When put to use with this aim in view, Composite Image Design can work to the mutual advantage of both client and designer.

Jerome Sirlin is a practicing architect and visual design consultant in Ithaca, New York.

Photomontages of the proposed Ithaca Commons shopping plaza (Figures 1,2 and 3) suggested the use of an electronic billboard-facade. Hypothetical lighting and graphics were superimposed on a photo of the extant Hangar Theater (Figures 4, 5 and 6) before remodeling began. The model of a lounge at Cornell University (Figure 7) became the basis for photographic experiments with color and scale (Figure 8), while composite image studies of exterior color and reflectance at York College (Figures 9, 10 and 11) assisted Gruzen and Partners in selecting the best combination for the site.

7



8



9



10



11

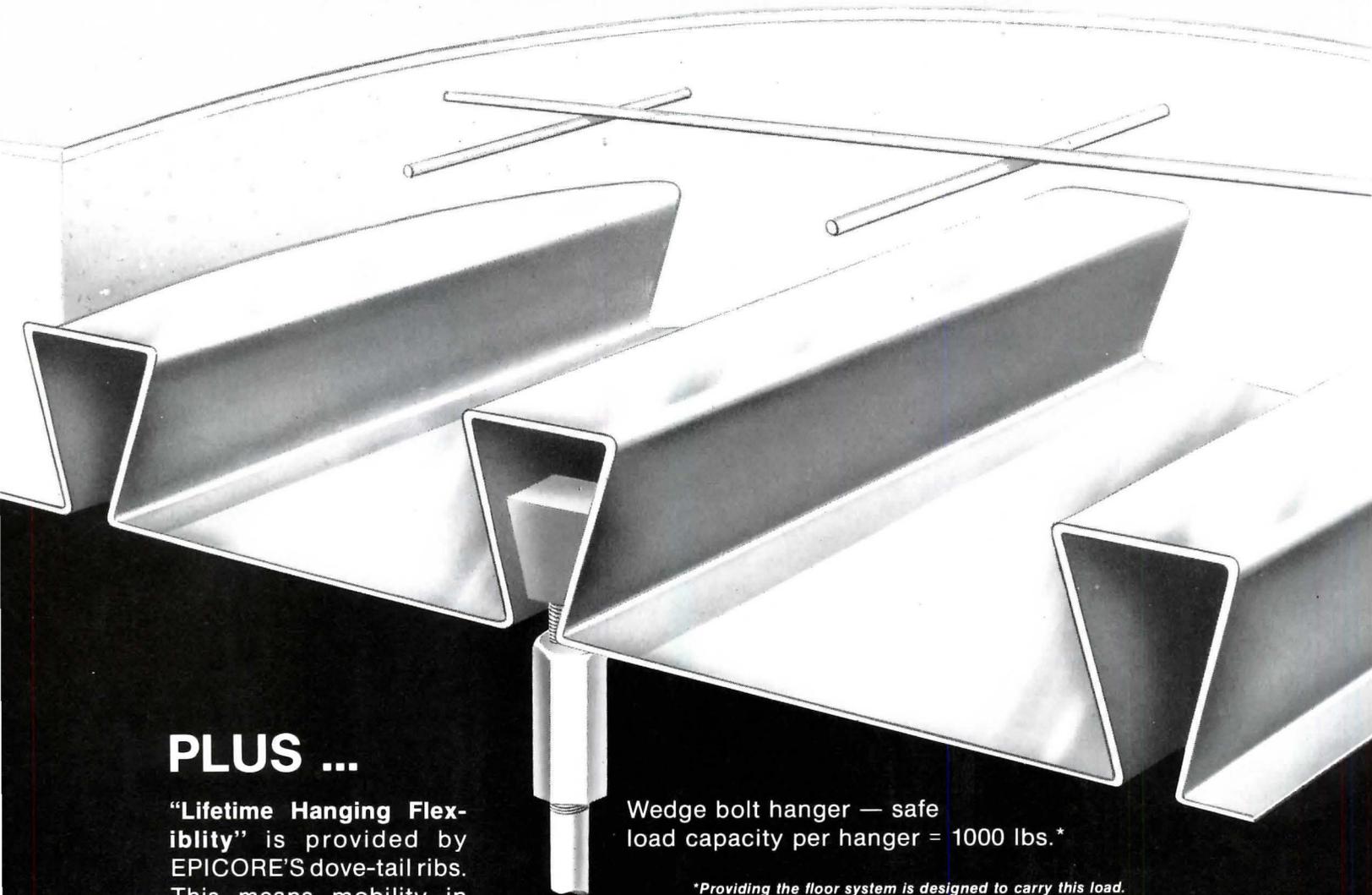


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An inverted yield curve increases construction's vulnerability

In the initial stages of a construction recovery, interest rates normally are substantially below their highs of the previous cyclical peak. However, because of excessive reliance on monetary restraint to combat inflation's tenacity and high core rate, interest rates have steadily climbed toward their exceptional levels of last March. Furthermore, short-term rates have moved up even faster and higher than long-term rates, producing an *inverted yield curve*. This has inhibited long-term lending, which is sapping the recovery's strength, causing construction activity to wobble rather than surge forward.

Investors usually want a higher interest rate to lend their funds for 10 years than for 90 days, resulting in a yield curve that slopes upward and to the right (see the July 3 line in Chart 3). When a yield curve is *inverted*, investors want a higher interest rate to lend for 90 days than for 10 years; thus, the curve slopes downward and to the right (see the March 28

or November 21 line in Chart 3).

The inverted yield curve has appeared because monetary policy has tightened and because businesses, consumers, and government are competing aggressively for increasingly scarce funds. Interest rates have risen rapidly. Lenders, anticipating even further gains in long rates, have curbed their long-

term loans and concentrated on short-term lending instead. Borrowers, desperate for funds to meet their mounting commitments, are scrambling after short-term loans, pushing these rates above long-term rates.

In this environment, an inverted yield curve discourages mortgage lending in two ways. Thrift institutions can obtain costly short-term funds, but then must charge even higher mortgage rates, which disqualifies many potential borrowers. Next, life insurance companies and pension funds, expecting further interest rate advances, shift more of their investments of new funds from the long-term market into short-term securities, lessening the money available for both residential and commercial loans.

The inverted yield curve will give way to a normal yield curve only when interest rates throughout the economy climb to levels that discourage borrowing. This process will curtail real activity, which will burst the bubble of excess credit demands. Since real activity in the retail and manufacturing sectors, as well as in construction, is currently (late November) feeling the adverse effects of high interest rates, credit demands are likely to ease somewhat in coming months. In turn, interest rates are expected to fall moderately until the onset of the spring building season.

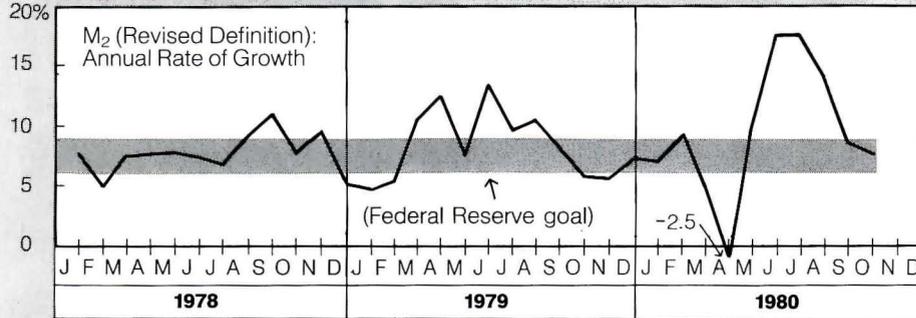
Any break in rates is likely to be short-lived. Home buyers, businesses, and state and local governments, who were frozen out of the market this winter, will eagerly seek funds this spring as credit becomes relatively cheaper and more readily available. Since Federal borrowing will remain extremely high and monetary policy will hold to a very tight course, these additional loan demands will increase pressure on the financial markets, reversing the slide in interest rates.

The hope is that the monetary authorities can use this time to rein in and contain money growth. If they do, inflationary expectations will abate (although the core rate of inflation will still be too high). Then, even though interest rates are likely to rise during the spring and summer, the yield curve could sustain its normal upward slope, which would encourage investors to continue supplying long-term loans. Residential activity, after the winter hiatus, would resume, setting in motion the forces for an expansion in retail building. This recovery would join strong office building to provide a lift to commercial construction in the second half of 1981. Still, this will not be a smooth, free-flowing expansion. The battle to curb too high an inflation rate, which will require firm, skillful handling of monetary policy, will periodically remind us of the fragility of this building recovery.

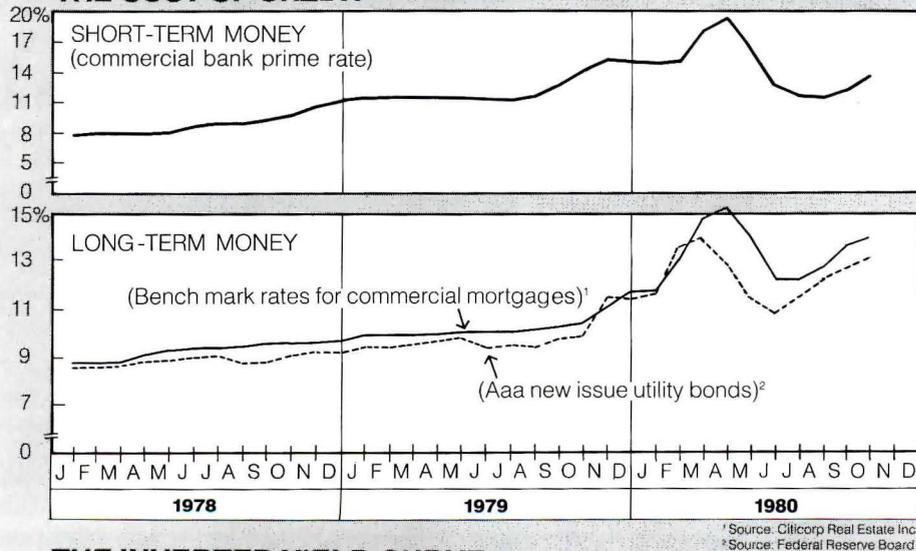
Phillip E. Kidd

Director of Economic Research
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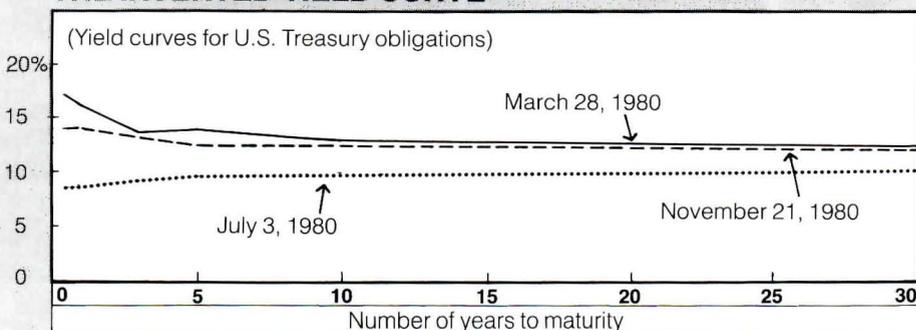
THE SUPPLY OF CREDIT



THE COST OF CREDIT



THE INVERTED YIELD CURVE



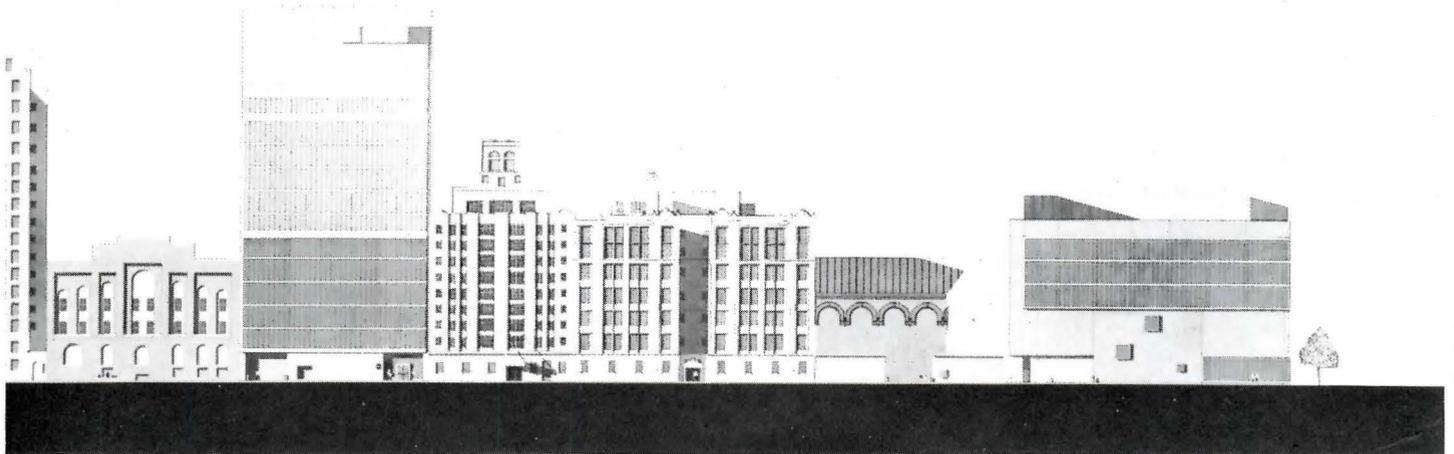


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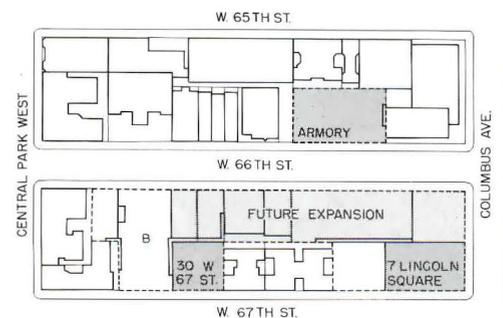


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MIXED USE FOR AN URBAN NEIGHBORHOOD

Architects Kohn Pedersen Fox Associates have solved the delicate problem of inserting three television production facilities for the American Broadcasting Company into the midst of an elegant residential neighborhood in New York City. Their solution gives architectural order to a complex technology as it attends to its architectural context. It is efficient, economical, and handsome. —Roger Yee





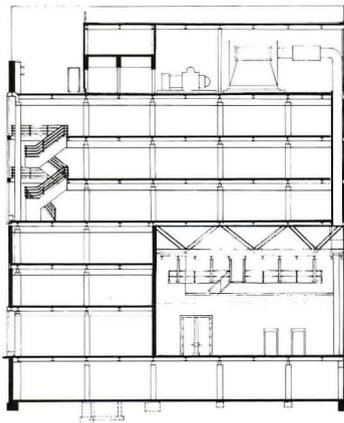
New York's West 67th Street between Central Park and Lincoln Center for the Performing Arts is an elegant residential address with a split personality: a tree-lined thoroughfare of tall masonry apartment houses dating from the 1910s and 1920s cheek by jowl with the technical nerve center for the American Broadcasting Company. The usually civil relationship between these unlikely neighbors was severely tested in 1977, when ABC announced plans for major construction on the block. That two new and unavoidably large structures, 30 West 67th Street and 7 Lincoln Square, could win the approval of an influential community of upper-middle-class professionals attests to the skill exercised by architects Kohn Pedersen Fox Associates on behalf of ABC.

The completion of these buildings and the remodeling of a third facility, the turn-of-the-century Armory, on nearby West 66th Street, points up a curious fact about the grip of technology on a national television network. Although cameramen can take TV's eyes and ears virtually anywhere in the world, the equipment used to control a network can be too extensive and costly to move. Once ABC located its electronics in a former riding academy split between West 66th and 67th Streets in 1953, the die was cast. Administration could and did move to midtown Manhattan in 1966. Production will most likely remain rooted in and around the old stable, now designated B Building (site plan and elevation overleaf) for the foreseeable future. In fact, ABC is a major land owner in the neighborhood.

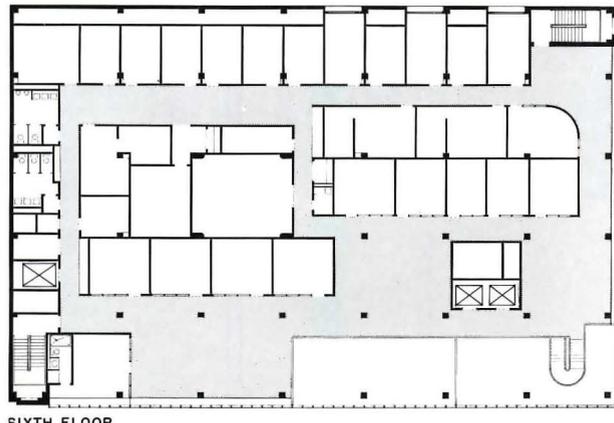
How these properties were acquired is but one example of the ingenuity, frugality, and daring that characterize the youngest of the three major networks. A perennial last place finisher in the Nielsen ratings for most of its lifetime, ABC was constantly obliged to innovate. It introduced major Hollywood film studios to TV programming and thereby brought the downfall of live shows. It perfected a unique style of sports coverage which remains unequalled. It proved that a serial could be aired over consecutive nights rather than in weekly installments by riveting the nation to its TV screens to watch a film based on the Alex Haley novel, *Roots*.

And it grew. Adding facilities as the need arose caused ABC to become the owner of 19 properties in New York and New Jersey and the lessee of another 19 in New York by 1973-1974, when architect John Carl Warnecke drew up a master plan to consolidate its untidy empire. Unfortunately, the plan required money that a young struggling business preferred to spend elsewhere. ABC chose to muddle through in facilities that often scattered its operations apart.

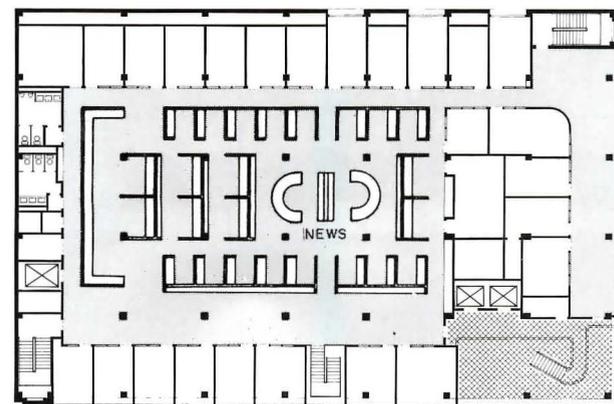
Then came the momentous 1976-1977 season, during which ABC shook the Nielsen ratings upside down. Having nurtured a strong management team and a battery of programs that made its schedules the envy of the industry, the underdog in the three-way race became the number one prime time network. ABC retained Kohn Pedersen Fox



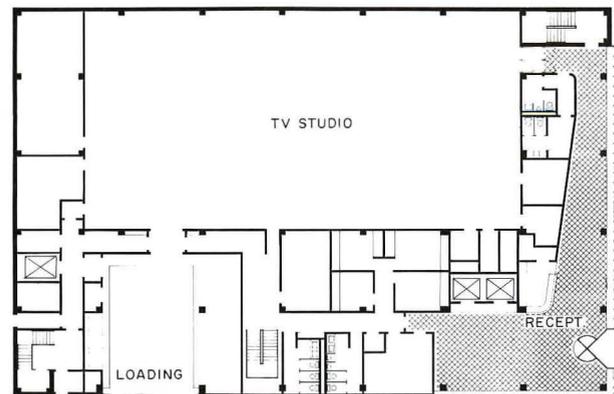
A brick box with its top half peeled away constitutes the new home for the local ABC affiliate WABC-TV, illustrated here and on the previous page. As the section and plans for the building show (above and right), the brick box that jackets the first three floors serves mainly as a three-story high, 110-foot clear span, 6,000-square-foot studio (top). Notice the profusion of stage lights and other services suspended above the set design for WABC-TV's "Eyewitness News" program. The windows at two stair landings and at a street level office and a glass wall enclosing the lobby (previous page and bottom right), are used to relieve the otherwise blank walls. The top half of the brick box takes advantage of the north and west exposures by opening up a three-story-high atrium and by minimizing the number of private offices along the glass walls. A cantilevered staircase (opposite), connects floors four, five, and six.



SIXTH FLOOR



FOURTH FLOOR

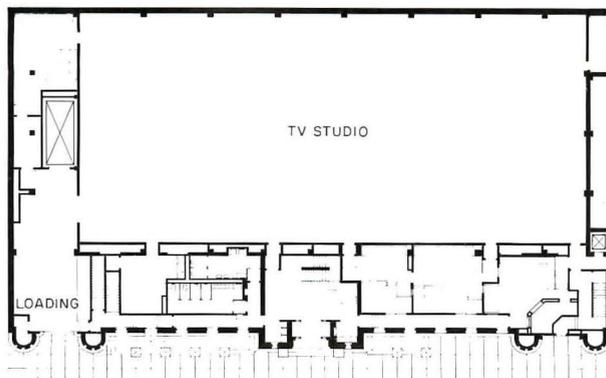
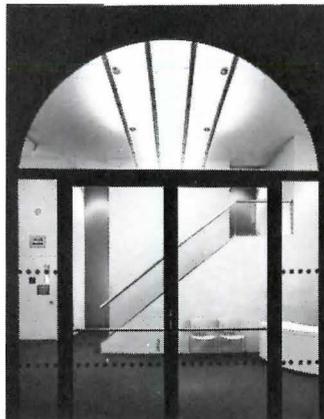


FIRST FLOOR





The interior world of television production tends to be either a vast expanse of empty studio floor free of permanent structures or a small room for editing or monitoring in which as much electronics equipment as possible is crammed. The control room shown at the top of the page serves WABC-TV, but it is representative of those used by producers of the soap opera "One Life to Live," housed in the nearby Armory (right and opposite). While not a historic landmark, the Armory, built in 1901, was admired by the client and the architects alike for its fastidious masonry detailing. The rusticated base, the windows framed with quoins and keystones, and the embattlements at the tower and the parapets are visible in the facade detail shown on the opposite page. The building's plan (bottom right), is fairly simple. A 10,000-square-foot studio three stories high is buffered by a layer of control rooms and other stage and technical services on the ground floor, production offices on the second floor, and mechanicals on the third floor. Dressing rooms, the green room, costume storage, and sound effects are in the basement.



for planning and design that soon culminated in construction.

Spartan, efficient, yet handsome, the new buildings represent the first of three growth phases that will someday house all New York operations on the block. Essentially, everything old and new revolves around B Building. Thirty West 67th Street, on the north side of the block, is a 120,000-square-foot structure (site plan, pages 70 and 71) that adjoins it as part of a scheme to run a continuous L-shaped structure along the south side of the block on West 66th Street to the southwest corner.

Neither of the other new buildings is physically or functionally tied to this group. Seven Lincoln Square, an 85,000-square-foot building occupying the northwest corner of the block (photo overleaf) is the home of local station WABC-TV. The Armory (pages 68-69) sited one block south, provides a 10,000-square-foot studio for the production of the soap opera, "One Life to Live."

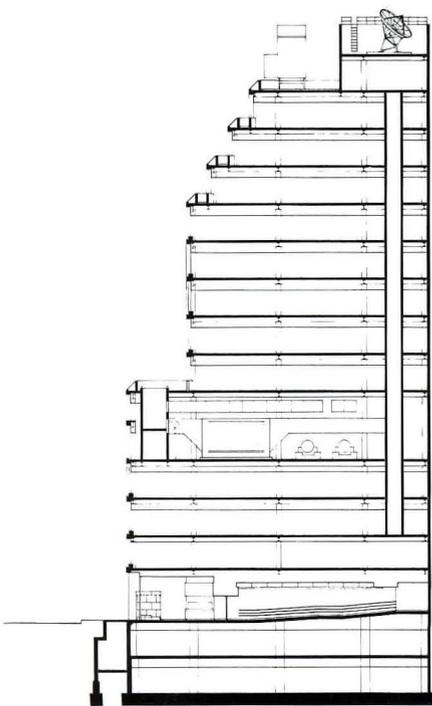
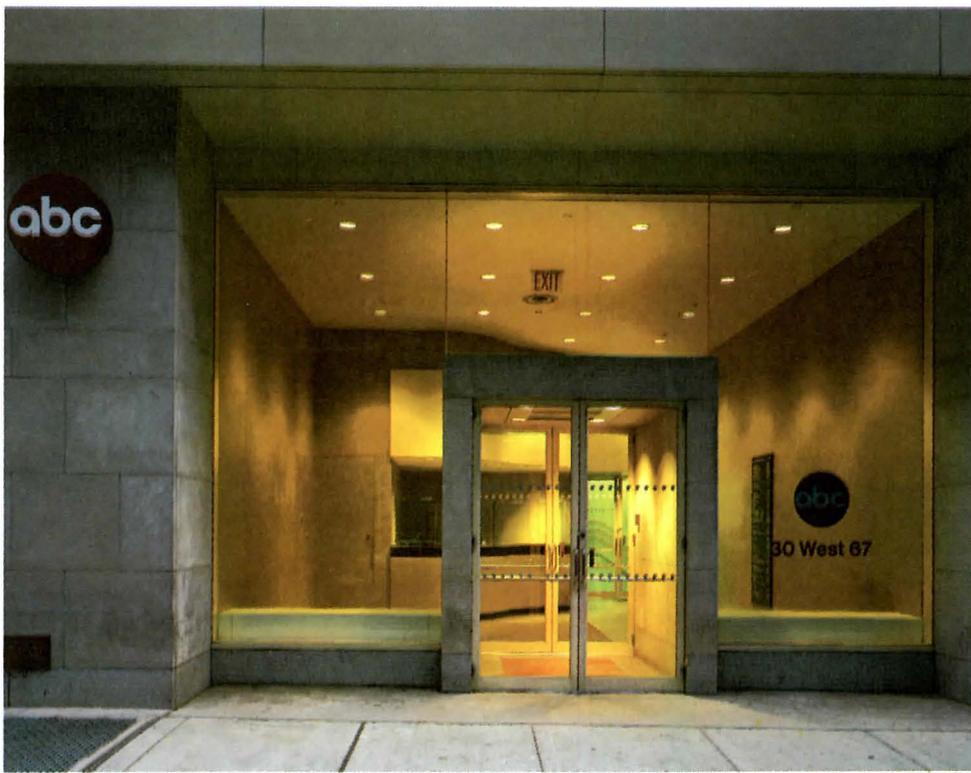
Although any building of this magnitude is not going to fade into the urban fabric, the trio were obviously conceived as "background" architecture. The most ambitious example is 7 Lincoln Square, so designated because it faces the plaza at Lincoln Center. WABC-TV's program demanded a two-fold solution: a "black box" for the local affiliate's own studio productions, and offices for the administrative, creative, and technical staff.

Balancing the technical demand for a windowless TV studio with the corporate goal of calming neighborhood fears of commercial intrusions on the block created a dilemma for the architects. The optimal location for the studio was at street level for easy loading access, with offices stacked above, on the fairly tight building lot. Facing West 67th Street or Lincoln Center with a blank wall at street level, however, was politically and esthetically unthinkable.

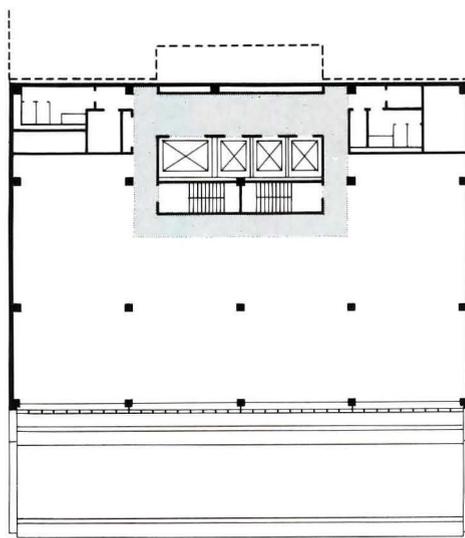
Project designer Paul Rosen responded by establishing a rectangular steel box, cladding it in a curtain wall of buff-colored brick that occurs elsewhere on the block, and punching out as much fenestration as possible. A degree of transparency was even attained at the lower three levels, where the three-story-high 6,000-square-foot studio dominates (page 66). A narrow, glass-walled street level lobby encircles the studio in a welcoming gesture to the neighborhood.

Above the studio, loading dock, and technical services on floors one through three, the building reveals itself dramatically through a glass curtain wall that exposes floors four through six (page 67). The extensive use of glass has considerable impact in the presence of so much brick. Intensifying the sense of depth is an interior atrium which expands as the building rises. This three-story-high "community space," set off by a nautically inspired cantilevered staircase and pipe railing, functions as a unifying symbol and casual meeting place for a staff that has never been gathered under one roof before. Other office interiors stress openness with open plan work stations, glass partitions, and

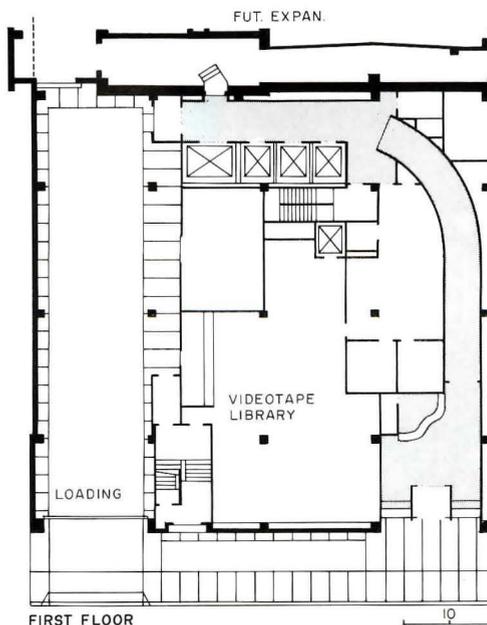




To the unsuspecting pedestrian, 30 West 67th Street, ABC's new technical complex, seems smaller than it is because of setbacks at floors 6, 11, 12, 13, and 14. Its true bulk is not easily concealed from afar (opposite). Careful detailing helps reconcile it to neighboring apartment buildings: a limestone base, narrow mullion spacing, end walls with returns that simulate bearing walls, chamfered parapets to soften hard edges, and an attractive lobby (top). Note the core's position on the plans (right), which await a mirror image building that will face West 66th Street.



TYPICAL OFFICE FLOOR



FIRST FLOOR

a palette of beiges, browns and white.

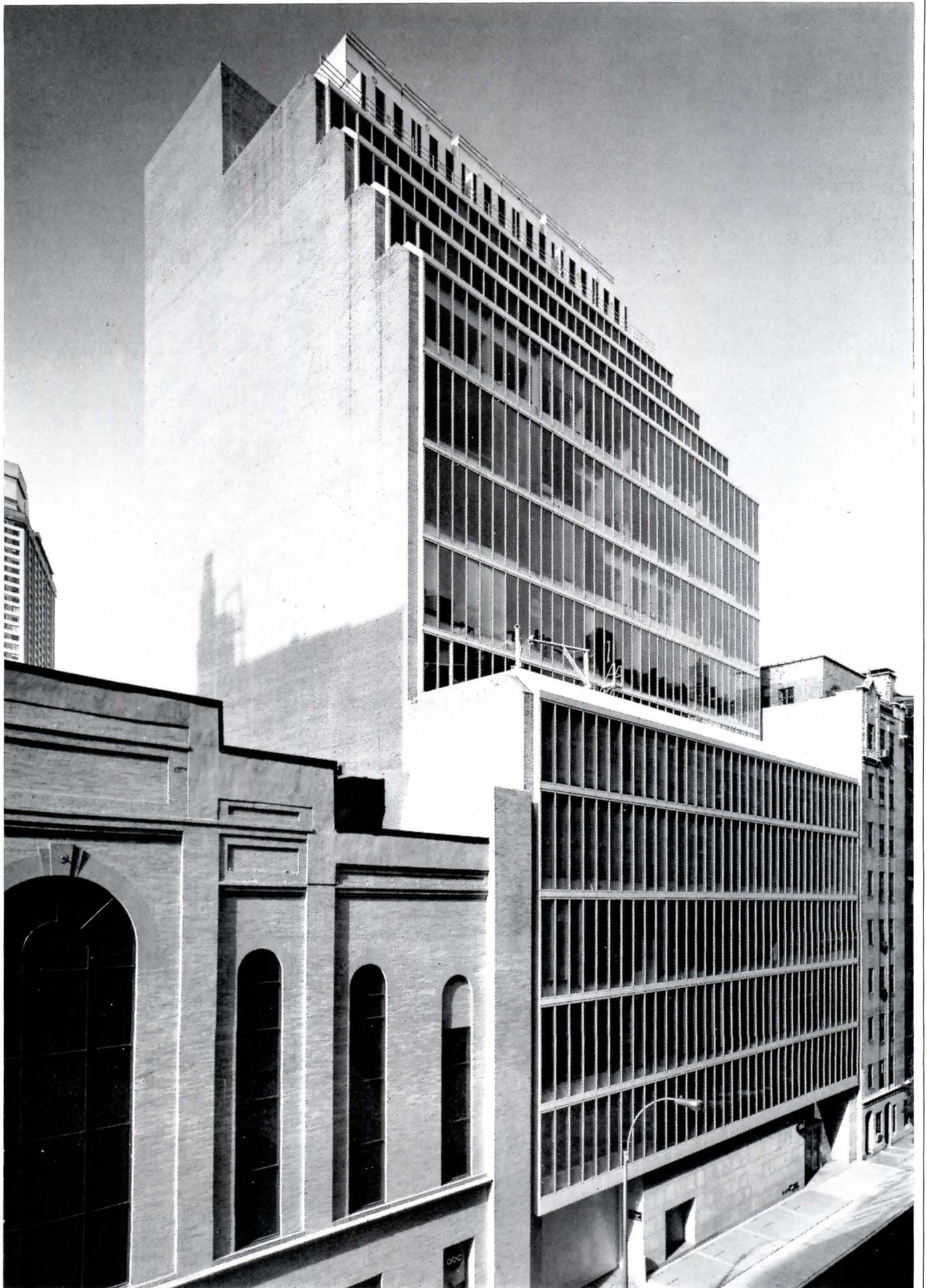
The requirements of the studio and other technical facilities dictated a radically different interior design. The studio, big enough to house two program sets, is laced overhead with massive air ducts, catwalks, suspended structure, stage lighting, and racks for routing separate power and electronic cables. The walls and floor below the maze are basically soundproof (STC-56) backdrops to be hidden behind the set designs. Control rooms (page 68) typify the other technical facilities: small interconnected spaces built on access flooring and crammed with instrumented panels and monitoring screens that glow eerily in the dark.

Were a visitor to walk one block south of 7 Lincoln Square to see the other new ABC studio, he might be startled to find it inside the rugged walls of the Armory, a fanciful heap of masonry erected in 1901 for the National Guard's 102nd Medical Battalion. When the network decided to rush its one-hour soap opera into production, the Armory proved equal to the task. Kohn Pedersen Fox steam cleaned and repointed the street facade, gutted everything else except the wood roof trusses, and planted a studio inside big enough to take up to 10 sets (one-hour "soaps" need many set changes) in 12 breathless months.

Were the visitor to leave 7 Lincoln Square and turn east instead, towards 30 West 67th Street, he might not realize how big the 14-story building is. The architects have adroitly exploited the zoning envelope to match nearby apartment buildings' cornices. The ruse is successful, at least from the sidewalk. Setbacks at floors 6, 11, 12, 13, and 14 are aided by such studied detailing as the glass curtain wall. Its mullions, spaced 2 feet 6 inches on center as at 7 Lincoln Square, restate the tall, narrow windows of the neighboring apartments.

The architects describe the interiors as "strictly workhorse." From the electronic labyrinth in two below-grade levels linked at B Building to the video tape library and workshops above, the technicians have indeed taken matters in their own hands. One aspect deserves special mention, nevertheless. Since 30 West 67th Street is intended to be joined back to back with its mirror image in the second phase of construction, its core is located at the rear, rather than the center of the plan. What image the second phase will take is sheer speculation in the absence of a firm construction timetable. It seems safe to say, however, that Kohn Pedersen Fox will be part of that picture.

ABC BROADCAST FACILITIES, New York, New York. Owner: American Broadcasting Companies. Architects: Kohn Pedersen Fox—Sheldon Fox, A. Eugene Kohn, managing partners; William E. Pedersen, design partner; Paul Rosen, project designer; Patricia Conway, planning and programming partner; Robert A. Cioppa, Charles A. Schmitt, project architects. Engineers: Joseph R. Loring (mechanical/electrical), Severud-Perrone-Sturm-Bandel (structural). Contractor: Morse/Diesel.



In a lecture given at the American Academy of Arts and Sciences last winter, *The New York Times* architecture critic Ada Louise Huxtable examined the recent shifts in architecture, noting with some trepidation that "the pendulum is swinging from the desire to remake the world to the desire to remake art." This essay—based on that lecture and first published by *The New York Review of Books*—evaluates this latest stylistic revolution and the offerings of its vanguard.

A respectable and conventional title for this article would be "Architecture at the Crossroads." A more alarming title could be "The Crisis of Modern Architecture." On a more personal note, I could call it "Critic in Crisis: Or How I Am Learning to Live With, But Not to Love, Post-Modernism."

I believe that architecture today is at a genuine crossroads, quite unlike that of any other time in history. Our Western tradition has been through more than 25 centuries of stylistic development, from its Greco-Roman sources to the humanistic revolution of the Renaissance and the radical readjustments of the present. The changes wrought by the technological and modernist revolution of our own day are absolutely without parallel. In our own lifetime modern architecture has been hailed—and it has failed—as an instrument of social salvation. It has been called to account by Jane Jacobs and the environmen-

talists. And it is now backing away blindly, in the name of change? progress? rediscovery? creativity?—I do not know what to call it—from a sociological or environmental context and into the realm of pure art again—back into an ivory tower with a vengeance, surrounded by an unsettling aura of ecstasy and unease.

What we have come to know as modern architecture in the twentieth century has had very precise rules and definitions and a very visible impact on the built world. This entire phenomenon is being attacked and downgraded. It has become fashionable to say that modern architecture is dead. We are told that we are now in the post-modernist period. None of the rules observed by modernists for the last half-century remains valid. This "revolution against the revolution" is the center of a spirited debate among architects, historians, theorists, and critics. Right now, it is generating much more passion than building. But it is bound to have a profound effect on what will be built, which eventually concerns us all.

We have grown so accustomed to revolutions in our own time that we treat them cavalierly. There are no more dramatic changes than those that have taken place in the twentieth-century built environment. We have watched modern cities explode and seen their skylines remade as they have turned into incredible displays of glass and steel and concrete unlike anything ever

known before. Only the names remain the same. None of this could have been constructed, in engineering or technological terms alone, in any other century, and the modern architecture of the cityscape has become the universal twentieth-century style. It does not matter whether anyone likes it or not. It has not needed anyone's encouragement or permission. Even the ripoff artists have created a vernacular as valid and lasting as the Georgian vernacular that followed Vanbrugh and Wren.

Does anyone still remember how hard the avant-garde fought for the acceptance of this revolution? The intellectual dedication, the evangelical passion, the all-out efforts in its behalf? The charmed circle of those who shared the vision? Those terribly shocking and fashionably *dernier cri* architecture exhibitions at the Museum of Modern Art in the 1930s and 1940s? The outcry that greeted those who dared to build "modern" houses? The flat roof controversies? The missionary "good design" shows? Those tiny buildings that were hailed as triumphs?

Some of those breakthroughs are now registered national landmarks. The Society for the Preservation of New England Antiquities is taking over Walter Gropius's revolutionary house in Lincoln, Massachusetts. The books and tracts meant to convince us of the apocalyptic inevitability of the modern movement have joined Alberti and Palladio in the rare book rooms of the architecture libraries.

The Troubled State of

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Tom Bernard



Allen Memorial Art Museum addition by Venturi & Rauch (Oberlin, Ohio).

Roberto Freno



Gallaratese housing by Aldo Rossi (Milan, Italy).

Eventually the acceptance of modern architecture came about through a combination of technology and economics that was able to achieve what lessons in taste and morality could not.

There are, of course, sermons in stones and lessons in buildings, and there is much irony in hindsight. Today there is no certainty about anything anymore. There are no longer any approved verities to hang onto, no yardsticks or ideals that safely and universally apply. That the tenets of modern architecture—so sure, so superior, so blessed with the revelation of beauty and truth—should be under attack is no surprise. It is so much easier to see that the overarching dream of salvation through design failed. It is so much easier to document stupidity, corruption, and abuse than to remember vision and intent. The failures of modern architecture are so enormous and so visible—they are lying around on every street corner. There is the irreparable damage that the rejection of the past has done to our cities, the uncaring and unthinking demolition and loss of our heritage, the destructively wrong scale and sabotaged relationships of the environment, the ignorance and neglect of the continuity that is urban culture.

Like all ideals, those of the modernists have been elusive and impossible to realize. To me it seems rather sad, and even arrogant, that the present generation does not bother to wonder what the excitement was all

about. In those circles that are customarily called avant-garde, modern architecture, with its quaint belief systems, is out of style. There is rejoicing among the Philistines and recanting among the faithful.

Perhaps if modern architecture's stated ambitions had been less large, it would have been less vulnerable. But those ambitions were part of a period of tremendous optimism about the perfectibility of man and his social and political systems and the conditions of his life. The early years of this century were full of courage and hope. Now we are coming to terms with reality and despair.

Today, the history of the fifty years in which modernism grew from a radical movement to the accepted style of the establishment is being actively rewritten. Revisionism is currently the vogue in academic circles. The results are a curious mix of valuable new insights and warped misreadings. Those who participated in this particular chapter of history, and who thought they knew what was happening, are in a state of befuddled or anguished shock. Was the revolution won or lost? Were none of its concerns real or legitimate? What, if anything, did those dedicated pioneers of a new spirit and style achieve? Were no truths revealed? Was no beauty created? Was nothing added to the history of the building art?

The discussion is taking place in an explosion of publications, here and abroad. In the

United States, the most serious periodical is *Oppositions*, the magazine of the Institute for Architecture and Urban Studies in New York, which has maintained an intense and elevated debate in predominantly turgid tones since its inauguration in 1973. The Institute is also producing a series of outstanding catalogs in connection with its exhibitions on new work and historical reassessments. For pure, magnificent presentation of the new work, and the dedicated documentation of older work of particular interest to today's architects, the most sumptuous magazines are coming out of Japan—*A + U* (Architecture and Urbanism) and *Process Architecture*, for example.

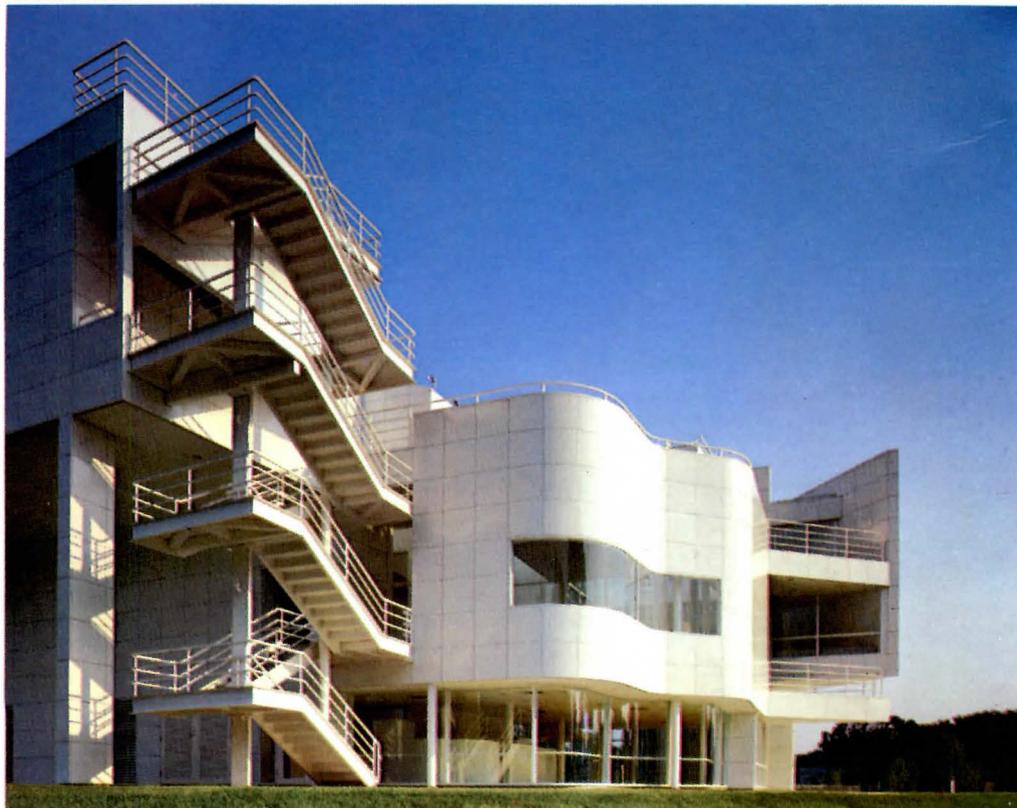
In the field of revisionist critical writing Charles Jencks is the acknowledged guru of post-modernism, with a series of shrewd, witty, insightful, and sometimes deeply irritating books, beginning with the collected essays on *Meaning in Architecture*, of 1969, edited with George Baird, and continuing with *Modern Movements in Architecture*, and *The Language of Post-Modern Architecture*. In close step with him is Robert A. M. Stern, whose *New Directions in American Architecture* appeared first in 1969 and in a revised edition in 1977, and who publishes widely in professional journals.

Two teachers, both distinguished historians and critics—Vincent Scully at Yale and Colin Rowe at Cornell—have probably done the most to change the architectural vision and philosophy of several generations of stu-

Modern Architecture

by Ada Louise Huxtable

Ezra Stoller© ESTO



Athenaeum by Richard Meier (New Harmony, Indiana).

dents, beginning as far back as the 1940s. Three particularly influential and enduring architectural essays are Colin Rowe's "The Mathematics of the Ideal Villa" (*The Architectural Review*, London, 1947), "Mannerism and Modern Architecture" (*The Architectural Review*, 1950), and "Transparency: Literal and Phenomenal," with Robert Slutzky (written in 1955-1956 and published in *Perspecta* at Yale in 1963). It is significant that these pieces were reprinted as part of a Rowe collection in 1976.

This body of history, theory, and criticism is supplemented by monographs on current practitioners and manifestoes of all kinds, of which the most outrageous and entertaining to date is Rem Koolhaas's *Delirious New York*. Other valuable and informative documents are the catalogs accompanying the increasing number of gallery exhibitions of architects whose work is on the leading edge of theory or design, or who are identified with a special kind of vision, such as Aldo Rossi, John Hejduk, or Michael Graves.

A number of different camps exist (not without friction) under the banner of post-modernism, ranging from the formalists, who strip everything down to universal abstractions of typology and semiology, to the inclusionists, who embrace the messy whole of history and the vernacular environment. The debates go on *ad ennui*, and in some cases, *ad nauseum*; the different schools are united only by the belief that modernism is a thing of

the past. The tendency is to write it all off as a temporary, wrong-headed aberration. Some of this is genuine soul-searching and the painful rites of architectural passage, and some of it is fashion, the cruelest modifier of all. Tough luck for those who believed and built; they are out of fashion now. The rush to renunciation has become a stampede.

Forgive me if I say that I am finding it all very tiresome. By tiresome, I mean pretentious, small-minded, lacking in historical knowledge or perspective. First, I do not agree that modern architecture is dead, or even dying, I think it is alive and well and showing signs of immense creative vitality. I believe that some of what is called post-modernism is not so much a break with modernism as an esthetic and intellectual enrichment of the modern movement, a more complex and interpretive development that builds clearly on what went before.

As a movement, however, modern architecture is growing old; we are, after all, talking about part of the nineteenth century and most of the twentieth. It is old enough to present a body of work of tremendous achievement and a distinctive style that has already taken its place in the history of art. It is changing; it is not the nature of art to be static. But there is a large and continuous enough production to provide the successes and failures that make analysis and evaluation possible. No thoughtful scholar or critic

denies the validity or importance of the modern movement. Anything so pervasive and so long-lasting cannot be all bad—or a total mistake. While the doom-sayers are busy pointing out everything that went wrong, every faulty judgment, every flawed execution, historians are able to look at the whole of this surprisingly long period of building objectively for the first time. It is an enviable position for scholars to be in.

Crying failure is a very cheap shot. Modern architecture is an immense, magnificent, and undeniable *fait accompli*, paralleled by only a few periods of similar creative magnitude in the history of civilization. It has produced masters equal to any; Alvar Aalto, Le Corbusier, and Mies van der Rohe have already taken their places in the history of art. The great art movements, which are the conveyors of awful and wonderful truths about ourselves and our times, come into being whether anyone likes them or not. If we were to examine the literature of the sixteenth century—I wonder—did anyone write off the Renaissance?

This generation, like every new generation, is busy reinventing the wheel and denying the faith of its fathers. Reverence for the masters of the modern movement has actually survived for a surprisingly long time. But the search for the new at the expense of the old is a process as venerable as history. It can be a confused and costly process, and it is often redundant and dangerous when an art

"It takes quite a lot of knowledge, experience, and some very unpop

Ezra Stoller© ESTO



Glass house by Philip Johnson (New Canaan, Connecticut).

is involved that so profoundly affects the social environment.

But I am equally convinced that something important is coming out of this peculiar, unsettled period. The ways of art and history are untidy, in spite of the efforts of historians and critics to line things up. In graduate studies, neatness counts. In any period of transition, there is always backing and filling and ambiguity. The biologist Lewis Thomas has called ambiguity an essential and indispensable part of the process of discovery. The more important the new information, the greater the sense of strangeness and askewness that it carries with it, until such time as the pieces all fit together, which is an unending and never-completed process.

I cannot think of better words for what is going on in architecture right now than ambiguous, strange, and askew. That does not make it easy to distinguish good from bad. You will not see much of this difficult new work on the streets; it is still the stuff of the specialized magazines and seminars. But it also is generating a surprising energy. This is the kind of ambiguity that seems to characterize those important, wrenching steps from one period of art to another.

For the critic, it is a very difficult time. All of one's beliefs and experience are brought into question. It is necessary to reexamine everything, to make difficult reappraisals, to question loyalties and satisfactions—in short,

to open one's mind. But this also proves to be a time-consuming, frustrating, and aggravating business because, unfortunately, one has to read what architects and theoreticians are writing—which turns out to be a new kind of cruel and unusual punishment. Architects' writings today go beyond permissible ambiguity. They are being couched in the most obscure, arcane, and unclear terms, borrowing freely from poorly digested and often questionably applied philosophy or skimmings from other fashionable disciplines. As in literature and other fields, we suffer through endless interdisciplinary borrowings and half-baked esthetic Marxism. Small ideas are delivered in large words and weighed down with exotic and private references. Intellectual trendiness is rampant. Those of us who report on architectural activities must wade through masses of pretentious and glutinous prose, seeking the flash of insight, the buried diamond of evaluation, the key to the counterrevolution that we are told is in process now. And on deadlines as well.

If architects put their buildings together with the same awful gropings, the same appallingly unnecessary complexity and dubious detail, the same lack of understanding of the basic beauty of an expressive economy of means, architecture would be in a very bad way. I have been harboring a chilling thought: some architects really are building the way they are thinking, if that is the right word for what is going on in their heads.

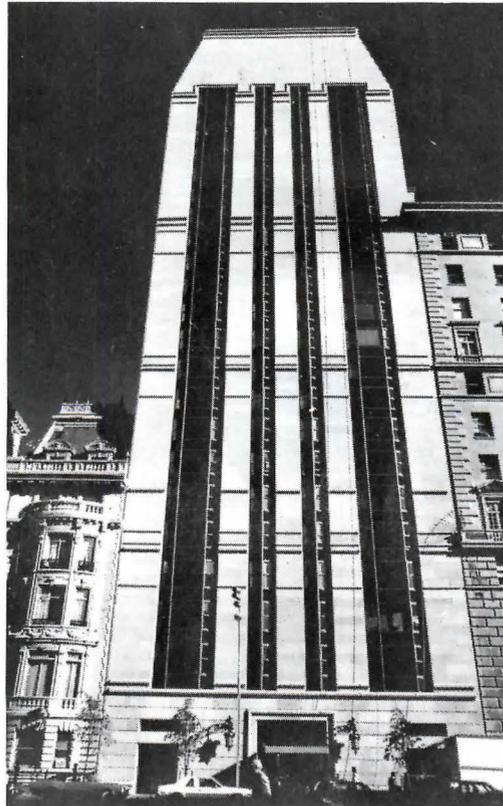
Often, I confess, impatience or fatigue wins out. But what a concerned public has the right to expect from the critic is some kind of guidance. People know they are captive consumers of the environment. They want a set of reliable indicators, a kind of good building seal of approval. Considering the complexity of the art of building today, it is understandable that they look for expertise. It takes quite a lot of knowledge, experience, and some very unpopular value judgments to separate the meretricious from the meritorious right now, and the necessary perspective is not easy to achieve.

First, there is that phrase post-modernism that we seem to be hung up on. It was coined originally by and for one particular splinter group interested in the historical and vernacular aspects of building that the modernists had discarded. Robert A. M. Stern lists its characteristics as historical allusion, contextualism, and ornament. The result is an odd pastiche, sometimes called the Frankenstein effect. But the phrase is being used increasingly loosely for almost everything that is a departure from established or accepted practice. There are other groups that reject the label passionately; at least one architect-theorist insists that he is a post-functionalist instead. Post-modernism is not all that arcane; it is simply where one goes after modernism. It suggests a post-industrial society and a lot of currently fashionable post-other things. It is

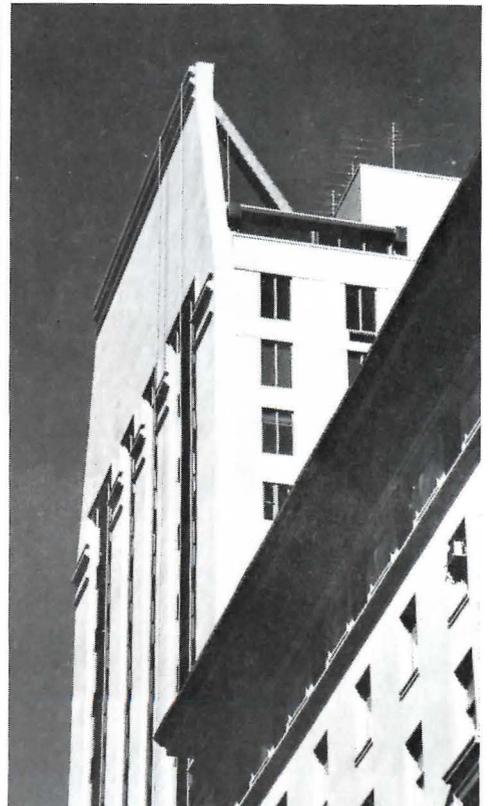
ue judgments to separate the meretricious from the meritorious right now."



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©Dianne Arndt



1001 Fifth Avenue apartment tower by Johnson/Burgee (New York, New York).

too tidy a phrase, of course, as much of a catchall as an evasion. It includes a very mixed bag of ideas and styles.

However, I find that it is a matter of considerable surprise to a lot of people to be told that they have moved into post-modernism and that modernism is now a thing of the past, just when they have finally gotten used to it. Even that reliable old warhorse of an argument about "traditionalism versus modernism" that kept everyone so busy for so long can barely be flogged alive. For one thing, tradition is in again, although one would hardly recognize it. And history and historic styles, taboo to the modernists, are respectable once more. But one cannot just copy history straight. It has to be used with at least a 45-degree twist in the mind or eye. One hears the words "witty" and "ironic" being applied to architecture quite frequently these days. There have been examples of practitioners in the past, Sir Edwin Lutyens, for example, so skilled that they could use traditional elements for dazzlingly unconventional effects. But they were deeply grounded in an established architectural culture in which they were totally at ease. I am very wary, today, of "witty" architecture; it usually implies limited talents resorting to the equivalent of "amusing" fashion in clothing or interiors. Architects may be rediscovering the past, but their knowledge of it is still so spotty, their enthusiasms so arbitrary and episodic, that a lot of what we are getting is

do-it-yourself history, with a long way to go for that kind of assured and able synthesis again.

In the same spirit of novelty and perversity which is a hallmark of so much of our culture today, Levittown, Las Vegas, and Disney World are enthusiasms of the cultural leaders who once disdained their tacky, populist vulgarity most, and even kitsch is fashionably OK. Ornament is no longer equated with crime. Adolf Loos's curious esthetic morality in which ornament and crime were allied with reference to such things as the affinity of criminal types to tattoos has been turned upside down. Today we are fascinated by what repelled him. In fact, anything goes—provided it breaks modernist strictures, and the more shockingly the better. (Shock value, alas, is short-lived.) The range in architecture today is from a completely private and hermetic esthetic, which may be difficult or totally inaccessible, to the most blatant and boring populism. The only requirement is that it be turned into a fiercely intellectual exercise at the drawing board. Everything has to be seen as a set of signs and symbols or metaphors for something else in art or society.

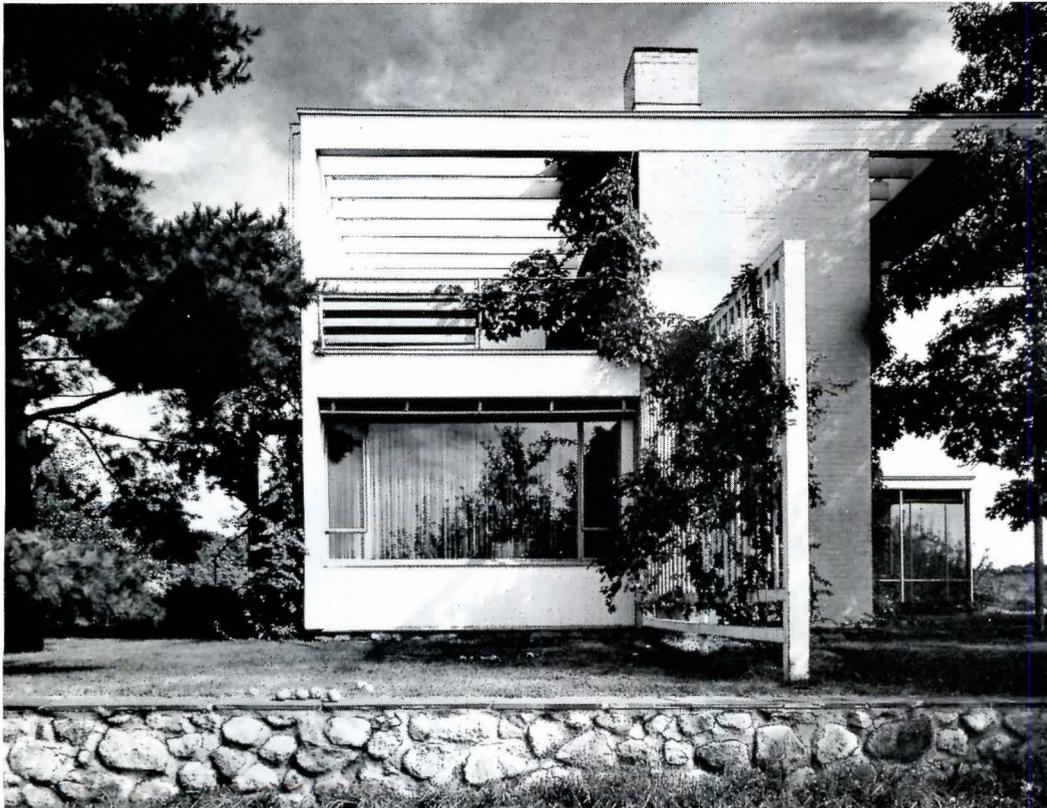
Sometimes the end scarcely justifies the complexity of the means, and sometimes the means is hard to justify at all. For example, as much as I admire Philip Johnson's taste and intellect, I cannot take a standup joke like his AT&T Building in New York seriously—or his

PPG Industries Building, Pittsburgh, either. No, I take that back. I take them very seriously, because they are such shallow, cerebral design and such bad pieces of architecture. The impressive care and cost with which they are detailed does not really make them any better. It takes a creative act, not clever cannibalism, to turn a building into art. It must do more than satisfy a roving eye. Unfortunately, these buildings are flying the flag for post-modernism all over the place, in the name of such things as historical allusion, because this kind of superficial shocker that doubles as a calculated crowd pleaser is so beloved by the popular press.

To look at these buildings really seriously, in fact, involves evaluating the architect's well-publicized uses of the past. It is no longer shocking to say that the past is all right; we are beyond that stage. Mr. Johnson has been saying it for a long time. But eclecticism, the dirtiest of all words to the modernist, is still like a forbidden toy; he has found the last architectural commandment to break. Mr. Johnson particularly loves forbidden toys. He does not believe in forbidden anything. But do eclectic designs like these really respond to the rich lessons to be found in other cultures and viewpoints, or do they simply divorce form from content for easy decorative effects? Or instant unconventionality? And is that enough? Or does that not really put down architecture as an art of any profundity dealing in the difficult business of

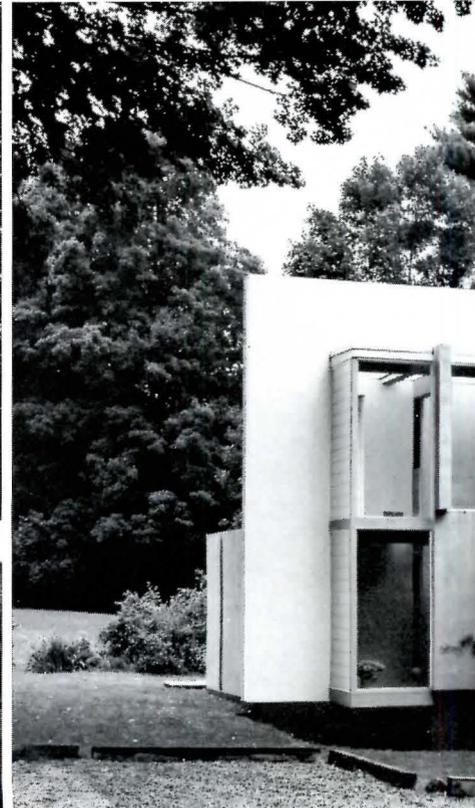
"I have been harboring a chilling thought: some architects really are building t

Robert Damora



Gropius house by Walter Gropius (Lincoln, Massachusetts).

Courtesy House & Garden. Copyright © 1977 by The Condé Nast Publications Inc.



House 6 by Peter Eisenman (Washington, Connecticut).

resolving problems of purpose, structure, space, spirit, and style?

The work of Venturi and Rauch represents a difficult rather than an easy eclecticism. Their addition to Cass Gilbert's classical Oberlin College Art Museum is a much riskier and much more rewarding kind of design. In 1966 Robert Venturi wrote and the Museum of Modern Art published the ground-breaking treatise on today's new eclecticism: *Complexity and Contradiction in Architecture*—"a gentle manifesto." Almost a classic text ten years later, it was reissued in 1977. The book dealt with the "inclusive" rather than the "exclusive" environment; complexity and contradiction were seen as esthetically and urbanistically desirable. Robert Venturi and his wife, Denise Scott Brown, immortalized the Pop environment in *Learning from Las Vegas* and *Levittown*. And they translated it all into a language of symbols and signs that gave instant intellectual cachet to suburbia and the strip. Theory, however, is always passed through Venturi's very refined and sensitive eye for what might be called a synthetic eclecticism in a subtle act of design that manages to transcend the theories he espouses.

The Piazza d'Italia of Charles Moore in New Orleans (Urban Innovations Group with Perez Associates) is the ultimate eclecticism—architecture and urbanism as calculated stageset. This eclecticism is symbolic and esthetic on several levels of meaning. It offers

classical recall seen through a sophisticated Pop eye at the same time that it is turned into something totally unlike its traditional sources for a collage of academic references, colors, and symbols—plus neon. Its final level of meaning is a carefully expressed and conscious irony in the context of the scaleless, featureless, modern city. Today's architects do not just build; they comment. People love it or hate it.

Michael Graves deals in the most intense and esoteric eclectic imagery of all; his sources are incredibly personal, private, and diverse. His objects and images come from the most random associations and are filtered through a gifted painter's eye. This is a hermetic and obscure and difficult kind of art. Graves is primarily a colorist and collagist. He uses color, metaphor, and historical recall in fragments, to serve a larger unifying idea. But that idea is not primarily structural—which breaks another architectural taboo. Graves digests these elements into a strong personal style that is also a consistent and unified language of design. He is pushing out the boundaries of architectural vocabulary. And it is becoming clear that he may be the only genuine eclectic in the group.

Graves's drawings are superb artifacts in themselves. The danger is that the executed work, when it moves off the paper, inevitably turns into something else; the refinements of the pictorial image can become fussy and obscure. It may be no more than disruptive

surface embellishment, which it skirts dangerously at times. And in the hands of his students and imitators, his signature mannerisms become instant clichés. Graves must be judged on at least one fully executed work. One waits for the Fargo-Moorhead Cultural Center, a remarkable design that takes the form of a bridge over a river, or the competition-winning Portland Public Service Building. But Graves has already added to the language of architecture in a significant way.

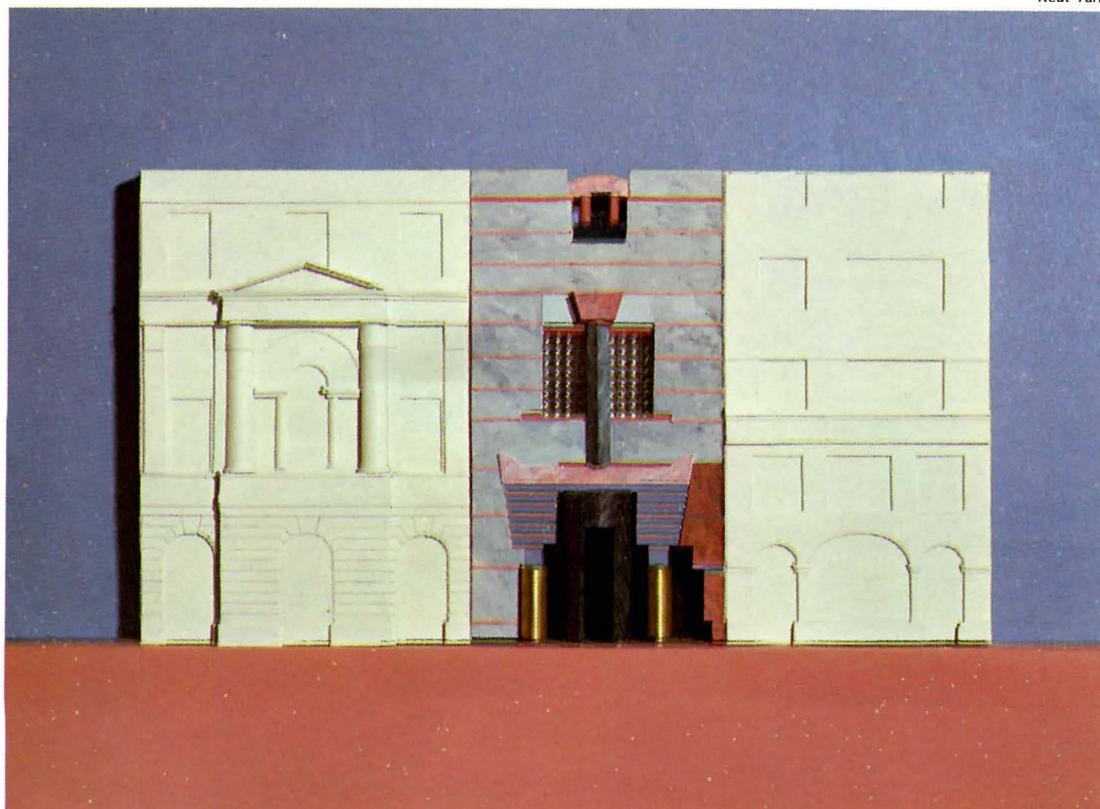
If eclecticism is one direction, then abstract formalism is another. Peter Eisenman represents the opposite extreme of those who are finding ready references in the past or the popular scene. Any references to the real world have been carefully expunged from his painstaking and very elegant exercises in pure geometric form. Lines, planes, solids, and voids, and the intricate spatial and diagrammatic relationships possible among them, are all that count. These, also, make wonderful drawings. The kinds of drawings favored today are isometric or axonometric views, in which a precise three-dimensional rendering without illusory vanishing points projects a kind of geometry as notable for its linear beauty as for its indication of spaces and surfaces. But as well as exploring theoretical exercises, Eisenman builds houses occasionally. This is an architecture of pure abstraction; the most extreme form of art for art's sake, form for form's sake. Compared to this,

they are thinking, if that is the right word for what is going on in their heads."

Norman McGrath



Keat Tan



Proposed facade renovation for French & Co. by Michael Graves (New York, New York).

Euclid's vision of beauty was overdressed.

Richard Meier uses elements of eclecticism and elements of formalism. He does not reject modernism; his work has, in fact, been called "modernism reconstituted." He obviously borrows from early Le Corbusier; many people are thrown off by his complex love of every nuance of that now-nostalgic early twentieth-century style, which he sees with a late twentieth-century eye. But he takes those forms far beyond their original uses. Meier moves an old vocabulary, redefined by a new vision, into new explorations of spatial geometry. This becomes a significant step beyond accepted ways of composing architectural space; it offers a whole new range of perceptions and experiences. Those experiences are concentrated and compressed in the New Harmony Atheneum in Indiana completed last year. Designed as a visitors' indoctrination center for an historic town, the structure is actually a circulation system. The space seems to be set in motion as one ascends a ramp that winds up on a five-degree diagonal grid, leading to exhibition areas, a theater, and outdoor terraces. The interior is simultaneously experienced in many different ways—each view yields still more intricate patterns of staggered and overlapping floor levels and indoor and outdoor areas in a way that expands not only one's vision but the understood relationships of space and time. It is all expressed brilliantly in too small a space, as Meier compressed his

ideas to fit the size of the commission.

James Stirling is an English architect whom other architects watch and copy. He designed the Engineering Building at Leicester University and the History Library at Cambridge, using an esthetic of technology in a way that made the earlier modernists' "machine art" look like child's play. This became one of the most pervasive new styles, popularly called High Tech. The landscape is now littered with knockoffs of his work. His latest buildings have moved on to a kind of stripped classicism halfway between Ledoux and outer space. It is an intensely creative struggle to keep pursuing the limits of design. But this process moves beyond modernism without ever denying its achievements. The new work could not exist without the old.

The idea of solving problems of building on an innovative technical level has been the hallmark of twentieth-century architecture. It goes with the dream of the infinite, universal space. Both principles are explored further than ever before in Foster Associates' Sainsbury Center in East Anglia. These buildings are meant to be universal—in this case the space contains a museum and school—but they also succeed in dematerializing the particular. The Willis Faber building in Ipswich even dematerializes architecture; the reflections in the glass skin are as important as the breathtaking finesse with which that skin is put together. This is the ultimate celebration of technology as art. One has to be very

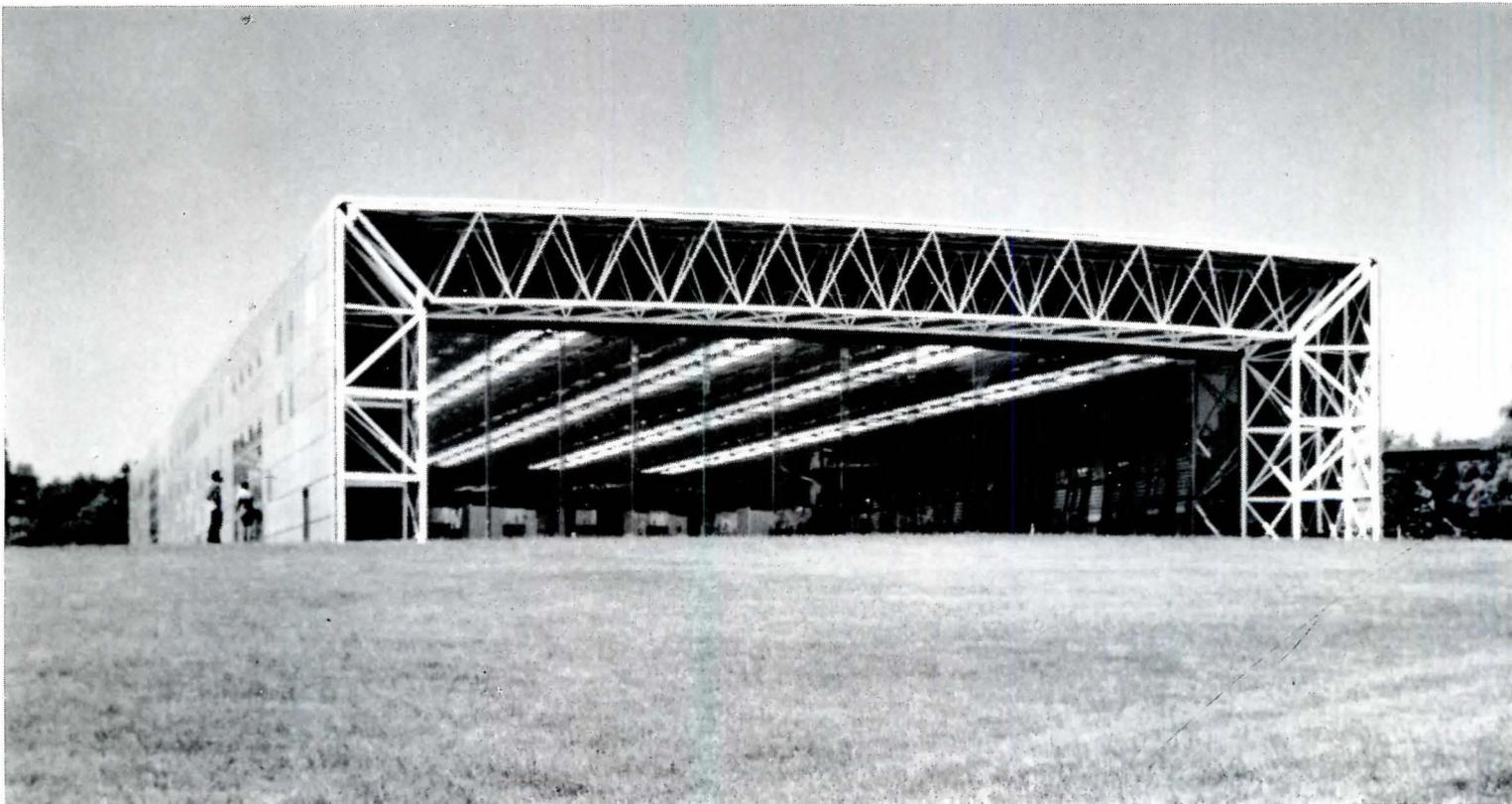
good to pull this trick off so elegantly.

This is a limited and arbitrary selection. I have not touched on many architects and much work of equal interest. But what unifies all of this theory and practice is a sincere sense of exploration and a search for forms and sensations that were denied by the modern movement. Doors are being reopened that had been firmly closed, and a new architecture is being forged out of a wide range of interests and ideals.

There are new themes: populism and pluralism; not one style, but many styles. There is a backlash against purism and functionalism, a fascination with eclecticism and mannerism. The current preoccupation is with the periods the modernists hated most—the Baroque, the High Victorian, the Beaux Arts; the despised Academy is once again in good repute. This is partly the kick-thy-father syndrome. There is a taste for the "decadent" periods, for subtle, complex, and perverse explorations of style and space. And a burgeoning admiration for the academic buildings my generation was taught not to see—that were treated as if they were not there, as if someone had committed a giant indiscretion on the street. There is everything from the most superficial nostalgia to the most specialized historicism.

Some architects are pushing the abstract frontiers of design with a growing dedication to art for art's sake. Exhilarating and danger-

"Architects may be rediscovering the past, but their knowledge of it is still so spotty, t



Sainsbury Centre for Visual Arts by Foster Associates (Norwich, England).

ous, this is the most challenging aspect of the new work today. Some of it comes closest to what great architecture has always been about: the purposeful manipulation of structure, light, and space and the rewarding relationships of pragmatic and sensuous purpose. At the same time, architecture for art's sake threatens the all-important relationships of architecture to social needs and social purposes; the perils are as great as the promise.

Contextualism is another popular idea that is long overdue. It means that we finally understand that history and the environment are the two faces of architecture, that no building stands alone. The individual structure as monument is frowned on. Neighborhoods are seen in terms of social identity, cultural continuity, and a sense of place. French architect Antoine Grumbach has been studying sympathetic "interventions" into the historic texture of Paris; he is about to build a large amount of housing as "in-fill" structures within a framework of existing buildings. To be avoided is the dominating "statement" of the new. Symbolism, a historical function and human need discarded by the modernists, is hungered after once more. Much attention is being paid to the identification of elements of style that convey special meanings and values to those who see or use the buildings.

Once, when I was a student in Rome, Bruno Zevi took me to see a splendid Baroque church and plaza by moonlight. I had

no idea that cities could be so devastatingly beautiful, that stone could be so sensuous, that architects dealt in such sublime stagesets for human drama, that space could move one to such strong emotions, that architecture could make man so much larger than life. These were seductive and manipulative ideas that had no place in modernist doctrine. What had been rejected with them was the power of the architect and the traditional soul of his art. All this was revealed to me in the experience of Baroque space. "Look!" he said. "She is discovering the umbrella."

And that is exactly what is happening today. Architects are discovering the umbrella. Released from a restricted and reductive esthetic, they are dazzled by possibilities that are as old as time. An older generation sees the new directions as heresy; a younger generation sees them as the creative reopening of the limits of design. In every case, the source is being transmuted into something different. The approach is erudite, romantic, and fiercely intellectual—even if it is not always the kind of thing that keeps us warm and dry.

All of this is part of something deeper: a search for meaning and symbolism, a way to reestablish architecture's ties with human experience, a way to find and express a value system, a concern for architecture in the context of society. This is no longer seen just as the right to safe and sanitary dwellings and workplaces, but as the provision of a special

quality of life. That is as large an ambition as anything that concerned the early modernists; it may be an equal trap. But it is a return to a basic understanding that architecture is much more than real estate, shelter, or good intentions; it is the recognition of that extraordinary mixture of the pragmatic and the spiritual that is the tangible vehicle of man's aspirations and beliefs, the lasting indicator of his civilized achievements.

That the search for these values is enriching current practice is beyond question. But two factors disturb me deeply: the danger of architects increasingly addressing each other, with a widening comprehension gap between the professional and the public, and the sharp trend away from sociological to exclusively esthetic concerns.

The pendulum is swinging from the desire to remake the world to the desire to remake art. But from the ghetto activism of the architects of the 1960s to the closed and esoteric preoccupations of the 1980s is a traumatic swing. The underlying question of the architect's role and responsibility in contemporary society remains unanswered. If we wish to concentrate on what went wrong, this is the failure of architecture in our time. How much the architect can be blamed for that failure is unclear. What he produces is conditioned to a very large extent by forces, standards, desires, and restrictions beyond his control. We probably get the world we want and deserve.

asiums so arbitrary and episodic, that a lot of what we are getting is do-it-yourself history."

Norman McGrath

Norman McGrath



Piazza d'Italia by August Perez & Associates/fountain design by Charles Moore of Urban Innovations Group (New Orleans, Louisiana).



SUBURBAN RENEWAL:

Arquitectonica transforms two “dumb and ordinary” buildings by re-interpreting local Spanish themes.

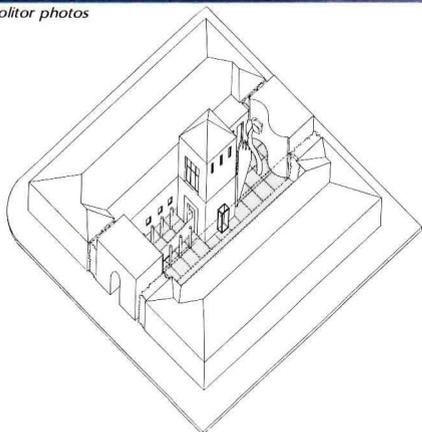
In an alley-like space between two existing one-story structures in Miami, architects Bernardo Fort-Brescia and Laurinda Spear have designed a series of whimsical elements that simultaneously pull the older buildings together into one composition, and recall the local Spanish traditions of the early twentieth century. The program called for two medical offices in one of the buildings and five efficiency apartments in the other. The inserted new construction routes visitors to the medical facilities from the street through an enclosed courtyard, and into the bottom floor of a blue-tile roofed tower, where the reception and waiting rooms are located. The owner, a plastic surgeon, reaches his study on the upper floor by an outside stair from the opposite direction through a more private courtyard (photo right). That courtyard is created by a new studio building at the rear of the site; and its curved wall creates a pleasant and whimsical shape for both the studio and the courtyard. Originally, the architects had intended to spell out the axial route of approach through the public courtyard with four freestanding columns on each side, but palm trees were substituted. The other elements of their design remain: the narrow arch into the court through a rust-red painted wall, the blue-tile trim around the entry to the waiting room and the detailing of doors and railings in a manner influenced by the 1930s. Access to the five apartments is from the adjoining street.



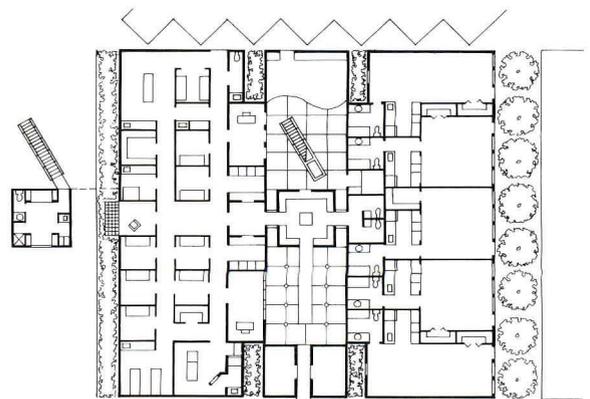
DOCTOR'S OFFICES AND APARTMENT COMPLEX IN MIAMI, Miami, Florida.
 Owner: *Constantine N. Kitsos, M. D.* Architects: *Arquitectonica International Corporation—Bernardo Fort-Brescia and Laurinda Spear.* Engineers: *Clement DiFillippo* (structural); *Louis Stoll* (mechanical/electrical). General contractor: *Louis Jones.*



Joseph W. Molitor photos



Medical offices occupy the existing building on the left, and apartments that on the right. Behind the curving, poured concrete wall at the back of the central space is a studio. Two small storage rooms on either side of the entrance increase the depth of the archway and form a miniature triumphal arch. The tower's tiled public entrance is shown above.

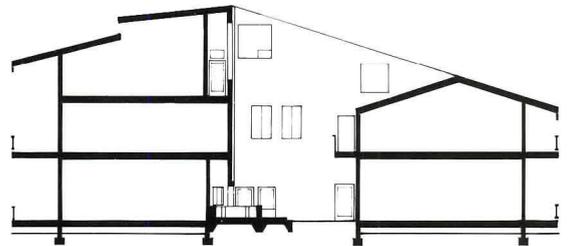




EL RANCHO RIO:

A small speculative office building combines several California regional styles

What appears to be a group of older structures from various eras joined together is actually an entirely new building located on an office tract in Carmel, California. Created by a firm of young architects who call themselves Ace Design, it forms an interesting alternative to the usual enclosed box-like low-rise office building. To offer a distinctive and accomplished architectural image, the architects have borrowed from several local traditions including the colonial "hacienda" style, and the more recent tradition of early California statehood with its imposing "false" fronts. They were particularly sensitive to the nearby Larkin House, which is really nineteenth century. The designers have also borrowed elements from the eighteenth-century Carmel Mission, three blocks away. More importantly, the architects have taken strong advantage of local traditions shaped by the near ideal climate. Around an open central courtyard, there are 16,000 square feet of space on three levels for a diverse roster of some twenty tenants. The individual offices are reached by covered exterior verandas on the outside of the building and around the courtyard. The roofs of the outside verandas are designed to shield the interior spaces from sun in the summer and admit it in the winter. Windows allow natural ventilation, and the slope of the south-facing roof allows future solar panels. The structure is wood frame with stucco cladding. The balconies and stairs, designed in the local vernacular are of painted wood. The cost of the building was \$800,000.



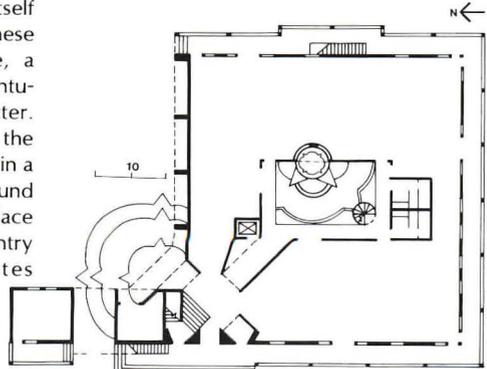
EL RANCHO RIO BUILDING, Carmel, California. Owners: *El Rancho Rio Building Partnership*. Architects: *David Weingarten and Lucia Howard, Ace Design*—collaborators: *Laurie Hart, Scott Glendinning, Sam Dyer*. Engineers: *Steven Tipping* (structural); *Lee and Associates* (mechanical); *David Ovenden* (electrical). General contractor: *Abba Construction Co.*



Rob Super photos

Despite its varied facade, Ace Design architects David Weingarten and Lucia Howard describe the basic building as a traditional hipped-roof volume. This impression is enhanced by old-fashioned cream-colored stucco walls and green trim. The volume is cut into by several elements—the central court, another large walled court used for parking to the left of the

entrance and the partially enclosed entrance lobby itself (photo left). The walls of these spaces are painted white, a color contrast which accentuates their special character. Special pavers between the street and building are within a gridiron of grass (foreground of photo above). This surface gives character to the entry court yet accommodates overflow parking.



PROFILE OF THE 1981 GRADUATES: CONSERVATIVE, ON-TRACK, MAIN-LINE MODERNISTS

This article is based on a survey of students in their final year at almost every accredited school of architecture. The survey was intended to check their enthusiasms, their hopes, their perceptions of their skills. It develops a picture of young people dedicated and committed to architecture, who are intent on being licensed (and to an extraordinary extent having their own firm), who (like generations before them) are strong on design but not so strong on the nitty-gritty of practice—and who are astonishingly conservative in their design philosophy. For students who choose Frank Lloyd Wright, Le Corbusier, Alvar Aalto, Louis Kahn, and Ieoh Ming Pei as their "favorite architects" would scarcely seem on the brink of ideological revolution. . . . —Walter F. Wagner Jr.

RECORD conducted the study by sending questionnaires on our letterhead to the dean of every accredited school—the number sent being proportional to the size of the school as given in *Peterson's Guide*. Some deans got over 20; some got less than 5. The deans were asked to distribute these to a cross-section of their final-year students. 1021 questionnaires were mailed, there were 392 usable returns (38.4 per cent) from 77 schools.

To cross-reference the students' answers and attitudes against the attitudes of practitioners, a parallel (though differently worded) questionnaire was mailed to a cross-section of 1000 architectural firms on the 1980 mar-

ket list for Sweet's General Building Catalog File. There were 328 usable returns.

Of the 392 students, 56 per cent expect their B. Arch. degree, and almost 70 per cent of those students entered their five-year architecture school directly from high school. 41 per cent of the students surveyed were about to earn their M. Arch. degree, and almost all of their undergraduate degrees were in architecture or closely related disciplines. Only 15 planned further study immediately after graduation—with M. Arch. and MBA the only two courses of further study getting more than 10 mentions.

The firms surveyed range in size from very small (96 of the respondents were the

only licensed architect in their firm) to large—four of the respondents were from firms with more than 30 licensed architects. The median firm has three licensed architects. Eighty-two per cent of the respondents say they "hire architecture graduates fresh from school," and 60 per cent "thought they would be in a position to hire a recent graduate" in 1981. Asked if they prefer graduates with a B. Arch. five-year degree or an M. Arch. degree, 36 per cent said they preferred B. Arch. candidates, 10 per cent said they preferred M. Arch. graduates, and 59 per cent said they didn't care. Most of the practitioner respondents, it turns out, hold B. Arch. degrees (73 per cent).

Most of the student respondents did well in high school, and are getting good grades in architecture school—but they don't see grades as "a fair predictor of future success."

The students were asked if they had been in the top quarter of their high school class. Predictably, since getting into (or staying in) architecture school is a rigorous procedure these days, 81 per cent of the students were in the top quarter of their high school class (306 of 380 responses).

And these survivors through the final year of architecture school are getting good grades in college:

In architecture courses, 50 per cent say they are getting As, 46 per cent are getting Bs, only 3 per cent report Cs or Ds.

In design studio, the picture is similar: 50 per cent say their grade level is A, 42 per cent say B, only 6 per cent admit to C or D.

Grades "in other college courses," are

(not surprisingly) lower, but still very good: A majority (57 per cent) report they are getting gentlemanly Bs, 36 per cent are getting As, 6 per cent Cs or Ds.

I find it surprising (Anxiety? More likely the popular student disdain for grades?) that of these talented students, only 22 per cent think that grades are "a fair predictor of future success." Practitioners were asked the same question, and almost twice as many practitioners (41 per cent; or 125 of 309 respondents) thought that grades were a "fair predictor" of future success. But the majority of practitioners (59 per cent) agreed with the students that good grades were no "unwritten guarantee."

The practitioners nonetheless do look at

scholastic performance when hiring. They were asked "In hiring a recent graduate, do you inquire/care about over-all grades in college? (82.2 per cent, or 189 of 230 respondents, said yes). . . . Grades in architecture courses? (55 per cent said yes). . . . Grades in design studio? (42.2 per cent)."

Those last two responses are less puzzling given the response to the next question asked practitioners: "When considering a graduate, how important is a good design portfolio?" Of 320 respondents, 49 per cent said "very important," another 45 per cent said "fairly important," leaving only 6 per cent to whom a design portfolio is "not important." Obviously, then, most practitioners want to see the work. . . .

Almost all of the students worked during their summer vacations, mostly in architects' offices, and almost all think "it contributed effectively to their progress."

Almost 96 per cent of 390 student respondents said that they had worked during their summer vacations from architecture school. Where did they work (374 responses)?

Architect's office	77 per cent
Unrelated work	32 per cent
Construction firm	25 per cent
Engineer's office	14 per cent
Developer's office	8 per cent
In another office	
"related to your	
study of architecture"	18 per cent

"Do you feel your summer work contributed effectively to your progress as an architecture student?" Nearly 90 per cent of the 375 respondents said yes; only 11 per cent said no. What went wrong for those who said "No?" The largest number were those who had worked outside of architecture. Other sample answers: "The experience wasn't long enough" . . . and "Little chance in three months to be given work with sufficient depth and responsibility." "I was used only as a gopher."

Of the students who said that summer work *did* contribute to their progress as a student there were some common reasons: Over 50 of the 335 respondents volunteered comments along the line of "Helped increase my knowledge and perspective in areas of architecture not emphasized in school." "The work gave me an understanding of the 'real world,'" was suggested by 50 others. Best answer: "Most of all you begin to realize the monumentality of the architects' responsibilities. . . ."

Almost all of the practitioners think that summer employment is important, and many offices are staffed with former summer employees

Practitioners were asked: "In hiring a recent graduate, would you care/inquire about earlier summer employment?" Of 327 respondents, only 20 said no; 97 per cent said yes. We asked: "If yes, do you consider it primarily evidence of commitment or evidence of at least some office experience?" 24 per cent said "commitment," 61 per cent saw "at least some experience" as the prime reason, 15 per cent said "both."

Asked what kind of work summer employees were given, the practitioners offered no surprises: drafting . . . drafting . . .

drafting . . . and more "drafting." Then there's "trace lettering . . . field measuring . . . secure supplies . . . model building . . ."

Fortunate students worked for the practitioners who volunteered these comments:

"I have summer employees do everything I have other staff members do—from calculations of structural members to client contact to presentation drawings to drafting to photography to sweeping the floor."

"They tackle everything except client contact and counting the money."

"We're happy to let it be an observation

period for the student—who I hope learns more than he earns. . . ."

Asked "Have any of your present employees had earlier summer employment in your firm?" 56 per cent of the respondents said yes, 43 per cent said no. Most (109) of the 168 firms who responded to the question "How many of your present employees had earlier summer employment in your firm?" answered that they had one or two, but many had more, and 13 of the 168 said that "all" of their present employees had had summer experience in the firm.

Most students and practitioners knew early that they "wanted to be an architect." And virtually all of the students are glad they did go to architecture school.

The patterns for students and practitioners are very much alike. We asked both: "When did you decide to study architecture?" 30 per cent of the students and 26 per cent of the licensed architects said they "always wanted" to be an architect. 41 per cent of the students and 35 per cent of the practitioners "decided in high school." Taken together, those figures suggest an early interest or commitment for both groups. Only 29 per cent of the students and 36 per cent of the practitioners did not decide that they wanted to be an architect until they were in college.

We asked the students: "Why did you decide to study architecture?" We found no big surprises. In one phrase or another, 58 of

the 377 respondents mentioned "To design and be creative." "With background in science, math, and art, it seemed logical," was suggested by 27 respondents. "A life-long interest," said 17 respondents. "To combine art and construction" was mentioned by 15; "Fascination with the built environment" by 14; "Interest in building and its relation to human beings" by 12. There were philosophical answers: "Admiration for its formal aspects, fascination for its technology;" "Because of the beautiful mix of rational and irrational that architecture provides." And there were cynical answers: "Because I had no idea what I was in for;" "High pay, short hours;" "As I recall, it seemed like a good

idea at the time."

Asked if they are glad they decided to study architecture, an astonishing 98.7 per cent (372 of 377 respondents) said yes. Only five regretted their decision. The reasons: Money, money, money, money, and money. "The profession seems very unrewarding for the effort expended." "Lack of sufficient monetary reward one gets from such long hours of work, and also the lack of credibility or status that the architect has." "Architects are viewed as a luxury, not a staple like law or medicine." One student (but only one) mentioned "lack of control the architect has over his project"; another doesn't think "I'll ever have a chance to do anything important."

Twenty-four per cent of the student respondents are women—and almost all of the practitioners (few of them women) say they "would welcome a woman graduate for the firm"

Specifically, 93 of the 392 student respondents are women; only 3 (or less than 1 per cent) of 321 practitioner respondents are women. But to the question "Are there any women architects or architecture-school graduates in your firm?" the answer was 33 per cent yes, 67 per cent no. And asked: "If you were hiring, would you say you would

welcome a woman graduate for your firm?" the answer was 82 per cent yes. (Fifteen per cent said they would "be a bit hesitant about hiring a woman for the firm," and three per cent confessed to being "a lot hesitant.") We also asked: "We would like to get helpful comments and advice for the young woman graduate. What is yours?" That was probably

a dumb question to begin with—and got dumb answers such as "be assertive" and "don't be assertive." The answers that seem the wisest are all along this line: "I would give no different advice to young women than to young men . . ."

And surely that is the way it should be, and a mark of progress. . . .

What kind of firm do these final-year students want to work in when they graduate? No surprises here: Over 85 per cent want to work in a "small" or "medium-sized architectural firm"

The totals come to more than 100 per cent because of multiple answers, but the pattern is clear and, as suggested above, probably no surprise. Here are the figures (from 389 responses):

- Small architectural office.....38 per cent
- Medium architectural office.....48 per cent
- Large architectural office.....11 per cent
- Don't care about size, but an architectural office.....13 per cent
- Engineer's office10 per cent
- Developer's office.....5 per cent

Construction firm3 per cent
Others (please specify) ...none supplied
Why do the "small-office fans" want to work in a small office? Of the 149 students who checked "small office," 56 offered a comment along this line: "In a small office, I will have a better chance to see, learn, and participate in all of the aspects of architecture" Other typical comments: "I will be able to see a project from start to finish." "You can be lost in the shuffle in a large office." "In the small office each person has to do all parts of the job. I want to see and do all parts of the job." "Should allow me to be a general practitioner rather than a specialist." "Closer relationship to the boss."

Those who chose "medium-sized firm" offered similar answers. Those checking "large firm" saw advantages like this: "A wider range of professional experiences." "My interests focus on technical matters, especially computer applications. . . ." "Large offices work on larger projects; and usually pay better." A number of respondents clearly had particular interests—structural design, feasibility studies, programming, construction management—and properly saw greater opportunities in the larger firm. Only one mentioned "better job security"—and whether this is a mark of idealism, miscalculation, or inexperience, is a judgment left to the reader.

How well trained are graduating students? The students gave themselves higher marks than practitioners gave to recent graduates. And everyone felt better about design skills than the nitty-gritty. . . .

Please check those areas in which you feel you have had (you feel the recent graduates you have hired have had) good training, inadequate training, no training

	Good training Student vs. practitioners	Inadequate training Student vs. practitioners	No training Student vs. practitioners
Schematic design	92% vs 80%	6% vs 17%	1% vs 0%
Site/environmental analysis.....	84% vs 63%	13% vs 33%	2% vs 2%
Design development	84% vs 63%	12% vs 32%	2% vs 3%
Programming/client contact	49% vs 23%	40% vs 45%	9% vs 30%
Construction documents.....	42% vs 18%	37% vs 60%	17% vs 21%
Code research.....	36% vs 17%	41% vs 47%	21% vs 34%
Specifications/materials	25% vs 10%	50% vs 62%	21% vs 27%
Document checking	16% vs 11%	41% vs 45%	40% vs 42%
Building cost analysis	14% vs 7%	47% vs 38%	36% vs 55%
Bidding procedures	27% vs 6%	39% vs 52%	32% vs 40%
Construction observation.....	22% vs 6%	41% vs 55%	33% vs 38%
Construction office.....	13% vs 5%	43% vs 53%	41% vs 39%
Office procedures	42% vs 16%	39% vs 53%	15% vs 29%
Professional activities.....	36% vs 33%	45% vs 45%	15% vs 18%

We asked the same question of both students and practitioners to get the comparisons shown in the chart above. Using the list of experience requirements developed by NCARB for the Intern Development Program, we asked: "In most states, you must have at least some experience in each of the following areas before you are qualified to take the

licensing examination. Please check those areas in which you think you have had [to practitioners: in which you think the recent graduates you have hired had] good training, inadequate training, or no training."

389 students responded, 317 practitioners responded. Comparing the two sets of perceptions (see table), there are two basic

points that seem clear:

- Students and practitioners agree that graduates are best prepared in areas of schematic design, site/environmental analysis, and design development. From there, even the students' perceptions of their training drops off sharply: Far fewer (less than half) think they had "good training" in programming/client contact, construction documents, and code research. And the vast majority of students say they had "inadequate" or "no training" in specification writing, in materials, in document checking, in cost analysis, in bidding procedures and other aspects of construction administration or office management.

Editor's note: This profile is not unexpected, of course, given the heavy emphasis on design in most students' college work. I wish in retrospect we had asked both students and practitioners whether they thought there should be more emphasis in school on non-design subjects. My guess is that both would answer "no": that schools should emphasize the teaching of design skills, leaving to internship the learning of working drawings, and the workings of documents, specifications, and the like. Comments?

- Comparing the student perceptions with the practitioner perceptions in the table makes very clear that the practitioners have a more critical view of the training of recent graduates than the students do of their own training. In every experience area, the percentage of practitioners checking "good training" is far smaller than the number of students who think they had "good training." And in some areas, especially in non-design areas, the differences are very substantial indeed.

And whether this is a mark of over-optimism by the students or underestimation of graduates' skills by the practitioners, the survey really cannot tell us.

If the practitioners were a little skeptical about the skills of the graduates they hire, most say they "assist recent graduates who work in the firm to become licensed."

Specifically, of 310 responses from practitioners to the question: "Do you assist recent graduates who work in your firm to become licensed?", 269 (or 87 per cent) said yes, only 41 (or 13 per cent) said no.

How do they help? "Vary work experience and counseling," was mentioned by 12; "In-house seminars, varied work assignments" by 10; "Counseling and advice" by five; "Support of Intern Development Program and personal attention" by three. Other inputs mentioned: "Allow employees to work on projects from start to finish;" "Give them time to study during pre-exam period;" "Help them buy books, attend seminars, suggest areas of study;" "Familiarize employees with all aspects of office procedure;" "Design and technical critique and discussion, opportunities to attend seminars (some paid by firm); encouragement to join CSI, AIA, and CEC as junior members;" "Pay tuition for review courses;" "Encourage them to visit job sites,

observe and inspect construction;" "In-house seminars in structure, office practice and management, design and selection of mechanical and electrical systems, energy conservation, solar design concept. . . ."

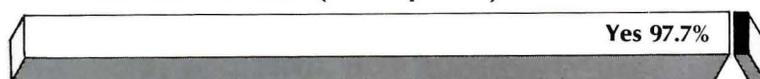
Editor's note: I wish I had asked a more specific question about the Intern Development Program, which now has been made mandatory in six states by the registration boards, and which is now under study by two separate AIA task forces. The IDP is intended to create a more formal procedure of work experience for "intern architects" and assure a greater percentage of interns successfully passing the examination(s) and becoming licensed. As suggested above, very few of the practitioners in this survey mentioned that they actively participate in the IDP program, though in a separate question, 74 per cent of the respondents said they had "heard of the IDP program." That is a greater percentage than students who had "ever heard of the

IDP program." The student percentage was only 55 per cent, which suggests a fact that everyone who has studied the IDP program seems to agree on: It is not well publicized in the schools, which is of course the place it most needs publicity.

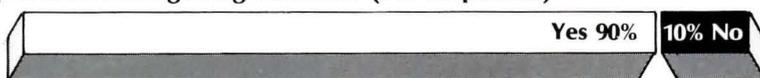
This relates to the answers to another question we asked of the students: "Are you vaguely aware of, or well informed, on the experience required before you take the licensing exam [61 per cent said they were well informed, but 39 per cent were only 'vaguely aware of' the experience required]; and how and when you are entitled to take the examinations for licensing [57 per cent 'well informed', 43 per cent only 'vaguely aware of']". Again, this seems too important a matter for students in their final year to be only vaguely aware of—and thus another point that (like IDP, which is of course closely related) probably should be the subject of at least a lecture or two in college.

Are today's graduates still eager to go through internship and get licensed? The answer is yes, yes, 97.7 per cent yes. And almost all said they knew how to go about it.

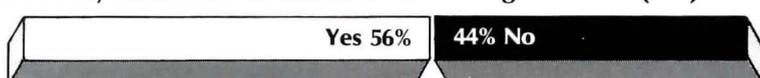
Do you plan to become a licensed architect? (388 responses)



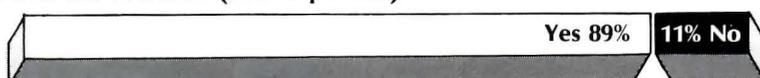
Do you know the procedure for getting licensed? (387 responses)



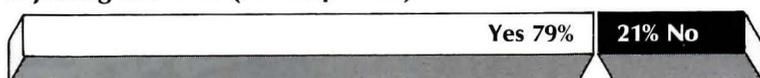
Has your school offered any instruction or advice on becoming licensed? (387)



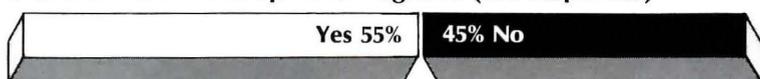
Have you ever heard of the NCARB? (388 responses)



Are you interested in joining the AIA? (348 responses)



Have you ever heard of the Intern Development Program? (390 responses)



The question was purposely asked in a redundant way—"Do you plan to become registered, that is become a licensed architect?"—to avoid any misunderstanding over the commonly mis-used titles of "intern architect," or "architect-in-training," and especially "architect," which by law in every state can be used only by those who are licensed.

The replies (from 388 respondents) are overwhelming: 97.7 per cent yes; only 2.3 per cent no. Those who answered "no" were asked to "describe your future plans." Several planned to get MBAs, perhaps (though the survey isn't clear on this) to work

on the business side of architecture; several others plan to study law after graduation; and several mentioned that they were simply going to look "for more lucrative work."

We asked a group of questions intended to determine to what extent these final-year students understood the procedure for becoming licensed (see chart above). Over 90 per cent said they knew the procedure—though only 56 per cent said their school had offered "any instruction or advice on becoming licensed"—which seems a fairly major oversight that could be easily remedied in any school by a series of lectures. One editor's

advice: some basic instruction in an early year of study, and a more specific group of lectures early in the final year suggesting that the students make contact with NCARB or the AIA about the Intern Development Program, and make specific contact with the registration board in the state(s) where they hope to begin work—for the reason that the specific amount and kind of experience required before an "intern" is qualified to sit for the examination varies widely.

Happily, and reassuringly, almost 90 per cent of the students said they had "heard of the NCARB," which would seem to indicate that even if they did not know much about the procedures for becoming licensed, they know about registration boards.

We asked "Are you interested in joining AIA?" Almost 80 per cent said yes, almost all for predictable reasons: 102 respondents offered comments along this line: "It is a good way to stay in contact with other professionals and keep up-to-date on current issues in architecture." "I think it is important that architects have a common voice for professional recognition," was mentioned by 27 respondents. "Benefits of courses, lectures, programs, committees, etc." was mentioned by 21 respondents. "To develop personal contacts within the profession," was mentioned by 8 respondents. Many respondents said that they had been active in their student chapters and "saw the benefits of this activity." The negatives? "Benefits do not justify the cost." "It seems reactionary" . . . "political" . . . "self-interested" . . . "anachronistic" . . . "does nothing to promote status of women in the profession. . . ." Nonetheless, if only because they see a personal benefit ("No one believes you're an architect if you don't") a large majority of students plan to join the AIA.

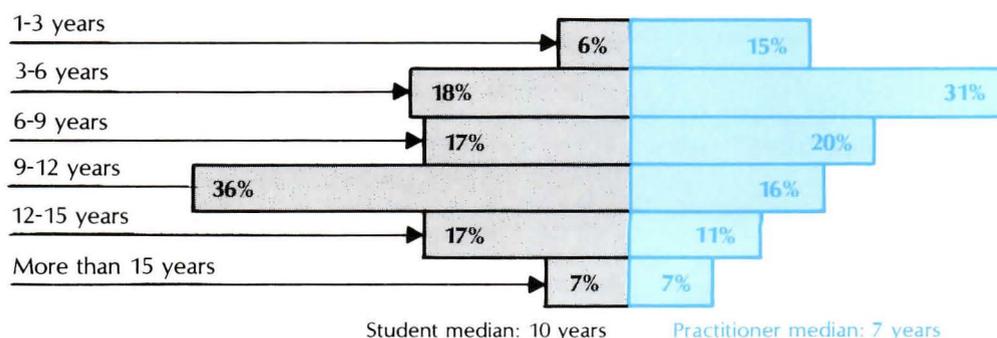
Do today's students want to set up their own architectural firm? Yes, yes, 89.5 per cent yes. Their goal seems to be on their own in 10 years—which is what most of the practitioners managed. . . .

Of 381 student respondents, 341 (or 89.5 per cent) said "yes" to the question: "Do you some day want your own firm?" This is a very close match with the practitioners surveyed. They were asked "Did you organize/help organize your present firm?"—and 275 of 326 respondents (or 84.4 per cent) answered "yes." Clearly, the entrepreneurial spirit is alive and well among today's architectural students. . . .

The chart at right shows how long, in years, students think it will take before they set up their own firms; and how long it actually took the practitioners surveyed. The student "median expectation" is 10 years—indeed 10 years was by far the mostly frequently volunteered answer. The practitioners surveyed, perhaps surprisingly, managed "their own shop" sooner than that; the median time after graduation that they "organized/or helped organized their present firm" was seven years.

Question to students (326 replies): "If you want your own shop, how long do you think it will take before you're ready?"

Question to practitioners (263 replies): "If you organized/helped organize your present firm, how many years was it after graduation?"



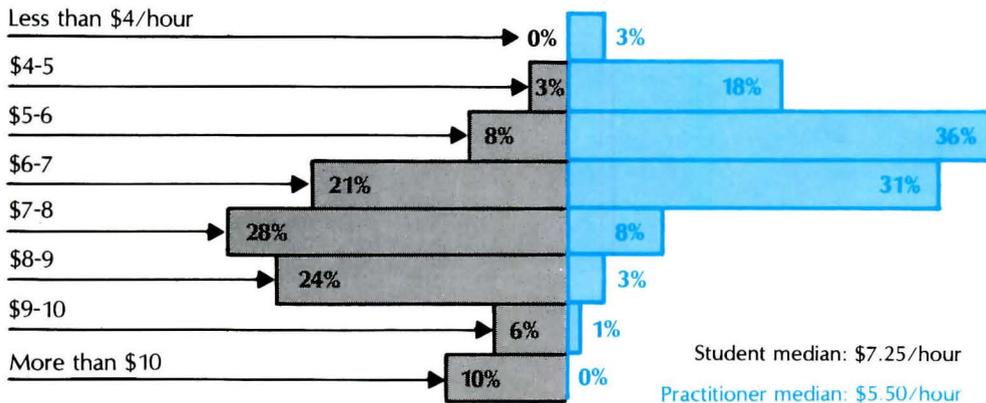
How much do final-year students expect to be paid on their first job? More than they're going to get. After three or four years, most can expect to be in the \$18,000 range.

Question to students (366 responses):

How much do you expect/hope to be paid on your first job in an architect's office?

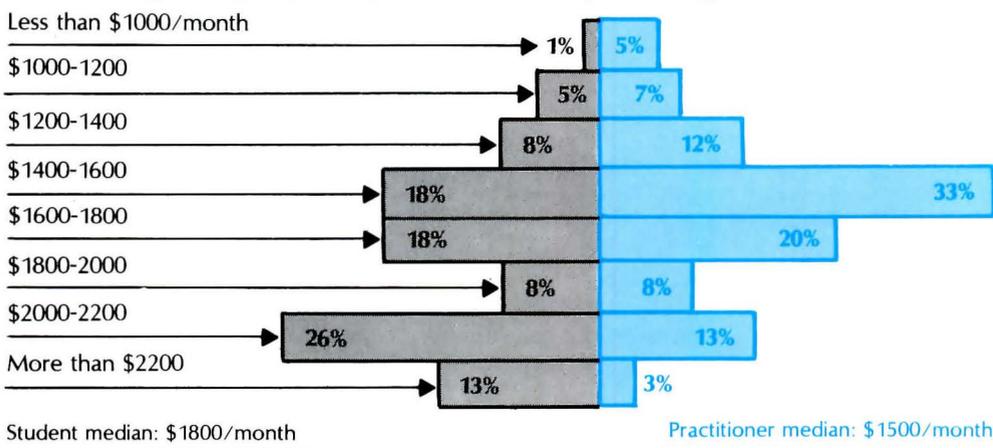
Question to practitioners (291 responses):

How much do you usually pay architectural graduates on their first job?



Question to students (350 responses): "How much would you hope to be making by the time you are licensed in three or four years?"

Question to practitioners (264 responses): "How much might a new graduate hope to be making if they stay with you three or four years and get licensed?"



What kind of work most interests the about-to-graduate? Urban rehab and re-use scored high. But then so did housing—including single-family houses.

In asking these questions, we made a few suggestions—and here are the responses from 387 respondents:

- Urban rehabilitation, re-use 58 per cent
- High-density housing, townhouses.....55 per cent
- Single-family housing50 per cent
- Urban housing47 per cent
- Large-scale work, such as high-rise office buildings, hospitals.....46 per cent
- Urban planning36 per cent

Schools33 per cent

We also left space for "other—please specify." Here are some of the building types volunteered: "Solar resource-oriented buildings." "Medium-size offices, clinics, schools, churches—work at a size I feel I can control the design of." "Buildings to be used by children. . . ." "Any building that touches the personality of the community." "Special-use housing— for the elderly, mentally retarded, handicapped. . . ."

Editor's note: In asking this question, I

We asked students and practitioners parallel questions: "How much do you expect/hope to be paid on your first job in an architect's office?" and "How much do you usually pay architecture graduates on their first job with you? Also, we asked: "How much would you hope to be making by the time you are licensed in three or four years?" and "How much might a new graduate expect to be making if they stay with you three or four years and get licensed?" (Note: this question assumes rather prompt licensing— but turns out to agree with the median "time to licensing" reported by the practitioners surveyed—which was, perhaps surprisingly, between three and four years.)

The "starting salary" chart clearly shows that the students have high expectations and are probably in for a disappointment. The median starting salary expected by the students surveyed was \$7.25 per hour; the median/starting salary paid by the practitioners was about 30 per cent lower—\$5.50. Some 10 per cent of the students expected to start at over \$10 an hour—and none of the practitioners surveyed paid that much; one student mentioned \$20 per hour. (Presumably he has earlier graduated from the Harvard Business School and plans to go into architectural investment banking.)

As to how much the students expect to be making by the time they are licensed, vs. "the reality" of the practitioners' report, the two pictures are somewhat closer together—but still 20 per cent apart. While nearly a third of the students expect to be in the \$25,000 bracket by then, the student "median expectation" was about \$1,800 per month (or \$21,600 per year) while the median actually paid was in the \$1,500 per month range, or \$18,000.

Most students want to work (and most practitioners do work) in their home state. And the city is a big winner over "suburban or rural setting."

We asked the students, "In what state do you want to work?" Of 336 responses, 67 said "California." Other popular destinations: New York, with 76 mentions: Massachusetts with 39 (to which one might reasonably add 10 "New England" responses); Illinois, with

38; Texas, 36; Washington State, 34; Pennsylvania, 30; Florida, 27; Colorado 23. No other state got more than 11 mentions.

For 57 per cent of the student responses, the state they mentioned was their home state (compared with 69 per cent of the

practitioners surveyed who work in their home state). Another 19 per cent of students said the state they had chosen was the "state where school is located;" compared with 25 per cent of practitioners who work in the same state in which they attended school.

Editor's note: I asked this question because I thought a great many students would want to stay in the state where they attended school—and I also confess to predicting a strong East Coast and West Coast bias. There was a East Coast/West Coast/Chicago bias—though whether this is because of an imbalance in school location or "home state" is

hard to tell from the survey. Do students from rural schools in the heartland wander away to the coasts or to Chicago? Not clear; should have been smarter in framing the question. Perhaps some analysis of answers by school will show a pattern, and if so, we'll report in a future issue.

Asked "Do you want to work in the city,

or in a suburban or rural setting?" 88 per cent of the student respondents checked "city," 25 per cent checked "suburban or rural"—a response that totals more than 100 per cent because of "both" answers. And that is a pretty good match with the location of practitioner respondents: 70 per cent report their office is in the city.

Who are the favorite architects of students—and of practitioners? Frank Lloyd Wright tops both lists, by a lot. To say the lists are conservative is a great understatement. No revolt anywhere?

Editor's note: This question turns out, to me, to be the most fascinating, and the answers most surprising. I should confess to experts in research that, unaccountably (at least I can't remember why), I asked the students "Who are your *five* favorite architects?" (No hints, or "aided recall," were offered) and asked the practitioners "Aside from your own firm, of course, who is your favorite architect?" Does framing the question differently invalidate comparisons? Probably, though I hope not; and anyway here *is* the comparison. Please note that the number in parentheses after each name gives that architect's position on the other list—for example, Le Corbusier, second on the student list, is ninth on the practitioner list. And there are 21 on the practitioner list because the last six all had the same three votes and I didn't want to leave out Yama out of any sense of neatness.

One can spend hours comparing the lists and deciding what to make of them. Thoughts that have occurred to me: After Wright in undisputed "favorite" position, three others—Aalto, Kahn, and Pei—are in "the top five" on both lists. Corbu, second on the student list, dropped to ninth on the practitioner list; Philip Johnson was third on the practitioner list, down at thirteen on the student list (which surprises me). If you make "a top ten" list, only Corbu and Saarinen are added to both lists. Richard Meier, Charles Moore, Gaudi, and Palladio are in the students' "top ten," but not the practitioners' "top ten." Philip Johnson, John Portman, Ed Barnes, and Paul Rudolph are on the practitioners' "top ten" but not the students'.

This all adds up to a pretty "main-line" list. I'm not surprised that Robert Venturi (11th on the student list), Jim Stirling (12th), and Michael Graves (15th) didn't make the practitioner list at all: I am very surprised they weren't higher on the student list. I'm sur-

The students' Top Twenty architects¹

(371 respondents,

asked for "five favorite")

1. Frank Lloyd Wright (1) 173 mentions
2. Le Corbusier (9) 138 mentions
3. Alvar Aalto (4) 135 mentions
4. Louis Kahn (5) 112 mentions
5. Ieoh Ming Pei (2) 58 mentions
6. Richard Meier (12) 56 mentions
7. Charles Moore* (14) 43 mentions
8. Eero Saarinen* (7) 43 mentions
9. Antonio Gaudi 38 mentions
10. Palladio* (15) 33 mentions
11. Robert Venturi* 33 mentions
12. James Stirling 32 mentions
13. Philip Johnson* (3) 29 mentions
14. Michelangelo* 29 mentions
15. Michael Graves 27 mentions
16. John Portman (6) 25 mentions
17. Mies (13) 22 mentions
18. Paul Rudolph (10) 18 mentions
19. Luis Barragan 17 mentions
20. Borromini 15 mentions

*Ties are listed alphabetically

¹Number in paren after name is position on other list

prised that Mies and Kevin Roche weren't higher on the practitioner list.

Well, enough—to your own conjecture and conclusions. Hundreds of other architects were listed by students and practitioners alike—you'll have to wait until the final research study is published to find out if "you made the big time."

We also asked students and practitioners for their favorite building in the U.S., and their favorite building in the world (which most seem to have taken as "outside the U.S."). Mr. Wright and Mr. Pei score heavily on the U.S. lists; and LeCorbusier's Ronchamp was

The practitioners' "Top Twenty":

(201 respondents,

asked for "your favorite")

1. Frank Lloyd Wright (1) 41 mentions
2. Ieoh Ming Pei (5) 23 mentions
3. Philip Johnson (13) 11 mentions
4. Alvar Aalto* (3) 8 mentions
5. Louis Kahn* (4) 8 mentions
6. John Portman* (16) 8 mentions
7. Eero Saarinen* (8) 8 mentions
8. Edward L. Barnes* 7 mentions
9. LeCorbusier (2)* 7 mentions
10. Paul Rudolph* (18) 7 mentions
11. Gunnar Birkerts* 5 mentions
12. Richard Meier (6)* 5 mentions
13. Mies* (17) 4 mentions
14. Charles Moore* (7) 4 mentions
15. Palladio (10)* 4 mentions
16. O'Neil Ford* 3 mentions
17. Bernard Maybeck* 3 mentions
18. SOM* 3 mentions
19. Kevin Roche* 3 mentions
20. Harry Weese* 3 mentions
21. Minoru Yamasaki* 3 mentions

the runaway winner on both lists. Specifically: the students' favorite buildings in the U.S. are: Falling Water (38 mentions), Pei's East Building of the National Gallery (22 mentions), the Chrysler Building (14), Kahn's Kimball Art Museum (11) and Exeter Library (8). The practitioners' list: The East Building of the National Gallery (17), Falling Water (14), Seagram Building (6), Dulles Airport (6). As mentioned, Ronchamp topped both student and practitioner "overseas" lists—and overwhelmingly.

Which is, of course, another very conservative list. And what do we make of that?



A final editor's note: What emerges from this survey, of course, is a very conservative picture. What's to be made of that? I wish now that I'd asked a more direct question about evolving design philosophies—instead of just asking for a list of "favorite architects." I asked a number of essay questions—"Assume it is 15 years from now and you have your own successful firm. What kind of commission would you like?" and "What would you like to see done to improve the public understanding of the need for good architecture?" The responses were too brief to be meaningful, and I wish I'd asked for more. I want to go back to the raw data of the survey and see if there are regional patterns; or whether "post-modernism" doesn't emerge as a stronger force at some of the schools; or whether students at some schools don't emerge as anxious to work in larger firms where the large-scale work is. And I expect comment and criticism of this inaugural survey in the cause of helping the students and interns who are coming along into the profession, and who are the profession's future. I'd welcome your comments. —W.W.



COLLEGE BUILDINGS

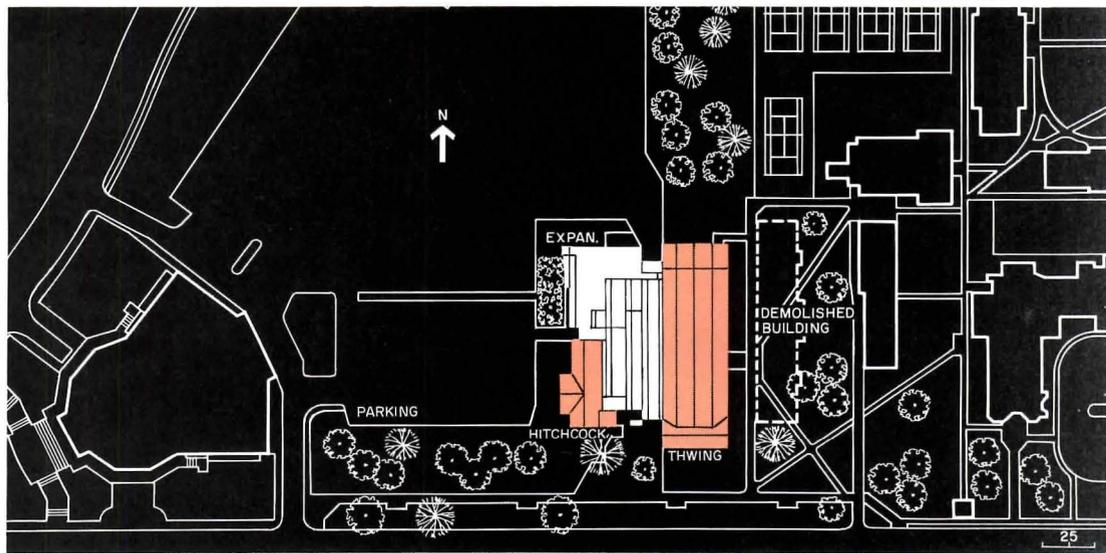
As American colleges mature, their buildings age, and they may decide, as Syracuse did, that the century-old heart of the campus has grown decrepit to the point of being unsafe. Or collegiate functions change and disappear—Yale abandons a chapel, Mount Holyoke gives up on a campus inn. At the same time, the colleges do not wish to sacrifice buildings of charm, or sentiment, or structural soundness. Much as it needed a new student center, for instance, Case Western Reserve could not bring itself to demolish two sound old buildings, handsome but no landmarks. The architects dealing with these four cases devised similar though distinct solutions, what might be called neo-Eclecticism, an uninhibited combination of period buildings with modern architecture. —*Grace M. Anderson*



Photos © Thom Abel except as noted



Case Western Reserve Photo Lab



CASE WESTERN RESERVE MARRIES OLD BUILDINGS IN NEW STUDENT CENTER

Whatever you call it—modern, post-modern, high tech, or off-the-shelf—Don Hisaka's new in-fill building for Case Western Reserve University's student center behaves with uncommon gallantry. Without compromising its 1980 self, it creates for two older buildings an architectural integrity that did not exist before.

The older and smaller of the two buildings is Hitchcock Hall, at the left of the new structure; it was built in 1897 as a private residence. Thwing Hall, at the right, was built in 1913 as a men's club and saw service as Western Reserve's student activities center even before that university and the Case Institute of Technology, just across Euclid Avenue, merged in 1967.

Beyond their location facing Euclid Avenue and a vaguely Jacobean-Georgian-Eclectic style, the two existing buildings had little in common, least of all in the scales of either their massing or their ornament. Hisaka has boldly inserted between them an L-shaped addition of decided contemporary character. The addition houses a two-story atrium at the front for student milling and lounging and a split-level bookstore at the back.

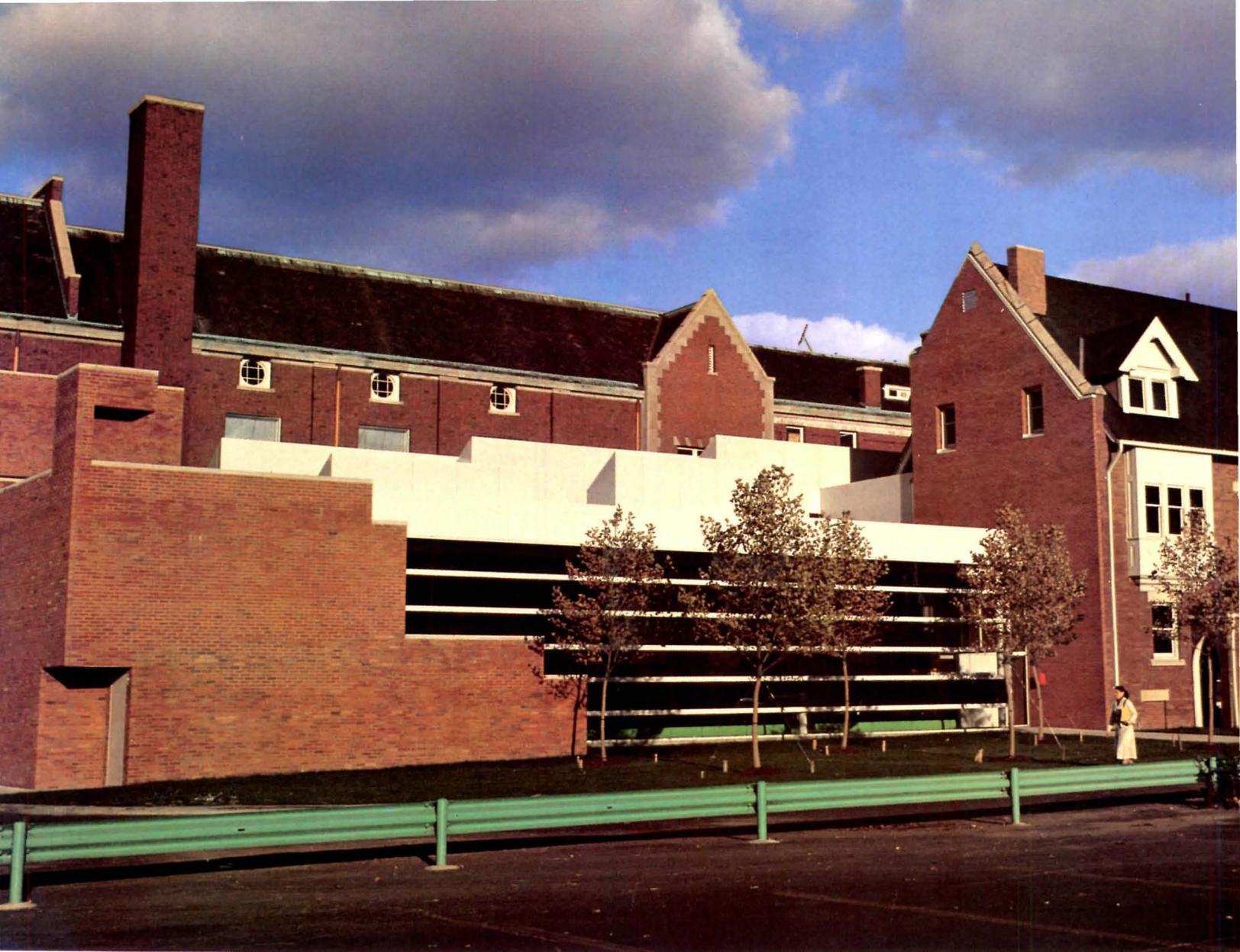
On the street facade, the designer recessed the in-fill to allow the older buildings' apparent precedence along the sidewalk. The

strong horizontals of the new metal window frames and butt glazing align with horizontal elements on each side and thus resolve—or at least blur—discrepancies in scale. At the same time, the horizontals echo the white quoins and stone courses on Thwing and the white lintels above Hitchcock's windows.

Still more, the stepped-back angular peaks of the atrium's monitors establish a sympathetic rhythm in combination with the gables and the front corbiesteps of Hitchcock, while the three planes of the facade repeat the number of arches at Thwing's base. And yet further gallantries to the older buildings include reflections of their exterior detail on the new facade and the re-use of Thwing's old Doric portico, swung 90 degrees from one wall and set at the entrance as a detached portal.

The new front assertively holds its own, nonetheless, both by the emphatic contrast of its light frame and reflective glass with the heavy brick masonry on either side and by its strong composition. Hisaka disposed lights of both reflective and clear glass geometrically to extend the line of the monitors to the base of the addition and to allow glimpses into the lighted atrium even during the day.

The bookstore wing, its facade visible from the parking lot, repeats the general



Milan Bender

CASE WESTERN RESERVE UNIVERSITY

composition of the street facade: a glass skin framed by brick masonry. The proportions differ considerably, however, the flat glass structure assuming a far greater importance than it is permitted in front. And although Hitchcock flanks the atrium wall on the right, the stepped masonry on the left is new.

Some architectural pruning was performed on the site as well. Demolition of some earlier additions at the back of Hitchcock was paramount to the form of the new building as it cleared space for the bookstore. Almost equally important was the removal of an extremely undistinguished middle-aged building to the right. Its disappearance opened a grassy vista from Euclid Avenue to part of the campus (see site plan, preceding page). Thwing Center thus gains room enough to stand as a defined entity, its nearest neighbor to old Thwing a rather handsome building of similar design, its neighbor on the Hitchcock side Severance Hall, home of the Cleveland Orchestra.

The same pluralistic approach prevails on the interior of Thwing Center as on the exterior: saving what is beautiful or useful of the old, and straightforwardly revealing the newness of the new—while the architect makes sure that their meetings are affable. In this case, the use of the existing masonry

walls and their glazed windows (the fire department insisted) goes far to establish the easy companionship of old and new. Budget as much as architectural philosophy fostered the pluralism: the 70,000-square-foot building and its furniture cost \$3.5 million.

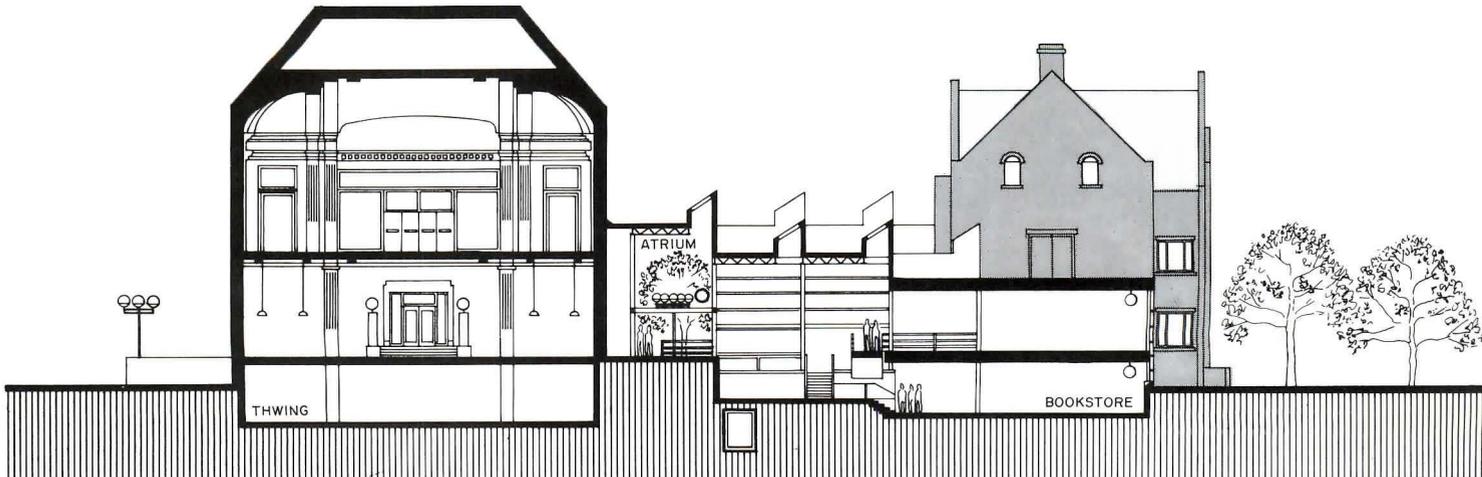
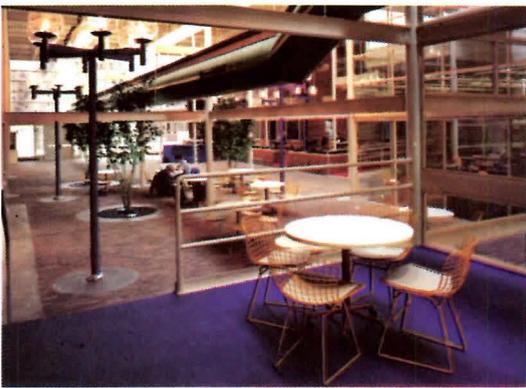
Besides providing circulation for the bookstore and the cafeteria, the atrium sets itself up as a center for casual and deliberate encounters—the bright blue information desk is an easily located and immediately identifiable meeting place. Lounging spaces around the perimeter, such as a platform looking into the bookstore or the preserved front porch of Hitchcock, give semipublic vantage points for watching the passing parade.

Hisaka attributes much of the atrium's vitality to the vision and spirit of CWRU's President Emeritus Louis A. Toepfer, head of the school while Thwing Center was under construction and a man who "understands today's students." It was he who conceived the multicolored neon monogram that clearly identifies the building from the outside and that places the interior squarely within the disco generation.

Because Thwing is so much the larger of the two existing buildings, it accommodates the facilities that can be expected to draw the heaviest traffic. The new cafeteria pluralisti-



The atrium at Case Western Reserve's new student center engages the walls of two different existing buildings as parts of its own interior. Students have direct access to either building—the smaller Hitchcock with new student lounges, or Thwing, with new cafeteria and offices—and to the new split-level bookstore at the rear (right).





CASE WESTERN RESERVE UNIVERSITY

cally mixes new and old design. The imposing fluted columns with their unconventional egg-and-dart capitals were saved, though newly painted; ivory and beige succeeded a color Hisaka describes as "garish yellow." Windows giving onto the central atrium were extended down to the floor, but their carved jambs and lintels and the fluted pilasters, dating from the room's men's-club days, were preserved. Declaring the room's modernity, on the other hand, a row of ceiling lights points straight to food service, accessible beneath the neon-lighted arch that is visually doubled by the mirrored lunette.

Above the unimaginative dropped ceiling in Thwing's second-floor ballroom, Hisaka was overjoyed to discover an elaborately plastered cove ceiling and six oeils-de-boeuf. New decoration is simple: pale violet painted accents, deep magenta draperies, deeper purple stage curtains.

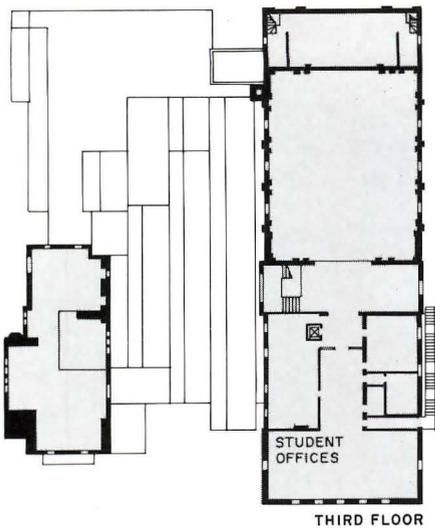
The architect left one room in Thwing unchanged: the art gallery at the front of the building, which boasts a pair of splendidly carved wood chimney breasts. Smaller rooms, newly furnished, house offices for the staff and for student publications, such as two newspapers and the yearbook.

The character of Hitchcock's interior differs yet again. Fittingly enough, the scale of

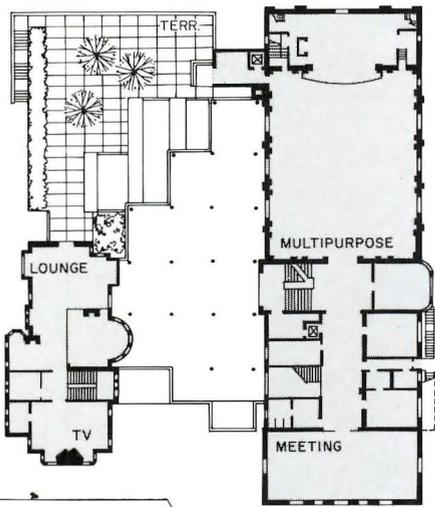
the rooms is domestic, and the building houses intimate lounges and small meeting rooms. The architect has given the main lounge, entered directly from the atrium by the preserved front porch and front door, a dash of glamor by removing the floor above and allowing the room to expand upward. Holes punched in second-floor partitions open views into the room from upstairs and allow the lower room to borrow some light from the atrium via second-floor windows.

The ornament in both old buildings— heavy and masculine in Thwing, dainty and homelike in Hitchcock—is more than handsome, and is virtually irreplaceable today. Metal railings, woodwork, tiles and plaster have been lovingly cleaned, painted and repaired, kept in existence and in use.

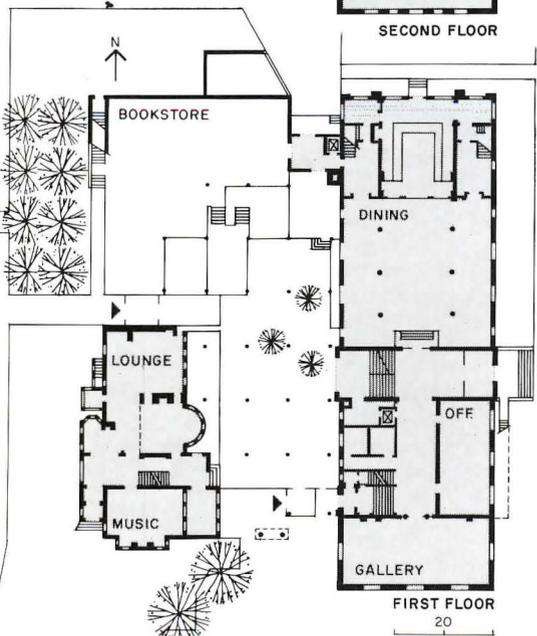
THWING CENTER, Case Western Reserve University, Cleveland, Ohio. Architects: *Don M. Hisaka & Associates—Don M. Hisaka, principal-in-charge—design; George Saire, principal; Alex R. Posze, Jr., project architect; Robert Polcar, job captain.* Engineers: *Gensert Brettnall Bobel (structural); Pasiadis-Kuentz and Associates (mechanical); Mehnert and Frederick (electrical); David V. Lewin Corp. (soils).* Interiors: *Don M. Hisaka & Associates.* Construction manager: *J. B. deHamel, Jr. & Associates.* General contractor: *Sam W. Emerson Company.*



THIRD FLOOR



SECOND FLOOR



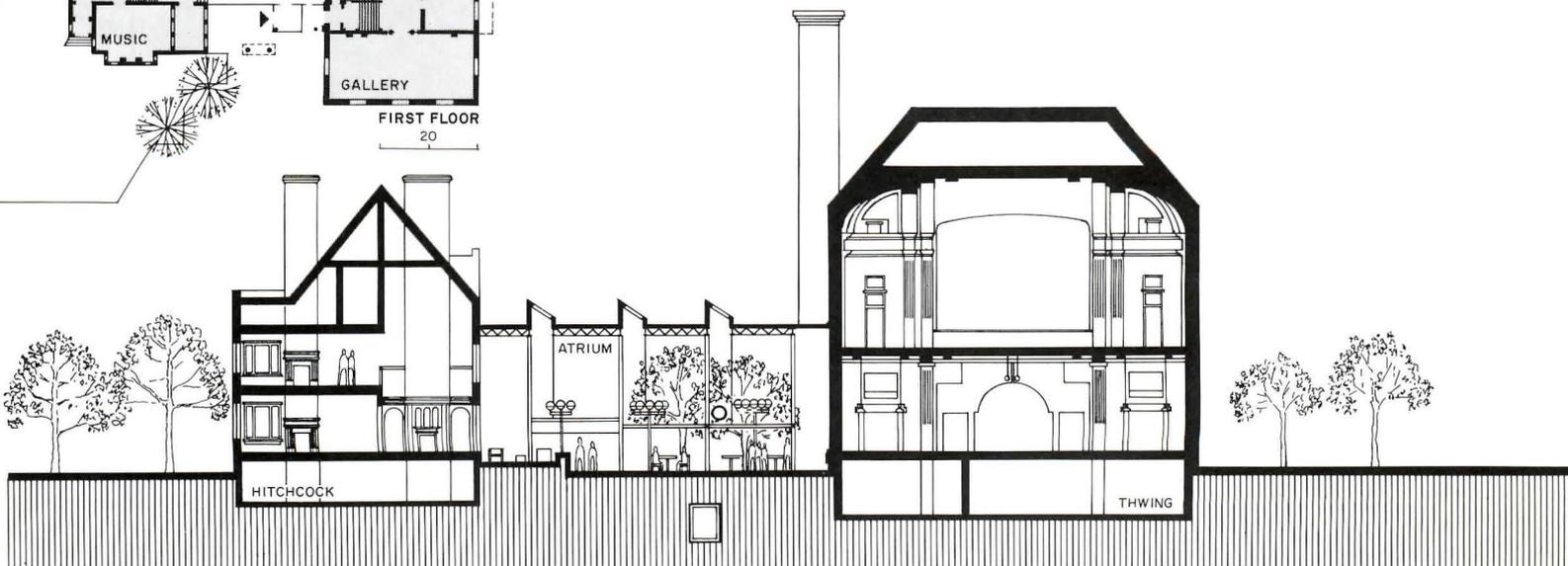
FIRST FLOOR

20



Rooms in the existing buildings that flank Thwing Center's new student atrium confidently combine new and old. The cafeteria in old Thwing Hall (opposite) cheerfully mixes new paint and curtains after its dropped ceiling was removed. In Hitchcock Hall, the main lounge (directly above) expands upward to the attic. Its neon lights and butcher-block tables, fluted columns and a new Palladian gateway. The ballroom in the same building

(at top above) needed only new paint and curtains after its dropped ceiling was removed. In Hitchcock Hall, the main lounge (directly above) expands upward to the attic. Its neon lights and butcher-block tables, fluted columns and a new Palladian gateway. The ballroom in the same building





© Nick Wheeler photos

YALE TRANSLATES AN ABANDONED CHAPEL AS A NEW COMMONS

The logotype of Yale's School of Organization and Management is a square ringed about with small circles, representing a table and chairs. As he designed the school's new commons, architect Herbert Newman bore in mind the credo of the school's founding dean, William Donaldson, that conversations held around the dining table are always more rewarding than those conducted around the conference table.

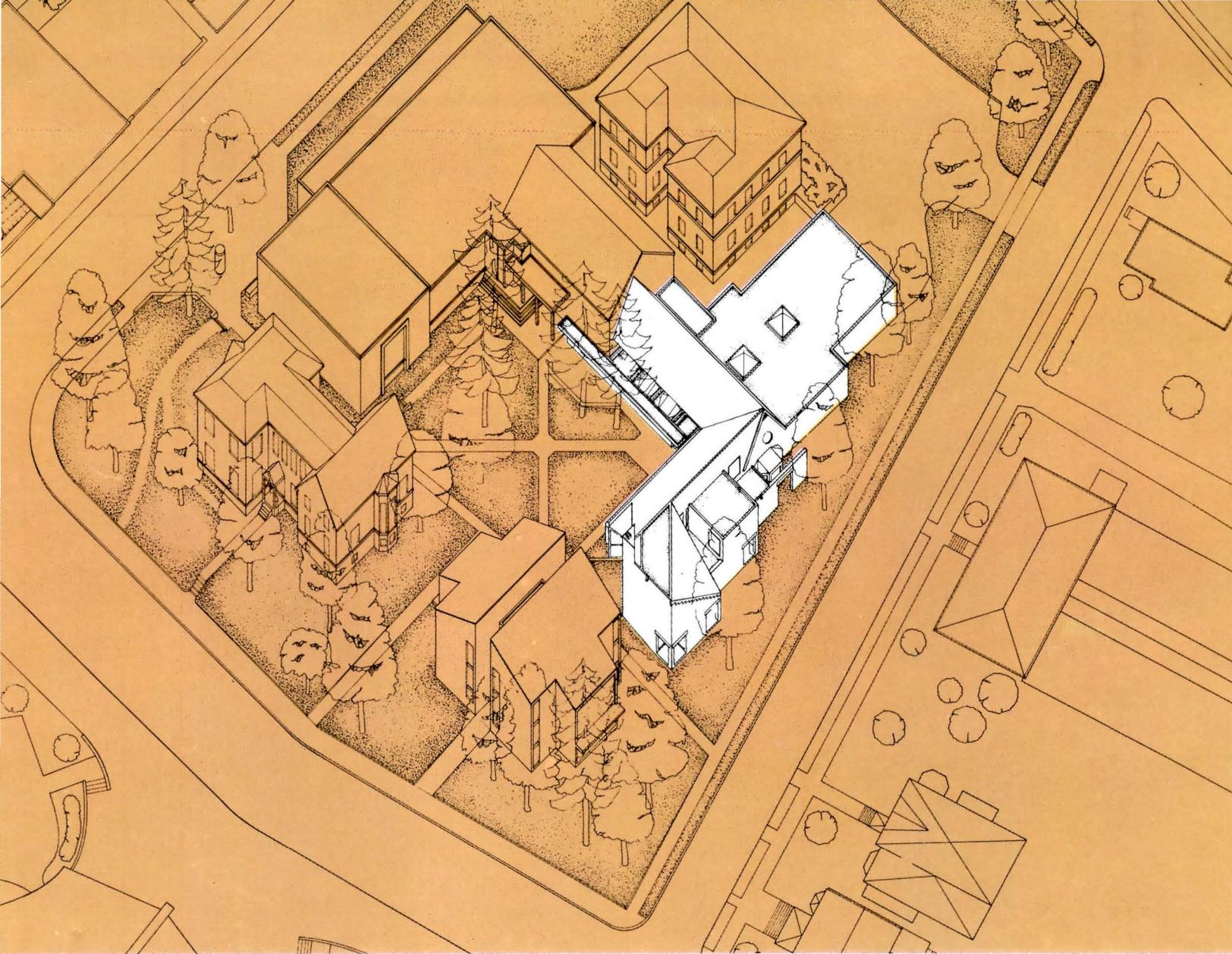
A chapel that had belonged to the Berkeley Divinity School, before Berkeley merged with Yale, houses the commons at a remote corner of the university's campus. One of the primary considerations Newman faced, even as he considered ways to expand the space for kitchen and dining, was its scale on a restricted and peculiar site. The new street facade, which incorporates one end of the chapel, required a residential scale to complement existing buildings in the neighborhood. On the other side of the block and slightly uphill, however, the social sciences library imposed a more institutional scale, as did Hammond Hall, an older building used by the engineering school across the street. To complicate matters still further, the style and materials of the other buildings on the site differed markedly: one middle-aged brick social studies library, one angular dark brick

turn-of-the-century building, and one more recent angular red brick building.

Describing his solution, Newman talks much of Yale's architectural typology and of James Gamble Rogers's large green courtyards, bounded by college walls and entered through low arched portals. Here, the commons establishes a new courtyard, using one crossbar and the stem of the T-shaped building to define the corner. The reference to Rogers's courtyards is clear, despite the architectural variety of the enclosing walls. Instead of entering beneath an arch, the visitor walks in on narrow paths between buildings, a way at once public and pleasantly secretive.

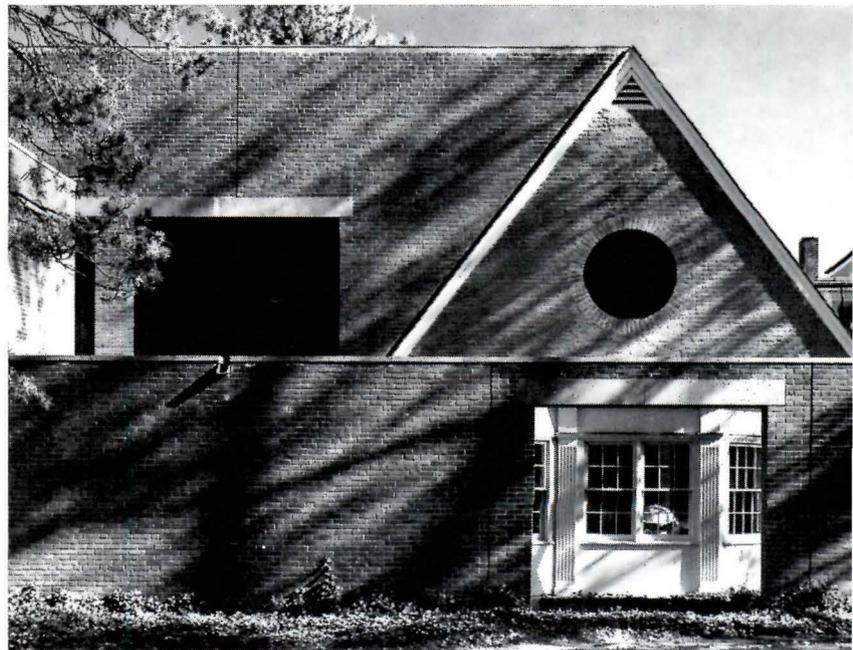
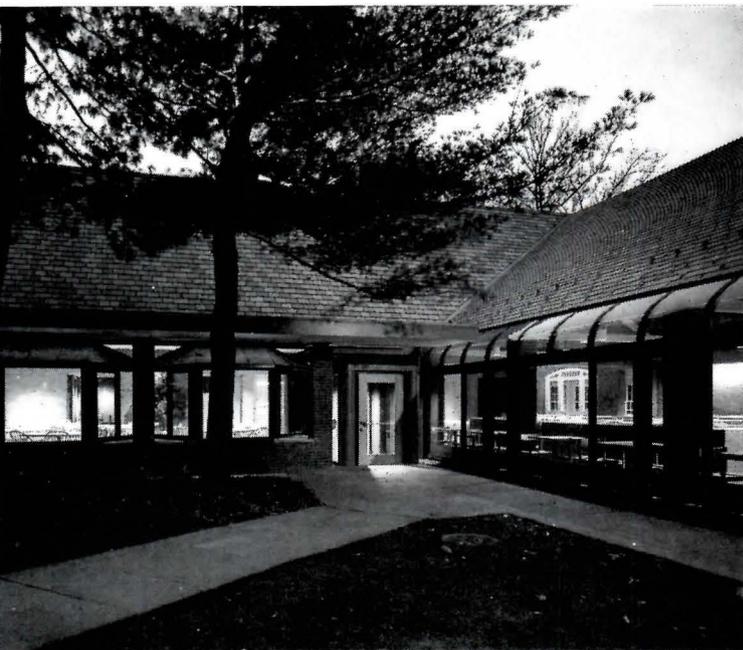
The existing fabric of the chapel has disappeared almost completely on the exterior, enveloped by additions. But the additions, however frankly they announce their contemporaneity, subtly flatter the original and its neighbors with their materials, their scale and their details.

At the corner of the courtyard, the steep pitch of the chapel's low-eaved roof is repeated by the new wing set at a right angle, and the slope of the roof continues across a sensitively proportioned radiused skylight above the dining hall's glass wall. For dining alcoves on the courtyard face of the old chapel, Newman added generous bay win-



Yale's Donaldson Commons, occupying the chapel of a former divinity school and new additions, accommodates the School of Organization and Management. Architect Herbert Newman has used diverse existing buildings and the T-shaped commons to enclose an interior courtyard, a

familiar collegiate amenity at Yale. At the same time its artful voids and angles place the building's facade as late 20th-century architecture, its red brick, white wood trim and precast concrete lintels (pigmented and sandblasted to recall older stone) defer to the more mature buildings.





YALE UNIVERSITY

dows whose angular form imitates the bay windows sported by a neighbor, as well as the one on the chapel's street front.

The composition of the new street facade was even trickier than the courtyard.

Newman handled the new wing on the right simply: a plain brick wall with a concrete coping, resembling a domestic garden wall, to enclose the kitchen and food service area. Pedestrians on the street can see over the wall an older, taller building—another of Rogers's favorite devices.

On the left, however, the new building had to resolve the scale of the chapel end with that of a new brick building on the site, a rather tall angular building, formerly a dormitory and now an office building, that Newman says was "unhappy in its solitude" on the corner. With a steep triangular slate roof, the architect leads one's view from a low corner in front to a high diagonal ridge, and then draws the eye still higher as it follows the chimney, until at last it reaches the roof of the building next door.

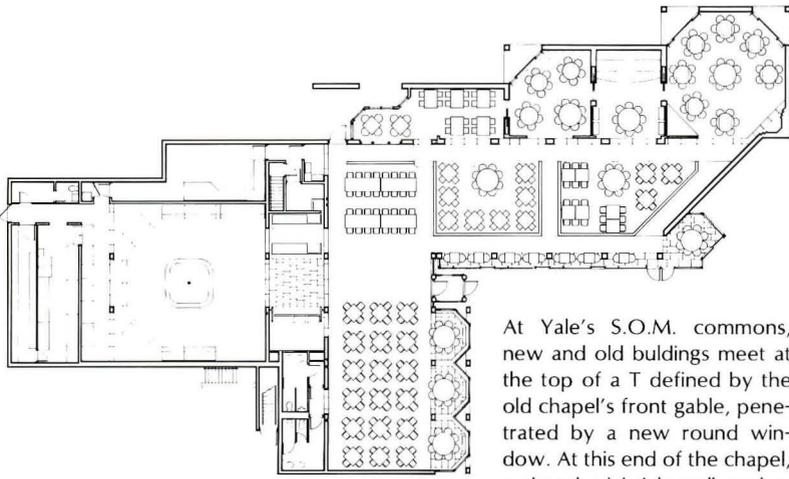
On the interior of the commons, old and new structures merge without conceding their respective identities. Symmetrical timber trusses support the peaked ridge of the chapel, while the addition, all asymmetry, has diagonal trusses supporting a single-pitched

roof to its ridge above the flat front wall. Trusses are exposed on both sides of the L-shaped dining area.

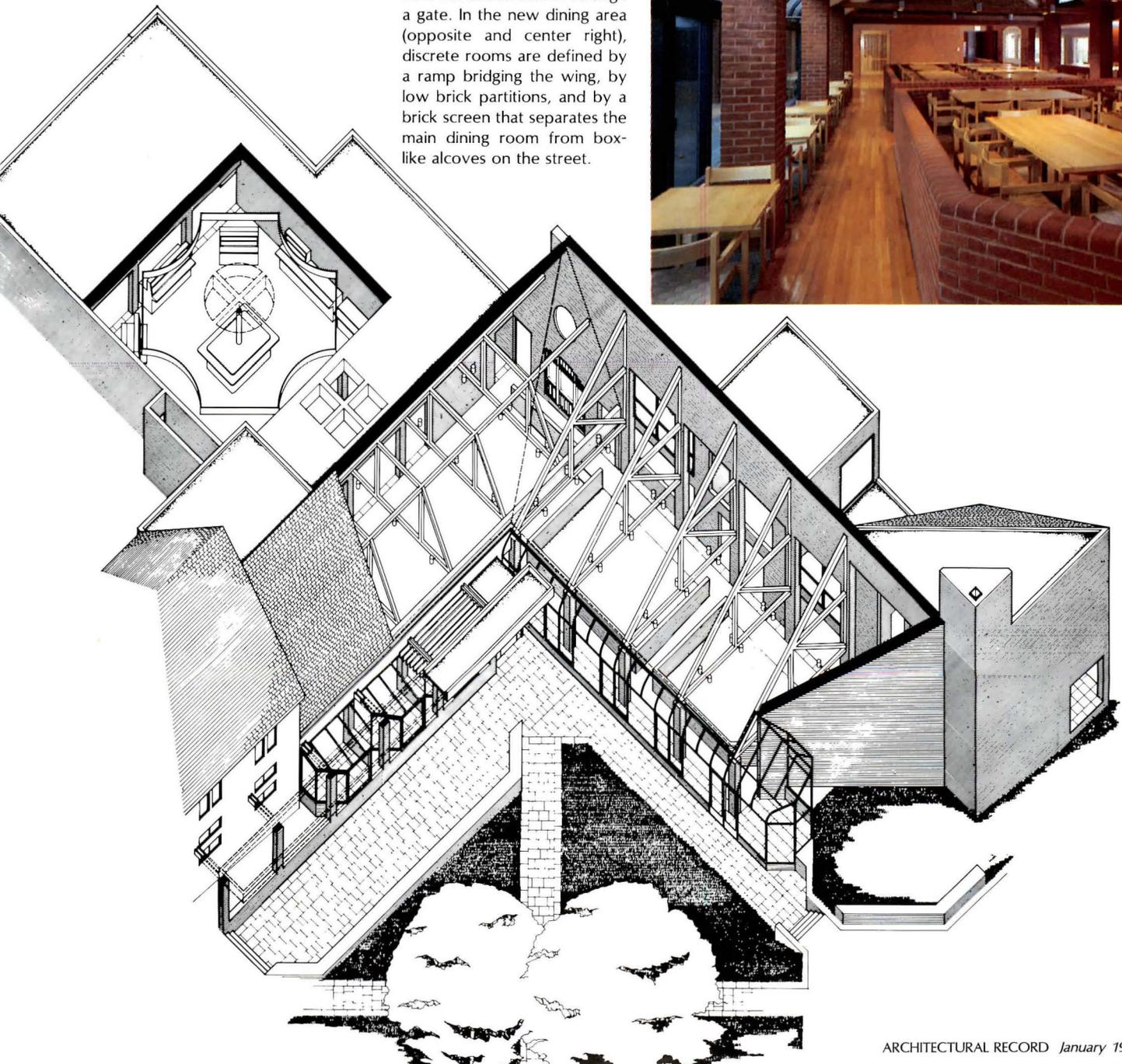
The commons interior design defines a broad array of discrete dining areas, offering freedom of choice among communal refectory, conversation *à deux* along the courtyard windows, select groups in the bay windows, or private lunch meetings in various sized alcoves. One of the cubical "boxes" projected toward the street from the addition can convert to a bar for dinner meetings.

The facility is intended chiefly for student lunches, however, and in its first year of operation has attracted numbers despite its distance from the central campus.

DONALDSON COMMONS, Yale University, New Haven, Connecticut. Architects: *Herbert S. Newman Associates, AIA, P.C.*—*Herbert S. Newman, architect-in-charge; Joseph C. Schiffer, AIA, associate, project architect; Barry Svigals; Beck Swanson.* Engineers: *John C. Martin, P.E., Consulting Engineers* (structural); *Peter Szilagyi & Associates* (mechanical/electrical). Interior design: *Herbert S. Newman Associates, AIA, P.C.* Landscape architects: *Zion & Breen Associates.* Consultants: *Donald L. Bliss* (lighting); *Strong Cohen* (graphics). Cost consultant: *George A. Fuller Co.* General contractor: *The Joseph F. Kelly Co., Inc.*



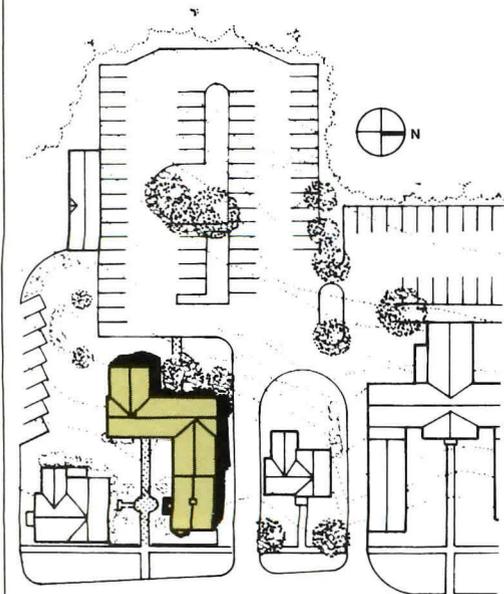
At Yale's S.O.M. commons, new and old buildings meet at the top of a T defined by the old chapel's front gable, penetrated by a new round window. At this end of the chapel, a detached brick wall pushes the facade toward the street to define and smooth the central bay. A wood-paneled bay window on this front had served the chapel as a kind of apsidal vestibule; one side of the bay now jogs forward to meet the wall and enclose a sunny alcove and new dining area (top right), while the window reveals its charm through a gate. In the new dining area (opposite and center right), discrete rooms are defined by a ramp bridging the wing, by low brick partitions, and by a brick screen that separates the main dining room from box-like alcoves on the street.





Edward Jacoby/APG photos

MOUNT HOLYOKE MIXES YANKEE TRADITION AND THE 20TH CENTURY



When describing Mount Holyoke's new Newhall Center, architect Elizabeth Ericson draws on the analogy of Grandfather's ax, a transcendent sample of Yankee wit, thrift, ingenuity and respect for tradition: "No matter that it's had eight new handles and two new blades—it's still Grandfather's ax."

Although Mount Holyoke itself occupies large stone collegiate buildings, the campus faces a row of pleasant 19th-century houses of no especial distinction across a street that reflects South Hadley's small-town New England character. The college had put the house that now contains Newhall Center to many uses over the years, most recently as the Bookshop Inn. In search of quarters for its admissions and financial aid offices, the college decided to move into the abandoned inn and to save what could be saved.

That wasn't much, the architect reports—fireplaces, a few timbers, the stone foundation, a stair railing. At the same time, the college wanted the building to look as it did, partly to protect its own view of the New England street, partly as a public relations image for prospective students.

Ericson, a Mount Holyoke alumna and now a principal in Perry, Dean, Stahl & Rogers, prefers to call the building "redesigned," its proportions intact but its period ornament

fitting the purse of an owner more affluent than the original. Thus Grandfather's ax.

In addition, however, the existing building had a series of added kitchens and sheds that no one wanted to save. These were demolished and replaced with a new, all forthrightly contemporary in design, particularly on the back elevation, which most visitors will approach from the parking lot. The face of this wing carries a row of obviously contemporary metal-framed windows, and its flush board skin is painted tan to differentiate it still further from white clapboard walls. A steel beam, whose span clearly exceeds anything obtainable from modest balloon-frame structure, supports office space above the void of the entrance portico, but off-the-shelf wood *Doric columns* recall tradition.

Construction was completed in eight months and cost \$518,000.

HARRIET NEWHALL CENTER, Mount Holyoke College, South Hadley, Massachusetts. Architects: *Ericson Associates—Elizabeth Ericson, principal; Donald Corner, job captain; Charles Alexander, Ann Abernathy, team.* Engineers: *Simpson, Gumpertz & Heger* (structural); *BR&A Consulting Engineers* (mechanical/electrical). Landscape architects: *Shurcliffe & Merrill.* Consultant: *Harry Gulesian & Associates* (Colonial design). Contractor: *Fontaine Bros.*



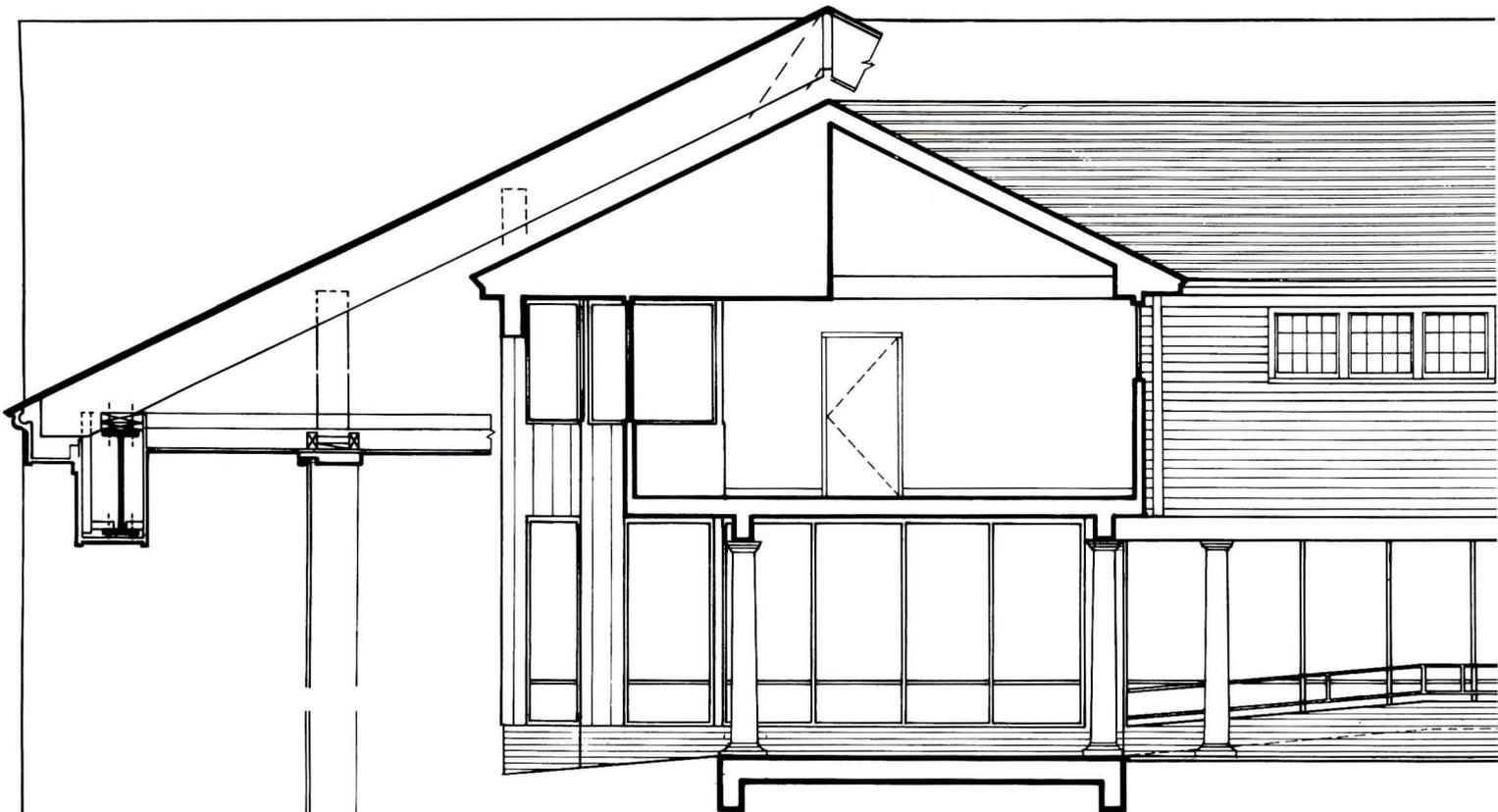
Mount Holyoke's Newhall Center, housing admissions and financial aid offices, presents a traditional Connecticut River Valley residential facade to College Street (top left), its yard a dainty Colonial garden with a picket fence. Via a brick ramp at the rear, which becomes the main facade from

the parking lot, visitors approach the central entrance portico with its up-to-date expansive glazing. The Colonial portion of the rear elevation, on the other hand, duplicates the front elevation, sans doorway (top right). The portico, beyond offering a hospitable entrance for prospective

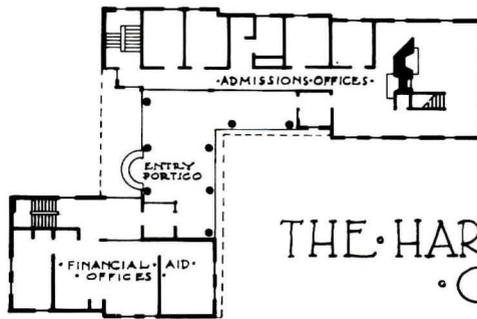
students and their parents, provides a visual axis to the campus proper on the other side of College Street. It also provides a meeting place for upper classwomen shepherding new students in the college's Blue Key program. The interiors have a deliberately domestic scale, both because

the staff is small in number and to make applicants feel at home. The eclectic furnishings mix spare Yankee furniture, Oriental rugs and modern steel desks. Second-floor space bridging the portico houses clerical staff and record storage shared by the admissions and financial aid departments.





NEW ENTRY • PORTICO • FORMAL • GARDE

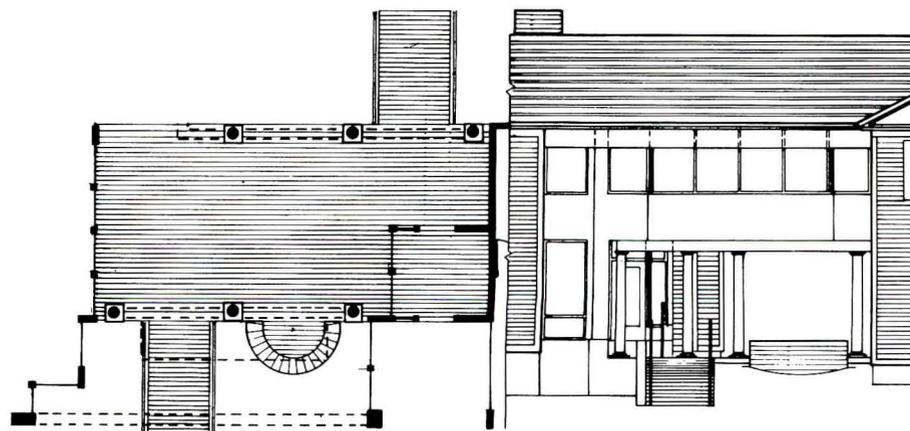


THE • HARRIET • NEWHALL
• CENTER •
AT • MT • HOLYOKE • COLLEGE
SOUTH • HADLEY • • MASS

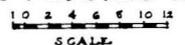
• DETAIL OF •
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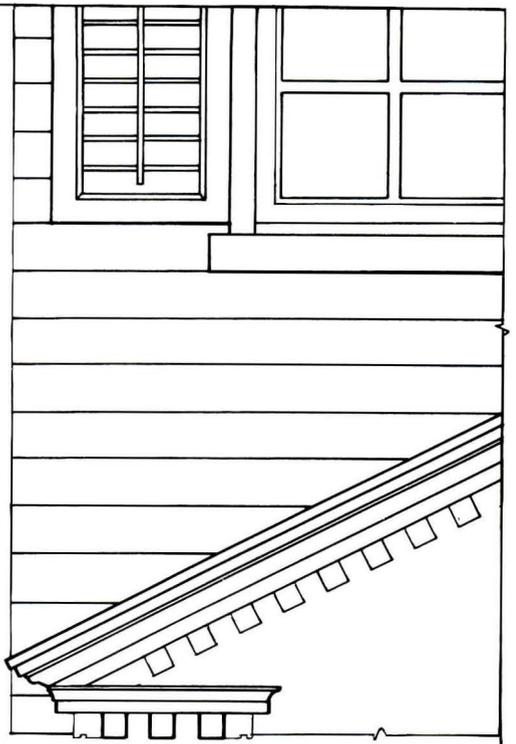
Ericson, an architectural child of the '60s and thus largely ignorant of Colonial design until she undertook Newhall Center, says that she found unexpected joy in the vocabulary and materials. She acknowledges a debt to the now almost forgotten White Pine Series of measured drawings, which in Volume 11-12 published the Squire Bowdoin house in nearby South Hadley Falls, obviously modeled on the same stock drawings as the Bookshop Inn. The louvered fan on the front gable comes from the original building, but the pediment surrounding it has been elaborated with new modillions. The doorways, no longer used for entrance, gained new period ornament, too: engaged columns, a broken pediment, transom lights. These drawings are in homage to the White Pine Series, which Ericson admires for its beauty, precision and lack of pomposity.



• ENTRY • PORTICO • ELEVATION

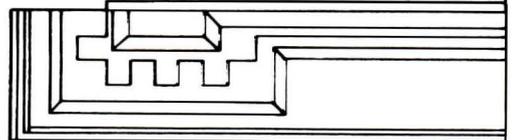


• PLAN OF NEW ENTRY • PORTICO •

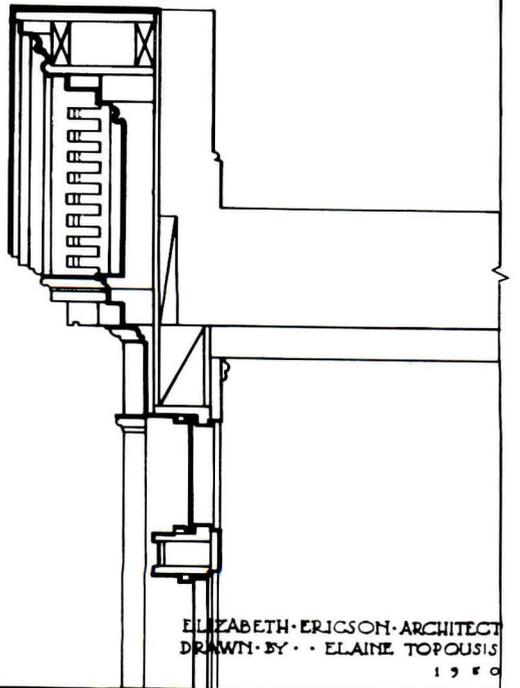


••AND•REDESIGNED

SIDE•DOORWAY



•DETAIL OF SIDE•DOORWAY•



1 0 1 2 3 4 5 6
SCALE

•END•ELEVATION•

•THE•ORIGINAL•HOUSE•
CIRCA 1810



ELIZABETH•ERICSON•ARCHITECT
DRAWN•BY••ELAINE•TOPOUSIS
1980



Photos © Steve Rosenthal

A MODERN ATRIUM FITS IN A VICTORIAN SHELL AT SYRACUSE UNIVERSITY

For a decade and a half after its opening in 1873, the Hall of Languages was Syracuse University, and for more than a hundred years it has served as the center of the school's College of Arts and Sciences.

More than antiquarian sentimentality prompted its salvation from decrepitude and demolition, however. Designed by architect Horatio Nelson White shortly after the Civil War, the Second-Empire-style building sits on the brow of one of Syracuse's seven hills, dominating the area from the top of the long axis of University Avenue and clearly marking the gateway to the campus. Moreover, other late 19th-century buildings flank the Hall of Languages, stretching out on either side to form an imposing architectural collection at the front edge of the campus. The interposition of a modern building in the middle of this row would be, at the least, unseemly.

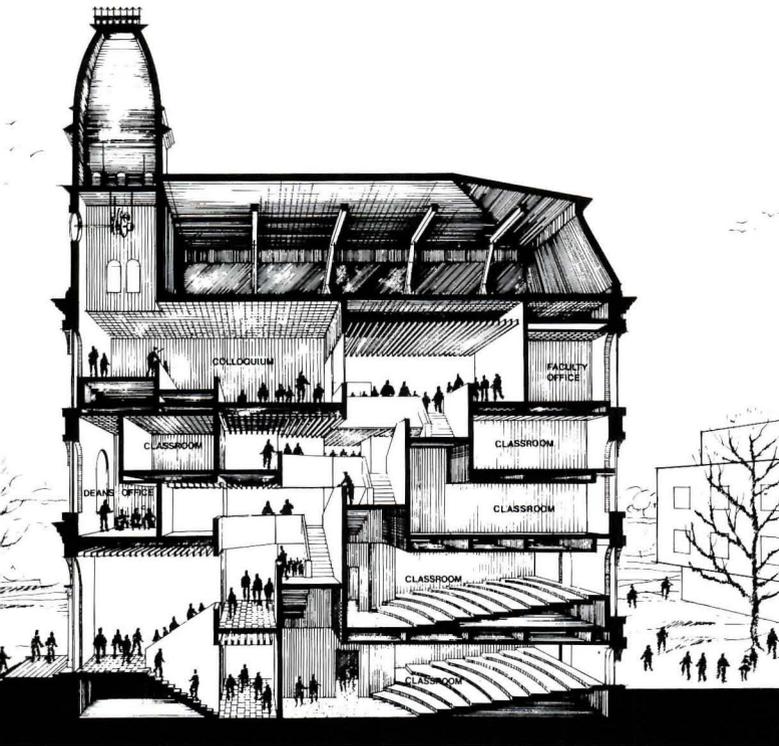
The architects—Architectural Resources Cambridge for design, Sargent-Webster-Crenshaw & Folley for construction documents and supervision—made very few alterations to the building's exterior. The most visible are the glazed vestibules at the back of the building, through which many of the students enter from the rest of the campus. The enclosed vestibules replace decaying wood porches contemporary with the origi-

nal building. The original "pecked finish" Onondaga limestone bearing walls become the vestibules' interior walls. In addition, the lowering of the floor to grade for the admission of the handicapped to elevators revealed the building's stone foundation.

Apart from the new vestibules, little was altered on the building's exterior. Metal-framed casement sash with thermal glazing replaces the old wood-framed double-hung sash, but the new mullions and muntins repeat the proportions of the old. And cleaning was minimal: one of the architects, Arthur C. Friedel, has a fondness for the "enhancing effect of soil" on ornate stone carving.

But if the exterior of the Hall of Languages remains its old nostalgic self, the same can hardly be said of the interior, now utterly transformed. By all accounts, architect White concentrated his art on the impressive exterior and left the interior to penny-pinching afterthought: vertical T&G board walls, pressed tin ceilings, noisy radiators and a central wood stairway repeatedly described as "quaint"—all still in use in 1978.

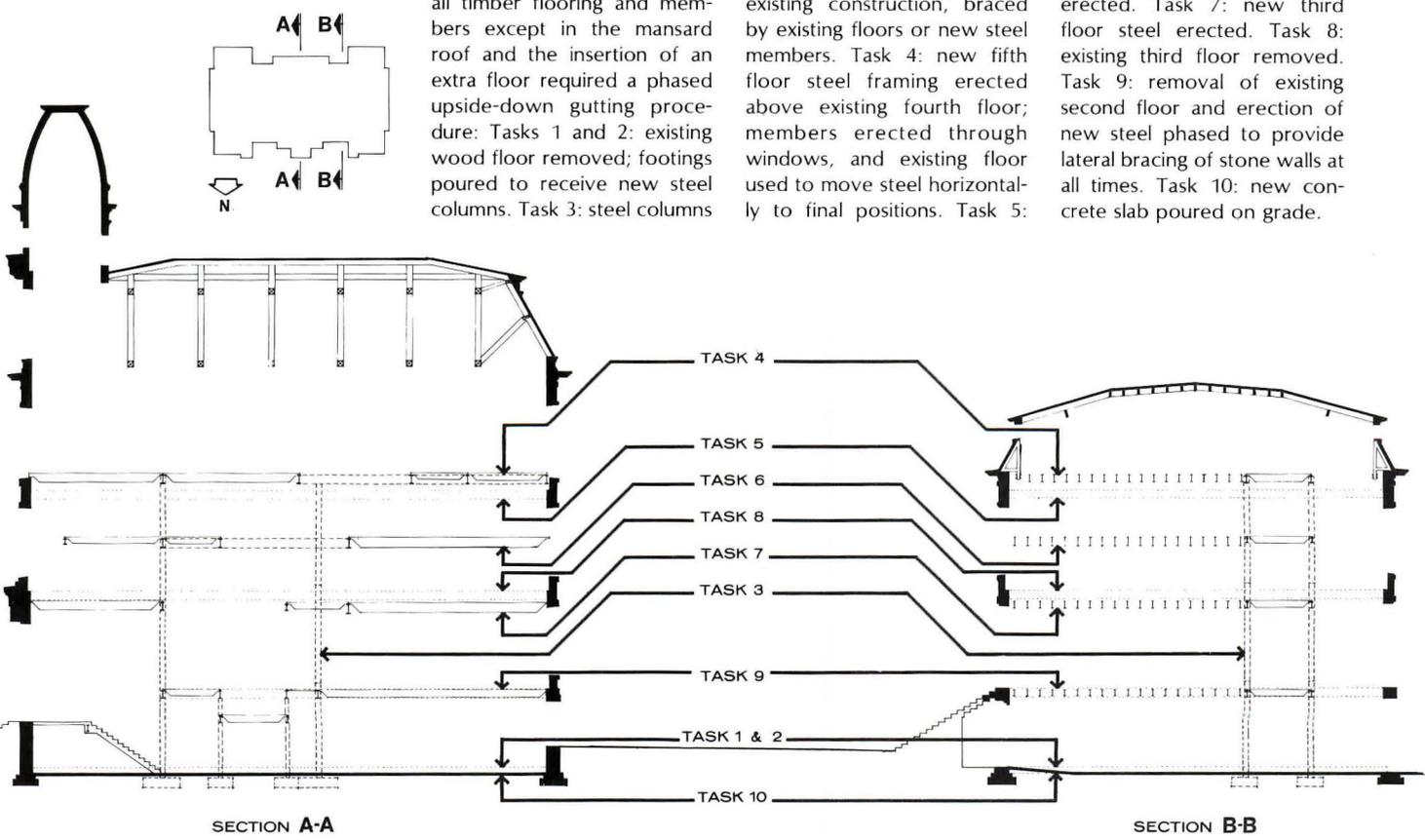
The new central stairway sweeps upward through a sloping, five-story atrium. A visitor first opening the Victorian front doors sees a totally unexpected ascent of receding gray and white plaster railings, graduating

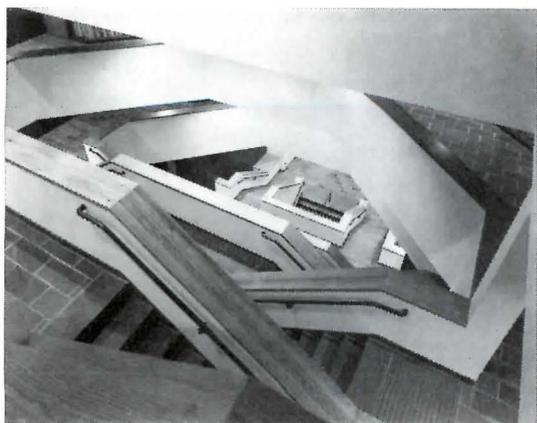
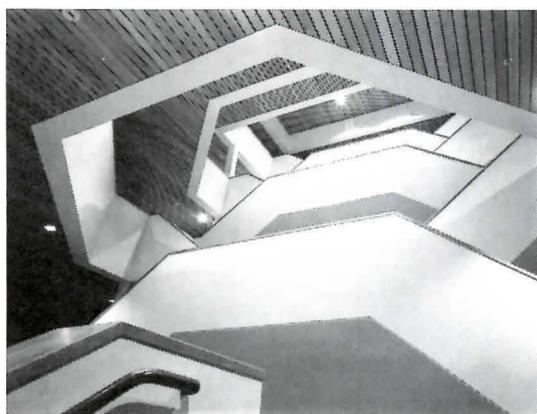


At Syracuse University's Hall of Languages, the replacement of all timber flooring and members except in the mansard roof and the insertion of an extra floor required a phased upside-down gutting procedure: Tasks 1 and 2: existing wood floor removed; footings poured to receive new steel columns. Task 3: steel columns

erected through existing wood floors; columns spliced above existing construction, braced by existing floors or new steel members. Task 4: new fifth floor steel framing erected above existing fourth floor; members erected through windows, and existing floor used to move steel horizontally to final positions. Task 5:

existing fourth floor removed. Task 6: new fourth floor steel erected. Task 7: new third floor steel erected. Task 8: existing third floor removed. Task 9: removal of existing second floor and erection of new steel phased to provide lateral bracing of stone walls at all times. Task 10: new concrete slab poured on grade.





from pale to paler to exaggerate the atrium's apparent height. The first-time user easily comprehends the circulation pattern, however, and despite the geometric monumentality, the scale of the spaces is in fact quite comfortable, almost domestic. The wide corridors around the stairway, paved with bluestone, answer the school's request for generous milling space for students.

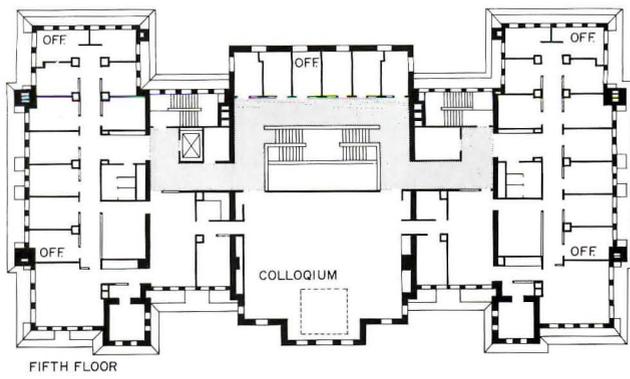
The plan places the bulk of heavy student traffic on the lower two floors, although some seminar spaces are located on upper floors. Faculty members have their offices on the top two floors, while the Dean of the College of Arts and Sciences has a suite of offices on the third floor.

To say that the Hall of Languages was gutted would be to understate the case seriously. In order to insert five concrete floors where there had been four of wood, and to accommodate 76 faculty offices and as many as 2,300 students at class time (4,600 between classes), the old floors had to be removed and the old timber columns and most of the interior brick bearing walls replaced with steel. At the same time, the exterior stone walls could not even temporarily bear the weight of the heavy timbered mansard roof and cupolas unassisted by lateral support from the floor joists (reconstruct-

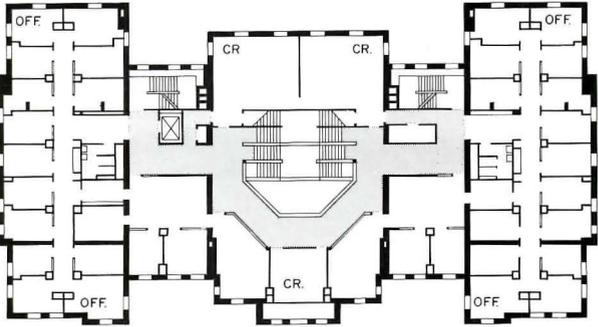
ing the roof with steel was economically impossible). And because the old fourth floor bore the brunt of the roof load on studs, it was, paradoxically, most practical to phase construction from top to bottom, transferring the roof load to the new steel columns via two 12-inch steel channels lag bolted to the wood studs; excess length of stud was snipped off below the new fifth floor when it was complete. The old fourth floor, 4 feet below the new fifth floor, served as a construction platform. (For a graphic description, see preceding page.)

The project was completed within the allotted 15 months—that is, the one school year the faculty felt it could spare the space—and within the \$4-million budget, barring a \$28 cost overrun.

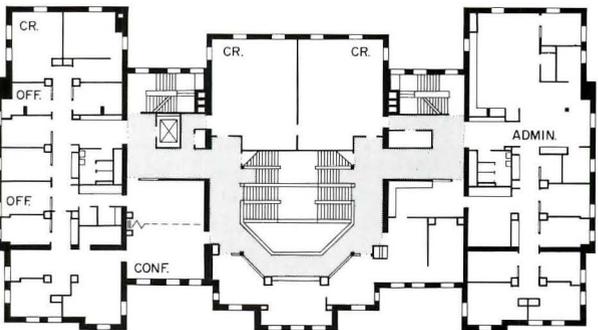
HALL OF LANGUAGES, Syracuse University, Syracuse, New York. Architects: *Sargent-Webster-Crenshaw & Folley in association with Architectural Resources Cambridge Inc.*—Arthur C. Friedel, Jr., AIA, partner-in-charge, *Sargent-Webster-Crenshaw & Folley*; Colin L. Smith, AIA, *Architectural Resources of Cambridge Inc.* Engineers: *Sargent-Webster-Crenshaw & Folley* (structural, soils, mechanical/electrical). Landscape architects: *Carol R. Johnson and Associates*. Construction manager: *J. D. Taylor Construction Corporation*.



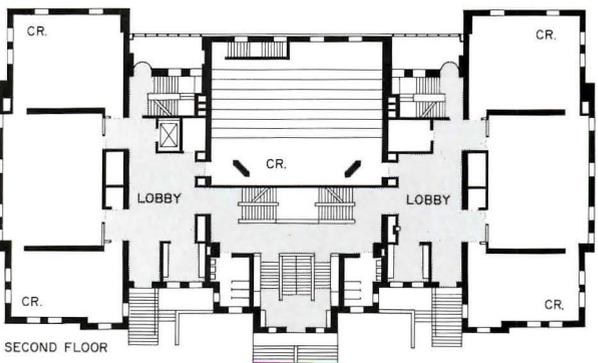
FIFTH FLOOR



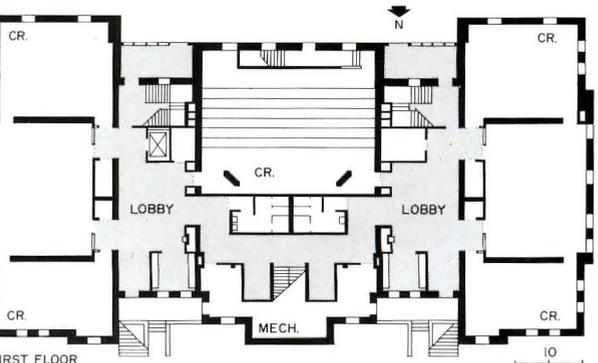
FOURTH FLOOR



THIRD FLOOR



SECOND FLOOR



FIRST FLOOR

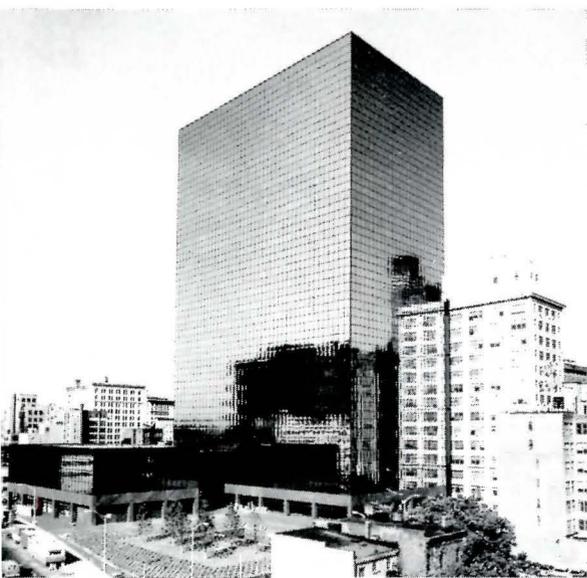


The stairway at the Hall of Languages, cutting a swath through a series of setbacks, offers climbers a choice of easy flights in two directions at each landing. On the fifth floor, the procession culminates at the Colloquium, a large room for scholarly lectures set below and daylighted by the hall's central tower, which commands a long view of Syracuse through its three arched windows and down

the axial street that leads to the front door. Butt glazing between the Colloquium and the stairwell provides auditory protection. Departmental offices—English, Fine Arts, Religion, Philosophy and the Honors Program—occupy the fourth and fifth floors, while the Dean's office and student advisers for the College of Arts and Sciences occupy the third, symbolically accessible to both faculty and students.

Where does the energy really go?

Because no one knows for sure, DOE funded a million-dollar study in this building to find out



The 26-story Park Plaza building in downtown Newark, New Jersey, headquarters for Public Service Electric & Gas Company, is the site of a pioneering investigation into energy usage. The number of sensors in the hvac system has been increased by 75 per cent so that energy consumption of chillers and heating equipment can be measured separately. With this energy data, DOE hopes to determine how effective design standards, operational practices, and system-design premises can be producing energy savings. Tishman Research, manager of this project, separately is conducting experiments on lighting control, in collaboration with the utility and lighting-control manufacturers.

Fuel and electric bills tell owners how much energy their buildings have used over the billing periods—but they don't give the really useful information on *which systems* have used how much energy. In the past, energy costs simply have not been high enough to justify the additional capital costs of measuring and metering for this kind of detailed data. Because there is no data, engineers and building operators are limited in their ability to optimize the running of the individual mechanical and electrical systems in a building, to tell how efficiently they are being run, and to determine the potential for further energy savings. This situation also has made difficult the development of energy standards and hindered the refinement of computer programs for predicting energy consumption of buildings.

A change for the better is the award by the Department of Energy of a \$950,000 grant to a team headed by Tishman Research Corporation of New York City to study energy consumed by systems and subsystems in the new 26-story Park Plaza building in Newark, New Jersey, owned by Rockefeller Center, Inc., and serving as the headquarters of Public Service Electric Gas Company of New Jersey. Other members of the project team include: Jaros, Baum & Bolles, the building's mechanical and electrical engineers; Swanke Hayden Connell and Partners, the architects; PSE&G Research Corporation; New Jersey Energy Research Institute; and Johnson Controls, Inc. In addition, the New Jersey Institute of Technology and Stevens Institute will utilize the building as a teaching laboratory.

The purpose of the study, which will be

conducted over eight seasons, is "to determine whether design standards, operational practices, and the premises upon which design decisions and regulation have been or will be based are effective in producing energy savings." For the first time, reports Joseph H. Newman, president of Tishman Research, a large, privately owned office building has been equipped with sufficient sensors to measure how energy is actually consumed.

One-third of the research grant (\$300,000) paid for the 150 extra sensors required, and for the 70 ammeters on motors, fans and lighting and for the Watt-hour meters on the chillers. Altogether there are 350 sensors in the hvac system, counting the 200 that would have been used anyway for hvac control. The sensors measure flow rates and temperature differences on both hydronic and air systems, indicating how much energy is being consumed at any given time. The building automation system samples the sensors' output continuously. Selected data is recorded hourly, except during start-up, shut-down, and lunch hours, when it is recorded every 10 minutes. Johnson Controls will transfer the magnetic tapes with this information to an off-line computer to perform computations turning raw data into useful information on energy consumption and organizing the data in useful formats.

The Department of Energy and the research team, headed by Oscar D. Turner, AIA, vice president of Tishman Research, have a number of goals in mind in collecting this energy-use data: 1) to validate (or perhaps indicate needed modifications to) the DOE-2 computerized energy-analysis pro-

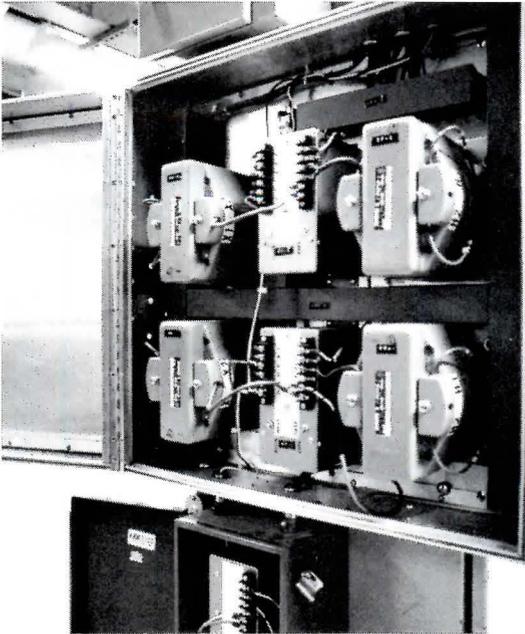
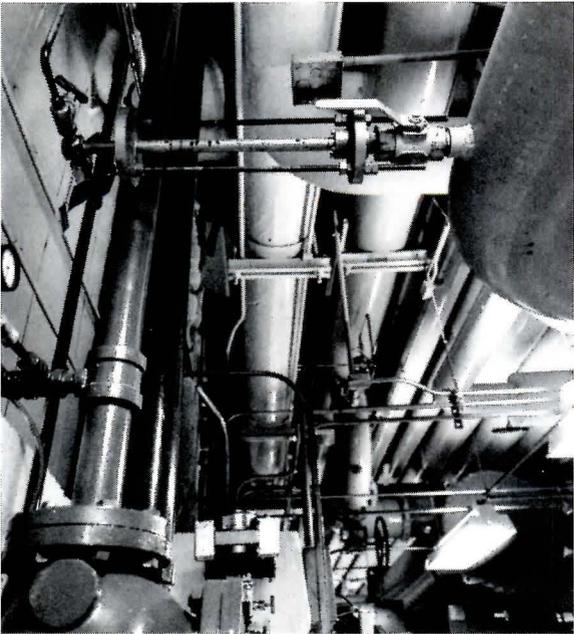
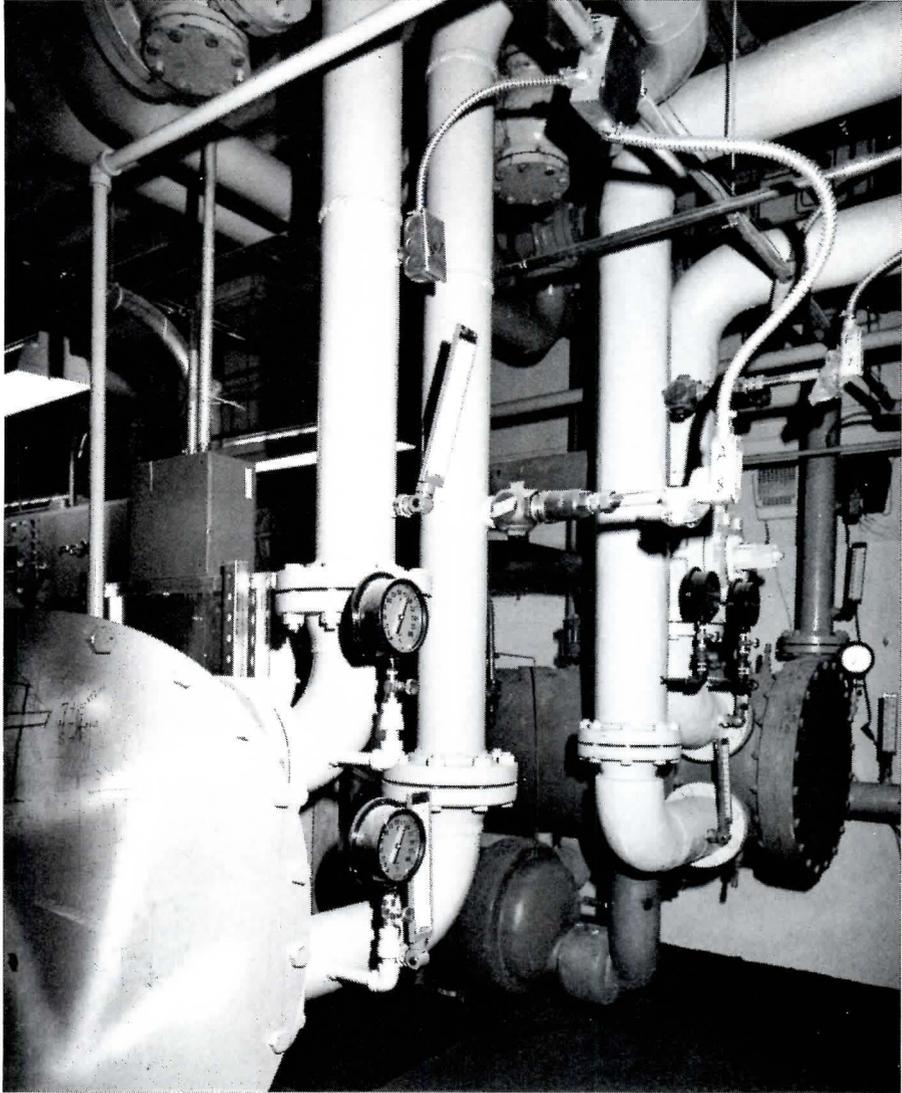


gram (by comparing actual energy use with computerized simulations) which DOE has specified as the method for determining compliance with the proposed BEPS; 2) to compare projected energy consumption of the building designed in accordance with ASHRAE Standard 90 with actual energy consumption; 3) to evaluate the effectiveness of computer-based management systems in reducing energy consumption; 4) to study the impact of infiltration and ventilation.

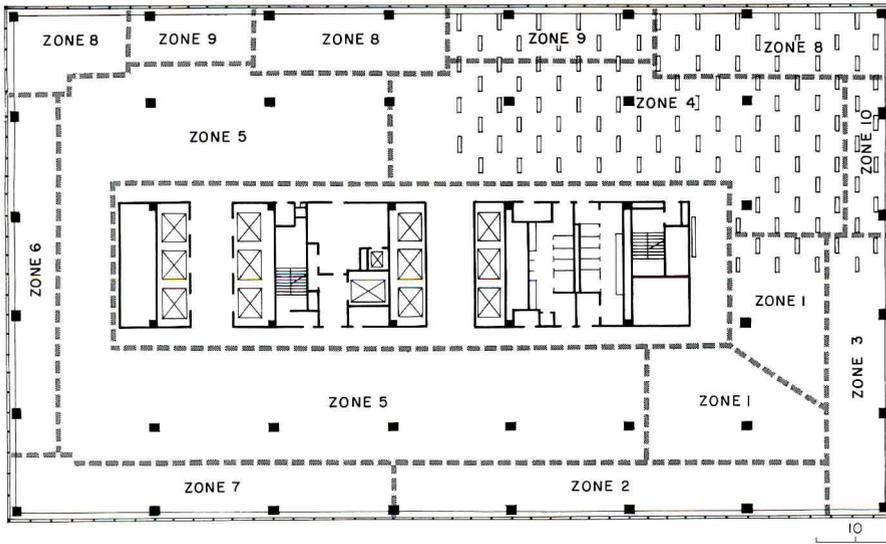
Lighting energy is being monitored for the entire building. The standard office-floor lighting is high-performance, two-lamp parabolic fixtures (lamp-over-lamp) in a staggered pattern, 5 ft apart in the lamp direction and 10 ft apart crosswise. Standard building switching, by building quadrant, provides for turning off one-third of the fixtures, or two-thirds, at one time.

Lighting studies in the building go much beyond this, however. In one of the most comprehensive investigations to date, Tishman Research and PSE&G, separately from DOE and in cooperation with lighting control manufacturers, have devoted the 16th floor of the building to one vast light control experiment. As it turns out, the experiment may be as valuable for its social implications as for its technical findings, says Tyrone Pike, project executive with Tishman Research. At the present time, the investigators have found, occupants favor those systems they themselves control, and/or that work specifically for their individual offices.

The lighting control systems include dimming systems that adjust light output of lamps in relation to availability of daylight; occupan-



Flow rate of chilled water is measured by two different types of devices in the machine room: a pressure-differential sensing device (center in photo far left) and by small turbine meters (center in photo above) installed in piping circuits. Four Watt-hour meters (left) measure the power used by two 1,250-ton chillers and by two 210-ton heat pumps that retrieve heat from the computer facility.

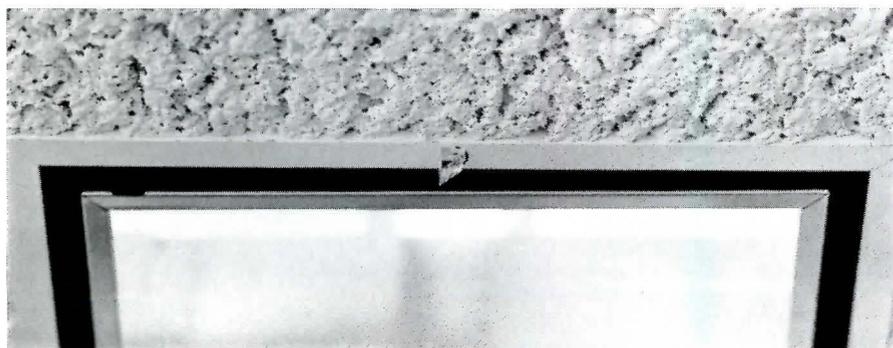
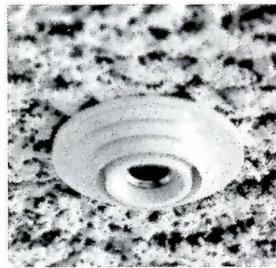


Lighting experiments on the 16th floor involve 10 different control zones. Zone 1 has dimming capability for lumen maintenance—as lamps age and dirt increases, lamp input is increased. Zones 2 and 3 have central dimming in response to daylight availability. Zones 4 and 5 are the base building system. Zone 6 (and Zone 9) will have high-frequency ballasts

and a controller responding to a ceiling-mounted photocell. Zone 7 has an on/off lighting controller which, in response to a ceiling-mounted photocell, turns off rows of fixtures as daylight increases. Zone 8 has an infrared detector (see below) that turns lights on when it senses body heat. Zone 10 uses fiber-optics and photocells for dimming.



Three different light-control systems, initiated by two different media, are shown at left. The top photo shows a ceiling-mounted photocell for sensing room illumination that sends a signal to a central controller (three of these are at top of photo, right). The research team taped a baffle in front of the photocell because stray light from Venetian blinds caused excessive dimming—suggesting the need for a differently configured element. The small photo is of a ceiling-mounted infrared detector that senses body heat and activates a relay that switches on the lights. The third device, at bottom, is a light-collector prism at the end of a luminaire, facing the windows; the prism is connected to a fiber-optics cable conducting light to a photocell within the housing of a magnetic-core ballast. A still-different, fourth system turns lights on and off in response to a preprogrammed building-users' schedule. The master controller can be seen next to the meters.



cy control systems that turn office lights off when people are not there, or that switch lights in accordance with the building-use schedule; and an on-off controller that turns fixtures off and on in a zone with respect to daylight availability.

The dimming systems are of three different types: 1) conventionally-ballasted lamps with power reduction produced by remote lighting controllers, 2) high-frequency ballasts with a single dimming controller per zone, 3) solid-state control for conventional ballasts with a fiber-optics daylight sensing device providing input to a photocell. These controls will be evaluated on the following bases: 1) energy performance, 2) cost effectiveness, 3) ease of installation and adjustment of the control, and 4) user response to and acceptance of the control systems.

(In a somewhat similar experiment in the offices of The Ehrenkrantz Group in New York City, three types of dimming systems are being tested—two systems responding to task brightness, and the other to daylight. Sensors on interior walls measure window brightness to indicate position of Venetian blinds and, hence, relative amount of daylight being admitted as a reference value in the experiment.)

Two types of occupancy control are provided, completely different in concept and function. The first is a ceiling-mounted infrared detector that senses a change in infrared energy produced by body heat. The device detects a person walking into a private office and actuates a low-voltage relay that turns on the lights. An eight-minute delay is built into the circuit so that one can walk in



and out of his office without lights flickering. The other occupancy control system is more properly termed a scheduling controller, which is an advanced microprocessor scheduling device that allows building lighting to be turned on and off according to building-use profiles. Energy is saved by lighting offices only when scheduled for occupancy.

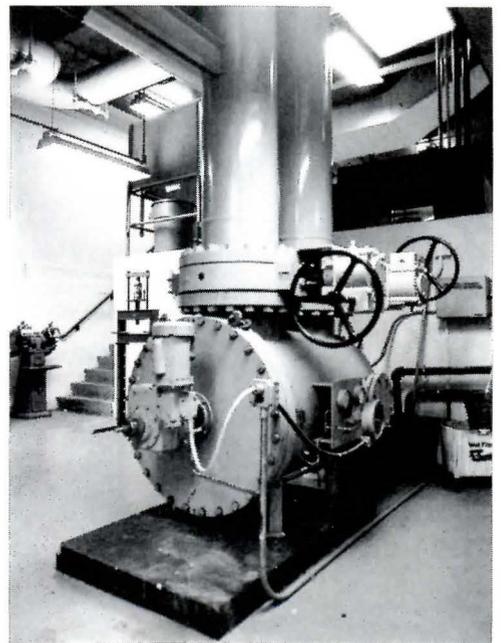
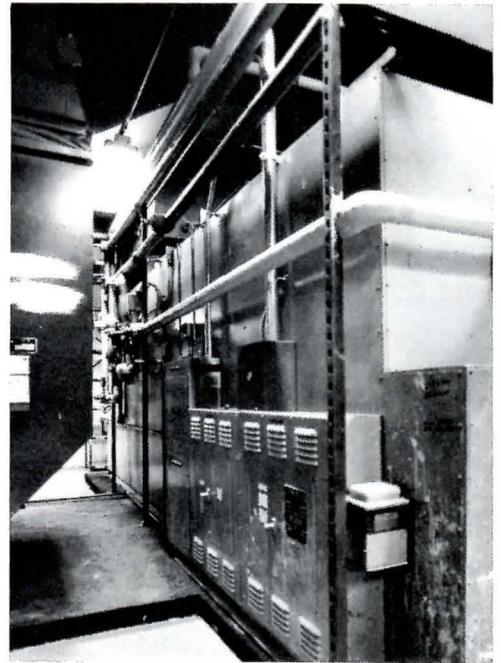
One part of DOE's contract with the research team calls for the engineers to use DOE-2 computer analysis program to evaluate the impact of ASHRAE 90-75, ASHRAE 90-80 and the BEPS. Two sets of computer runs will be made—the first based upon BEPS stipulations for building operation schedules, occupancy and weather data, and the second based upon actual operating schedules and occupancy of the Park Plaza building. The engineers also will make a comparison of predicted energy consumption made by manual methods with a DOE-2 analysis of the building as designed.

While the architects/engineers designed the building in accordance with ASHRAE 90-75, certain systems and subsystems such as the lighting and heat recovery substantially exceed these minimums. The engineers' manual calculations indicated an energy consumption on the order of 60,000 Btu per sq ft per year. The all-glass exterior has 50 per cent window area and 50 per cent insulated-spandrel area, yielding an average U-value of 0.31. The gray insulating glass of the windows has a silver reflective coating on surface 1, providing 20 per cent light transmission and 22 per cent total solar transmission.

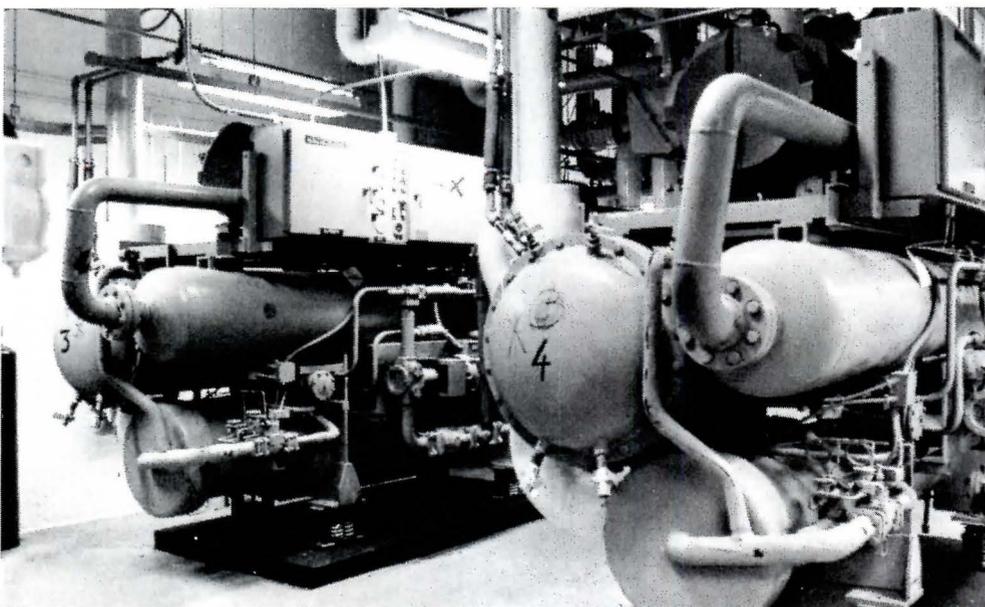
The hvac system comprises a variable-air-volume system for the interior and a four-

pipe fan-coil system for the perimeter. Because PSG&E, the third largest privately owned utility, has a large computer in the building, the engineers anticipate that the computer's heat and that of the lights (1.85 Watts per sq ft) will heat the building down to 20F outdoor temperature. Two 210-ton screw-compressor heat pumps will retrieve the computer-room heat for use at the building perimeter. "Free" cooling for the fan-coil system is obtained when outdoor air psychometrics are favorable by using cooling-tower waters directly in the cooling coils instead of refrigerated water. Engineers know this system as the "strainer cycle" because the cooling tower water flows through a vessel with multiple corrugated plates to remove impurities. Domestic hot water is preheated by the warm condenser water of the two 1,250-ton refrigeration machines before it is pumped to the cooling tower.

The building's automation system, which manages the hvac system as well as provides security and fire-control functions, is designed to optimize energy use and power cost through the following functions: 1) dynamic system start-up and shut-down controlled by outdoor and indoor conditions; 2) utilization of outdoor air for free cooling when it is sufficiently cool and dry; 3) optimized adjustment of supply-air temperature related to actual needs; 4) adjustment of chilled-water temperature, condenser-water temperature, and refrigeration-plant performance for lowest energy consumption; 5) cycling and load-shedding of refrigeration machines, hot-water generators, and fan systems to reduce electrical demand.



With favorable outdoor air conditions, cooling-tower water is used directly for space cooling; but it is first cleaned by a strainer (top). Electric demand of the building is less through use of off-peak power to heat domestic hot water (above). Two 210-ton screw compressors serve as heat pumps to cool the computer room and recoup the heat for winter use (left).





COMPUTER PRODUCTS / A 32-page catalog covers over 700 word processing and mini-computer system products. Both national brands and *Quill* supplies are featured; items include printwheels, magnetic cards and disks, cassettes, paper, CRT stands and desks, etc. ■ *Quill Corp.*, Northbrook, Ill.

circle 400 on inquiry card



LANDSCAPE IRRIGATION / The *Harvard* line of sprinkler/irrigation valves, controls and accessories is described in an eight-page color brochure. Featured products include "Automatic" controllers in three-, six-, and 12-station dual program models; battery-operated, mechanically-timed hydraulic and manual valves. ■ *The American Granby Co.*, Liverpool, N.Y.

circle 401 on inquiry card



INDUSTRIAL GRATING / All *Borden* grating products are shown in a 32-page catalog. Metal, aluminum and fiberglass gratings, stair treads and architectural grillwork are illustrated; structural details, load tables, engineering and installation data are given for all products. ■ *Borden Metal Products Co.*, Elizabeth, N.J.

circle 402 on inquiry card



METAL FRAMING / The *Unistrut* system, based on a continuous slotted channel frame designed to receive a special nut and bolt, offers rigid metal construction without drilling or welding. Various in-plant applications, such as racks, mezzanines, equipment supports, OEM, partitions, etc., are described in a 32-page design booklet. All *Unistrut* and *Tele-spar* tubing hardware items, fittings and accessories are illustrated. ■ *Unistrut Corp.*, Wayne, Mich.

circle 403 on inquiry card



HAND-CARVED SIGNS / A color brochure illustrates several distinctive hand-carved wood signs from this company. Specializing in custom signage and art work for interior and exterior use, the firm works with the architect and client to create original graphics for corporations, hospitals, restaurants and all types of shops. ■ *My Vermont*, Chester Depot, Vt.

circle 404 on inquiry card



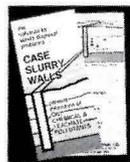
CONTRACT CARPETING / Written for architects, designers, and specifiers, a 24-page booklet on *Mohawk* carpets contains photographs and close-up illustrations of representative colors on 16 running line grades of woven and tufted carpeting. A quick-reference chart lists specifications. ■ *Mohawk Carpet*, Amsterdam, N.Y.

circle 405 on inquiry card



URETHANE INSULATION / Catalog on fiberglass-faced tapered urethane roof insulation gives the C factors and R values for the product, lists the industrial and governmental approvals it has received, and provides diagrams and text explaining how to install tapered urethane so that ponds do not form on flat roofs. Available sizes, thicknesses and slopes are listed. ■ *NRG Barriers Inc.*, Sanford, Maine.

circle 406 on inquiry card



SLURRY WALL CONSTRUCTION / A four-page brochure explains the use of the slurry wall, especially in pollution control. Typical applications, such as how to stop waste migration and prevent landfill seepage, are illustrated. Various slurry wall techniques are discussed, and construction services for the installation of slurry walls and caisson foundations are outlined. ■ *Cast International Co.*, Roselle, Ill.

circle 407 on inquiry card



GRAPHITE SEALS / *Grafoil* is an all-graphite material used in place of asbestos in corrosive and high temperature applications such as valve stems, pump shafts and flanges. A product brochure describes various types of *Grafoil* seals: die molded ring sets; ribbon pack for custom-formed rings; pre-cut gaskets; sheet; and self-adhesive tape. *Grafoil* is naturally self-sealing and leak tight at all temperatures. ■ *Chemplast Inc.*, Wayne, N.J.

circle 408 on inquiry card



FLOORING PRODUCTS / A color brochure describes four different floors for commercial, institutional and residential applications. These include *PermaGrain*, an acrylic-impregnated hardwood; *GenuWood*, a vinyl-bonded hardwood; *Cork-O-Plast*, a vinyl-bonded cork; and *Long-strip*, a three-ply laminated hardwood. ■ *PermaGrain Products, Inc.*, Media, Pa.

circle 409 on inquiry card



LIGHTING SYSTEM DESIGN / An illustrated brochure explains *Wide-Lite's* "Illumination Investment Analyses," remote-terminal access to a central computer facility, "small" programs for HP-65 and HP-67 hand-held calculators, and other lighting design services available to professionals from the company's application engineering group. All performance and owning/operating criteria. ■ *Wide-Lite Corp.*, San Marcos, Texas

circle 410 on inquiry card



SLIDING DOORS/WINDOWS / A 16-page catalog covers *Arcadia* aluminum sliding doors and windows for commercial, institutional and residential applications. New products include the "series 750 Aspen" thermally controlled sliding door, designed for energy conservation. ■ *Northrop Architectural Systems*, City of Industry, Calif.

circle 411 on inquiry card



LABORATORY FURNITURE / "System 55" modular components are presented in a 44-page catalog. The steel frame supports casework, shelving and overcounter cabinets independent of the floor; components can be easily installed or relocated. A full line of bench sizes, counter top materials, casework styles and colors, seating, plumbing fixtures, electrical outlets, fume hoods and other laboratory equipment work with "System 55." ■ *Forma Scientific*, Marietta, Ohio.

circle 412 on inquiry card



VERTICAL CONVEYORS / Used for transport of mail and supplies in multi-floor buildings, selective vertical conveyors are described in a four-page bulletin. These systems move continuously at about 70 ft per minute, while automatically loading and delivering trays to operator-selected destinations. ■ *Lamson Co.*, Syracuse, N.Y.

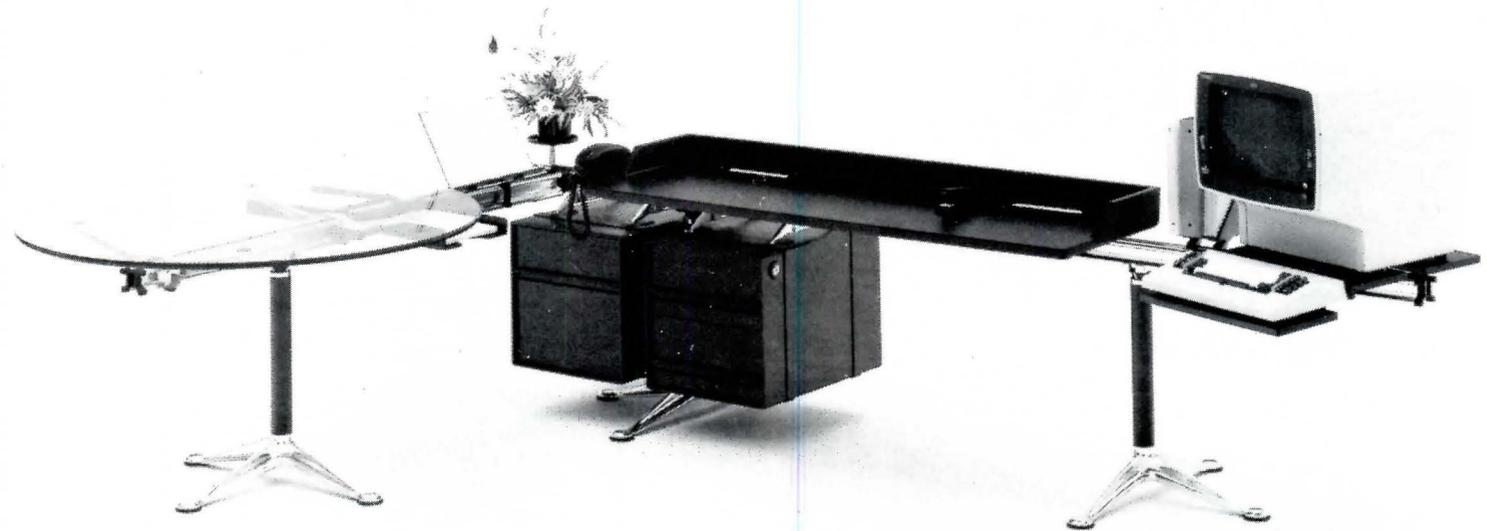
circle 413 on inquiry card



SOUND-ABSORBING WALLS / Decorative facings in 100 patterns and 1,700 colors are described in a catalog on *Vicracoustic* sound-absorbing wall systems. ■ *L. E. Carpenter & Co.*, Wharton, N.J.

circle 414 on inquiry card

For more information, circle item numbers on Reader Service Inquiry Card, pages 157-158



Executive desk designed as workbench with movable surfaces cantilevered from base

The most recent introduction in office furniture design for Herman-Miller, Inc., is the Burdick Group (by San Franciscan Bruce Burdick)—a high-tech workbench, with versatile units to allow user flexibility.

The desk's exposed frame is of polished aluminum beams in three lengths: 10, 7 and 5½ feet. The latter two lengths have options of L-shape connectors making L-, T-, and U-

shape configurations possible, for primary and secondary work "zones" (these variations are shown in photos). Supporting brackets for work surfaces can be located any place along the beam.

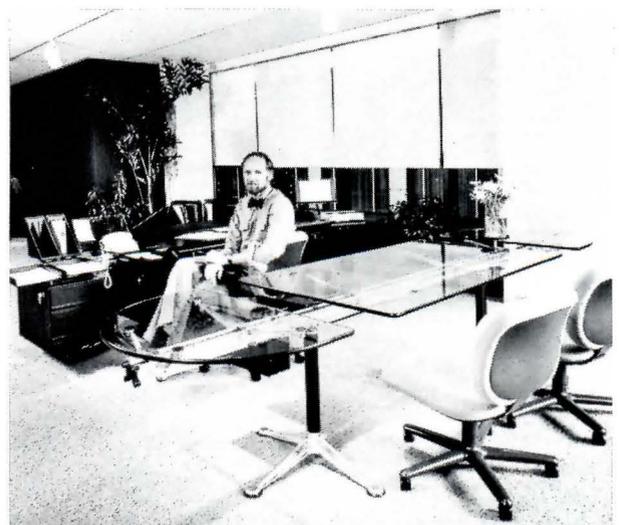
An assemblage of table tops are cantilevered either above, below or to the side of the beams. Surfaces include those for CRT terminals or computers, dictating ma-

chines, telephone, microfiche viewers, reading stands, microscopes, books, files and paper-handling devices. These surfaces are available in wood, marble, glass or black laminate, in three shapes (rectangular, round and half-round), with some swivel tops. Electronic integration is simply handled by enclosing wires along the beam and legs.

Burdick polled a number

of executives and professionals to find out their ideal desk needs, which generally revealed the need for expansive work tops in different configurations around the individual. Combining these ideas of flexibility led to the present beam and joist system. ■ Herman-Miller, Inc., Grand Rapids, Mich.

circle 300 on inquiry card more products on page 119



More finished plumbing per plumber's hour.

Prevent costly excess labor charges... with pre-assembled Bradpack Wash Centers.

Everything... including light, towel and soap dispensers, mirror, faucet and other features... comes in a one-piece modular unit ready for hook-up. Just set in place and connect to water and electricity. No complicated plumbing, wiring or field assembly. No wasted time.

Bradpack Wash Centers also save space. Most units project only 11-3/4" into the room. And barrier-free models allow easy accessibility to everyone without requiring special washroom design.

To save on maintenance, Bradpacks are made of stainless steel. All exposed fittings are heavily-plated chrome on brass. And the Pos-I-Pak and Bradtrol valve cartridges carry the famous Bradley 83-1/3 year guarantee.

To get more finished plumbing out of your budget, find out more about Bradpack Wash Centers from Bradley. Look for our catalog in Sweet's File Sections 10.16/Br. and 15.7/Br. Or contact either your Bradley representative or Bradley Corporation, 9101 Fountain

Bld., Menomonee Falls, WI 53051,
(414) 251-6000. TELEX 26-751.

Circle 43 on inquiry card



 **BRADLEY SAVES SPACE,
TIME AND MONEY.**



SPLASH ZONE COATING / Available in paint or patching gel consistencies, *Aquata Pox* Splash Zone coating provides waterproofing and corrosion protection on wet or underwater surfaces such as bridge support pillars. It can be applied on wet or underwater surfaces with a brush roller or trowel, and is recommended for salt water applications where rising and falling tides alternately expose surfaces. ■ American Chemical Corp., Palo Alto, Calif.

circle 301 on inquiry card



MOBILE LOUNGE SEATING / Ball casters add mobility to the "Eleanora" upholstered chair for conversation areas in contract and residential installations. Its 17¼-in. seat height makes the chair particularly suitable for use with continental height (26-in.) or dining tables, or in cocktail lounge applications. Built on a steel frame with molded urethane foam cushioning, the "Eleanora" chair may be covered with leather, vinyl, fabric or COM. ■ Stendig, Inc., New York City.

circle 302 on inquiry card

VINYL WALLCOVERING / One of six recent additions to this manufacturer's wallcovering line, "Karachi" comes in six colorways: beige, coral, dark brown, yellow, wine and blue/gray. The contemporary design is also available in coordinated fabric. Printed on vinyl, "Karachi" is 27-in. wide with a two-in. repeat. ■ Lee/Jofa, New York City.

circle 303 on inquiry card

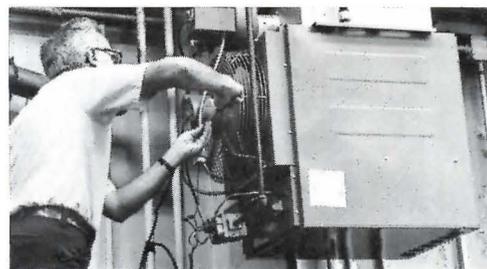
FLOOR UNDERLAYMENT / Engineered for sound control, *Acousti-Flor* is a two-part compound said to substantially muffle floor impact noise and reduce sound transmission through hard floor surfaces such as ceramic tile, hardwood parquet and decorative floor coverings. The underlayment is troweled on as shown; *Acousti-Flor* is packaged in factory-proportioned units sufficient to sound insulate about 140 sq ft of floor area each. ■ Laticrete International, Inc., Bethany, Conn.

circle 304 on inquiry card



LOUNGE SYSTEM / Chairs, sofa, corner units, even the tables are upholstered in this flexible lounge group. Seating pieces are 30-in. high, and are matched by 15-in.-high lamp, lunch and cocktail tables. ■ Design Institute America, New York City.

circle 305 on inquiry card



GAS-FIRED HEATER / A fuel-efficient unit space heater for industrial and commercial buildings, the "Venturion" is designed for horizontal power venting instead of conventional gravity venting. Its sealed flue also reduces the loss of heated room air during "on" and "off" cycles, allowing the unit to maintain desired comfort levels in shorter operating times. The smaller, horizontal vent is less costly to install. ■ ITT Reznor, Mercer, Pa.

*circle 306 on inquiry card
more products on page 121*

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for Creative Concrete Construction



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MEDUSA WHITE PORTLAND CEMENT—lends itself to unlimited architectural creativity in color, form and texture. Write for colorful, informative brochure.

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Circle 44 on inquiry card



The New Otis Elevonic 101. Faster, more reliable... and 30% more energy efficient.

The Elevonic 101 system provides a more efficient, reliable and comfortable elevator ride... while it reduces your energy costs by as much as 30 percent.

With microcomputers controlling all elevator functions, the system operates with unmatched precision, and the passenger rides with unmatched convenience. Car hoistway position is measured and electronically maintained to within 1/32." And average waiting time is trimmed by as much as one-third compared with our best previous equipment.

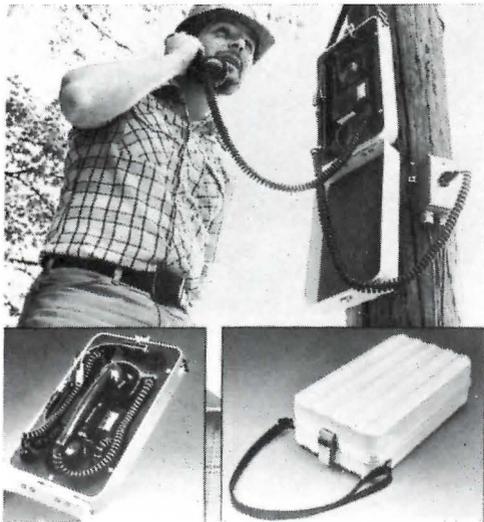
Meanwhile, a Silicon-Controlled Rectifier (SCR)

System, used to convert AC to DC to drive the hoisting machine, consumes up to 30 percent less energy than a conventional motor-generator set.

The Elevonic 101 can also promise you reduced installation time and lower maintenance costs. For all the details, call or write your nearby Otis representative.

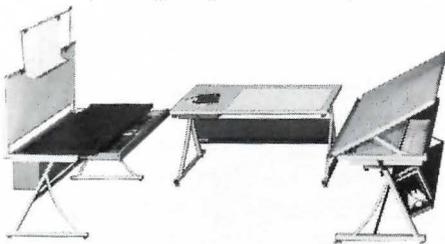
Elevonics is the science of moving people and products through the use of advanced elevator and microelectronic technology.





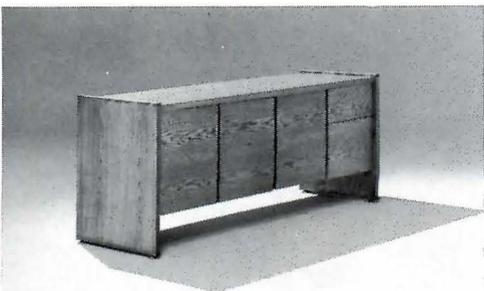
FIELD TELEPHONE / The Wheeler "Model SPS-300" sound-powered telephone unit provides for temporary or permanent communication on construction sites, in industrial areas, etc. Equipped with an extra-loud signal device, the unit can be plugged into any standard two-conductor, 1/4-inch phone jack, or it may be attached to terminals or any type of pair wires using the alligator clip adaptor provided. The durable plastic case has an adjustable carrying strap, which also permits the telephone to be hung when in use, as shown. ■ Sound Powered Communications Corp., Trenton, N.J.

circle 307 on inquiry card



DRAFTING FURNITURE / All "Planmaster" tables and desks have optional accessories that permit personalization of the work station. Plan and tool drawers and bookcases may be specified with both the adjustable drafting table and the 30- by 60-in. reference table. The "Planmaster" desk offers a full width tool drawer, and a document and manual file under the locking top. ■ Plan Hold Corp., Irvine, Calif.

circle 308 on inquiry card



OFFICE FURNITURE / "900 Series" desks, credenzas and tables are designed with square end panels and top edges. Work surfaces are offered in genuine oak veneers or plastic laminate. Credenzas are available in three sizes, with a choice of four storage inserts. The four-unit credenza shown has three hinged door inserts and one box and file drawer section. ■ The Worden Co., Holland, Mich.

circle 309 on inquiry card

ADJUSTABLE SEAT / Designed for "people who work standing up but who would love to sit down," the *Stand-Aid* folding seat adjusts to nine positions, and supports the standing person in much the same way as the old-fashioned umbrella seat. It is said to be particularly suitable for those working in the kitchen, draftsmen, cashiers—anyone who has to stand for long periods. The *Stand-Aid* folds flat for storage and carrying, and comes in a range of colors. Retail price: \$125. ■ Sam Flax, New York City.



circle 310 on inquiry card



LOW TABLE / Designed by Antonio Citterio and Paolo Nava to work with the "Diesis" lounge series, this low table has a clear or frosted glass top set on a framework of cast metal alloy. Finish options include satin or black nickel and gray enamel; the shelf under the top is covered in red, black or natural leather. ■ B&B America, New York City.

circle 311 on inquiry card
more products on page 123



QUME, INC., Hawley & Peterson Architects.

KALWALL®

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

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See Sweet's 8.14/Ka, 7.8/KaL, 13.11a/Ka, 13.2c/Stu.

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a single-ply roof is only as good as the company that installs it



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We have enough confidence to warrant our roof for 10 full years. That warranty covers both workmanship and materials. Try to find another contractor who'll warrant both.

Why we use Sarnafil® single-ply material exclusively . . .

Years of evaluating numerous single-ply materials have convinced us that Sarnafil® is superior to all others.

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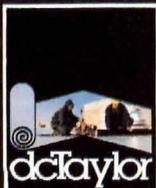
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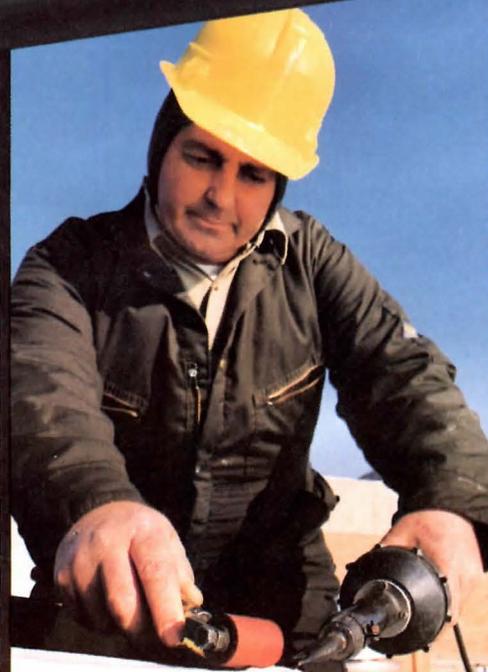
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ROOFING PRESERVATIVE / An emulsified blend of aromatic oils and additives, ecologically-clean *ECOLastic* is applied cold to existing built-up roof membranes. It is formulated to reimpregnate dried-out, brittle roofs and provide long-term weather-proofing protection. *ECOLastic* is compatible with both tar- and asphalt-based built-up roofs, restoring pliability and improving the self-healing characteristics of coal tar pitch. Asbestos and solvent-free with virtually no odor or phenol, *ECOLastic* has a UL Class A rating. ■ Tremco, Cleveland.

circle 312 on inquiry card



TRUSS DESIGN / Truss design drawings of any configuration can be instantly reproduced in the truss fabricators office using the "Zeta 1553" plotter, easily connected to most terminals. Design is based on the *AutoTruss* computerized engineering system. ■ Automated Building Components, Inc., Miami, Fla.

circle 316 on inquiry card



ELECTRONIC LOCKERS / These *BFC* storage lockers for factory, institution or office use are equipped with an electronically activated positive locking device and a three-digit combo lock. The lockers can be opened in groups for inspection from a single master control, or kept closed during certain hours. Door combination locks can be changed on site within 30 seconds; no handles or keys are used. Installation requires only basic electrical connections. Prices range from \$175 to \$275 per locker, depending on size and accessories. ■ Bernard Franklin Co., Philadelphia.

circle 317 on inquiry card
more products on page 125



DESK ACCESSORY / The white, black or chocolate brown memamine plastic surface of this rounded-corner desk nameplate can be engraved on two sides with name, title, company logo or other message. The sign measures 9- by 1 1/4-in. ■ Best Mfg. Co., Kansas City, Mo.

circle 313 on inquiry card



TELECONFERENCING SYSTEM / Add-on components make it possible to involve a very large conference room, or even an auditorium, in a two-way teleconference with several other locations. The basic unit, shown here, includes a telephone, a speaker, a voice-activated lapel microphone and two table-top microphones, all packaged in a carrying case. This portable system can be plugged into any standard phone outlet. For larger rooms and more participants, an optional microphone mixer package includes eight microphones. ■ Precision Components, Inc., Addison, Ill.

circle 314 on inquiry card

FLOOR FITTING / The *Tri-Power* flush floor fitting locates the electrical, telephone and signal service cables needed by every office work station in one convenient unit. The box is factory-installed above the in-the-floor cellular raceway system, and can perform in a four-in. concrete floor. A hinged polycarbonate cover opens without tools. ■ Mac-Fab Products, St. Louis.

circle 315 on inquiry card



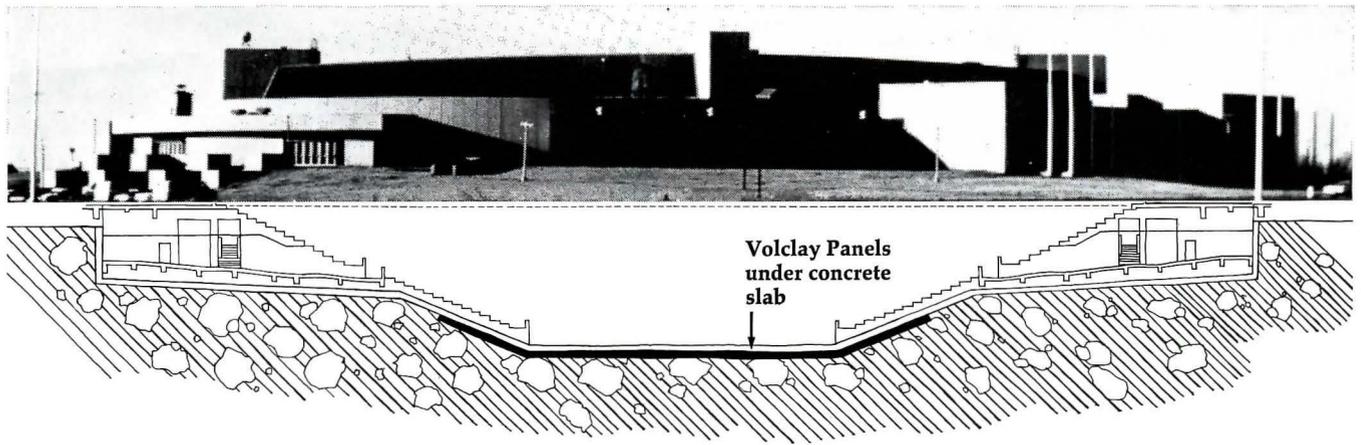
THIS IS AN EXIT DEVICE? THIS IS AN EXIT DEVICE!

Why have exit devices always been ugly, expensive, bulky, pipe-rack monstrosities? Darned if we know. We (Adams Rite Manufacturing Co.) believe that simplicity, not complexity, is the ultimate sophistication. We designed our exit device to complement the clean lines of narrow stile glass doors (and fit easily and securely into the same standard mortise cut-out as our M.S.[®] deadlock). We also designed it to release at a mere 8 lb. touch anywhere on the bar, which moves only one inch. This one inch is in the exit direction too, not the conventional but unnatural downward arc. Load the door up to the code-required 250 lbs. and release pressure still stays well under

50 bs. anywhere on the bar. Yes, it's an exit device. It's also an exciting device. Some architects have indicated they're specifying it even where exit devices are not required by law. It's simply the neatest way to open a door they've seen. Who are we to argue? For details of the 8400 mortise device (shown) and its twin, the 8500 concealed vertical rod for paired doors, write:

ADAMS RITE 
MANUFACTURING CO. CITY OF INDUSTRY CALIFORNIA 91749
TEL: (213) 699-0511

Circle 48 on inquiry card



"Without Volclay Panels, we might have built the first underwater gym floor."

—Mickey Landers, Former Project Superintendent
Rayco Construction Company, Oklahoma City, Oklahoma

The University of Oklahoma's Lloyd Noble Arena has a playing floor 4 feet below the permanent water table. A high security waterproofing system was mandatory, so Volclay Panels were specified.

"We were faced with a tricky problem to make sure the floor stayed dry," recalls Mickey Landers. "Any kind of a leak would easily lead to seepage, and water pressure could make it look more like a swimming pool than a gym.

"We hadn't used Volclay Panels, so we asked the factory rep to show us how to prepare the joints. Installation was comparatively easy. Best of all, there's been no seepage through the slab or the expansion joints in four years.

"In all my 35 years in the construction business, I've never seen a product like Volclay Panels. I'd recommend them to anyone."

Architect Max Lorenz of Binnicker & Associates, Oklahoma City, Oklahoma, specified Volclay Panels.

"There are other ways of meeting this problem, but they tend to be expensive," said Lorenz. "And even more important, none of them are as reliable as Volclay Panels. It's completely dependable."

How can the corrugated board in Volclay Panels keep out water?

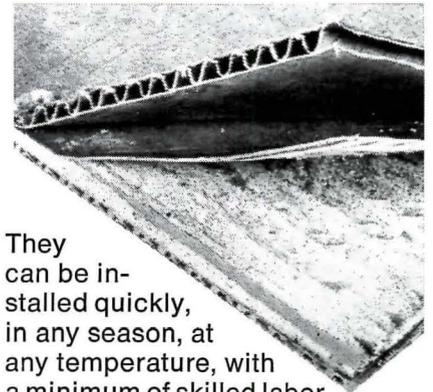
It can't.

What does the job is sodium bentonite, an aluminum silicate clay, *inside* the flutes. When they're wet, these tiny granules expand, forming a permanent, flexible gel. Whenever it's punctured, torn or cracked by structural setting or other strains, this gel literally "heals" itself. Long after the cardboard has disintegrated, this inert, natural layer of waterproofing shields walls and underslabs against ground water. At the Lloyd Noble Arena Volclay Panels have been working without failure for over four years.

Volclay Panels have been approved by the General Services Administration, the U.S. Army Corps of Engineers, and the department of Civil Engineering, University of Liverpool. These panels have also been proven in such demanding applications as building foundations in New Orleans and Miami Beach; 150-foot-deep mine crusher pits; and multimillion-dollar rapid transit tunnels.

Installation costs are low, maintenance is minimal.

Compared to conventional waterproofing systems, Volclay Panels save money.



They can be installed quickly, in any season, at any temperature, with a minimum of skilled labor. To find out more about this proven, economical waterproofing system, mail the coupon.

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- Please send more information (including case histories) on Volclay Panels.
 I have a tough waterproofing problem. Please have a consultant call, with no obligation on my part.

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Firm _____

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City _____

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Area Code _____ Phone _____

Listed in Sweet's Construction and Architectural Catalog.

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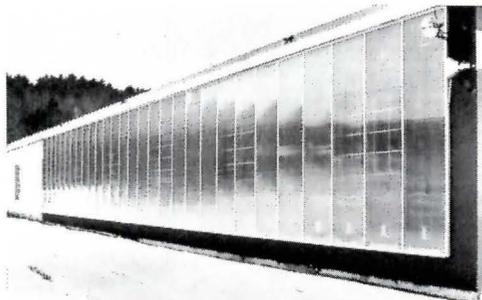
VOLCLAY PANELS
Bentonite Waterproofing Systems

Circle 49 on inquiry card



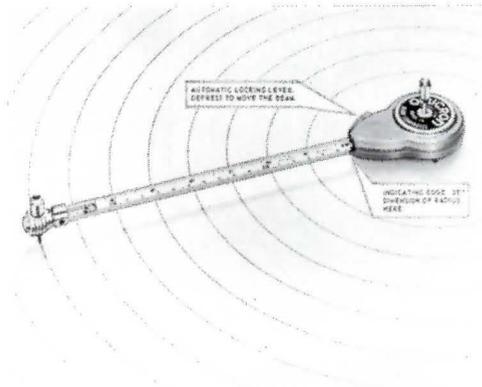
SELF-LUMINOUS SIGNS / Accepted by all major code groups, *Everglo* "Series 710" signs provide a variety of life safety indications such as "not an exit," "fire extinguisher" and "fire escape," in addition to the single word "exit" with arrows. These signs, in a range of sizes, colors and configurations, are self-illuminated by removable "T-Light Tubes," grouped to yield specific light distributions for each sign type. Always "on," the "T-Light Tubes" only need replacement every ten years. ■ Self-Powered Lighting, Inc., Elmsford, N.Y.

circle 318 on inquiry card



PASSIVE SOLAR WALLS / *Exolite* double-skinned acrylic sheet is shown here installed on a south-facing masonry wall, creating a passive solar Trombe wall said to cut building heating costs significantly. *Exolite* sheet is made with integral ribs forming air cells that provide insulation equivalent to insulating glass, and offers high light transmission, easy on-site fabrication, and a high strength-to-weight ratio. ■ CY/RO Industries, Bound Brook, N.J.

circle 319 on inquiry card

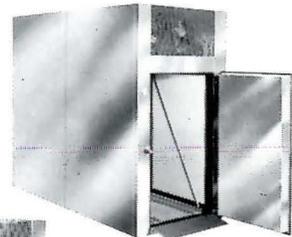


BEAM COMPASS / The *Hunter* compass uses a flexible steel tape, calibrated in both inch and metric dimensions. The beam retracts into its case, which has an automatic locking lever to hold the compass center in the location desired. The fully-extended beam can be used to rule or scribe accurate circles and arcs to 120-in. radius. The rule has scribes at both ends, for straight line lay-outs with parallel dimensions. Compass straight line lay-outs with parallel dimensions. Compass is priced at \$18.50. ■ Hunter Associates, Bridgewater, N.J.

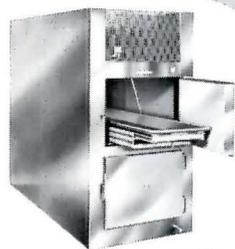
circle 320 on inquiry card

JEWETT

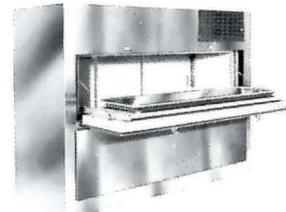
morgue autopsy EQUIPMENT



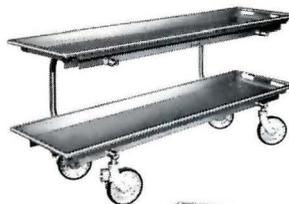
MODEL "1SPEC" ROLL-IN MORGUE



MODEL "2EC" END-OPENING MORGUE



MODEL "2SC" SIDE-OPENING MORGUE



MODEL "MC2" TWO BODY MORGUE CART



MODEL "DEM" AUTOPSY TABLE

JEWETT MORGUE/AUTOPSY PLANNING SERVICE

To make the most of this precisely built equipment, Jewett specialists provide expert design counseling. If you are planning new quarters, modernizing present facilities, or replacing equipment, Jewett will analyze your requirements with you and/or your architect and submit plans of the complete layout as well as detailed drawings and equipment specifications.

Jewett's morgue/autopsy planning services can save you time and costly mistakes. Your new construction or renovation will be right for your current needs and will also allow for future growth.

Your inquiries invited for our complete line of morgue equipment.



The Best of Both Worlds . . . Individual Craftsmanship combined with Modern Technology

refer to Sweet's Catalog 11.20/JE for quick reference

Circle 50 on inquiry card

60,000 sq. ft.





The elevators were running before the building was finished.

Delivered on time. Installed on time. Operating ahead of time. That's the story of the 22-elevator installation at Clinical Science Center of the University of Wisconsin-Madison, one of the most ambitious building projects ever in the state of Wisconsin.

The huge building complex on a 45-acre site houses four major components of the University of Wisconsin Center for Health Sciences—Hospital and Clinics, Medical School's Clinical Departments, School of Nursing and Wisconsin Clinical Cancer Center. On a typical day 6000 patients, staff, students and visitors use the building, and enjoy quiet, efficient inter-floor transit on Dover Elevators.

Dover wants to be on your team by providing on-time elevator installations. Dover Corporation, Elevator Division, Dept. 669, P.O. Box 2177, Memphis, Tenn. 38101.

Clinical Science Center,
University of Wisconsin-Madison
Architects:

Phase 1: Hellmuth, Obata and Kassabaum,
St. Louis

Phase 2: Flad and Associates, Madison
and Milwaukee, Wis.; Gainesville, Fla.

General Contractor:

Findorff-Hutter, "Joint Venture," Madison.

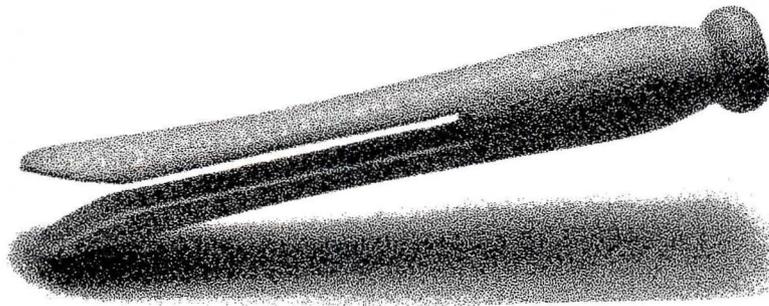
Dover Elevators installed by:

Northwestern Elevator Co., Milwaukee.

DOVER®

**The elevator
expeditors.**

Sloan's Optima solves a problem not normally mentioned in polite company.



When the men's room is a little strong.

Sanitation is somewhat less than perfect if urinals go unflushed. Which can happen with manual or timed flushing. And disinfectants replace one odor with another.

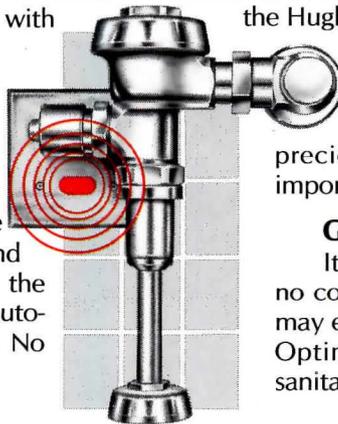
Sanitation is why Optima was invented.

The Sloan Optima™ Automatic Flushing System is *sensor-operated*. The sensor sends out an invisible, continuous beam of light. The user reflects the beam back into the scanner and arms the system. When the user steps away, the flush valve trips automatically. Sanitation's automatic, too, since flushing is on *demand only*. No more forgotten flushes.

Optima works for big buildings (and little ones).

Optima is on the job all around the country. For example, it helps solve sanitation problems at the huge

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Beyond sanitation, water savings.

Since Optima flushes only on demand, precious water is conserved. That's pretty important these days.

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It tells all about the Optima System. There's no cost or obligation, of course. Just write. You may end up joining the ranks of those who find Optima is the clean-cut solution to tough sanitation problems.



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