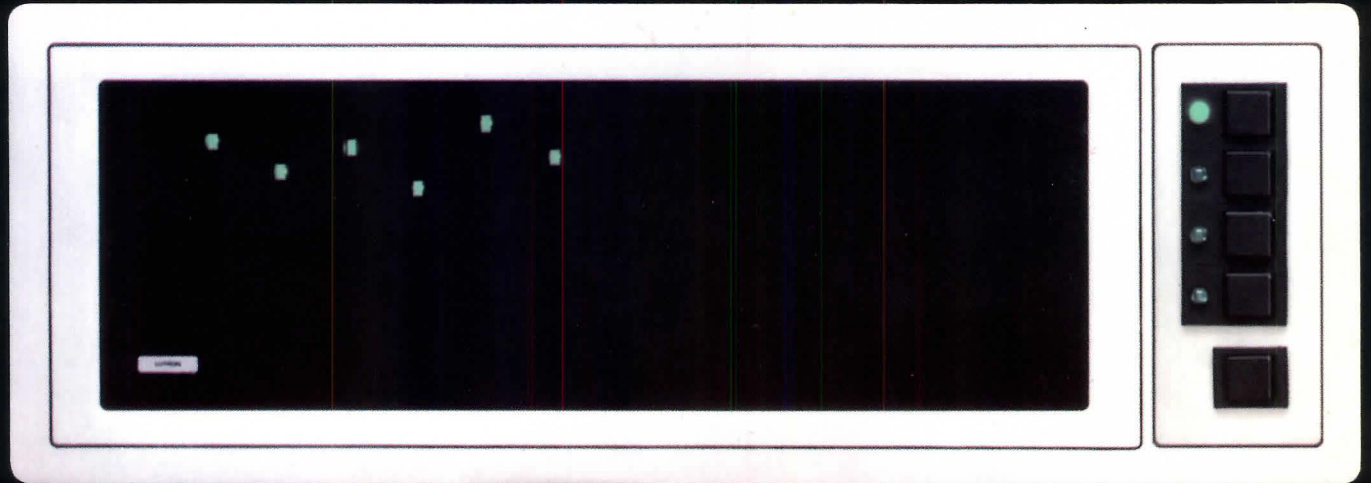


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EVENTS

Sept. 8: Seminar on Planning in Rural America: The Vision of Broadacre City. Contact: Richard Carney, Frank Lloyd Wright Foundation, Taliesin, Spring Green, Wis. 53588.

Sept. 8-12: Council of Educational Facility Planners International Conference, Toronto. Contact: CEFPI, 29 W. Woodruff Ave., Columbus, Ohio 43210.

Sept. 13-15: Annual Midwest Historic Preservation Workshop, Iowa State University.

Sept. 13-16: Workshop on Successful Rehabilitation, Chicago. (Repeat workshops Oct. 11-14, Boston, and Nov. 15-18, Seattle.) Contact: Center for Preservation Training, National Trust for Historic Preservation, 1785 Massachusetts Ave. N.W., Washington, D.C. 20036.

Sept. 14-15: Interface 1, Mid-Atlantic Regional Design Symposium on the Relationships Between the Various Design Professions, Wintergreen, Va. Contact: G. Revell Michael, AIA, Virginia Society/AIA, 15 S. Fifth St., Richmond, Va. 23219.

Sept. 14-15: DesignExpo '84, The California Interior Design Show, San Diego. Contact: Susan Beer, Epic Enterprises, 6151 Fairmont Ave., San Diego, Calif. 92120.

Sept. 14-16: Annual Conference of the National Association for Olmsted Parks, Seattle. Contact: Tamara Moats, Conferences and Institutes, University of Washington.

Sept. 16-21: World Conference on Cultural Parks, Mesa Verde, Colo. Contact: Terry B. Morton, US/ICOMOS, 1600 H St. N.W., Washington, D.C. 20006.

Sept. 18: The Growing Solar Business: Management Strategies, Sturbridge, Mass. Contact: Larry Sherwood, New England Solar Energy Association, P.O. Box 541, Brattleboro, Vt. 05301.

Sept. 19-22: Sixth International Conference on Urban Design, Pittsburgh. Contact: Institute for Urban Design, P.O. Box 105, Purchase, N.Y. 10577.

Sept. 20-22: South Atlantic Region/AIA Convention, Asheville, N.C. Contact: Jo Phillips, 115 W. Morgan St., Raleigh, N.C. 27501.

Sept. 22: Solar Energy Mini-Course, Comstock Park, Mich. Contact: Jordan Energy Institute, 155 Seven Mile Road, Comstock Park, Mich. 49321.

Sept. 23-27: National Passive Solar Conference, Columbus, Ohio. Contact: Phil Wells, Battelle Columbus Laboratories, 505 King Ave., Columbus, Ohio 43201.

Sept. 24-25: World Conference on Ergonomics in Computer Systems, Los Angeles. (Repeat conferences Sept. 26-27, Chicago, and Sept. 27-28, New York City.) Contact: Crispin Littlehales, Thomas L. Richmond, Inc., 1350 Avenue of the Americas, New York, N.Y. 10019.

Sept. 24-26: Workshop on How to do Historic Surveys, Mt. Carroll, Ill. Contact: Margery Douglass, Campbell Center, P.O. Box 66, Mt. Carroll, Ill. 61053.

Sept. 24-27: Intelligent Building/Information Systems Conference, Boulder, Colo. Contact: Tom Cross, Cross Information Co., 934 Pearl Mall, Boulder, Colo. 80302.

Sept. 25-26: International Committee of Architectural Critics Center of International Congresses, Berlin. Contact: Secretariat, CAYC, Elipidio González 4070, 1407 Buenos Aires, Argentina.

Oct. 2-7: Cersaie '84, International Ceramic Trade Show, Bologna, Italy. Contact: Italian Tile Center, 499 Park Ave., New York, N.Y. 10022.

LETTERS

Columbus, Ind.: I wish to congratulate you on the generous space and very fair analysis given to the architecture in this city in your June edition.

Three comments seem to be in order:

1. [Contributing Editor Carleton] Knight did us a service by calling our attention to the excellent work done (and still being done) by local architects.
2. The recent competition on small municipal parking lots was initiated and executed by Elizabeth Miller and Alan Melting, AIA, AICA, not by me. It seems to have been such a success that I would like to see credit go where credit is due.
3. Similarly, restoration and preservation of valuable old buildings was begun 20 years ago by Mrs. Xenia S. Miller, and this remains a principal interest of hers.

Your excellent set of articles will undoubtedly spur us to do better.

Irwin Miller

Historic McDonald's: Considering the oldest McDonald's stand for a listing on the National Register of Historic Places is ludicrous (see April, page 15). There is a consistency about McDonald's: The food and the architecture are equally poor. Together they represent the lowest common denominator in design, taste, and health concerns. The Downey, Calif., McDonald's hamburger stand is not important: It simply stands out. That does not make it outstanding; just notorious.

*Mark M. Velsey, AIA
Silver Spring, Md.*

Alan Hess, the San Anselmo, Calif., architect who nominated the oldest existing McDonald's to the National Register of Historic Places, responds: Few absolutes are more susceptible to change than esthetic judgments or historical interpretations. McDonald's restaurants have been de facto landmarks for 30 years. Recently we have begun to realize that they are cultural landmarks too.

The tremendous impact of the fast food industry on American life is a historical fact. Try to describe how we lived and what our cities looked like in the second half of the 20th century without mentioning fast food or the car culture. It can't be done. Few artifacts could document this facet of life more accurately than the oldest remaining McDonald's drive-in.

Whether this impact is for good or ill is worth discussing; either way it is imperative that the original evidence be preserved. Buildings are our common memory. We don't burn books as a rule, but we shortsightedly allow buildings to disappear when they are out of fashion without considering their value in explaining a historic era. As a result our society often suffers from cultural amnesia.

Some critics discount popular architecture under the assumption that democratic esthetics are not likely to be good esthetics. This neglects its frequent ingenuity in imaginatively solving the functional problems presented by the strip. Architect Stanley Meston translated commercial requirements for high visibility, appealing imagery, and operational efficiency into an economical, vivid, and delightful set of architectural forms. The design's energy and sleek materials exuberantly embody the technological optimism of the post World War II era. Its success as an urban design is clear in comparison with the bland clutter created by more recent, monotonously underscaled, tediously mansarded strip buildings dictated by currently fashionable "good taste."

McDonald's boldly scaled simplicity is a visual anchor for the eye wandering amid this stripscape. It suggests a few lessons in planning and esthetics that we could stand to relearn today.

School's Name: Michael Solari, winner of the 1984 Reynolds prize, is a student at the University of Southwestern Louisiana, not Southern Louisiana as reported in the May issue of ARCHITECTURE (page 30).

The mistake is disappointing but understandable. The University of Southwestern Louisiana, second largest university in the state, has a long history of recognition problems due to the cumbersome name. Its board of trustees recently voted 17-1 to change the name to The University of Louisiana, but the state legislature, with considerable influence from Louisiana's "premier" university, chose to
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Additional Credit: For the renovation of the historic Pension Building in Washington, D.C. (see April, page 12), Giorgio Cavaglieri, FAIA, of New York City is an associate with the Washington firm of Keyes Condon Florence.

Cities

Should a 12-Year-Old Building Become a Historic Landmark?

When the Minneapolis Heritage Preservation Commission (HPC) got wind that Oxford Properties, Inc., the new manager and part owner of the IDS Center, was planning changes to the architecture of the center's Crystal Court, it moved quickly to obtain historic designation for the 12-year-old enclosed retail area. But in a compromise worked out after months of frequently loud and public debates among Oxford, HPC, preservationists, the city council, and representatives of the city's business community, no such designation will take place for at least 25 years. That is, unless the owner violates the spirit of the compromise.

In exchange for the city not placing IDS on its list of designated structures, which would automatically *require* alterations to be reviewed by the HPC, Oxford has agreed to *voluntarily* bring to the commission any contemplated plans for "changes, renovations, revisions, or alterations, excluding leasehold improvements, to the significant areas of the building" for an "informal, advisory-only, and non-public review."

The agreement covers changes to the exterior curtain wall and surfaces of the complex, the interior surfaces from below grade to the Crystal Court skylights, and the interior and exterior surfaces of the skyways leading to the IDS Center complex. In addition, Oxford has agreed to have either Philip Johnson, FAIA, or John Burgee, FAIA, IDS Center's architects (or their designated replacement) act as supervising architect for any architectural revisions.

Charles Liddy, AIA, who has served on HPC for six years, most recently as its chairman, describes the agreement as "the best we could do short of designation. . . . We were looking for a compromise that would satisfy the business interests and assure us of some redress in case the spirit of the agreement is violated. I think that's what we've got."

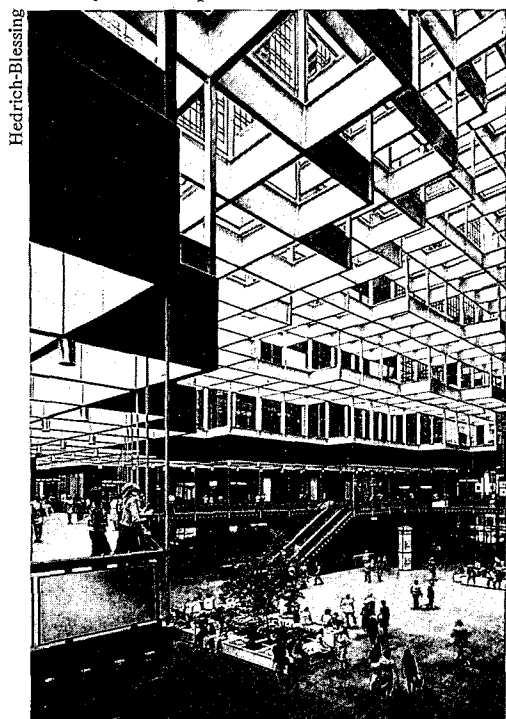
The controversy arose in March when Oxford, the Canada-based developer that purchased the IDS Center from Investors Diversified Services in 1981, announced plans to cut a hole in the main floor of the Crystal Court to bring more light to the lower level—which has consistently

suffered from poor exposure to pedestrian traffic—and to move an escalator to the southeast corner of the court. The 10-member HPC, a voluntary advisory panel to the city council, was alarmed that such changes would violate the character of the city's most celebrated public atrium. Such concern may well have arisen from major criticism that has been leveled at Oxford's recent downtown development projects in both Minneapolis and St. Paul, most pointedly at City Center, a massive retail/office complex a few blocks from IDS roundly denounced for its lack of urban design sensitivity or architectural character.

Liddy points out that the commission's move to designate IDS wasn't necessarily prompted by Oxford's plans; that, in fact, designation of the building has been under consideration for six years. Though only 12 years old, the IDS complex meets the commission's five criteria for designation.

But Robert Hovelson, Oxford senior vice president, is sensitive to the effect of recent criticism. "I believe there is a connection between the criticism we have

IDS Center's Crystal Court as it appeared when first completed in 1972.



received in the Minneapolis press and the apparent willingness of HPC to decide . . . that we are going to desecrate, or worse, demolish, the IDS Center," Hovelson was quoted as stating in the Minneapolis *Star and Tribune*.

Oxford's concern that designation will significantly decrease the value of its investment raises a number of questions. Is it appropriate to designate a 12-year-old building? Precedents for such designation are few: The 32-year-old Lever House in New York City was designated in 1983, and the 26-year-old Seagram Building (by Mies van der Rohe with Philip Johnson) was sold in 1980 with a series of protective covenants governing changes in its use and architecture. These are described as far more restrictive than those proposed for IDS.

However, no such agreements were contained in the IDS sale, and Minneapolis Planning Director Ollie Byrum warned that the proposed designation could create a dangerous precedent. Some city council members agreed. "People seem to think the city owns the IDS, like it owns a park," said Barbara Carlson, a council member who thinks designation violates the rights of the owner and could have an adverse economic impact on the center.

Preservationists, on the other hand, cite the positive economic impact of historic designation, though such status has usually been conferred on residential or institutional structures.

The questions, if not the compromise itself, are toothy. Under what circumstances should a 12-year-old office building receive protective designation? Should there be public review of design changes to "significant" architectural landmarks? Are such restrictions a threat to the economic vitality of downtown office buildings, which face the vagaries of shifting retail needs? And will developers, leery of legal wrangles presented by such review processes, be wary of commissioning architects to design structures that might have architectural significance to their communities? Where do private property rights end, and where does the public's right to have a say in the quality of the urban fabric begin? The IDS controversy poses those questions; only time will provide the answers. JOANNA BAYMILLER

Ms. Baymiller is deputy director for planning and development for the Minnesota Museum of Art, St. Paul.

News continued on page 12

New Pollution Problems Seen Despite 'Significant' Progress

"Uncertainty about cause and effect, large costs of action or inaction, inadequacy of laws and institutions—these three characteristics are the hallmarks of the new environmental problems facing the United States and many other nations," according to a new report issued by the Washington, D.C.-based Conservation Foundation.

The nation's current environmental policies, formed in the early 1970s in response to individual pollutants and their sources, have been superseded by knowledge gained during the last decade, says the report, "State of the Environment, an Assessment at Mid-Decade." Today more is known about how pollutants behave in the environment, and measuring capabilities are improved to detect minute traces of chemicals, but those who make and administer environmental law are said to be lagging in response.

The report credits the U.S. with "significant progress in many, if not all, environmental areas where laws and institutions have been explicitly devised to address specific problems." Specifically, most conventional pollutants no longer pose a health threat to nearby communities, most rivers are suitable for fishing and swimming, exposure to some specific toxic substances has declined, and the populations of many wildlife species are increasing, says the report.

But a shift in concern from a few large-volume conventional pollutants to numerous toxic substances (organic chemicals and metals) that started about 10 years ago has been accepted in theory without being fully implemented, according to the report, which points out: "Very few national standards for toxic substances exist,

and most permits for individual pollution sources do not cover these substances."

Acid rain—"probably the prototype of the new environmental problems"—vividly demonstrates the need for new approaches, says the report: Neither statistical data nor scientific knowledge exists to delineate the causes or effects of acid rain with precision. But it is known that the possible costs of either action or inaction are large. For example, most of the control plans for acid rain would cost "billions of dollars a year," but the cost of not taking action may be as great or greater, says the report. Meanwhile, existing laws and institutions are "inadequate" to deal with the problem. While the Clean Air Act deals with pollutants near sources, acid rain causes environmental damage hundreds or thousands of miles away, frequently making the problem international, and the report finds international institutions capable of dealing with it wanting.

Other concerns highlighted:

- U.S. expenditures for pollution control, in both current and constant dollars, are falling. The Environmental Protection Agency's budget has decreased to the level of 1972 and 1973, about a third lower than its peak in 1979. (However, the report sees a "turnaround" at EPA from conditions reported in 1982, saying: "William D. Ruckelshaus presides over a reinvigorated agency whose morale and integrity have been restored by one of the most impressive rescues on record.")

- Concerning land conservation, a "heightened sense of place consciousness" reinforced by higher comparative costs of new construction and favorable federal tax incentives, has resulted in "unprecedented" conservation and rehabilitation of old buildings in large and small cities.

- While technology exists to deal with most water conservation problems (cleaning contaminated groundwater aquifers being an exception), there is currently "an institutional and policy vacuum" in the U.S. "The institutional framework for planning, evaluating, and funding water-resource projects was eliminated in 1981, and no new framework has been proposed."

- Data on known toxic contaminants such as lead, cadmium, DDT, and PCBs show reductions in the environment and in human and animal tissue, but little is known about substances that have not been regulated. "There is sufficient information to allow a complete health hazard assessment to be made for less than 2

percent of the chemicals used commercially, and for only 14 percent of the chemicals is there sufficient information to support even a partial hazard assessment."

Copies of the 586-page, documented report are available for \$16, plus \$2 for shipping and handling, from the Conservation Foundation, 1717 Massachusetts Ave. N.W., Washington, D.C. 20036. The foundation is a nonprofit environmental think tank founded in 1948.

The 14th annual Environmental Quality Report by the Council of Environmental Quality was recently released and endorsed by the White House. Less critical of the state of the environment than the Conservation Foundation, the report was pointed to by Reagan as proof that his critics were "ignoring the progress we made in the last few years. . . ."

Environmentalists have in the past denounced the environmental quality reports as political "whitewashes." Reagan attempted to abolish the council in effect by cutting its budget from \$3 million to \$700,000 and its personnel from 50 to 12. In fact, the Conservation Foundation began issuing its reports to provide "reliable, credible, objective data" on the environment.

Brodie Named New Director Of Pennsylvania Avenue Corp.

M. J. Brodie, AIA, coordinator of center city development and planning for Baltimore, has been named executive director of the Pennsylvania Avenue Development Corporation in Washington, D.C. PADC is a federally created and funded organization charged with stimulating and directing development on the city's famous thoroughfare.

Brodie, 47, who holds architecture degrees from the University of Virginia and Rice University, was appointed principal city planner for Baltimore in 1964 and three years later became the chief planner of the city's urban renewal and housing agency. In 1969 he was appointed deputy commissioner of Baltimore's department of housing and community development and in 1977 became commissioner of that department, succeeding Robert Embry, who became assistant secretary for community planning and development at HUD.

This past April, Brodie was appointed by Baltimore Mayor William J. Schaeffer as coordinator of center city development and planning, responsible for industrial, commercial, and residential development in the city's downtown area.

Brodie also has served on the board of the Partners for Livable Places, Inc., of Washington and is a past board member of the Baltimore Chapter/AIA.

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Unless otherwise indicated, the news is gathered and written by Allen Freeman, Nora Richter Greer, Michael J. Crosbie, and Lynn Nesmith.

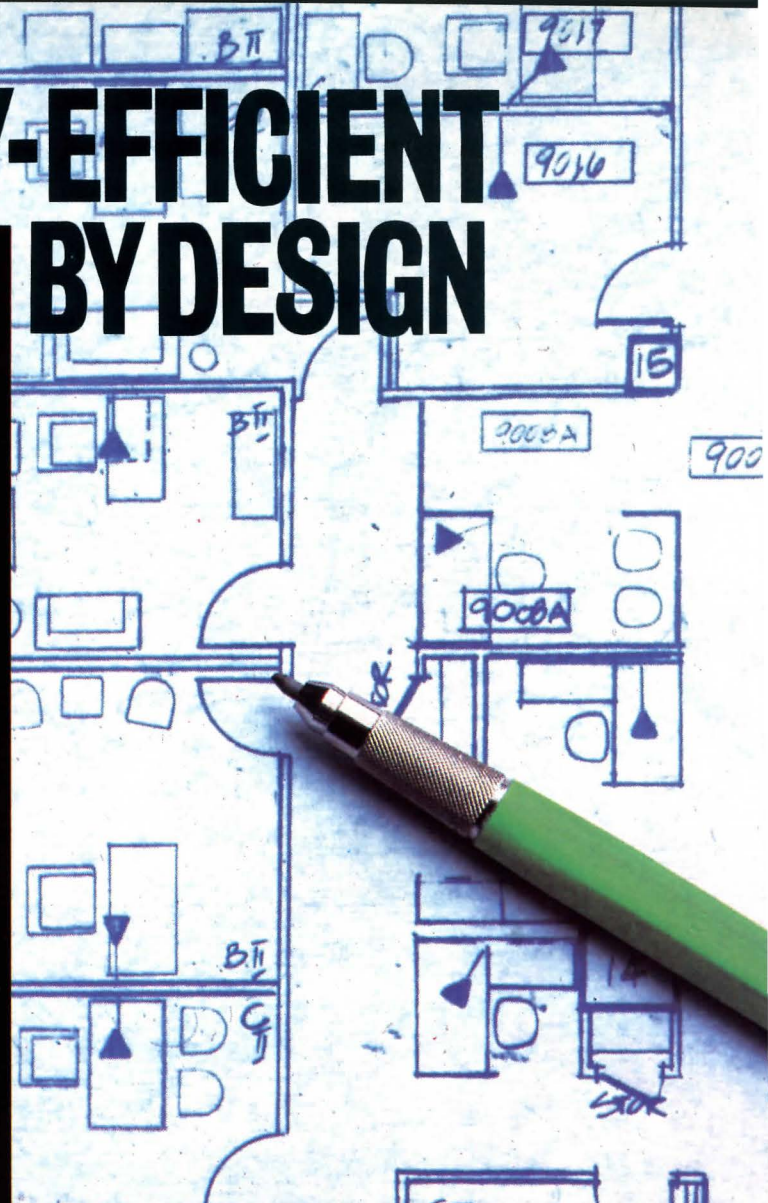
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British Broadcasters 'Taking Pulse' of U.S. Architecture

The British are coming, and they're looking for good recent buildings.

The British Broadcasting Corporation is filming a 10-part series on modern architecture that will air internationally in late 1985. The idea for the series originated two years ago with the Public Broadcasting Service in Washington, D.C., but since PBS' endowment fund precludes having a foreign coproducer, the BBC took over the project, securing coproduction money from German television.

Since then producer/director Peter Adam and his associates have visited India, Saudi Arabia, Japan, Hong Kong, and selected cities in Europe and the United States. Among the American stops were New York City, Washington, Miami, Chicago, Houston, and Dallas.

"In America you can see all the pluses and minuses of modern architecture chalked up, as if on a huge blackboard," Adam said. "All the major architects are building here, in such a readable period of time. It's remarkable, a textbook."

Adam plans to interview many of these "major architects," including I.M. Pei, FAIA, Philip Johnson, FAIA, and Helmut Jahn, AIA, but insists that the series will be aimed squarely at a lay audience. "I don't want to make it a debate among architects. There's so much jargon going around now about modernism and post-modernism and so on that the general audience doesn't care anything about. My goal is to take the pulse of architecture at this moment, but to relate it to the people who must live, work, play, and be entertained in the buildings."

Adam believes that the moment is right for a major series on architecture. The European and American press are devoting more space to architecture criticism and commentary. Television networks such as the BBC, after a decade of fascination with painters and writers (Adam has produced critically acclaimed documentaries on Lawrence Durrell, Kurt Weill, and David Hockney) are turning their attention to the built environment. The BBC is also preparing six programs on modern design.

Yet Adam admits to being somewhat intimidated by the scope of the project ("In a series on world architecture, where do you start and end?") as well as by the relative inertness of the subject matter: "Buildings don't move, for one thing, and you can never get far enough away to film *except maybe in a helicopter*. How many helicopter shots can you use?"

To compensate for his lack of formal training in architecture and design, Adam has hired architectural historian Kenneth Frampton as a script consultant. At the same time, he insists that his not being an expert will give the series greater immediacy.

"I have the knowledge of the average educated person," he says. "Experts like to show off for their colleagues, to talk about 'the idea' of a building and so on. But the general audience doesn't care about these things. I want to ask the questions that the average person might ask about architecture. One is amateur, of course, but from the Latin word *amare*, to love." DAVID DILLON

Complex Process of Building Infill Housing Explored

For either an urban or suburban setting, infill housing developments are fairly easy projects: find the site, design and build the housing. Right? Wrong. As participants at an AIA national housing workshop in St. Louis in late June discovered, infill housing is often an extremely complicated process, involving community groups, zoning attorneys and authorities, bankers, market analysts, architects, engineers, real estate agents, developers.

The tone for the two-day conference (sponsored by the AIA housing committee, the AIA Foundation, the St. Louis Chapter/AIA, and the National Endowment for the Arts), was set by D. Blake Chambliss, AIA, chairman of AIA's housing committee, and keynote speaker Carl W. Lehne, president of the Home Builders Association of St. Louis. Both stressed the need for the continued development of affordable housing, a task that becomes more challenging, obviously, as interest rates rise. Said Chambliss, "We must look at tax incentives for home ownership, new mortgage sources, and new tax-exempt ways to finance and own houses."

A new trend in mortgage financing may actually bring some relief to the affordability problem. As explained by Karl Reinlein, senior vice president of Colonial Mortgage Service Co., with offices in St. Louis, as mortgage rates reach 14½ to 15 percent tax-exempt loans become more and more attractive. These loans are often more complicated and expensive to obtain, and, once obtained, there are two requirements: 20 percent of the units must be rented to tenants who have an in-

come of 80 percent of the median in the area (in St. Louis for a family of four that would be \$22,700), and these apartments can not be converted to condos for 10 years or half of the life of the bond issued to secure financing for the project. However, Reinlein said, "We don't see many developers having problems" achieving these requirements.

What often adds to the cost of infill housing, making the units unaffordable to many, are "hidden" expenses. "We always pay more for an infill site than we first think we are going to, because there are always hidden costs involved," said Jerrad King, president of City Equity Corporation, a development company headquartered in St. Louis. These costs often include the extra expenses of assembling and surveying the site or improving utilities, roads, or sewage systems. "Many times it will seem that the money spent for these hidden costs is going to be more than it will take for the housing development," said Daniel Wind, manager of engineering for Fox & Cole of St. Louis. Wind stressed the need for all members of the team—developer, regulatory or zoning official, architect, engineer, other consultants—to anticipate those costs early in the development process.

Understanding an area's zoning regulations as well as the physical and social characteristics of the neighborhood are essential, many panelists suggested. "Infill properties are often located in areas where there are established patterns of development, and they have been established over a period of 5 to 25 years," said John King, a partner in the law firm King & Koster. He continued, "People in these particular areas often resist change."

As to the design of infill housing Jerrad King said, "We don't insult an architect by asking him/her to replicate what is in the neighborhood. But we also don't insult a neighborhood by ignoring what is there. We try to stay in the middle." Gene Magre, chief of zoning, St. Louis County department of planning, stressed the importance of "maintaining a certain community integrity."

For the workshop's design charrette the nearly 100 participants broke into groups and were asked to "develop" infill housing on one of two sites—parcels of land in St. Louis' historic Lafayette Towne or a plot of land in St. Louis County (the city is separate from the county) that contains a former high school, which in the problem was to be rehabilitated.

While the team's solutions illustrated a great deal of variety, figuring out the financial picture seemed the most challenging aspect, a task on which a few teams spent several hours. Overall, the toughest question seemed to be how to keep the density down yet provide affordable housing.

Practice continued on page 21

NCARB Accepts Alternative To Strict Degree Requirement

Delegates to the National Council of Architectural Registration Boards' annual meeting in late June reaffirmed the professional degree requirement as the education standard for council certification. Under a separate resolution, an educationally based set of standards and criteria, developed by an NCARB committee, was adopted as an acceptable substitute for the accredited professional degree in architecture.

While recognizing the accredited professional degree, earned in a formal academic setting, as the "preferred academic background for the practice of architecture," NCARB now accepts noncredit architectural and general subject courses toward NCARB certification.

The main elements of the alternative education criteria are as follows:

- The education of nonmatriculating students must conform to the subject area and content levels required of graduates of programs accredited by the National Architectural Accrediting Board.
- A maximum of six months' practical training or 50 value units in the intern-architect development program will be accepted.
- An organization, not affiliated with any of the collateral architectural groups, will be engaged to operate the evaluation, recording, and transcript dissemination.
- The process will be monitored by the education evaluation committee on a regular basis with NCARB staff assistance.
- The committee will also conduct evaluations of individuals who can demonstrate satisfactory compliance with the education standards through "exemplary and acclaimed professional practice" in conjunction with formal education.
- All technical and architecture design courses must be taken at institutions with a NAAB-accredited program. Design courses may be offered on- or off-campus but must be controlled and design solutions juried by faculty from the accredited sponsoring institution.
- All general subject courses must be taken at nationally or regionally accredited institutions of higher learning.

The seven member education evaluation committee that developed the criteria was headed by NCARB past president Sid Frier, FAIA, with an advisory panel consisting of representatives from AIA, NAAB, the Association of Collegiate Schools of Architecture, and the Association of Student Chapters/AIA.

These resolutions guaranteed that the requirement of a first professional degree from a NAAB-accredited program, adopted at the 1980 NCARB meeting, became effective July 1 as the education standard

for certification. (A resolution to extend the date of degree requirement to July 1, 1985, was defeated 34 to 8.)

The education standard for certification is to be published in a report entitled "Circular of Information No. 3," scheduled for release by January 1985. The report will detail the required education for candidates that do not hold the NAAB-accredited degree, will explain the evaluation process, and will delineate the education resources that can be used to satisfy the standard.

In other action the delegates voted to continue to administer the registration examination only once each year. A resolution to explore alternatives to multiple-choice exam items to incorporate into the examinations also was approved.

Institute College of Fellows Accepting Applications for '85

The Institute has announced Oct. 1 as the deadline for next year's nominations to the AIA College of Fellows. Fellowship is conferred on members of 10 years' good standing "who have made significant contributions to the advancement of the profession in one or more of the following areas: architectural practice, construction, design, education, government, industry, historic preservation, literature, public service, research, service to the profession, or urban design."

Each year 70 to 90 members are selected to become FAIA by a jury com-

continued on page 24

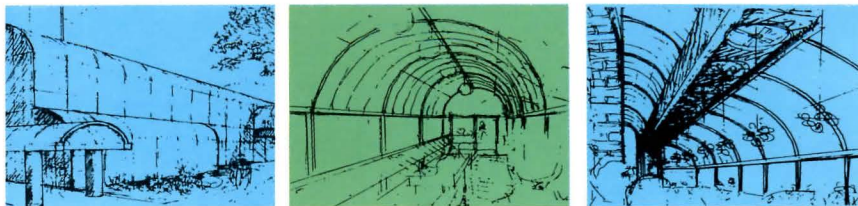
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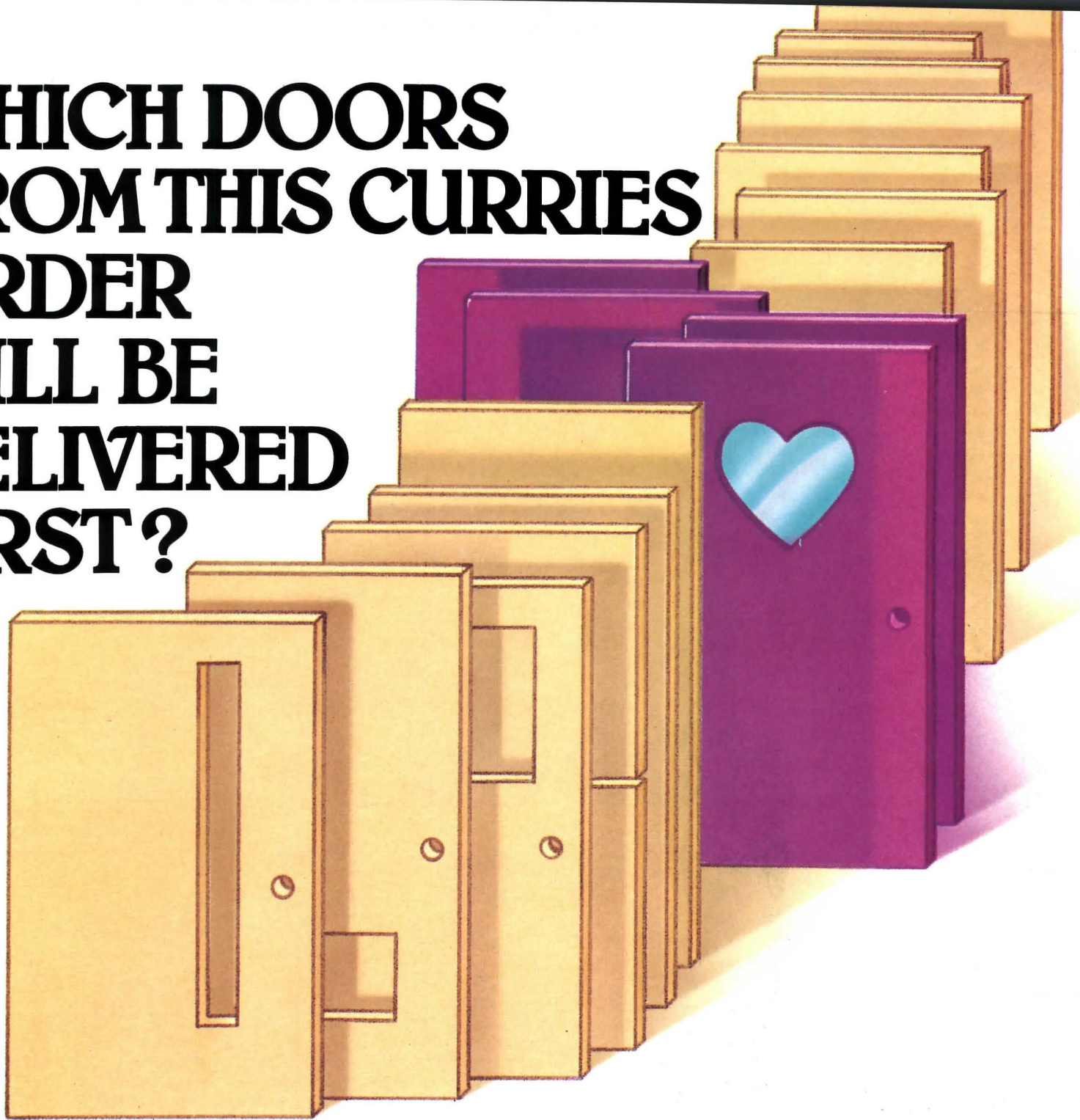


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Practice from page 21

posed of fellows appointed by the AIA president. New fellows are then introduced and invested into the college at AIA's convention. The college was established in 1952, and there are currently approximately 1,500 fellows, of which 34 are women.

In its statement of purpose, the college aims "to stimulate a sharing of interest among the fellows; to promote the purposes of the Institute; and to advance the profession of architecture."

The College of Fellows maintains a charitable fund, supported by members' contributions and outside gifts and bequests, that is administered by the AIA Foundation. Grants are made for projects that relate to the history of architecture in its broadest sense and encourage public education, in addition to scholarly research, lectures, exhibitions, publications, and the preservation of architectural records.

To nominate a member for fellowship a sponsor must submit two "Portfolios for Fellowship Nominations" that include supporting material illustrating the nominee's work and seven reference letters. Portfolios are available from the office of Institute affairs at AIA headquarters (202) 626-7392.

Awards and Competitions

Landscape Architect's Design Chosen for Copley Square

Landscape architect Dean Abbott of the New York City firm Clarke + Rapauno is the first place winner in a national competition to redesign Boston's Copley Square (see Feb., page 24). One of five finalists in a two-stage competition sponsored by the Boston Redevelopment Authority, the Copley Square Centennial Committee, and the National Endowment for the Arts design arts program, Abbott was awarded \$30,000 for his scheme to transform the "underutilized square to an accessible and enjoyable urban space."

Jury chairman and urban planner William H. Whyte said, "Of all the entries, Abbott's design was the most responsive to the competition guidelines, in spirit as well as in details. It is a fine, clean design with a nice balance between green and paving. The overall form is quiet, simple, and flat."

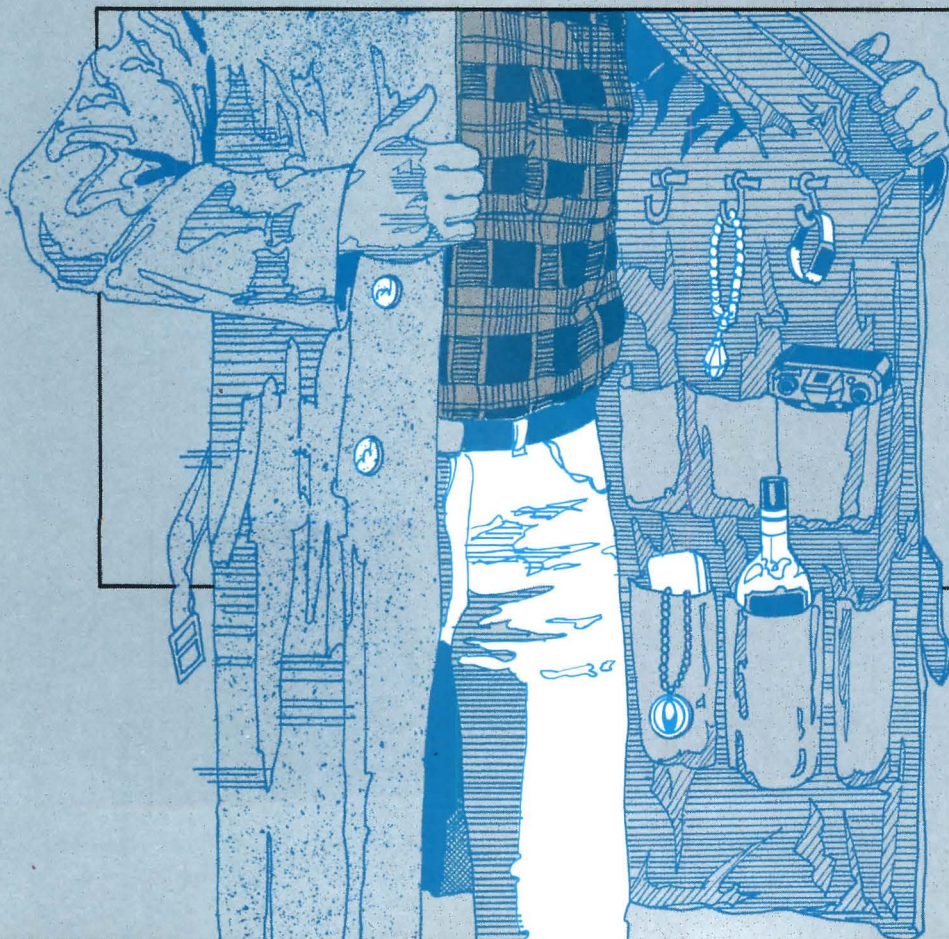
The design incorporates the existing fountain basin with large areas of grass and retains the linden and pagoda trees

within the square and across all the adjacent streets. Commercial functions are grouped along the perimeter to draw pedestrian traffic into the square and to create an active streetscape that surrounds a central space for informal gatherings, public functions, and occasional concerts and performances. Abbott said that his design would make the square "a place that reaches out to the surrounding city and makes its buildings, people, and events part of its composition."

The square provides access between the Back Bay and South End neighborhoods and is the focal point between Trinity Church, the Boston Public Library, the Hancock Tower, and the Copley Place project.

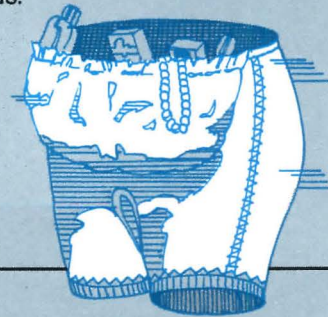
Second place winners were Krisan Osterby-Benson, Peter Schaudt, Michael R. Van Valkenburgh, and John Whiteman in association with Sippican Consultants International of Cambridge, Mass. The landscape architecture firm of Cooper,

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Eckstut Associates of New York City won third place. Commendations of design excellence went to Samuel R. Coplon and Harry L. Dodson in association with landscape architect Moriece & Gary of Cambridge and SWA Group, Boston.

Others on the jury were John Belle, AIA; landscape architects Anthony B. Casendino and William J. Johnson; consultant Katherine D. Kane; Joseph W. O'Connor of Copley Real Estate Advisors; lawyer Lawrence T. Perera; architect Phillippe Robert, and landscape historian John R. Stilgoe.

National Trust Honors 19; Highest Award to Leopold Alder

The National Trust for Historic Preservation has recognized 19 individuals and organizations in its 1984 preservation honor awards program. The highest award, the Louise du Pont Crowninshield award, was presented to Leopold Adler II of Savannah, Ga., "in recognition of his role in the amazing renaissance of Savannah, and his tireless work in inspiring and assisting similar efforts across the country."

Honor award winners are:

- Eleanor P. Ashley of Milwaukee for

her commitment to the rehabilitation of the Grain Exchange and three buildings in downtown Milwaukee.

- Beyer Blinder Belle of New York City for the design of Alwyn Court and portions of South Street Seaport.
- Chesapeake Bay Maritime Museum in St. Michael's, Md., for the rehabilitation of historic ships in its repair facility.
- Margot Gayle of New York City for her role in establishing the Victorian Society in America and the Friends of Cast Iron Architecture.
- Galveston (Tex.) Historical Foundation for the restoration of the Elissa, a historic ship.
- Greater Portland Landmarks in Portland, Me., for attention and dedication to urban revitalization.
- Historic Preservation Foundation of North Carolina in Raleigh for its state-wide revolving fund that is used to preserve rural structures.
- The John Warren Partners and Housejoiners, Ltd., in Middlebury, Vt., for the sensitive and cost effective adaptive use of the historic John Warren house.
- The Meadows Foundation in Dallas for directing funds toward historic preservation and establishment of Wilson Block, a development that provides office space for nonprofit organizations.

- Terry Morton, Hon. AIA, of Washington, D.C., for her work with the National Trust, the Society of Architectural Historians, the Board of Parks and History Association, and U.S. International Council on Monuments and Sites.
- Philadelphia Historic Preservation Corporation for facade easement program.
- Preservation League of New York State in Albany for preservation efforts in the Adirondack Mountains.
- Susan Schur of Boston for her publication, *Technology and Conservation*.
- Robert Sincerbeaux of Woodstock, Vt., for his philanthropic support of preservation projects.
- Sloss Furnace Association in Birmingham, Ala., for its innovative financing and volunteer support in renovating an industrial site to a museum.
- Sugarloaf Regional Trails in Dickerson, Md., for its approach to rural preservation through land use management, public education, public access, publications, films, research, and volunteer groups.
- Junior League of Tulsa, Okla., for volunteer efforts on the publication *Tulsa Art Deco—An Architectural Era, 1925-42*.
- John T. Windle of Madison, Ind., for his efforts to preserve Madison's heritage as a 19th century Ohio River town.

continued on page 28



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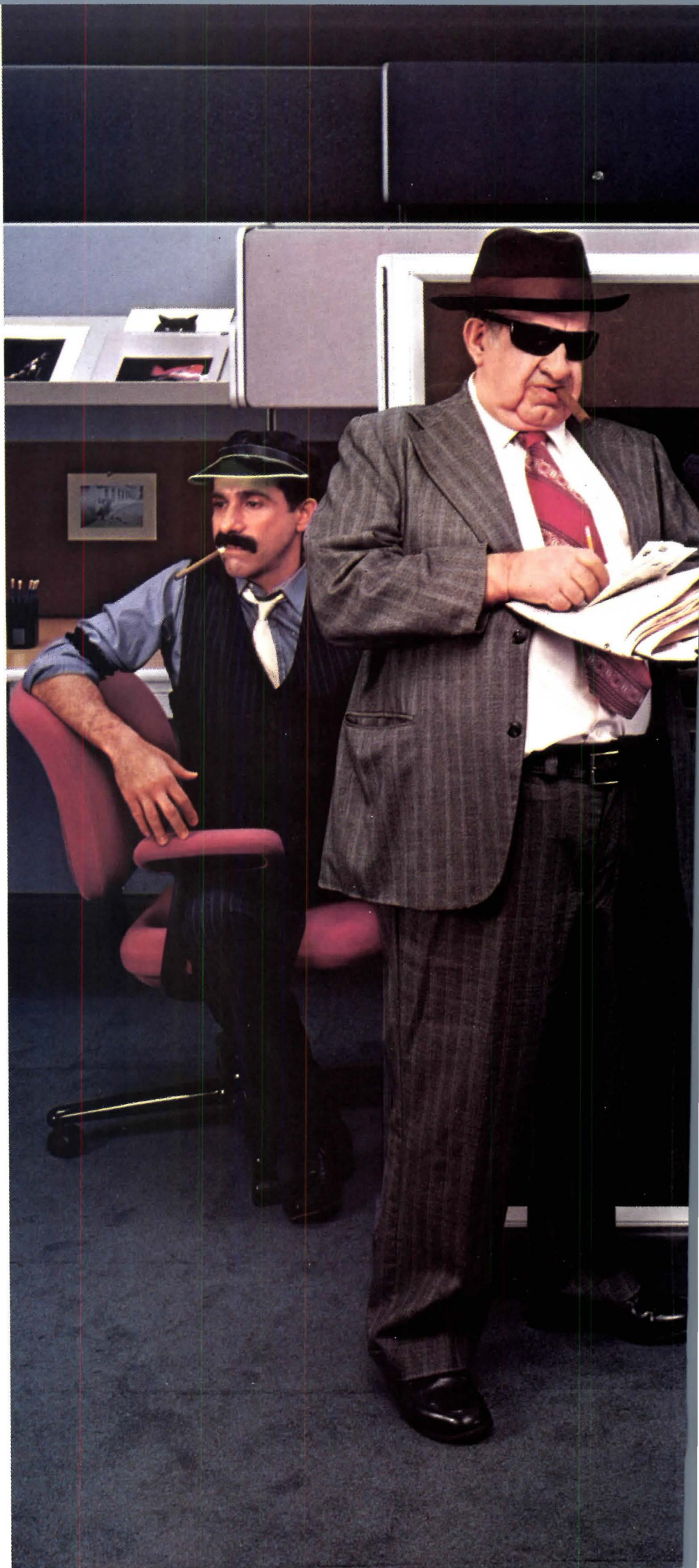
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Awards and Competitions from page 25

Certificates of commendation were presented to 11 public officials and agencies for their contributions to preservation: Governor Bruce Babbitt of Arizona; Conino National Forest Elden Pueblo archaeological project in Flagstaff, Ariz.; Mary Costello of Macon, Ga.; the county commissioners of Carroll County, Md.; Jeff Dean of Madison, Wis.; Denver Service Center of the National Parks Service; Maryland's Department of Natural Resources and Dr. Torrey Brown of Annapolis, Md.; the Kentucky Department of Transportation, Frankfort; Bob Martinez, mayor of Tampa, Fla.; the National Oceanic and Atmospheric Administration in Washington, D.C.; and the U.S. Army Material Development and Readiness Command and Stanley Fried, Alexandria, Va.

The awards were announced in May at the National Trust's 38th annual membership meeting held in Washington, D.C.

'84 Military Design Awards

Ten structures were recognized in the 1984 Department of Defense design awards program for military construction for "good design, quality, and appropriate use of materials, cost effectiveness, and environmental compatibility." The highest honor, the blue seal award, was presented for a library expansion at the Air Force Academy in Colorado Springs, Colo., by Henningson, Durham & Richardson.

Winning buildings in the "excellence in architecture" category are:

- U.S. Army Hospital at Fort Campbell, Ky., by Perkins & Will.
- Family housing for the Naval Facility at Centerville Beach, Calif., by Woodford/Sloan and PDE Associates.
- Marine Corps enlisted personnel housing and dining facility, Henderson Hall in Arlington, Va., by Chesapeake Division of the U.S. Naval Facilities Engineering Command.
- Enlisted personnel housing, Naval Submarine Base in Groton, Conn., by Northern Division of the U.S. Naval Facilities Engineering Command.
- Regional Operation Control Center at Griffiss Air Force Base, N.Y., by Stetson-Dale.
- Lejeune Hall physical education center, U.S. Naval Academy, Annapolis, Md., by The Eggers Group.
- Commissary at the Air Force station in Los Angeles by Leidenfrost/Horowitz & Associates.
- Conversion of building 606 cadet support facility, U.S. Military Academy, West Point, N.Y., by Leo A. Daly.

Cited for excellence in engineering was the central heating plant at the F. E. Warren Air Force Base, Wyo., by Sterns-Roger Services.

Competition Winning Housing For Those Who Work at Home

Rhode Island architect Troy West and urban planner Jacqueline Leavitt were selected the first place winners from a field of 346 entries in "A New American Home" design competition for "nontraditional" urban infill housing.

Sponsored by the Minneapolis College of Art and Design and the National Endowment for the Arts Design Arts Program, the competition was intended to meet the growing demand for housing for people who work at home. A recent *Newsweek* article estimated that in 1982 approximately five million people or 5 percent of the U.S. labor force worked at home.

The program called for design of six housing units with offices, each containing a finished interior floor space of less than 1,000 square feet. The site was two adjacent, vacant lots in the Whittier neighborhood of Minneapolis.

In the winning design, the six attached units are arranged in a row. A three-story living area and a one-story office, each with a separate entrance, are connected by the kitchen. Each unit has a private, landscaped interior courtyard that provides privacy between the living and work areas.

(West and Leavitt were disqualified from receiving the \$6,000 cash prize because their entry boards violated competition presentation guidelines. The sponsors plan to build the winning entry.)

Jill Stoner of Philadelphia was awarded the \$3,000 second prize. The third place award of \$1,750 was presented to Carla Pelliccia of Charlottesville, Va. Michael Pyatok of Oakland, Calif., and a joint design by Bob Burnham, Virginia Cartwright, and William C. Miller of Manhattan, Kan., earned \$750 awards of merit.

Honorable mentions were presented to Thomas A. Forman, Rick J. Lukasik and Steven Zebich of Chicago; Kenneth Brown and Edward Papp of Arlington, Va.; Margery Morgan and William Buckingham of Dorchester, Mass.; F. Gene Ernst, Gwen Owens-Wilson and Carsten Jensen of Manhattan, Kan.; Marta Gutman, Michelle Kayon, Thomas Krahenbuhl, Deborah Norden and Eugene Sparling of New York City; Michael Fifield of Moscow, Idaho; Dennis W. Grebner of St. Paul; James S. Norris of Madison, Wis.; Neomi Yoran, Amos Yoran and Karen Markison of Pittsburgh; Norman A. Crowe of South Bend, Ind.; Jeanne Marie Duvall and Rosaria F. Hodgdon of Eugene, Ore.; and Daryl E. Hansen of Minneapolis.

Jurors were Michael Brill, Thomas H. Hodne Jr., FAIA, David Stea, Cynthia Weese, AIA, and James Wines. □

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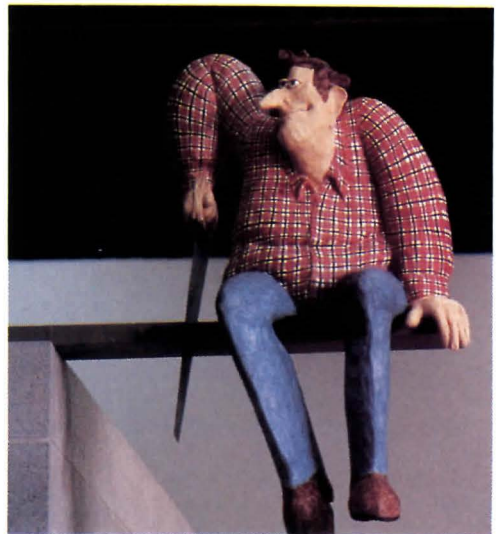
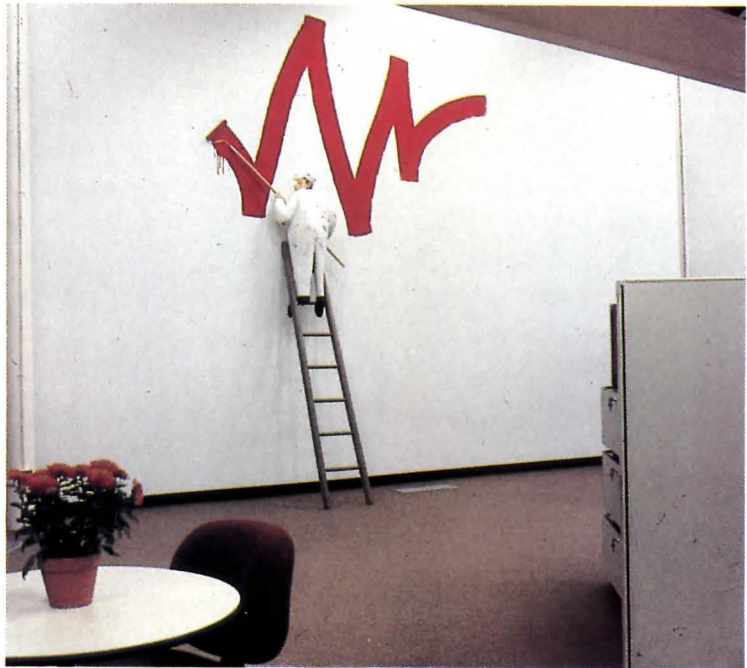
Unordinary, 'Lifelike' Workers



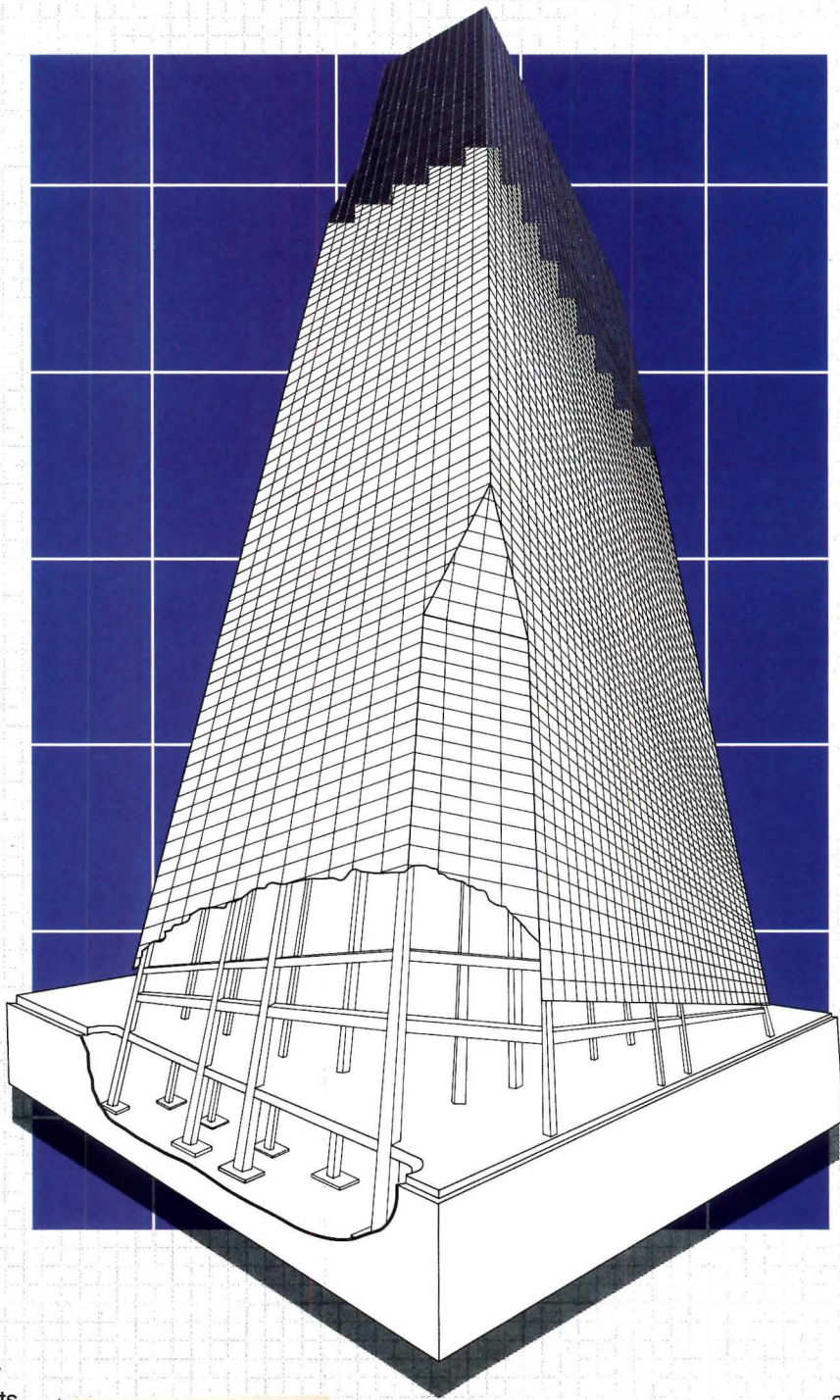
At first glance Steve Hansen's people seem "ordinary" enough as they carry on business as usual at Herman Miller's headquarters. But closer inspection of these almost lifesize papier mâché figures of workers reveals certain cartoonlike expressions, exaggerations, and absurdities.

In 1980, the Zeeland, Mich., furniture manufacturer commissioned Hansen, a 34-year-old Seattle native who now lives in Kalamazoo, Mich., to sculpt 22 figures. Hansen created his workers (including the foreman, carpenter, window washer, and painters shown on this page) and placed them on partitions, ladders, and scaffolding to tie in with the exposed ceiling structure and humanize the open office landscape.

Hansen calls his work lifelike rather than realistic. "I'm not sure what the difference is," he says, "except they are figures that exude real life instead of being replicas." LYNN NESMITH

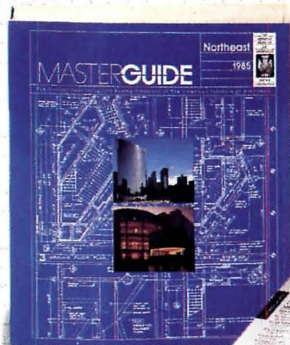


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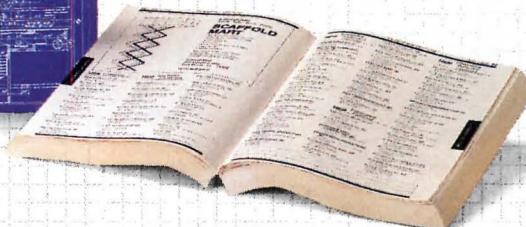


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ARCHITECTURE

FIVE SCHOOLS

A major portion of this issue deals with architectural education, but not in the usual ways of theoretical articles or panel discussions. Our quest is to discern what is going on right now in the schools—in particular, in the minds of students and faculty. The place to find out is clearly the schools themselves, and so we deployed four writers to five of them. The resultant profiles, illustrated by student work, follow.

A word about the selection of the schools. Michael J. Crosbie, editor in charge of assembling the profiles (and author of two exemplary ones), sought a wide range of approaches and locations. The geographical spread would have been wider, in fact, had not profiles of two Western schools failed to materialize. But this set turned out so well that we plan to do more in the future, and will be sure that the West is represented next time.

Summarizes Crosbie, "Although the five schools are diverse, each in its own way is focused inward, probing questions of their own relevance and that of the subject they study. They appear to reflect the self-evaluation and searching taking place in architecture schools across the country."

This issue also introduces a new section called "Kaleidoscope," consisting of brief presentations of interesting new work. It is being started because, since beginning regular publication of new buildings a year ago, we have found ourselves with more good work than we had places for. *D.C.*



Harvard GSD: 'You Ask Questions'

Making uncertainty central to the program. By Robert Campbell

The Harvard graduate school of design today is a very different school from what it was at any time in its sometimes distinguished past. It can probably be characterized best as a school that has bought the notion that we live in a time of uncertainty. What may make Harvard a little special is the seriousness with which it's trying to turn this seeming handicap into a virtue. If present trends continue, Harvard is going to become a school in which brooding about the art of architecture will become as important as training future professionals. The idea is that in a time of doubt, you don't teach methods, you ask questions.

Like everything else at the GSD these days, these ideas can be traced to the two figures who now dominate the school, or at least its architecture department—Gerald McCue, FAIA, the dean, and Henry N. Cobb, FAIA, the architecture chairman. Opinion around Cambridge is pretty much unanimous that both are superb and that they have brought the GSD in only a few years out of a period during which it was widely perceived to be in disarray and into a new era in which it is again one of the best schools in the country.

McCue and Cobb are as different in style as two persons can be. McCue presents himself as a brisk doer, while Cobb presents himself as a kind of becalmed philosopher. But they agree on a basic tenet, which is that schools of architecture shouldn't be located in universities at all; at least not today, unless the schools are willing to accept and exploit the questing, open-ended, investigative ethic that universities are supposed to be grounded in. Training good architects isn't enough. A university school should also be advancing the state of the art and its body of collective wisdom through research and meditation.

This is a long way from the Harvard of Walter Gropius in the 1940s or Josep Lluís Sert in the '50s and '60s. Harvard didn't become a famous school then by feeling uncertain about anything. Cobb himself draws the contrast when he recalls his student days under Gropius:

"We felt then," he says, "that the past didn't exist, that we had to reinvent everything. I think whatever my generation accomplished had a lot to do with our sense of going out into the world all charged up with a sense of mission and new beginning." He pauses, then adds: "But what was right for one era isn't right for another. What characterizes our era is uncertainty, and therefore you have to structure the teaching program around the notion of uncertainty."

Michael McKinnell, FAIA, who at 48 now has by far the most seniority among the GSD's active design faculty, makes the same point by reference to the Sert era, during which he first arrived at Harvard. "What Sert believed," McKinnell says, "was that

architecture was executing a general program for the improvement of society." The program was that of the *Congres Internationaux d'Architecture Moderne*. No one, says McKinnell, believes that a similar consensus exists today. So, for Cobb, "the program is one of investigation rather than implementation."

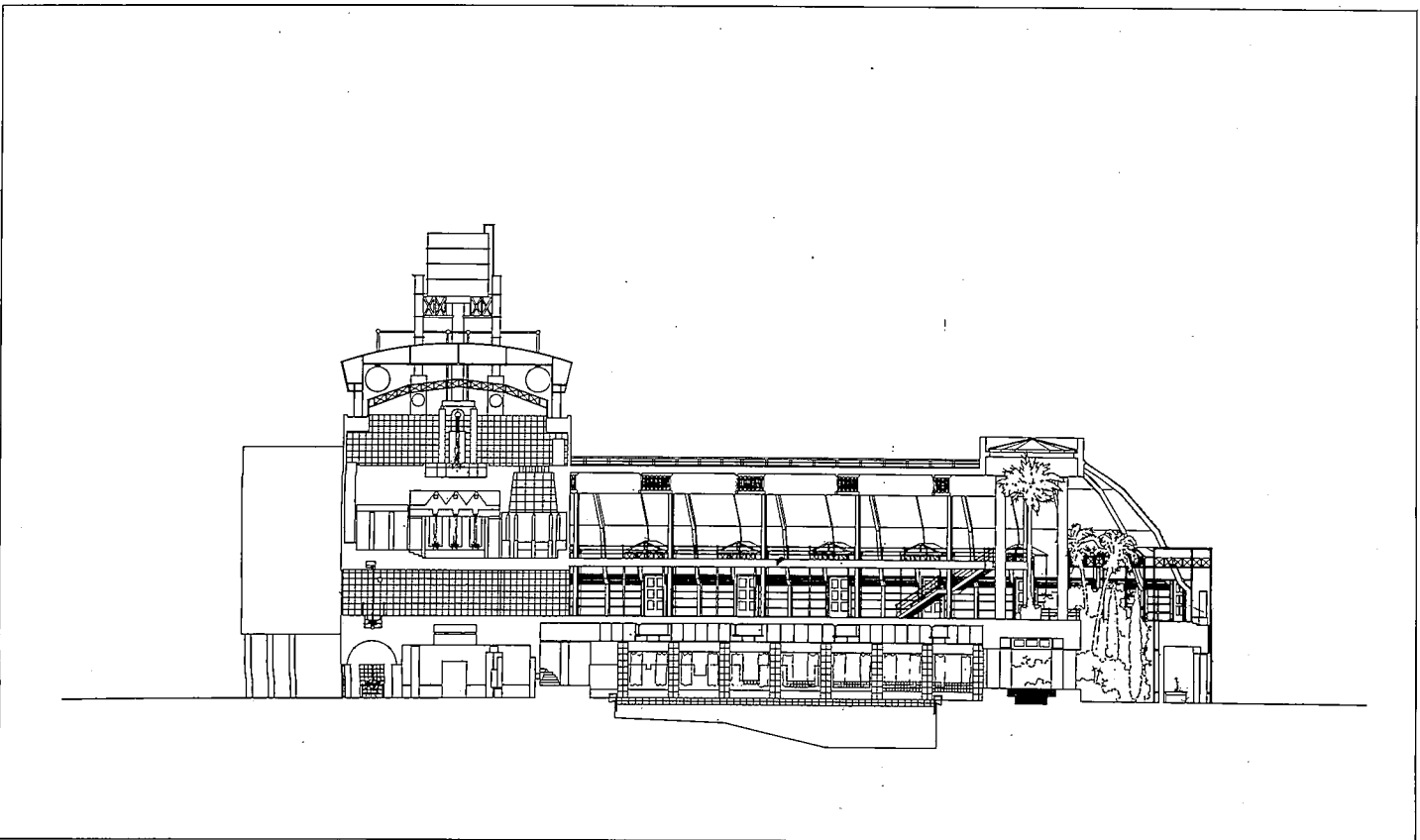
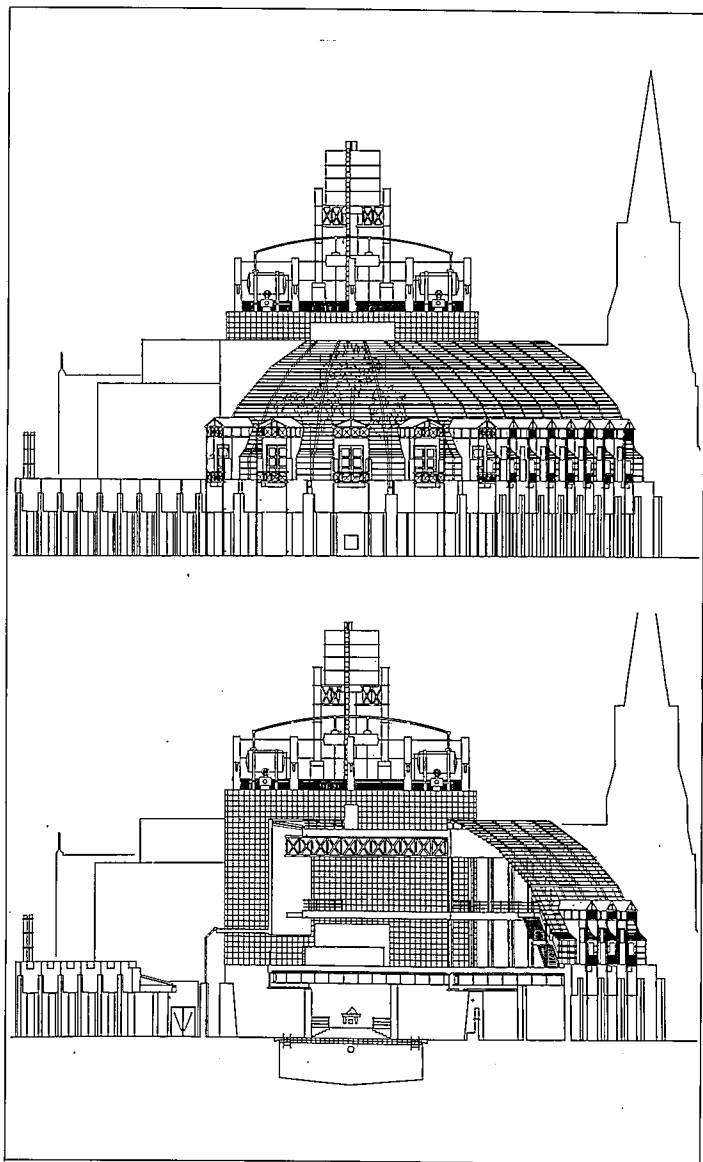
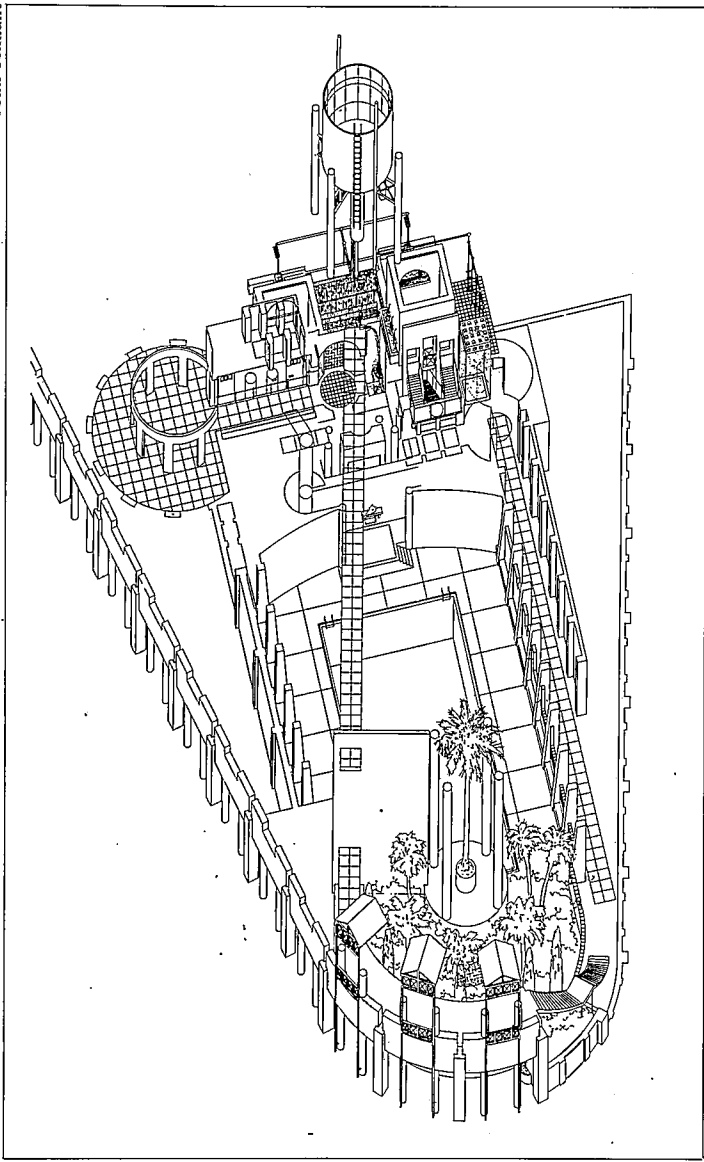
"Uncertainty" and "investigation" are vague words, but their effects are powerful. They may be about to trigger a radical restructuring of the GSD. And this restructuring may even be part of an attempt to reshape American architectural education. The notion, still embryonic, is to add a very ambitious upper-level, advanced-degree program to the school, a program that would have little to do with training architects and everything to do with attracting the kinds of advanced students and faculty who would push back the frontiers of thought and research in design.

Any such change is in the future, though, and we'll postpone discussion of it until later and turn instead to the GSD of today. The current architecture program is very much the creation of Cobb, whose impact began to be felt almost at once when he came as chairman four years ago. Suddenly, airplanes were arriving in Boston bearing visiting studio critics who displayed an astonishing diversity of viewpoints. Harvard's long-established orientation toward Europe was decisively broken. Where in the past there had been little evidence that anyone in Cambridge had ever heard of Chicago, for instance, now the entire architectural population of the Second City seemed to descend on the GSD—Stanley Tigerman, FAIA; Thomas Beebe, AIA; Myron Goldsmith, FAIA; Helmut Jahn, AIA; and others. It was a time of shaking the school out of old habits, of opening the windows. The flying circus diminished in intensity after a couple of years as Cobb got his resident faculty firmly in place, but its legacy remains in the rich roster of speakers from all over the world who visit the school every year.

The students felt quite shaken up during this period. One who graduated in June told me: "We came in with Cobb and always thought of ourselves as a transitional class. The program was always changing, new people were coming through all the time. The pedagogical intent seemed to be to provide radically different points of view."

Perhaps the students, like Pavlov's dogs, developed anxieties because of all the conflicting signals. Certainly the anxiety level

Above, Gund Hall, home of Harvard's graduate school of design. Across page, clockwise from upper left, axonometric, elevation, and two sections of a health club for a site in Harvard Square by Eric Meub, which uses 'architectural procession' as an organizing theme.



seems high, and students seem very competitive. One told me that students think for years ahead about who is going to win the prizes at commencement. I was a student myself at the GSD in the mid-'60s, and I'm sure we were barely aware of the existence of any prizes, but the topic is one that comes up often among students now, in such contexts as whether too many prizes go to too few students, or whether enough go to women. Another student told me that rumors were rife in his class that a certain group of students within the class was favored by the faculty and given the best critics. The atmosphere, in other words, is one in which achievement is important and failure an ever-present risk, in which perhaps too much of a student's sense of personal worth is contingent on success. It's a situation that one supposes must lead to overachievement in some cases and a paralysis in others.

A faculty member who concurs with much of the above offers the suggestion that the most important single fact about the GSD is the price of admission (\$8,600 tuition in 1983-84, plus fees and living expenses, a fairly typical figure for such schools). Combined with uncertainty about future jobs and income levels, the high cost of school creates anxiety among students about the choice to become an architect in the first place. They typically deal with the anxiety in one of two ways, this professor thinks. Most tend to become conservative, because the stakes seem just too high for creative play or experimentation. This kind of student wants mainly to get out of school with marketable skills and a marketable portfolio, so he or she can get a job and pay back his or her loan. (One student pointed out to me that his not-at-all-unusual loan will cost him \$200 a month for the next 10 years.)

The second response to anxiety, said the professor, is a kind of rejection, a nihilist belief that the whole system of architecture and building as practiced in this country is corrupt and meaningless. Students who react this way tend to gather around teachers who offer an antisocial philosophy of art-for-art's sake. There are enough such students to constitute a trend, and the trend has a name at Harvard: It's called Moonie-ism.

The question of where the Moonie teachers come from is a fascinating paradox of the GSD, one that again goes back to Harry Cobb. Once he had got this program running smoothly, Cobb, somewhat puzzlingly, moved this year to introduce a deliberate disequilibrium (the word is his) by bringing to Harvard two or three faculty members who are essentially anti-architects, who believe and say such things as "architecture has nothing to do with building" and who set their students to performing abstract exercises in the generation of form, exercises that are deliberately unrelated to such realities as site, program, context, history, or typology. Common enough at, say, Cooper Union, such ideas are strange at Harvard and lead some students to literal tears at the idea of spending their tuition on such nonsense, while other students become, as noted, something like acolytes. The rest of the faculty, maybe just a little bit too comfortably, closed ranks against the outsiders (who included Bahram Shirdel of Houston and Daniel Liebeskind of Cranbrook), and even Cobb now seems to feel he overdid the attempt to shake things up.

Puzzling over these events, a professor put it this way: "You have to realize that Cobb likes to flirt with the bizarre. It's the antidote to his own gray-suited, repressed personality. He reaches for oddballs." Another professor told me, "Cobb is a sucker

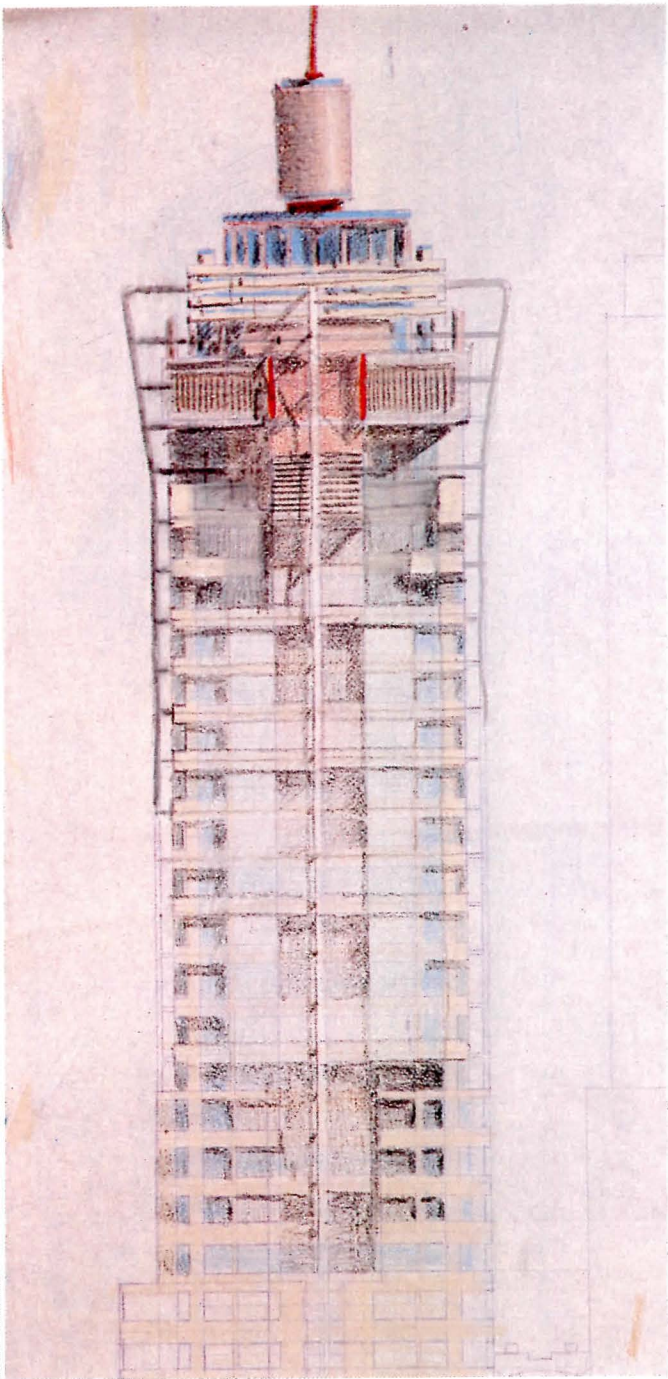
for anyone who seems to have a message." Both these professors, like most of their colleagues, believe that people who don't believe in architecture shouldn't be teaching students. "It messes up the kids' heads," one said. The situation has been by far the most explosive controversy at the GSD this year, but it hasn't dimmed anyone's faith in Cobb and is probably now blowing over.

The students seem to weather everything with remarkable sophistication. They produce consistently interesting design work that, however, is not easy to categorize. It isn't especially historicist or postmodern. That wave crested at Harvard two or three years ago. Today, anything is acceptable in the way of form, including modernism and even sometimes chaos. But to say so makes things seem a lot more inclusive and permissive than they really are. There are still stern taboos. No one, for instance (except maybe McCue), ever mentions the social or political value of architecture, and no one ever talks about a building as something you experience primarily with your senses. At Harvard, architecture usually belongs in the realm of art. It is formal, conceptual, intellectual. It is not experiential, and it is not a means for social improvement. A way of putting the taboos would be to say that the world as seen by a James Marston Fitch or a Christopher Alexander is simply absent from the GSD (although Alexander spoke there last year). And the view is very strong that the author of a work of architecture is its architect. There's little attempt at student collaboration, little or no talk about the proper role of architecture in a pluralistic democracy.

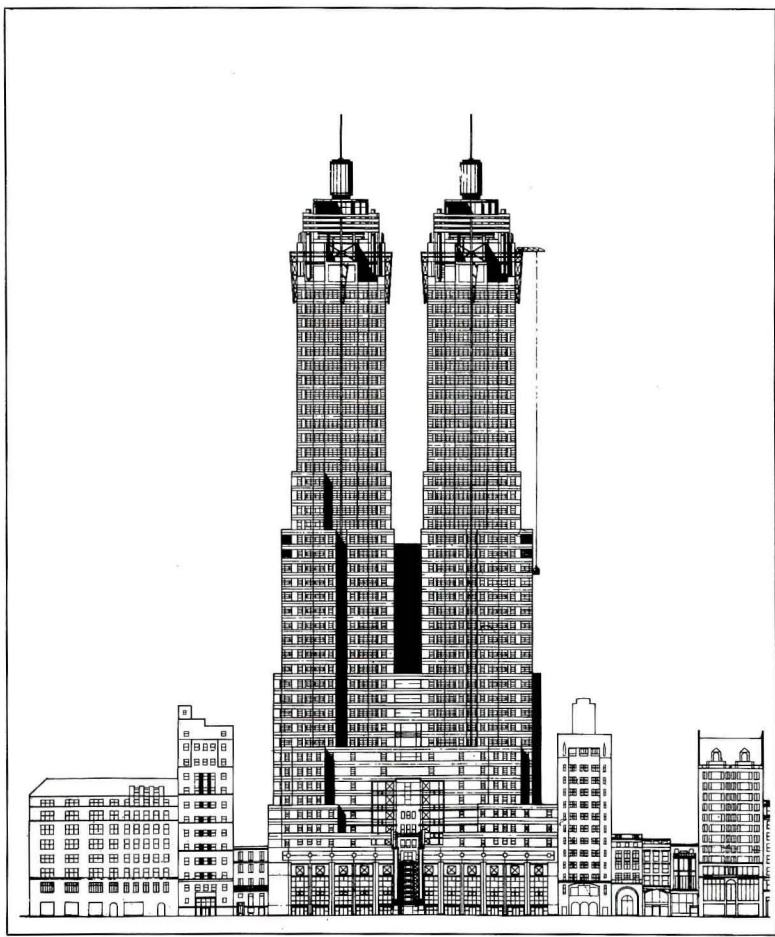
Given this possibly reductive philosophy, it's not surprising that student drawings tend to be rather ascetic. Though elaborately inked, they never seem to have labels on them, perhaps a clue to the degree of abstraction that is sought. Sometimes they suggest an intense interest in the plan seen not as a coded description of volume and space but rather as a graphic emblem in plane, a beautiful abstraction often based on colliding grids that recall the work of Colin Rowe (a professor calls this method "the Russian train-wreck plan").

The Rowe influence probably comes through Fred Koetter, one of the influential teachers. Another strong influence on students is Jorge Silvetti, who brings an interest in architectural typology. Another is McKinnell, with his interest in the physical fabric of buildings and their symbolic meaning in the real world. Another is Peter Eisenman, FAIA, a bridge to the anti-architecture camp. Any selection of names like these is invidious, but at least the above will suggest the breadth and strength of the current faculty.

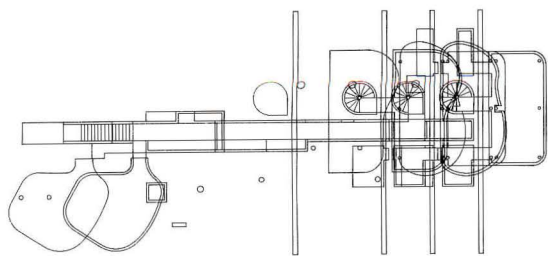
The curriculum has become highly structured under Cobb, with the student's first two years now almost entirely compulsory. Each of these four semesters is organized around a design studio course. Each studio is broken up into several groups with different critics, but all the critics give the same sequence of problems in a carefully thought-out series that gradually rise through a scale of increasing complexity. Pacing the design studios is another carefully contrived sequence of parallel courses, most also required, a few elective, including such topics as drawing, structures and other systems, history, and the like. Some of these have recently become very strong; the structures program headed by Dan Schodek and a course on architectural law taught by Carl Sapers are two that are repeatedly singled out as exceptional.



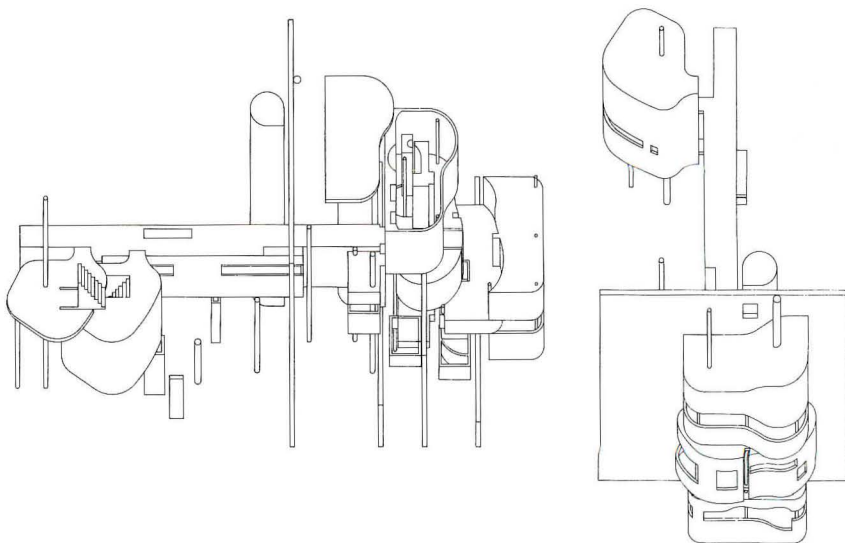
Left, pencil study for the pinnacles of a skyscraper in midtown Manhattan for a thesis project by Ken Gruskin, below. The student describes his tower as a 'cross-breed' that mediates between traditional and modern mentalities in a tripartite composition, attempting to 'perpetuate the evolution of the 1930 skyscraper.'



John Tennant



Analysis of John Hejduk's Bye House of 1973 (far right) by Christopher Chan, regenerated as an overlay plan (above) with the resulting axonometric (right).



In the fifth and sixth semesters, the students at last are free to take more or less what they want, choosing a design studio from a wide range of options, some led by outside stars, others by the faculty. There's also a rich menu of elective courses. In the sixth semester a student must also take a pre-thesis seminar during which he or she programs his or her thesis, and the seventh and last semester is devoted to the design of the thesis project. Cobb says that the only thing he knew he wanted to do when he came to Harvard was to restore the thesis program, which was abandoned during the student revolts of the late-'60s. Next year will be the first in which the thesis is mandatory. Its purpose is to force the student to work independently, and independence is carried to something of an extreme. The student gets no critiques at all except for five occasions on which he or she presents his or her work to a team of two advisers. There's concern that some students won't be able to cope with so much autonomy. A professor suggests that another problem with the thesis is that Cobb insists it have intellectual content. "We'd be happy to have them pick a site and program and design a good building," this teacher says. "But students aren't satisfied with that because they sense Cobb isn't."

A gaggle of random facts: There are now about 235 architecture students at the GSD in a total school of 420, giving Harvard one of the largest American design schools. The non-architectural students are landscape architects and urban designers. A former department of city and regional planning was shifted a few years ago from the GSD to the Harvard school of government, on the theory that it no longer had much to do with design. At the moment, there are no active plans to replace it.

About a third of the architecture students are women, although the acceptance rate for women is higher than for men (31 percent to 21 percent). In 1983-84 only one member of the architectural faculty was a woman, Donna Robertson, who is moving to Columbia University. About 15 percent of students get scholarship help. There are no recent studies of where the graduates go, but students guess that perhaps a third of this year's class will remain in Boston, with other strong contingents heading out to the West Coast and to New York City.

There isn't a great deal of interaction among the school's three departments, although joint projects are occasionally undertaken. Nor is there much interaction with the rest of the university, though everyone wishes there were. When visiting critic Stanley Tigerman asked his students how many of them had ever been inside Widener Library, Harvard's main library, virtually none said yes. (Tigerman immediately assigned everyone a philosopher to study.) An agreement with MIT permits students of both schools to take studios in the other, and some advantage is taken of this opportunity. But the two schools are so radically different in their approach to architecture that each tends to look psychotic to the other, giving the exchanging student problems of adjustment.

I've left discussion of the future to the end because at this time it's unknowable. The only sure thing is that, once again, Harvard is on the verge of major change. Cobb has announced that he will leave as chairman after 1984-85 to return to fulltime partnership in I. M. Pei & Partners. A rumor that he may be reconsidering is unconfirmable at this writing. Other key faculty will have to leave at about the same time because of the

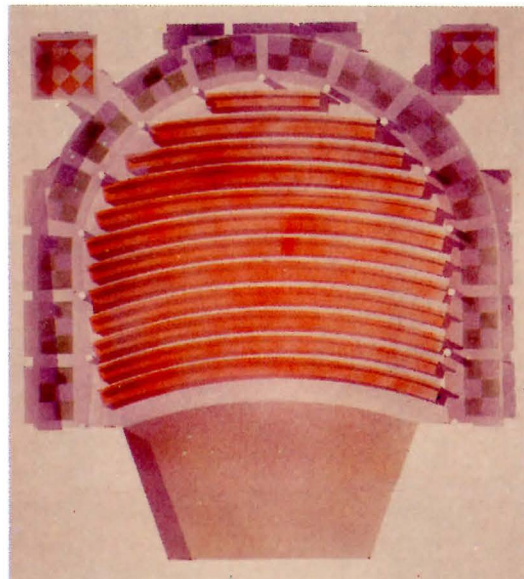
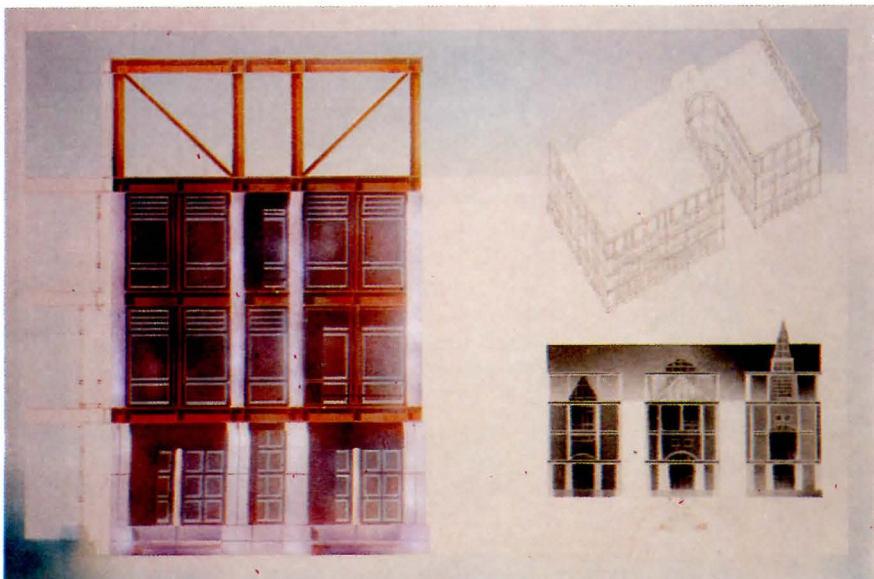
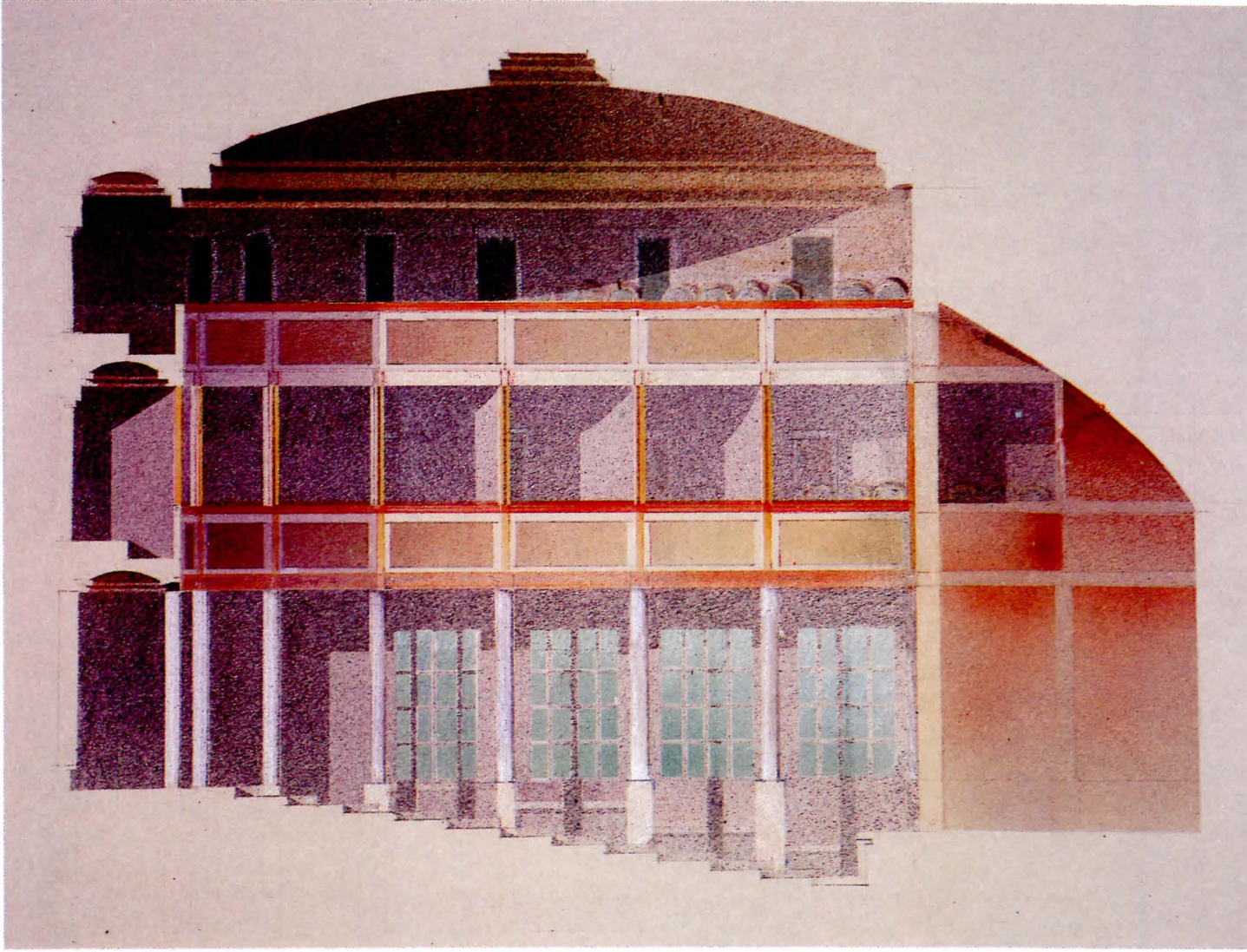
school's Catch-22 policy: No one may stay after having served a certain number of years at the associate professor level unless granted tenure, but no one can be granted tenure unless occupying an endowed chair, but there are virtually no endowed chairs. Some disruption of the school's continuity seems likely.

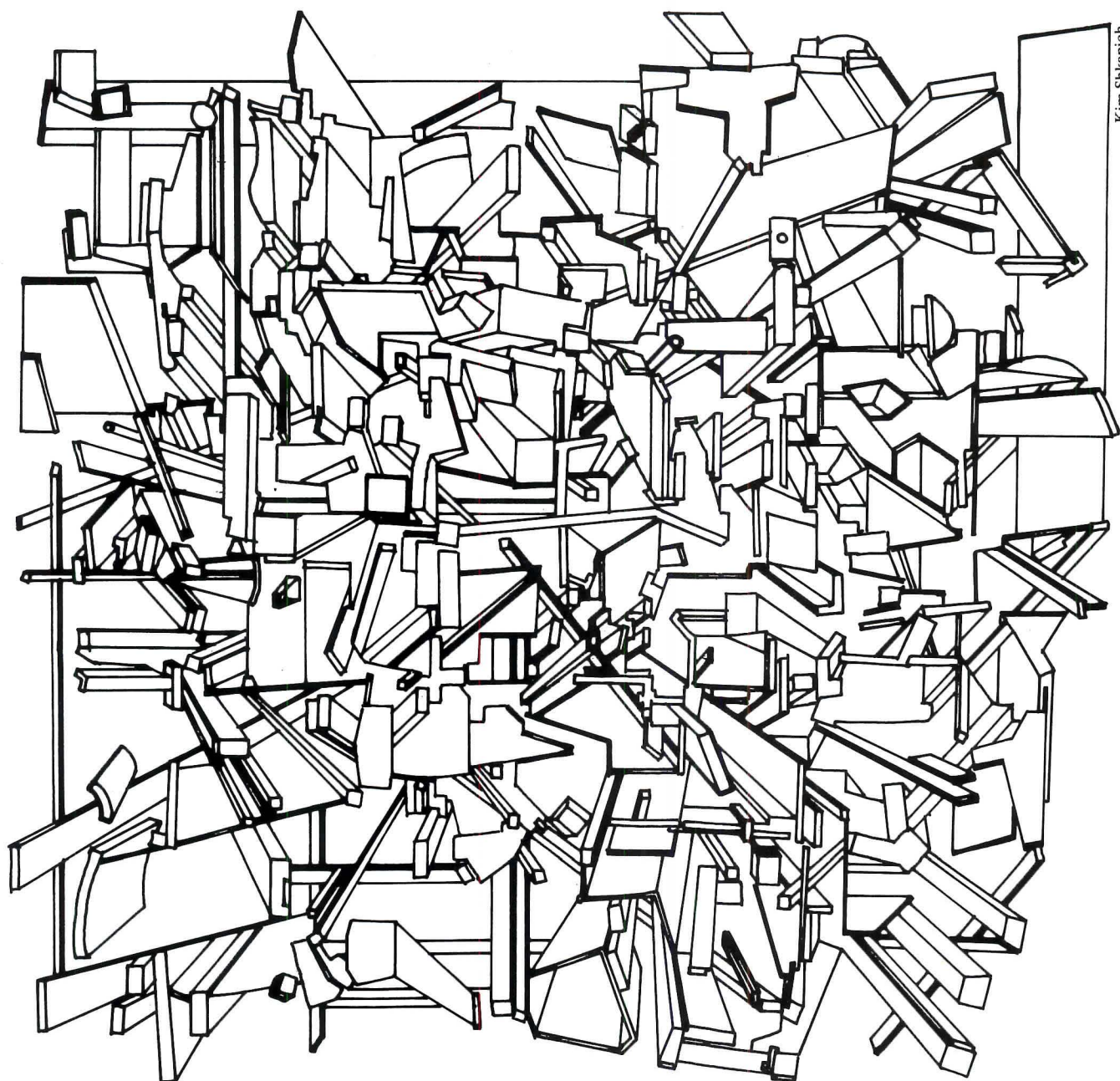
Even stronger will be the impact of the proposed upper-level program mentioned earlier. Still in the early planning stage and hard to pin down, this program will apparently establish an upper tier of postgraduate programs in a number of separate professional areas, as well as advanced study programs in teaching and research. Dean McCue summed up the goals of the new initiative in his last report to the president of Harvard: "The GSD must now recognize the necessity to do more than simply prepare young people to enter the professions. . . . I believe the faculty should engage in research that provides and analyzes new data and reveals new relationships; scholarship that sets forth hypotheses and argues philosophic positions; professional studies that examine particular cases and methods; and investigations of teaching techniques and the learning experience." He argued that this kind of thinking should take place within the school rather than in outside consultations or projects by individual faculty members.

An early indication of the form some of this upper-tier program might take is the role of Peter Eisenman. Eisenman's influence on students is growing as the influence of historicism wanes. He espouses what he calls "deconstructionism," a position both anticlassical and antimodern that attempts to generate form without reference to anything except itself, in the hope of coming up with something appropriate to an era in which even the physical sciences have accepted the notion of indeterminacy. A student, characteristically articulate, calls Eisenman's effort "a reductionist attempt to get away from not only program and context but also history as generators of form, to be abstract rather than representational of anything." I'm not sure what any of this means but that's all right because neither is anyone else at the school. Eisenman employs a strategy that places him beyond accountability and beyond reproach, which may be part of his appeal to students. He is tape-recording all he says and does for a book that will discuss the value of the studio system. His work, which obviously falls into the area of philosophy of design, may be one example, although only one, of the kinds of new activities that may occur in the upper-tier program. There's considerable skepticism about Eisenman among the faculty, and some fear that an upper-level program of any kind may downgrade the training of young architects to second-class status in the school. But there's also optimism that it may bring intellectual excitement. In any case, the hottest rumor around the school in recent months has been that Eisenman will be getting one of those rare tenured professorships.

Whatever its future may hold, Harvard's GSD today is a solid school that teaches the broad range of traditional skills—drawing, design, history, technology, theory, practice—without allying itself to any one school of thought. Its faculty is diverse and brilliant, and its student body is bright and motivated. Where there are tensions within the school, they are on the whole the kinds of tensions that accurately reflect the real predicaments of architecture today. Almost no one at Harvard—student, teacher, or administrator—is willing to make life easy by pretending that a value system is easily won. □

Clockwise from bottom left, elevations for a college of music in an urban setting by Stephen Schreiber and a section and floor plan of a music hall in the same project. The building needed to provide spaces for teaching music and performance, while responding to its location on a major thoroughfare and a number of historic buildings nearby.





Kim Shkapich

Cooper Union: A Haven for Debate

Giving primacy to process and the pursuit of inquiry. By Michael J. Crosbie

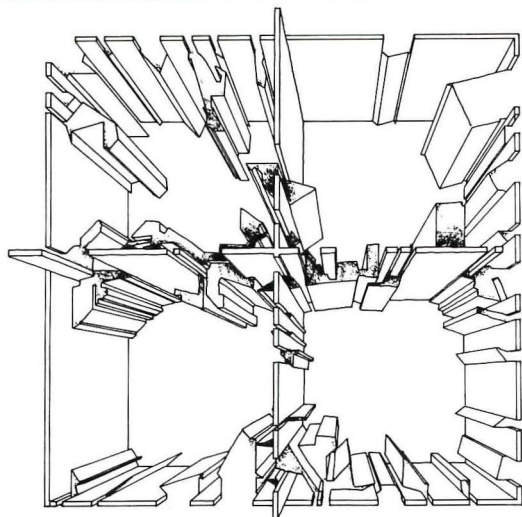
Michael J. Crosbie



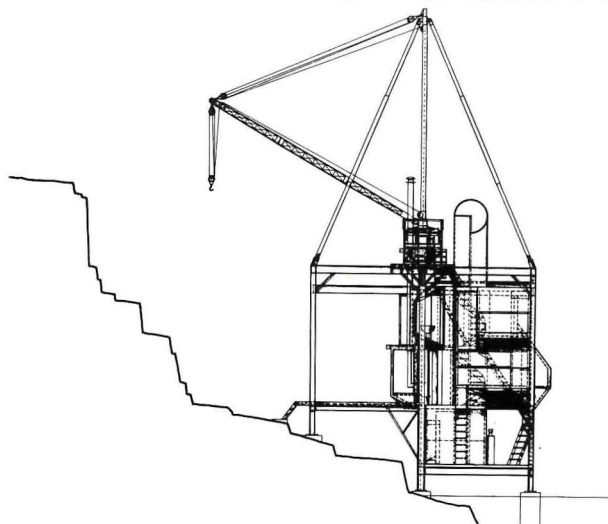
The Cooper Union for Advancement of Science and Art in New York City, now 125 years old, has its origins in the vision of a native son. Born in 1791, Peter Cooper became a successful inventor, craftsman, and industrialist. He is credited with rolling the first steel railroad tracks and with Samuel B. Morse laid the first Atlantic cable. Although his fame and fortune grew, his empathy for the lot of the New York poor and working classes remained. A man of similar roots, which prevented him from acquiring a formal education, Cooper conceived of a school that would educate those who could not afford such training. In the 1830s he began to assemble parcels of land on which he would build a school, tuition free, "so that the boys and girls of this city, who had no better opportunity than I had to enjoy the means of information," he wrote, "would be enabled to improve and better their condition." When the school's charter was approved in 1857 Cooper stipulated that the institution be opened to the working man and his children and that its education be "equal to the best."

In the city's East Village, Cooper constructed a building of brownstone (called the Foundation Building), which was one of the first in the country to use a rolled steel structural frame. Anticipating the effect of an invention by a mechanic in nearby Yonkers, Cooper included a round elevator shaft in his five-story building (two more stories were added in 1893). Upon open-

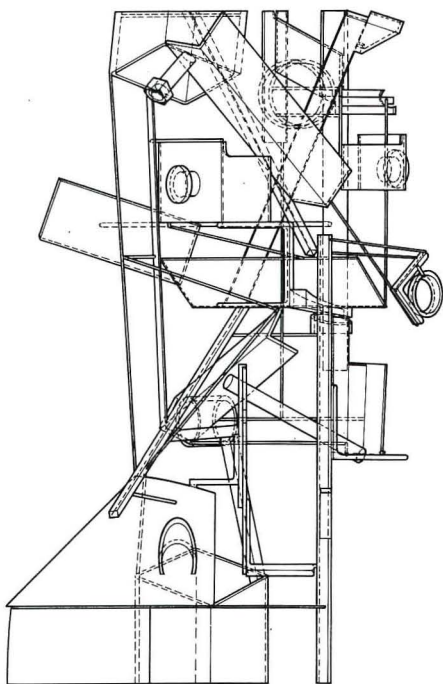
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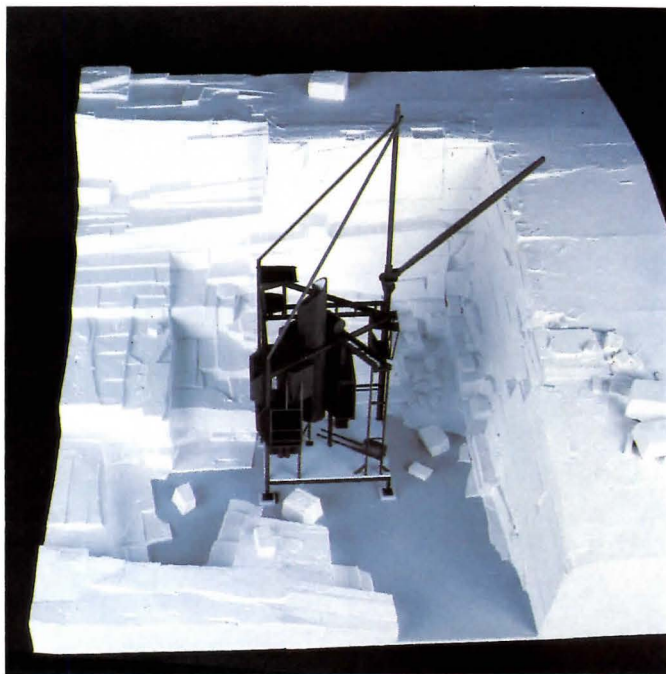
Kim Shkapich



Kim Shkapich



Kim Shkapich



Across page bottom, *The Cooper Union for the Advancement of Science and Art Foundation Building*. Across page top and above, 'Quarry,' a fifth year thesis project by Anthony Gregor, begins with an analysis of a complex plane of lines and shapes. A process of extraction from the composition generates the quarry concept, while the 'confrontation' of stone and metal introduces the steel derrick as a house for a quarryman.

ing in 1859 Cooper Union became a strong influence on the intellectual and social life of America. The building's "Great Hall" became the site of debate and collective action. The great orators over time, including Abraham Lincoln, Mark Twain, and William Jennings Bryan, spoke there. It was also host to the founding of labor unions and such organizations as the American Red Cross and the National Association for the Advancement of Colored People. Cooper Union often accommodated fledgling groups that challenged the status quo. Susan B. Anthony was provided office space for the Women's National Loyal League, and the Women's Suffrage Party commenced its meetings there in 1916.

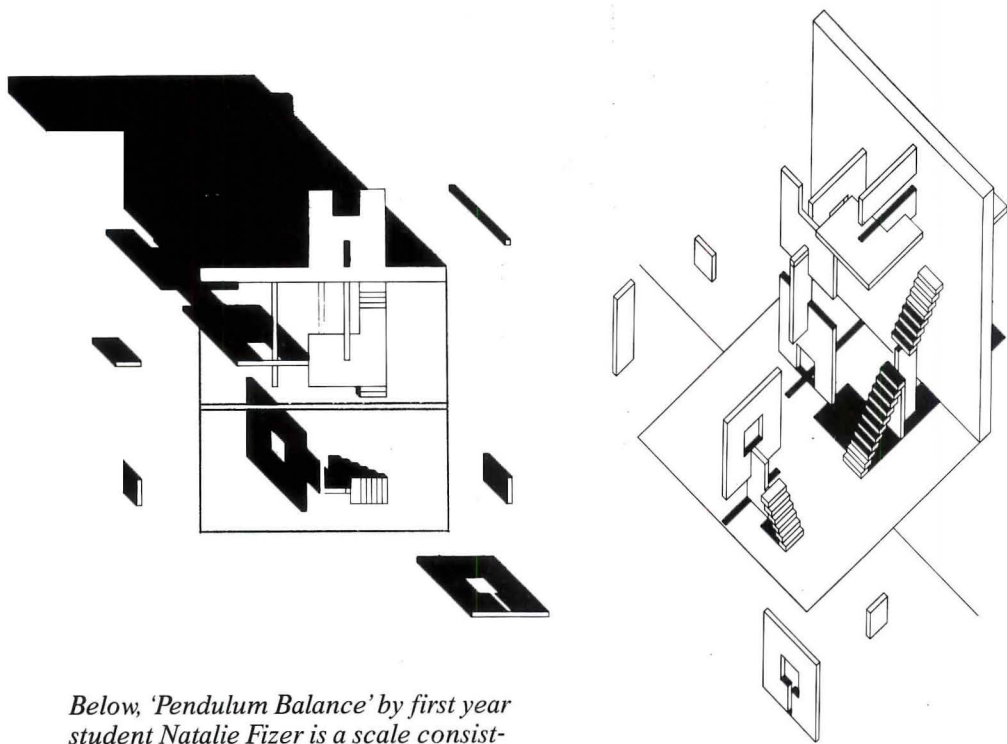
Through the early-20th century the breadth of instruction at Cooper Union—engineering, art, architecture, design, philosophy, and technology—grew until the school found itself in a financially perilous situation. In the late-1950s Cooper limited

its instruction to art, architecture, and engineering so that it could continue tuition free. Today it comprises these three schools and a department of humanities.

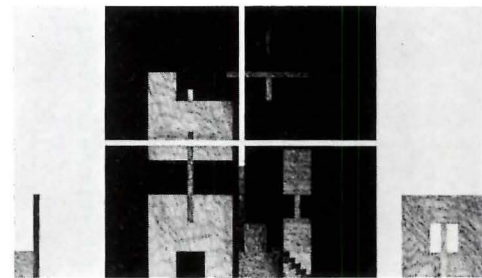
The Irwin S. Chanin school of architecture is small—approximately 165 students in a five-year program. Many come from the New York metropolitan area, though there are students from other parts of the country and the world. While the full-time faculty is only eight, the adjunct faculty is nearly two dozen.

Special to the architecture school is its location. "New York seeps into your consciousness," says Bill Lacy, FAIA, Cooper Union's president. "There is an array of urban problems, whether it's Westway, or a deteriorating neighborhood, or housing, or subway systems, or pocket parks. Some people refer to us as the 'Bauhaus in the Bowery.'" As one student described it, "The whole New York phenomenon is at your fingertips and in your work."

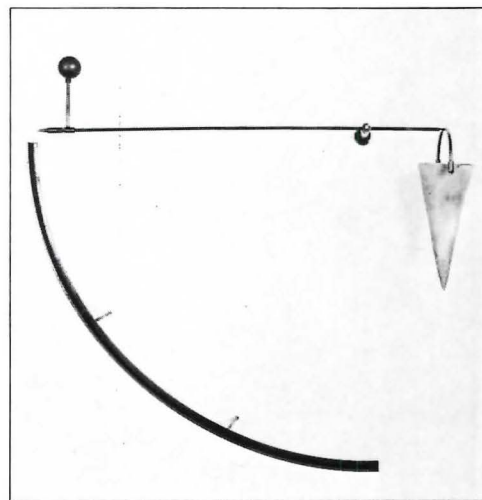
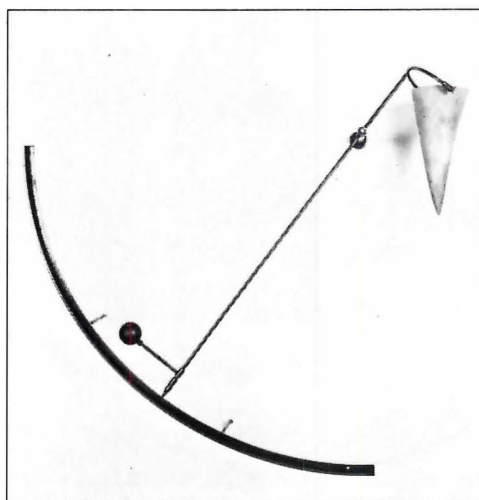
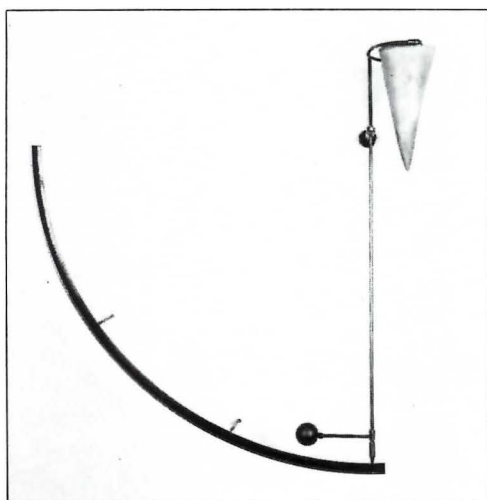
What is the essence of architectural education at Cooper Union? In a way it continues the tradition of Cooper as a place where one may challenge conventional wisdom and find a haven for debate. If you were to make a list of its educational priorities (besides that of training people to become competent practitioners), it would include the importance of developing a critical attitude about one's work and about architecture as it



Left, middle, and below, 'House for Contemplation' by first year student Ursula Kyle is derived from proportional system with architectural elements that define a cube's boundaries, the focus being the intersection of elements. Drawings render the house at morning, noon, and night.



Below, 'Pendulum Balance' by first year student Natalie Fizer is a scale consisting of two pieces mounted to a wall: arm with pendulum ball at one end and vessel at the other, and a quarter arc. At zero weight the arm is vertical.



exists in contemporary society. The pursuit of inquiry is of primary concern. The students are encouraged to doubt, to question givens, to generate alternatives to what architecture is today. There is an emphasis on making connections between other disciplines and architecture, to find the threads that join them and to explore their implications for architecture. The students are expected to develop a personal methodology in their critique of architecture and to test and express it through their work. Here, the process of making architecture is just as important as the product.

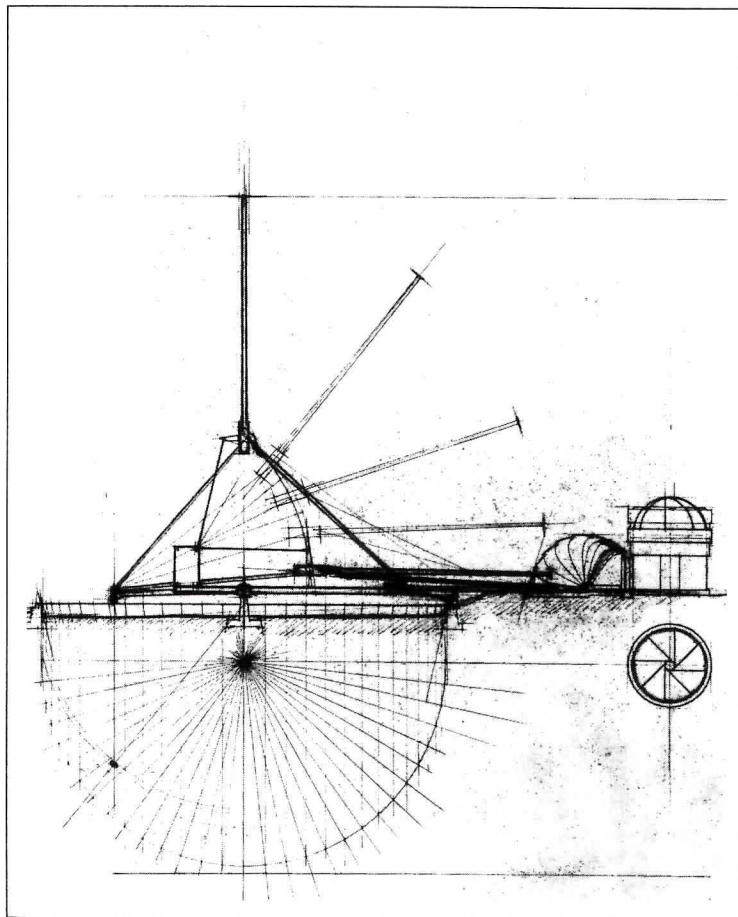
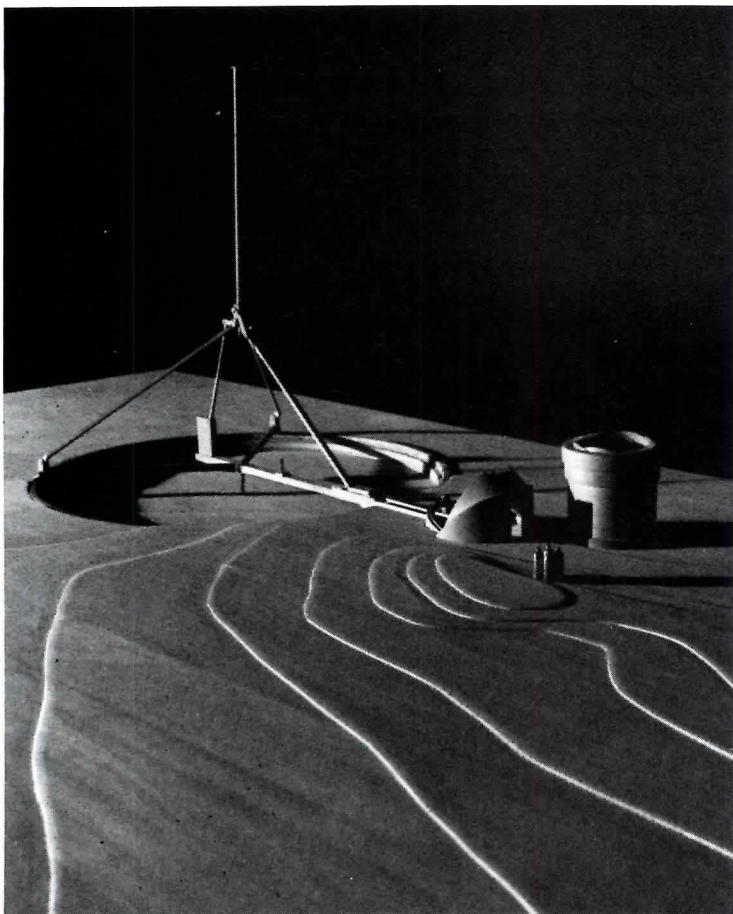
Graphic presentation should capture the spirit of the design project. There is attention to materials: how they are joined and how the details of their connections express the design. The overall focus at Cooper, then, is to engage the student in a process of inquiry and invention to communicate his or her world view through architecture.

Because the school is small and tuition free, admission is competitive. The faculty members who sit on the admissions board, according to one, are looking for students who will not be satis-

fied with simply being able architects. They should be interested in exploring in depth the questions their studies will generate. They should be restless and inquisitive.

The person who has made Cooper Union's architecture school what it is today is its dean, John Hejduk, FAIA. He attended the school in the late-1940s, continued his education at the University of Cincinnati and Harvard, and returned to Cooper in the mid-1960s. His presence is felt throughout Cooper Union, quite literally, for it is he who redesigned the interior of the Foundation Building in 1974. It is a white interior of soft edges and reveals, which makes it appear to float inside its brownstone shell, just as Hejduk himself most assertively does. He is a big man, tall and robust as a centenarian oak, with a loud, booming voice delivered with a Bronx accent. As he talks one can gauge his excitement. His eyes become wide open or narrow down to mere slits. He is quite animated, waves his arms, is not embarrassed to lose his composure. "He really loves to teach," said one student, "and he's passionate about that in a very open way." Hejduk is the reason why many students choose

Below, 'Weather Station,' a fifth year thesis project by Barry Scott, comprises a 75-foot-high moving mast for launching balloons, a retractable shell to protect instruments at mast tip when in the down position, an observatory with retractable dome for tracking balloons, and helium tanks from which balloons are filled.



to study at Cooper. "He's interested in anyone who is searching in the same way that he is and the school is," said another.

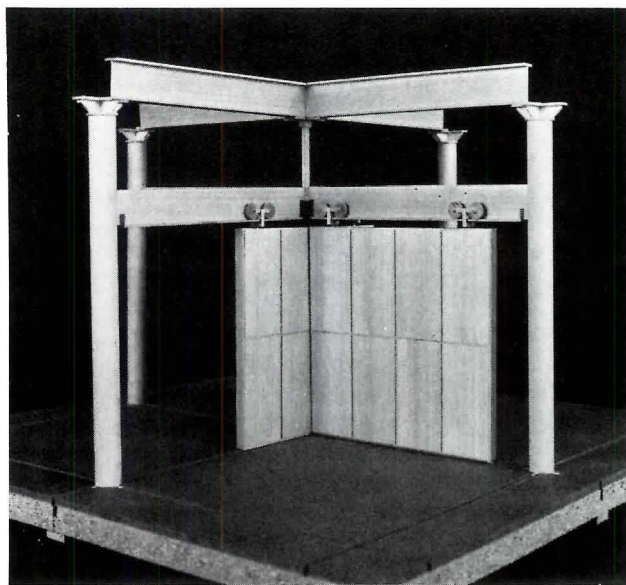
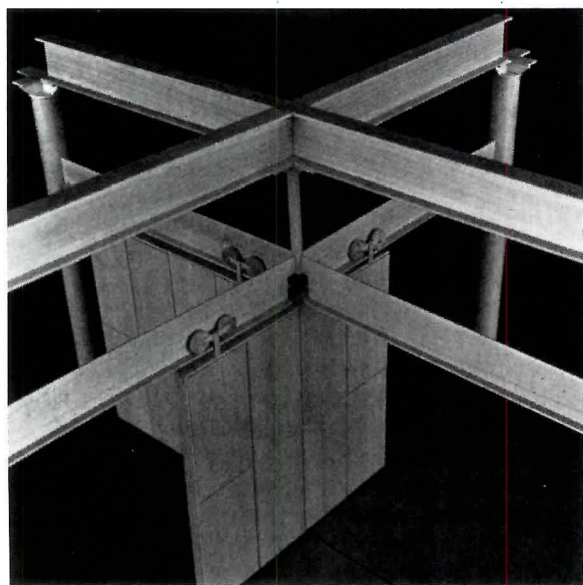
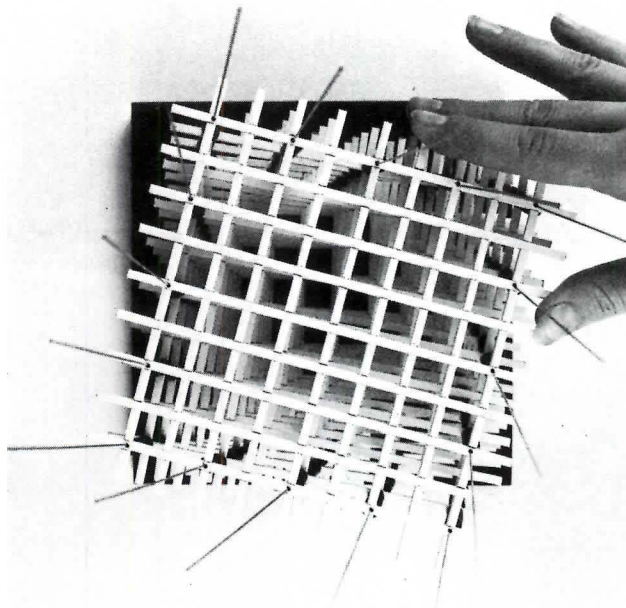
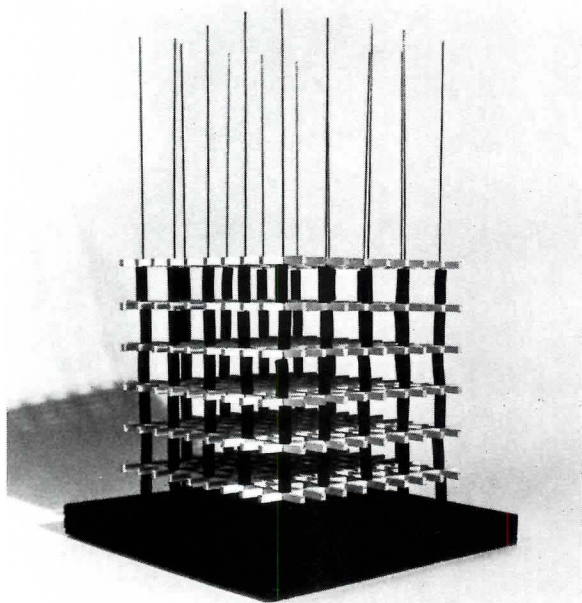
This atmosphere of inquiry and critique is possible primarily because Hejduk encourages it and has created a place that allows it to happen. "My concern," he says of the students' relation to the school, "is to make sure that these people have a place where they can breathe."

One way of encouraging debate is to spark controversy, and Hejduk has done this by choosing faculty, visiting professors, and lecturers whose ideas he may not agree with. The students I spoke with said that this confrontational setting (also part of the city's character) has contributed to the development of their own points of view. "Hejduk says that you should invite the devil into your house," one student noted. "There are architectural battles being fought within the school, and it's very exciting. It creates a lot of positive energy."

That the students enjoy this engagement is good news to Hejduk. "I wish the faculty felt the same way," he laughs. "They

were prone not to let their feelings surface as much, but I've provoked them." It hasn't been an easy thing to do. "At one time we had a thrust here to keep the old views," Hejduk explains, "but that's the easiest thing to do and that's not what education is all about. I'd rather open it up." Thus, Hejduk has taken what many schools perceive as a liability—faculty in-fighting—and used it to serve a positive function. The exposure to antithetical points of view, he admits, has also affected his own work.

The sense of union between students and teachers in the study of architecture is very strong at Cooper. Regi Goldberg, an adjunct professor, explains that there is no firm dividing line between students and faculty. Everyone is on first-name basis, there is no faculty lounge, and small offices discourage spending a lot of time in them. "Sometimes it's hard to determine who is the teacher and who is the student," says Goldberg, "because information and ideas are flowing in two directions." The faculty contributes to the students' work and the students in turn affect the faculty's work.



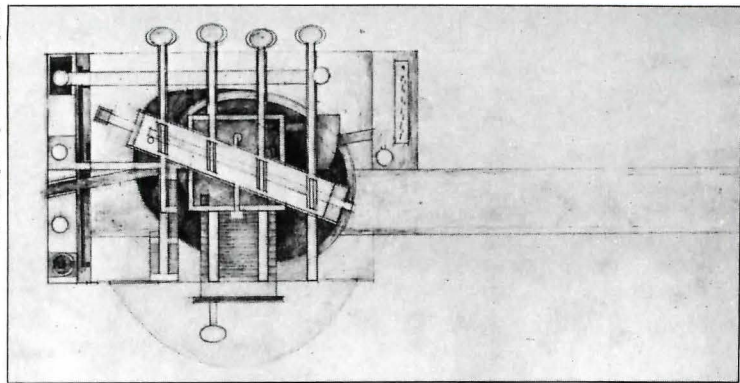
Both the students and teachers I spoke with put much emphasis on the idea of developing a personal methodology about architecture. A methodology, as one faculty member explained it, "is an inner mechanism that structures and a language with which one expresses a program." It is not only an ordering device but an architectural vocabulary that codifies, evaluates, selects, and denotes. Students study methodologies used by other architects and artists to develop their own. History is not a grab bag for style here but a lesson. It teaches the ways in which architecture has found a voice particular to a time, a place, and a culture.

A problem difficult to overcome, Goldberg points out, is the way students have been previously trained "to give the teacher what he or she wants." Through grade school and high school, students are encouraged to psyche out what the teacher expects and then to deliver it. Designing projects in the manner in which students believe the teacher would is a common technique in architecture schools. At Cooper, Hejduk says, the faculty is not prone to reward copying: "In fact they resent it. I will never let a student do things the way I do. It demeans my own work."

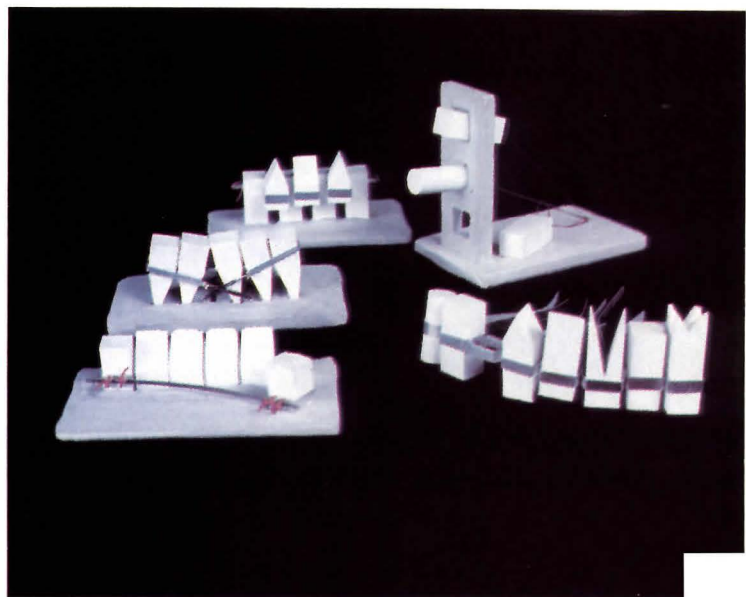
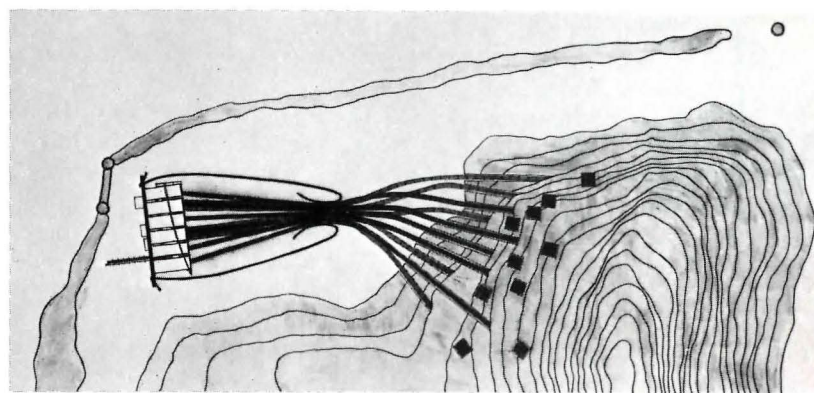
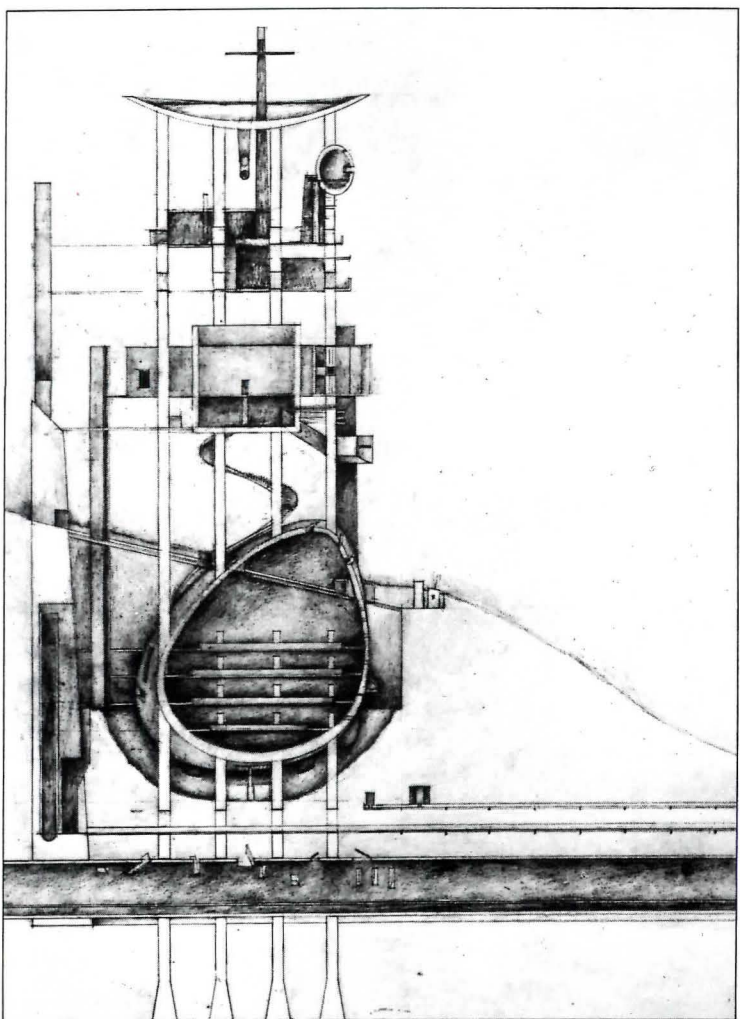
Instead, explains Goldberg, "we want the students to look inside themselves to discover what they want and to be passionate about it."

The first four years of the program concentrate on drawing, the humanities, history, theory, structures (one of the most rigorous sequences in the country), and studio work. By the fifth year students are ready to formulate their own questions about architecture and to translate these into a thesis program through which they search for answers. "The thesis project is a culmination of one thing and the beginning of another," said a student, the aim being to draw upon the previous four years and apply the methodology of one's own design to a problem. "It's meant to be the first substantive statement about architecture that you'll make," says another.

In their work students investigate (among other issues) the revelatory qualities of materials and their juncture. One exercise entails the design of musical instruments to understand how materials and the space they create become part of the art of music. This attitude is carried over into design presentation. "It's a description of our method," one student explained, "more than



Across page top, 'Rubber Building' by fourth year student Holly Ross investigates rubber as a material in an office building; across page below, 'Sliding Door System' by third year student Edward Arcari shows single-bay component of a 64-square grid of movable partitions. Left, 'A Place for Music' by fourth year student Timothy Schollaert is an intervention of a building-sized musical instrument as a 'foreign body' in Mesa Verda National Park; below, fifth year thesis design of a dentist's office on a desolate island in the Hudson River by Kathleen Lyons presents an architectural language based on the study of dental artifacts.



a description of the architectural objects that we make. We want to make the drawing be the work itself." For these reasons presentations are more than ink on Clearprint and cardboard models. Bumwad, paper bags, plaster, clay, string, wire, glass, metal, even video tape, can be used to render a design. In one case a student from China found it impossible to communicate the essence of her project—a setting for a Chinese fable—with a T-square and pencil. Her teacher took both away, and the student beautifully rendered her work with ink wash on rice paper.

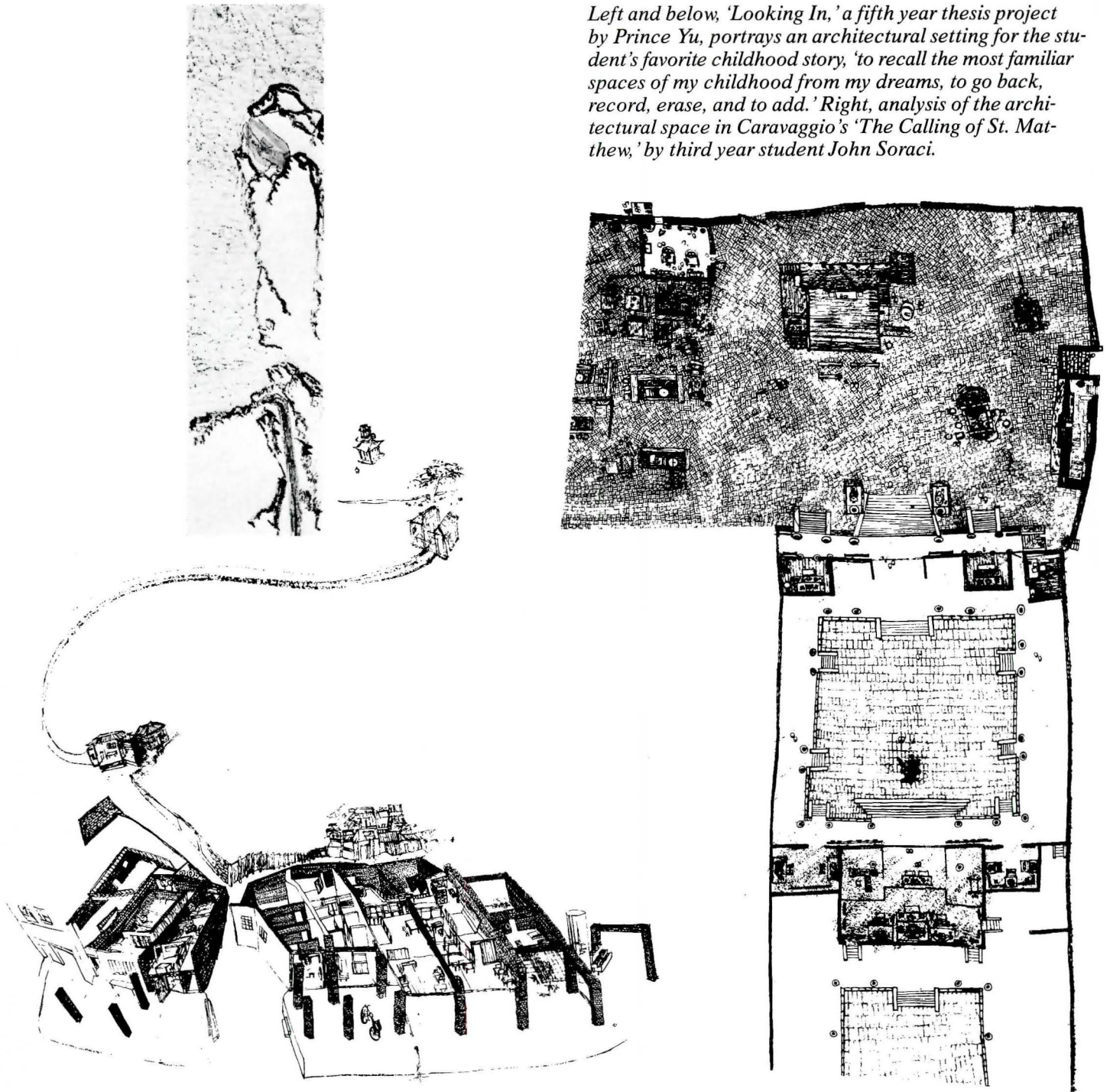
Another part of the Cooper architecture experience is the connections it makes with other disciplines. As one student described it, "We study a number of disciplines outside of architecture for an analogic approach." The connections between painting, literature, music, philosophy, and architecture are always approached, say the students, with the view of an architect looking at another discipline, in an effort to come to terms with the language of architecture by looking at other languages to see if there might be a similar tone or spirit.

Hejduk has encouraged the school's fascination with other

disciplines over the past 20 years. "The first stage was the passion of the figurative art of painting and its space," he says, "and the second stage has been the literature of space for architecture." Poetry pervades the school. Poets such as David Shapiro and Brian Swann teach in design studio, drawing connections between the two disciplines: how space found in poetry may be translated architectonically and how architecture can be created poetically and allegorically.

The next discipline to draw from may be medicine, thinks Hejduk. The last academic year opened with a lecture by Yale surgeon and author Richard Selzer. "It was mind blowing," Hejduk booms. "He talked about cutting into the body and how he can find a space through the sound of the cut. If architects shouldn't know about that, who should?" The space inside the body and other anthropomorphic themes have already surfaced in some student work. One used successive cross-sections of the body to build a vocabulary of spaces that were then transplanted onto a site. Another analyzed the history and practice of dentistry and oral surgery to develop a program for a dentist's office, and then translated dental procedures and para-

Left and below, 'Looking In,' a fifth year thesis project by Prince Yu, portrays an architectural setting for the student's favorite childhood story, 'to recall the most familiar spaces of my childhood from my dreams, to go back, record, erase, and to add.' Right, analysis of the architectural space in Caravaggio's 'The Calling of St. Matthew,' by third year student John Soraci.



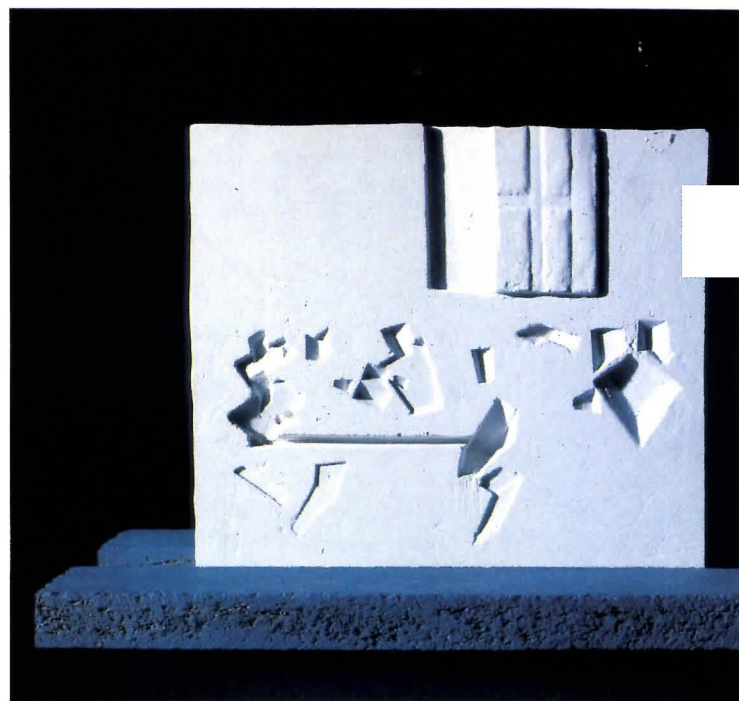
phernalia into an architectural expression. While jurying the latter project Peter Eisenman, FAIA, an adjunct faculty member, objected to the use of braces and crowns as the basis of an architectural idea, labeling it "banal" and nothing more than a "Venturi duck." But Hejduk interceded: "This student wants to probe that space between the earth and the angels," he said, paraphrasing the poet Rainer Maria Rilke to describe where architecture finds itself today: between one world view and the next, offering great opportunity for students to define its future course.

To expand the benefits of interdisciplinary inquiry, Hejduk hopes to create a program at Cooper where doctors, lawyers, scientists, and others who are leaders in their field can visit the school for extended periods of time. Being in New York City, he says, "we have the ability to draw people from all over the world who, just by their presence, can feed into the place."

But dentils outside of their use in a cornice may be too much for some to bear. Cooper's unconventional approach has earned its share of critics who claim that the school is too removed from the real work-a-day world of architecture. "Outside peo-

ple that I have taken to student shows at the end of the year," said one student, "have a reaction to it as if Cooper is very dreamy." Hejduk sees this outside view of Cooper as one of the biggest threats to its existence. "By its exploration there is the appearance that it draws away from the discipline of architecture," he acknowledges. "That worries me because as it becomes more open it becomes more vulnerable." He is also concerned that the hopes instilled in the students may not be met by their future. With the example of Cooper as an open forum for question and debate, Hejduk hopes that the profession will respond by expanding its own view of what is possible in architecture. "The structures that we build—physical structures and mental structures—have a deep effect on our humanity, on our society. I want the young people to know that their discipline is open and wonderful and that they can effect change. But," he pauses, "the profession has to help. It has to start debating and autocritiquing."

Bill Lacy sees the Cooper Union experience as an important first step in pushing architecture further along. "If students are ever going to have a chance to try out all the ideas they can



think of, it's now," he says. "I think we can afford more architects with a bit more imagination than is allowed by a profession that wants them to conform to its particular way of doing things by the time they graduate. That's the way the profession has always advanced."

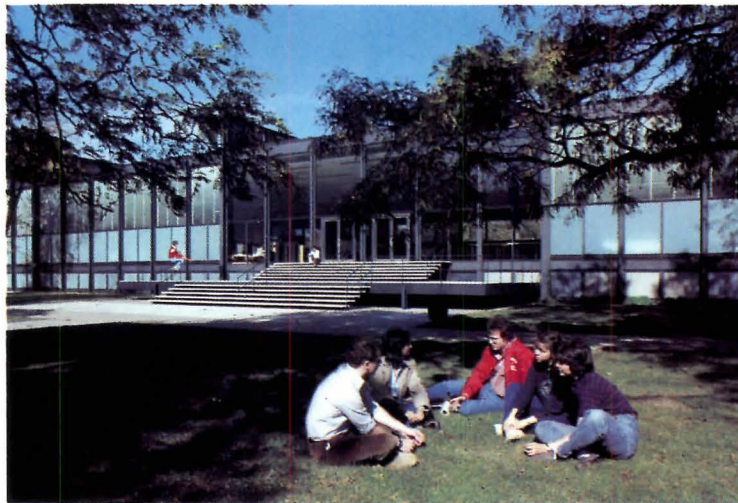
According to the students, faculty, and graduates I spoke with, Cooper Union grads have an admirable reputation in the "real world" of practice. Many offices seek them out because of their extensive education in structures and the rigorous nature of their work. And as more Cooper grads move into decision-making positions in offices they can begin to effect change. This last scenario was presented to me so often and so forcefully and by so many at Cooper that I began to suspect a coup was being planned. Maybe there is. "The work of Cooper Union architects has been felt somewhat," one student told me, "but it's only the tip of what's coming."

The educational experience at Cooper appears to have staying power. Hejduk reports that graduates who drop by to visit always comment on how their education daily affects their architecture or, if they have chosen to work in another field, how

their education has contributed to their understanding of that field in an architectonic way, be it film making, computers, or, in one case, designing artificial joints.

Theodore M. Ceraldi, AIA, whose design for a horse breeding farm in Lexington, Ky., just received an AIA honor award (see May, page 212), graduated from Cooper in 1970. "There's not a day that's gone by in the past 14 years," Ceraldi says, "that I haven't given serious thought to my education and the incredible restraint and resourcefulness that was necessary for that education to exist." Ceraldi believes that the most important thing that the school offered him, and continues to offer its students, is freedom. "Freedom of mind, freedom to postulate, freedom to associate, freedom to contrive. To work and teach with this kind of philosophy lays bear the mind to discover and rediscover that which is most natural to it."

Imagination will atrophy if one is not permitted the freedom to cultivate it. To ask whether architectural education at Cooper Union is relevant to the "real world" is to beg the question. Our architecture will be as rich, as deep, as colorful, and as textured as our imagination will allow. □



IIT: Tradition and Methodology

'Mies' presence there is still felt in obvious ways.' By M.J.C.

The key to understanding the school of architecture at the Illinois Institute of Technology in Chicago is its history. Its legacy, tied to the Chicago School tradition, continues to shape it to this day. A century ago Chicago architects desired an architecture school in their city that would train practitioners for work locally, and they wanted to be involved in the education process. In 1889 Daniel Burnham, John Wellborn Root, and William LaBaron Jenney sponsored a two-year course of instruction in architecture at the Art Institute of Chicago. The program was popular, and all three often lectured there.

In 1892 the Armour Institute of Technology was founded by the Armour family, who had made their fortune in the meat packing business. Three years later the schools merged, the Art Institute supplying architectural training and the Armour Institute engineering. For the next 40 years the school developed under the tutelage of the Beaux-Arts movement in Chicago. By the 1930s, however, the Beaux-Arts had run its course, and another generation of the Chicago School emerged, represented by such architects as John A. Holabird and John Wellborn Root Jr. In 1936 the Armour Institute's head, Earl Reed, vacated the position, and a committee of five Chicago architects, headed by Holabird, commenced a search for a new director.

An exhibit of Ludwig Mies van der Rohe's work in the Burnham Library at the Art Institute prompted Holabird to write to Mies about the position. He received no reply. A year later, hearing that Mies planned to visit Chicago, Holabird arranged to meet him. Mies was offered the position and accepted on the condition that he introduce a new curriculum. Several months later the Armour Institute accepted Mies' curriculum without revision.

George E. Danforth, FAIA, emeritus professor at IIT, says that Mies' philosophy of education "was to develop a method of work, a way of doing, a striving towards clarity of thought, a concentration on fundamentals." The curriculum was an expression of this philosophy. It taught the means of building (materials), the purposes of building (functional building types), and planning and creating (the tools with which to raise building to the level of architecture). This tripartite organization constituted a way of learning, which, as Mies wrote, "makes clear, step by step, what is possible in construction, what is necessary for use, and what is significant as art."

Mies brought with him Ludwig Hilberseimer and Walter Peterhans, both colleagues of his from the Bauhaus. Hilberseimer used Mies' principles to develop the planning program at the school and Peterhans, a photographer and graphic designer, de-

veloped the visual training courses. The curriculum was fine tuned during World War II when enrollment ebbed and was inaugurated in 1947 as a five-year bachelors program.

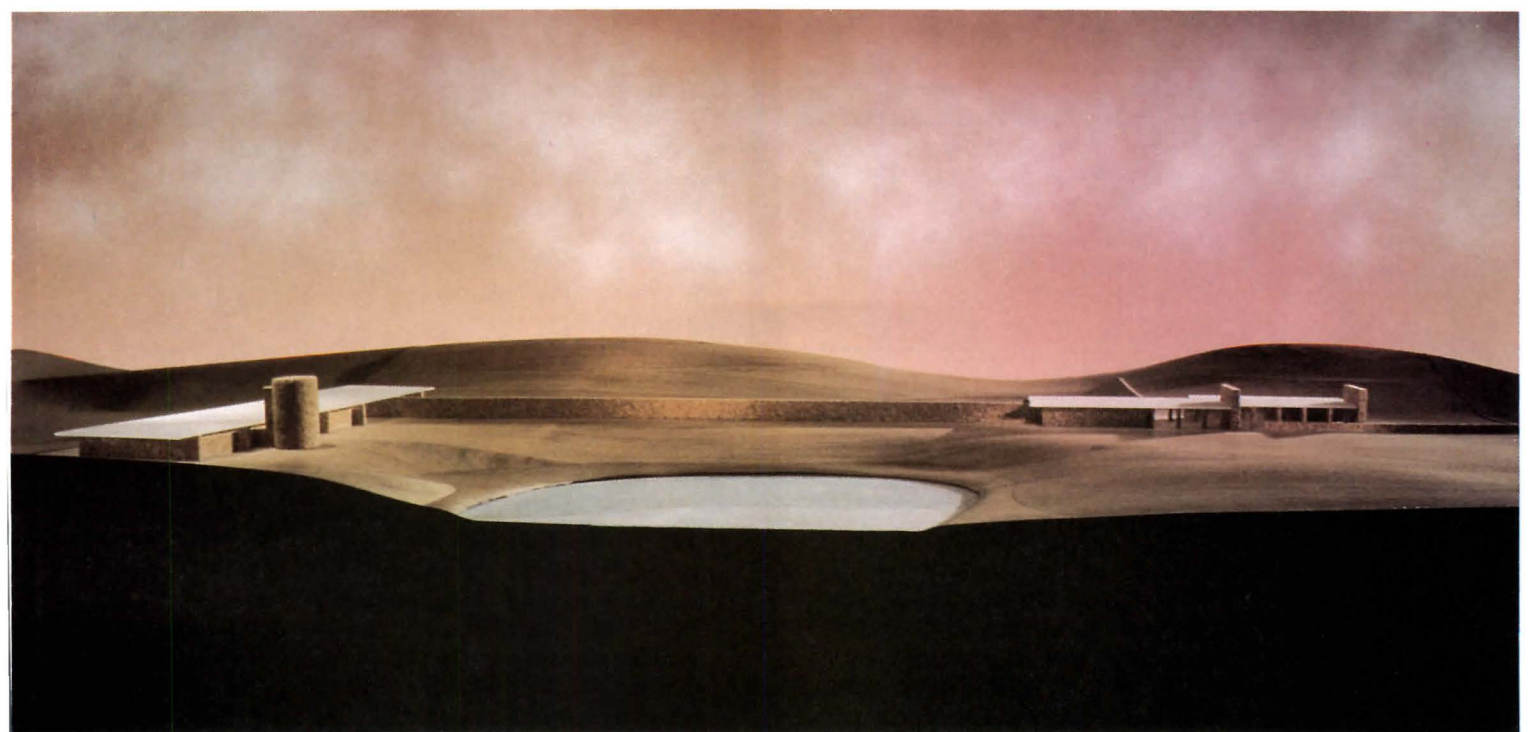
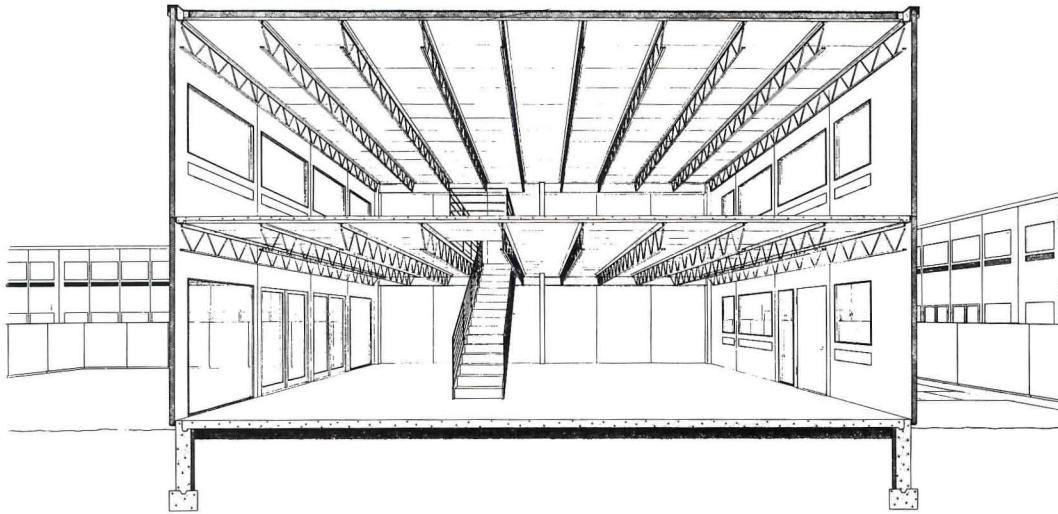
In 1940 the Armour Institute was renamed the Illinois Institute of Technology, and Mies was commissioned to do a master plan for a new campus, which would provide a permanent home for the school. In 1947 Alumni Hall was completed and the architecture school moved into its new facility. Eight years later the school moved to the newly completed Crown Hall, its home now for nearly 30 years.

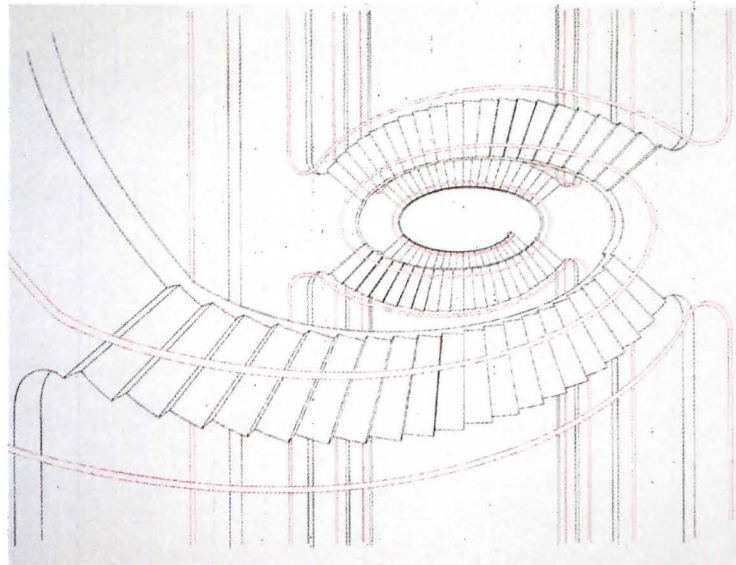
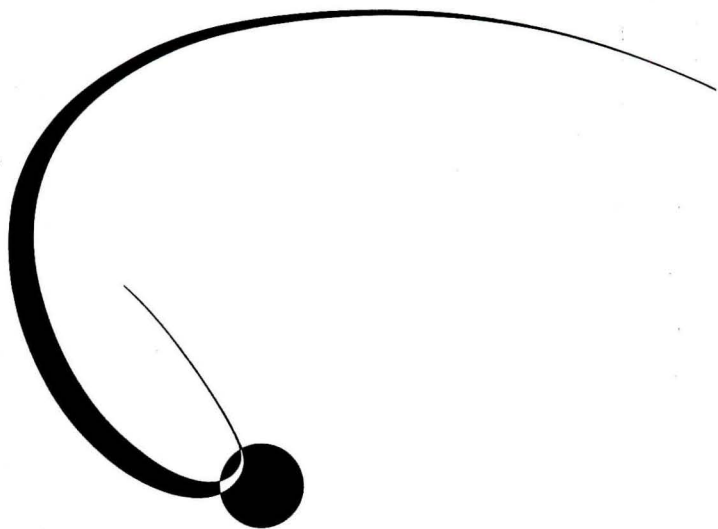
During Mies' 20-year tenure as director (he retired in 1958 to pursue his practice) students were drawn to IIT to study under the master. Many of those who attended have designed buildings all over the world, but nowhere is their work more patent than in Chicago. The skyline seen through the glass walls of Crown Hall presents the work of former students: Chicago Civic Center by Jacques C. Brownson; McCormick Place Convention Center by Gene Summers, FAIA; the State of Illinois Center, the Board of Trade Building, and One South Wacker, all by Helmut Jahn, AIA; and Lake Point Tower by George Schipporeit, AIA, and John C. Heinrich.

Schipporeit, who is the dean of IIT's college of architecture, planning, and design and chairman of the department of architecture, points out that nearly all the faculty members are practicing architects. Among them are such leaders of Chicago's architectural community as Myron Goldsmith, FAIA, John Hartray, FAIA, and Gerald Horn, AIA.

The faculty, for the most part, shares a commitment to carry forth the traditions of Mies and the school. The majority of them were educated there, some under Mies. John A. Holabird Jr., FAIA, whose father chose Mies as director, is chairman of the school's board of overseers. As one faculty member explained to me, there is an unbroken line down from the Chicago School of Burnham, Root, and Jenney, through Mies, and to the IIT students of today, a tradition handed down from one generation to the next. Mies' presence there is still felt in obvious ways. Crown Hall is a powerful building, the centerpiece of IIT's master plan, and one of the best examples of Mies' striving for ar-

Above, Crown Hall as it looks today from the rear. Across page, top, perspective section drawing of structural system by second year student Jeffrey Furman; middle, long-span steel structural model by third year student Patricia Haliakis; bottom, masonry farm buildings by third year student George Sorich.





chitectural clarity through structure. A bust of Mies in Crown Hall surveys the work that is carried on in his stead.

The school has approximately 275 students in the five-year program and 10 in the graduate program. The curriculum, put forth as one of the school's strongest points, is highly structured and has not appreciably changed since it was introduced. The school's pedagogical focus, says Schipporeit, "is a tradition in believing that one of the first steps in dealing with architecture, or being an architect, is knowing how to build buildings." There is much study given to how buildings are constructed and the appropriate use of materials, or to use Mies' word, *baukunst*, meaning "building art." A second part of that tradition, the dean explains, "is a strong commitment to quality, that architecture is something serious and that building should represent the best possible effort of what can be done for a particular situation."

The first three years concentrate on training students in how to see. Freehand drawing, photography, art, three-dimensional design, and two years of visual training make the students sensitive to proportion, form, rhythm, texture, color, mass, and space. The second and third year introduce them to those physical principles of architecture "that do not change," explains Schipporeit, "with which we build a confidence to solve problems." This includes the properties of building materials and a thorough understanding of how they are used. Studio work is co-ordinated with engineering courses in masonry, wood, steel, and concrete structural systems. Schipporeit points out that emphasis is placed on the constraints of these materials and their appropriate use. Students draw beautifully detailed plans, sections, elevations, and perspectives showing materials in use. Carefully constructed models are made of steel trusses, wood frame buildings, and masonry frames. Sometimes full-size mock ups of brick walls or wooden connections are made. "You feel like you can build your own house," one student said. "You have a sense that you really understand building. You don't need a structural engineer standing over you telling you what you can and can't do."

The visual training and an understanding of the properties of materials in construction are identified as the fundamentals of architecture, "the basic principles that have been consistent and should be consistent in the future," says the dean. "IIT gives you all the building blocks that you need to become an architect," explained a recent graduate.

By the fourth and fifth year, students are applying the principles they have learned. One fourth year project, a space model of 5,000 square feet, tests the student's ability to develop a structural system of enclosure and subdivision of the space with partitions, sculpture, and columns. The interiors are represented with collage (a technique developed in the visual training courses).

Above, two exercises for visual training: left, circle and curve by first year student Jao-Nee Hu and right, spiral stair by first year student James Davison. Across page, two renditions of a fourth year, 5,000-square-foot space problem: top by Frederick T. Norris and middle and bottom by Carl Dittburner.

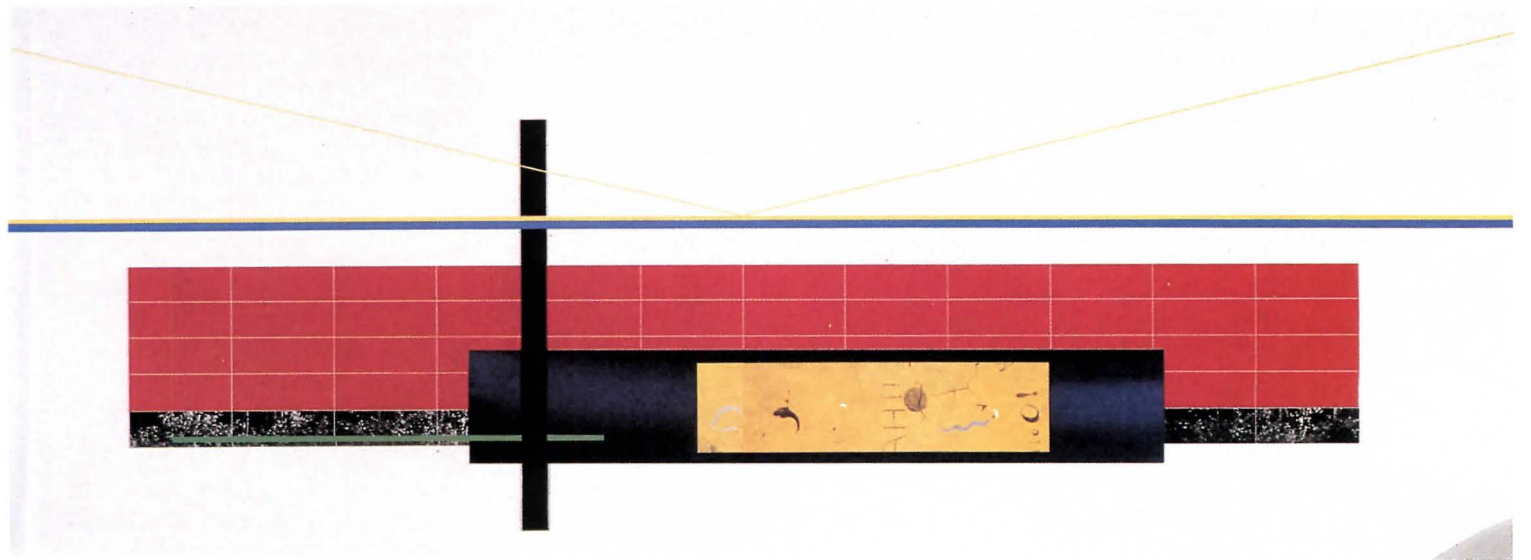
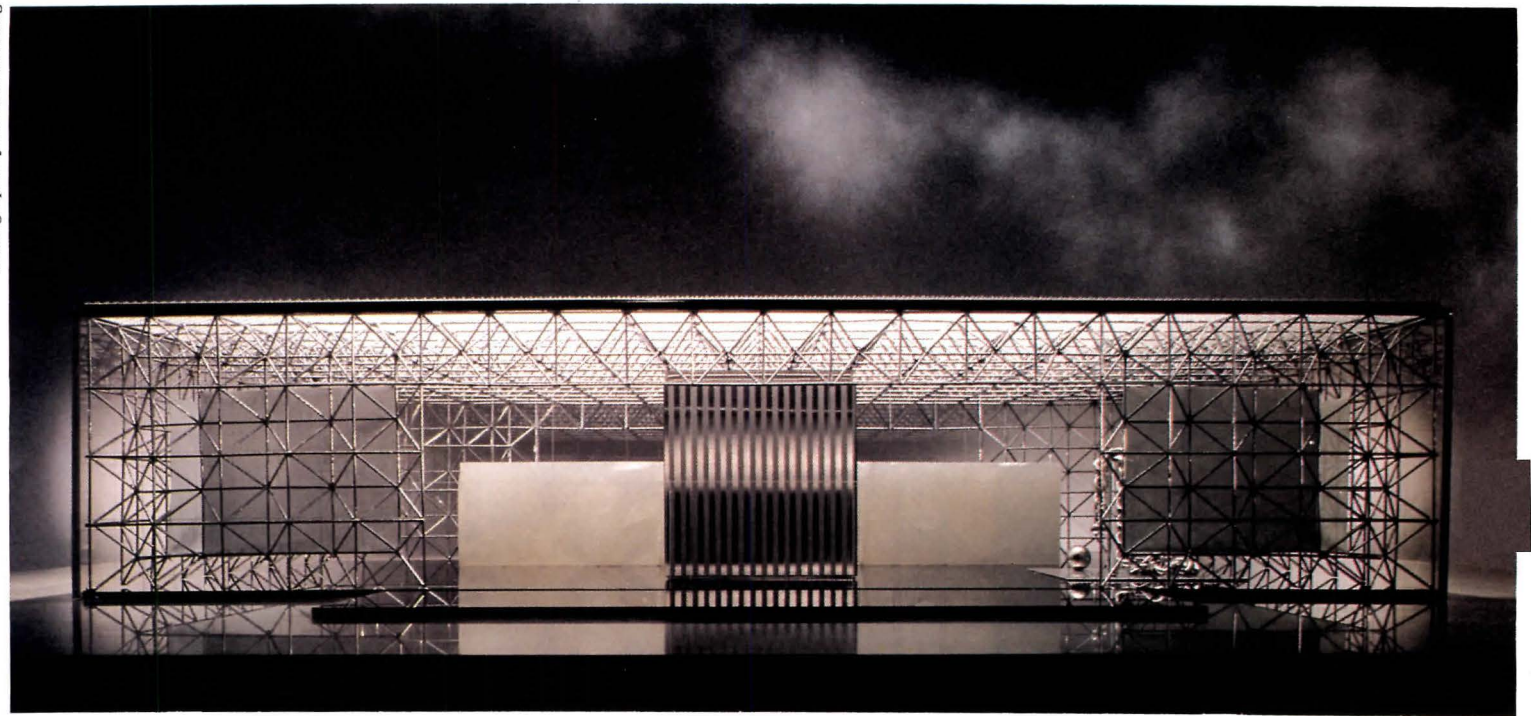
The structural system is demonstrated with a carefully detailed and constructed scale model that shows the materials used and their connections. In fifth year the students do a thesis project (developed by them and their teachers) that elaborates on the principles learned.

That's the curriculum in a nutshell. Connected to it is another part of IIT's tradition: a methodology of teaching and learning. This methodology is based on logic and reason. "It's an incredible process," explained one student. "You learn a universal attitude and a process for doing just about anything, not just architecture." The process is a step-by-step evaluation of a problem followed by a rational, step-by-step resolution arrived at through a series of decisions. "The process gives you the confidence that any problem is surmountable," said another, "if you break it down to its most elemental parts."

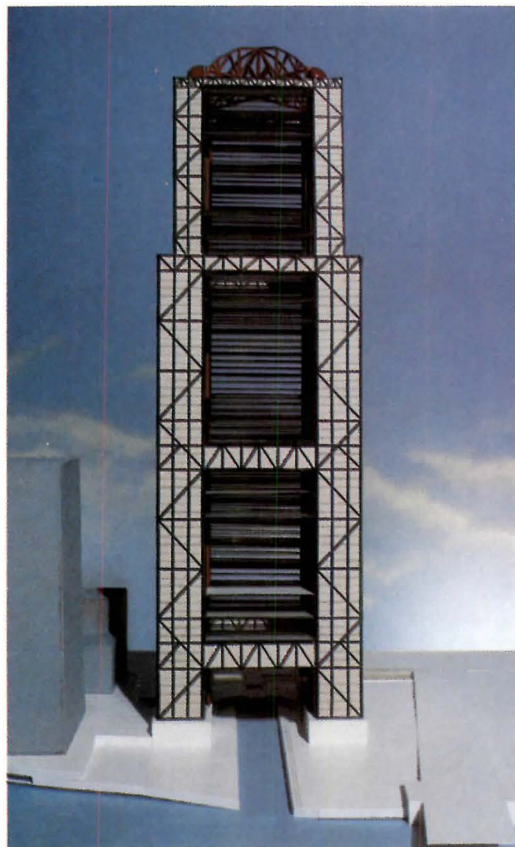
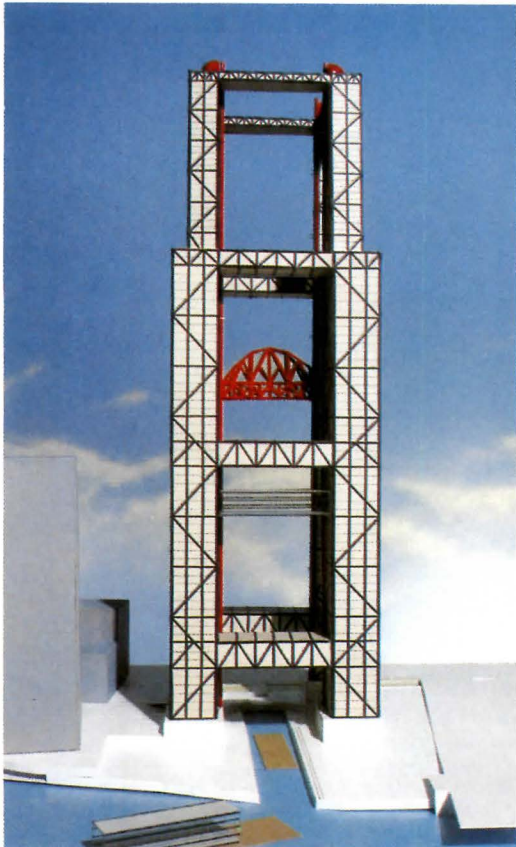
Learning the principles of architecture through a logical process instills within the student a faith in an ordered approach to not only architecture but life itself. "Education must lead us from irresponsible opinion to true responsible judgement," said Mies in his inaugural address in 1938. "If teaching has any purpose, it is to plant true insight and responsibility."

If Mies' aphorisms have a gospel ring to them it is no accident. His teachings are considered by most of the teachers and students to be the way to truth, with a capital T. "There's a real moral fervor here," one student told me. "There is a correct method that involves hard work, serious attitudes, and a lack of frivolity or whimsy about the process." The principles learned here are universal and timeless in nature, explained another. "They are correct yesterday, last century, this century, or the next century," and transcend Mies' architecture. "People say this place is Miesian," a student complained. "It's not Miesian, it's just truth." Mies may have said that God is in the details, but salvation at IIT is in the methodology.

Their disciplined and orderly work habits make IIT graduates quite marketable. Most students work in Chicago offices during the summer and upon graduation are assimilated into the local workforce. The majority work in large firms. One of the half-dozen or so IIT grads who work for Murphy/Jahn told me the office is enthusiastic about their work, "because we understand clearly what we are supposed to do, we know how a building goes together, and we respect deadlines." And because



Below, fifth year thesis project by Kay Vierk for multiuse complex in Chicago. Red elevator unit moves down on rails to lift prefab units from barge, which are then slid into place. Right, fifth year thesis project combines residential and commercial space with transportation in center, by Glenn Johnson, Henry Pieracci, Richard Hamielec, and Mathew Bold.



of the faculty's close ties to firms in the city, there is, in effect, a contingent of IIT grads in many offices: "a family atmosphere," as one student described it, "an old boy network of IIT students."

IIT has been very successful in carrying on a tradition of teaching architecture while fulfilling the hopes of its progenitors that it supply practitioners who will perpetuate an architecture that is assertively identified with the Windy City. The fidelity to tradition, however, has a flip side to it, a dark side in which the school's weaknesses reside. IIT is in danger of becoming a captive of its own history, a school without a master that is a slave to its own tradition. A state of suspended animation could make IIT a museum piece, not unlike the projects so proudly displayed in Crown Hall under their plexiglass cases.

The school's unswaying faith in its own view of the world has closed it off to certain things. A number of students I spoke with said some teachers are hostile when questioned about directions in architecture different from IIT's. "There's really not an open dialogue of views here among certain members of the faculty," said one student who otherwise praised the school. "Everything is slanted in the tradition of Mies, and everything is viewed through that looking glass." The students stress that this is not true of everyone at the school. It is possible, explained one, to go through IIT and avoid teachers who are unyielding. "There's a kind of IIT mafia here," he said, "who tend to be

most intolerant. With them it's a clear case of good and evil, black and white."

But education shouldn't be an obstacle course nor should it omit shades of gray. Schipporeit agrees that the faculty needs to be responsive to the world outside. "One of our biggest concerns is emphasizing that we are not an isolated community, but very much part of our society, just as we say our architecture is." He also believes that the school should work to overcome the perception of itself as the sole repository of architectural truths. "It has a reputation for being the place where all the scrolls are kept, and I don't think that's good. We want to be one of the options," he explains. "We have a way of teaching architecture, but there may be students who are more interested in approaching it from another direction."

The student work tends to reinforce the perception of the school as being frozen in time. If one reviews projects from 20 or 30 years ago, it is hard to distinguish them from work done today. This is especially true in the first three years where the same examples illustrating architectural principles are used over and over again. It is obvious from faculty presentations of this work that they have learned to be defensive. As different projects were explained to me, justifications were often included seemingly out of habit. I was told that these projects were only études, that the principles were important and not the media



used to teach them, that Miesian architecture was only a tool to illustrate the fundamentals. I have no doubt that all of this is true, but what about the sheer monotony of it? Couldn't other media be used to teach the same principles? Might the students be invited to demonstrate their understanding of the fundamentals through examples of their own design? Might new exercises be developed to help alleviate the view of IIT by some as nothing more than, in one student's words, a "Mies machine?"

And couldn't the fundamentals and principles be covered in a more efficient way? The drawings and models, although very beautiful, take a great deal of time to illustrate something so elemental. Schipporeit says that the faculty is beginning to ask this question, adding that he would like to apply computers throughout the program as a teaching and problem solving tool.

The school's ideological background has also hampered the teaching of a very basic part of architecture: designing space. Space tends to be a residual of structure at IIT. There is much attention paid to the expression of structure but none to the space created within. This weakness, conjectures Schipporeit, is no doubt rooted in Mies' concept of universal space: space that responds to no particular program or function but can be divided infinitely for virtually any use, like the space in Crown Hall. Mies also disdained the word "design." He wrote that "architecture has little or nothing to do with the invention of in-

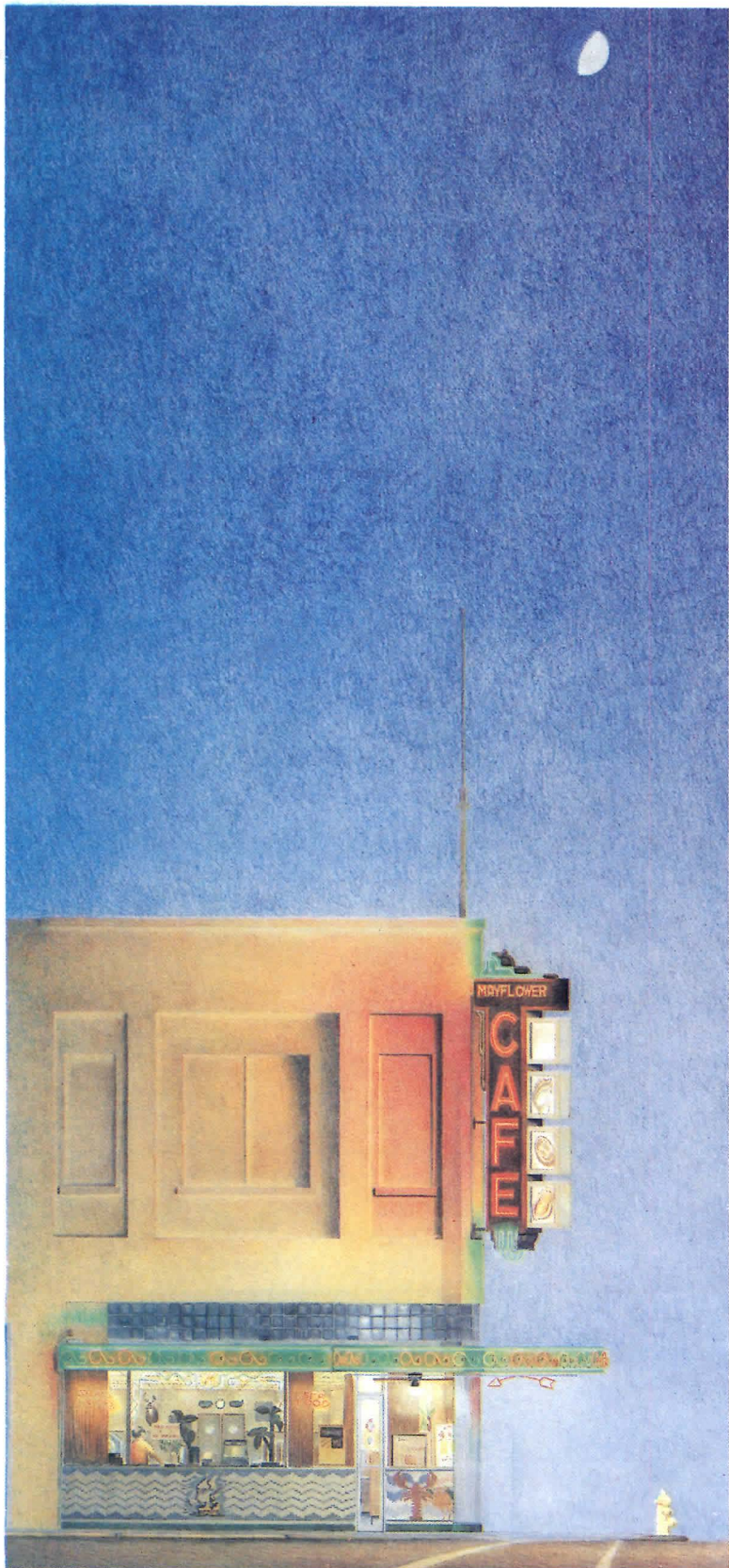
teresting forms or with personal inclinations." Some faculty and students, in the spirit of Mies, concentrate on making enclosures of elegant clarity while functional considerations are given less attention. For example, one student went into great detail in explaining how the metal panels that covered his building would be manufactured. But the building's placement on the site and its accommodations for the people who would use it were given little thought. Again, this is not true in every instance. One fifth year housing project was an interesting study of the creative mix of retail and residential space, and more efficient uses of such space to lower cost and raise density. There needs to be as much concern for the contained as there is for the container.

IIT has a great tradition that it should covet. Its founders not only raised a city from ash but also changed the course of architectural history in doing it. Mies elaborated on that history, creating a Chicago School all his own. But IIT needs to evaluate this tradition in a fundamental way to understand how the school can further develop. What made architects such as Burnham, Jenney, Root, Holabird, and Mies relevant to their time? What was the essence of their work, the generative force, that allowed them to adjust and respond so creatively? To be faithful to its past and responsive to its future, IIT needs to ask these questions today. □

Mississippi State: A Small Town Focus

A relatively new school draws strengths from its limitations. By Robert A. Ivy Jr., AIA

Craig Baird



Tom Joynt

Mississippi's highways form a loose fabric of small towns: Pheba. Anguilla. Eupora. Potts Camp. Miles of green hills or flat green delta, rising visible heat, and quietude separate the arching water oaks that define the major avenues of its communities.

At the town of Starkville located on the edge of the rolling Black Prairie, Mississippi State University is celebrating, for it has wrested a dynamic energy from the state's untapped natural resources. MSU's school of architecture has flourished, grown, built, and educated 10 classes despite its rural setting, despite the state's relative poverty, despite the odds.

When Dean William McMinn, FAIA, arrived in 1974, he found that 70 students had already begun their first year of architectural education without a dean, without an architectural faculty, and without a building. But he also found that the architectural profession within the state was hungry for the focus that a school could supply. Further, McMinn found a significant commitment from the university itself. John K. Betterworth, then vice president for academic affairs, was a friend at court at the 12,200-person land grant institution. His early enthusiasm for the incipient program produced tangible benefits of money and encouragement at the critical moments.

The new dean drew strength from Starkville's distance from urban centers, which allowed the faculty and students to focus inwardly toward studies and toward each other, to develop esprit de corps and camaraderie. Other positive factors in place included the fact that Mississippi was emerging into the 20th century mainstream; its own urban center, Jackson, enjoyed a healthy, growing economy, as did many of its smaller towns. Newness and the energy and goodwill inherent in a new institution all played a role.

The new institution self-consciously tried harder. Associate Dean James Barker, AIA, one of three original faculty members recruited by McMinn, recalls the first days when desks had not arrived. As the students sat cross-legged on the floor, he and D. K. Ruth, AIA, huddled together before going into their first teaching assignment. "We realized that the course we were entering would be the first architectural class ever held in the state. When the significance of the moment hit us, we turned around and prepared for another hour before beginning."

Two faculty members joined the staff with each subsequent year, and a curriculum emerged from the forge of experience. The need and willingness to experiment necessitated some risk-taking with real energy and real intensity as results. As Barker says: "Anything has been possible. 'Why not?' has been the motto, because designing this school was and is an adventure together—for students and faculty."

Since the school's mission has been to educate young Mississippians for the practice of architecture, the majority of students has come from within the state, from the small towns of the Piney Woods to the Memphis exurbs, from Starkville on the east to Greenville on the river. According to Associate Professor Hank Hildebrandt, there is an enormous diversity in the background of the entering freshmen. "Some come from very small towns and have had limited exposure to architecture or the larger

Mr. Ivy is a principal in the Columbus, Miss., firm of Dean/Dale & Dean and editor of *The Mississippi Architect*.

world, yet some are urban dwellers from Jackson, Memphis, or Washington, D.C.”

Where students lacked familiarity with the man-made world, the school tapped esthetic sensibilities derived from the land. Where students lacked sophistication, the school tapped their common sense and willingness to work.

Faculty came for various reasons. Professor Robert Ford, AIA, who had marched with Martin Luther King Jr. at Selma, responded to the commitment he saw from the administration and to the opportunities afforded by a new program, and he has stayed seven years. Starkville is demanding on faculty, according to Ford, but the setting encourages the close and continuous relationship between faculty and students. Since it is also possible to practice in Starkville, as Ford does, most faculty members continue some private work. “This is no haven for the nonpractitioner,” he says.

Fifteen faculty members and 250 students participate in a program whose basis is a five year curriculum. The small program is structured as a continuum in which there is a correspondence from each year to the next. Key to that progression is the notion of a “bridge faculty member,” a system in which a student retains one of two design instructors from the previous semester. The student is thus passed along all five years via the faculty “bridge,” a link that can remember and work to improve a student’s weakness in a particular subject.

While integration of curriculum follows throughout 10 semesters, it is particularly evident in the first year syllabus. Professors stress cohesiveness among the entering group, whom they lead through a series of individual exercises that build individual skill upon skill, sometimes within the context of a single subject.

Montgomery Hall, a major masonry building on campus, is analyzed, sketched, drafted, named (sill, mullion, and the larger architectural vocabulary), and explored for form, line, and color. Another first year project, which began at the suggestion of a fifth year student, analyzes a street in downtown Meridian, Miss. Students draw individual buildings, study the effects of shade and shadow in drawings, build models to study exterior alterations, and produce interior designs. When lined up, the individual storefronts come to life as a new street—the synthesis of the individual efforts.

Second, third, and fourth years concentrate on building basic skills introduced in the first year. The second year design class investigates programs simultaneously studied in Professor Michael Fazio’s history of architecture course. Projects are often located on historical sites—such as at Hadrian’s Villa or at a Mayan temple site. Students are thus encouraged to confront the implications of history in a rigorous studio setting; they cannot “can” the subject or relegate it to a special category.

Third year at MSU could be subtitled “Dreams to Reality,” according to Professor Bob Ford, since that is the year of intense study of building materials and the leap to putting those materials together in actual buildings. Third year shares its design studio with both second and fourth years in a large arena space that produces an audible drive of its own, from the large, brightly painted airconditioning ducts to the chatter of critiques and gossip taking place on its two major levels.

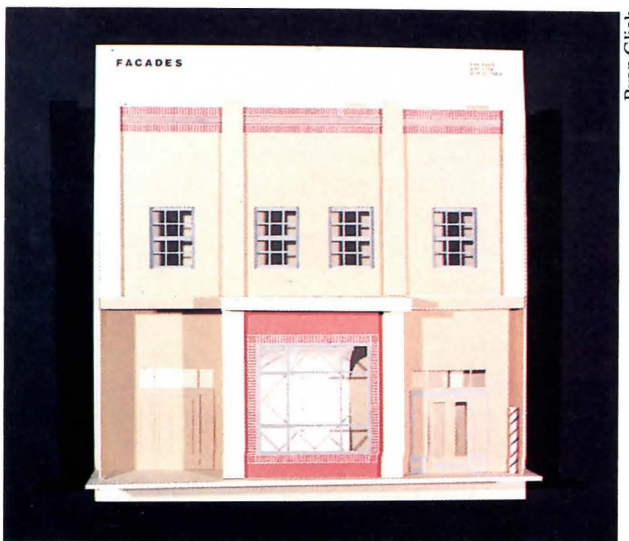
Across page, top, Mississippi State University’s school of architecture building; across page, bottom, study of cafe in Jackson, Miss., as rendered by fifth year student Craig Baird. Below, top, middle, and bottom, facade designs based on existing storefronts by first year students John Beard, Monte Earlywine, and Eva Read, respectively.



Ryan Glick



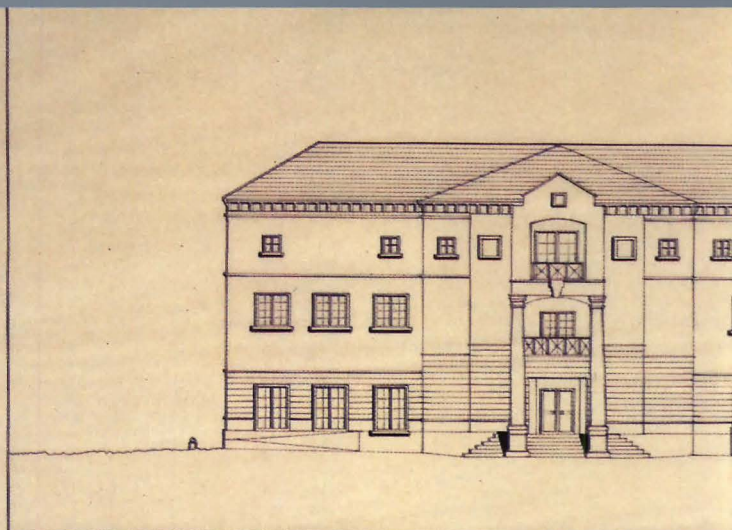
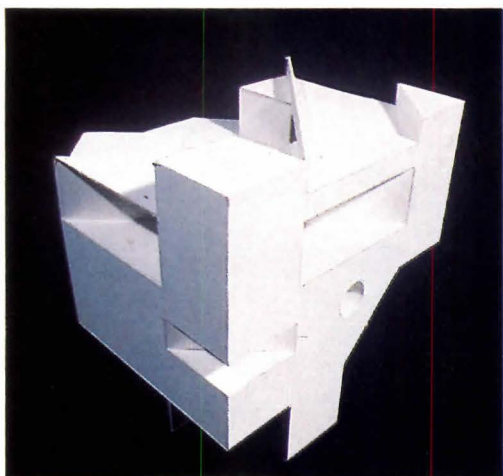
Ryan Glick



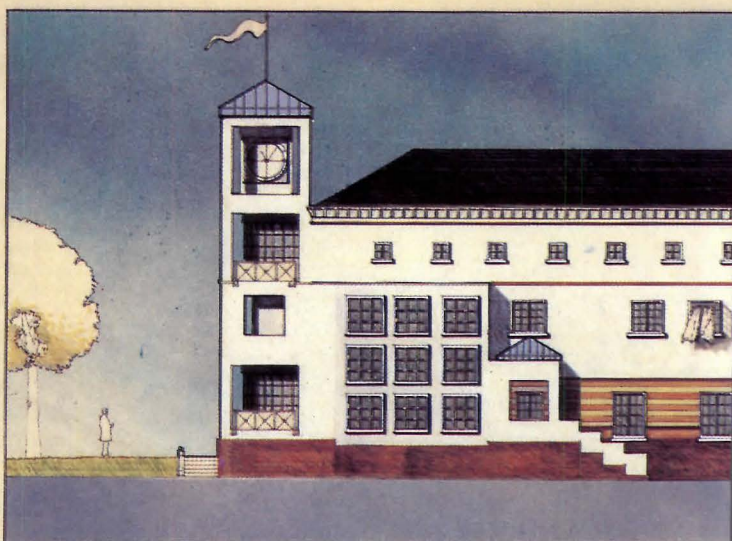
Ryan Glick



Courtesy of Mississippi State University



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Despite the fact that one large design studio houses three classes, fourth year student Blair Seibert commented pointedly on the “respect for the individual student” that she found at Mississippi State, a quality that led her to transfer to MSU from an urban university.

Since four years in Starkville required enrichment of exposure to the larger world of architecture, the school reached out beyond its boundaries and took a class to Columbus, Ind., 10 years ago. That initial trip has now expanded into an active midyear travel program that has become a regular part of each class’s education.

First year students now routinely travel to nearby cities—to New Orleans, Memphis, or Atlanta—where they sketch or attempt small design problems. The second year trip to Columbus has become an annual event providing the entire school with a common vocabulary of shared experience. “You know Saarinen’s Church at Columbus?” is universally greeted with an affirmative nod of the head. Third and fourth year classes visit the East or West coasts, and the school now sponsors trips to Europe, some for prolonged study.

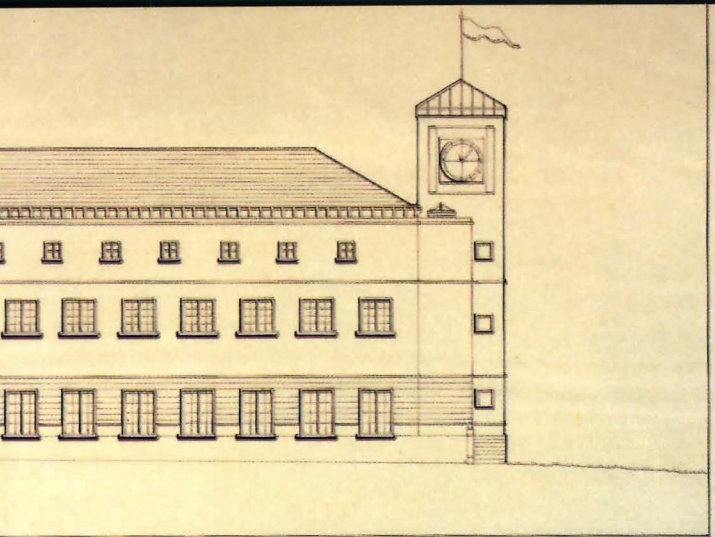
A further source of enrichment has been the conscious importation of other architects, other minds to spark fires and augment the curriculum. Inspiration for the first “vertical studio” (so called because all ages and classes participate) came in 1974 with a request from the mayor of Biloxi, Miss., who asked the school for help. The mayor wanted to do something dramatic that would spark improvement in downtown Biloxi. Dean McMinn responded by calling nationally prominent architects to lead student teams from architecture schools at Mississippi

State, Auburn, Louisiana State, and Tulane. The resulting inter-collegiate charrette held in Biloxi helped chart the possibilities for a cultural center, stoked the fires at MSU with residual fuel, and resulted in a real building. William Turnbull’s library and cultural center stands today closely resembling the model arrived at in group investigation.

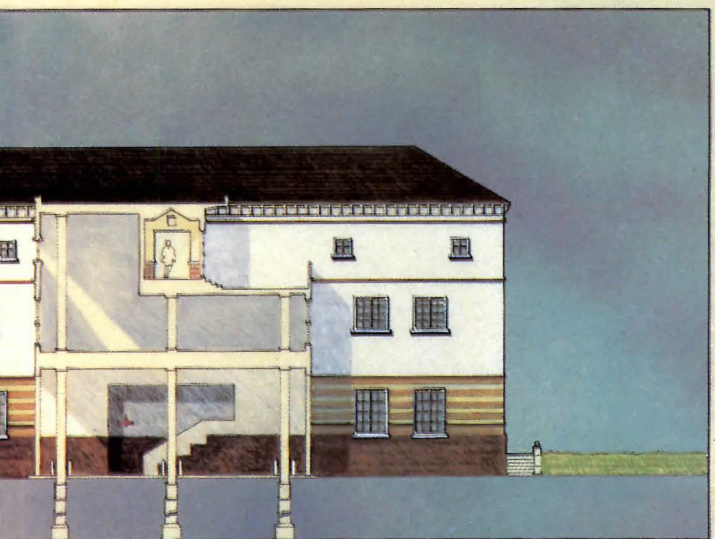
When McMinn was chairman of the department of architecture at Louisiana State University, he kept a separate design studio in New Orleans to maintain an urban connection. The lesson seemed applicable to Mississippi, and therefore the fifth year studio is located in Jackson, Mississippi’s capital and only urban environment. “It may not be really urban, but it’s the best that we’ve got,” said Dan Bennett, AIA, professor and head of the fifth year program.

Jackson is also home to the majority of the state’s practicing architects, as well as the center of new construction and source of many regional building materials suppliers. Other colleges and universities lay within the city limits, providing opportunities for enrichment and cross-pollination. Intellectual yeast, as well as the possibility of making the fifth year a transition to the profession, lay 120 miles south of Starkville.

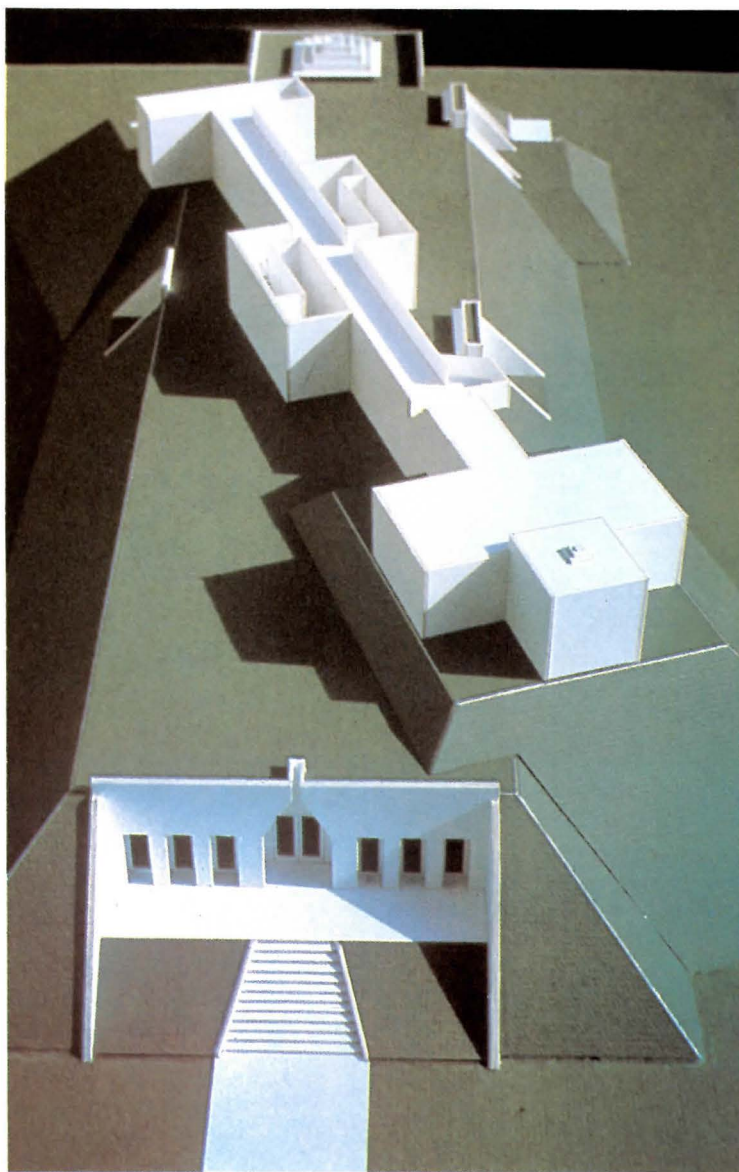
Bennett sees the fifth year as an enrichment year, a chance to develop lessons previously learned, to speculate, and to expand. He enlivens the design and thesis program with speakers from outside the university, such as Professor Michael Mitias of Millsaps College, a philosopher who teaches a course on the philosophy of architecture; an attorney who lectures on legal aspects of the profession; an architect who teaches office practice; and an English professor whose supplemental course for



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Courtesy of Mississippi State University

Left, top, study of geometry in solid and void by first year student Shelton Stone; left, bottom, design for a foreign student center by third year student Jeff Blanchard. Above, design for an administration building and community center at Belhaven College in Jackson, Miss., by fifth year student Amin Atlaschi; right, Uxmal visitor center on the Yucatan by second year student Jerry Martin.

analytical method, a way of seeing. They were also, says Bennett, accurate orthographic representations of what was actually there, not just artistic interpretations of the buildings.

While there has been discussion as to the relevance of the large scale drawing problem, the results speak for themselves. Drawings from this fifth year group have been exhibited throughout the state and were shown early this year at the Institute for Architecture and Urban Studies in New York City.

From looking at student work, there is no evident "school" or style in monopoly. Associate Dean Barker feels that the mid-1970s founding date was beneficial, since that period saw the disintegration of the modernist hegemony and the rise of pluralism in design. If there is a direction that the school seems to be pursuing, it is toward the analysis of the particular, whether that be the evaluation of light and shadow on a storefront in Meridian or the examination of a windowsill in Jackson.

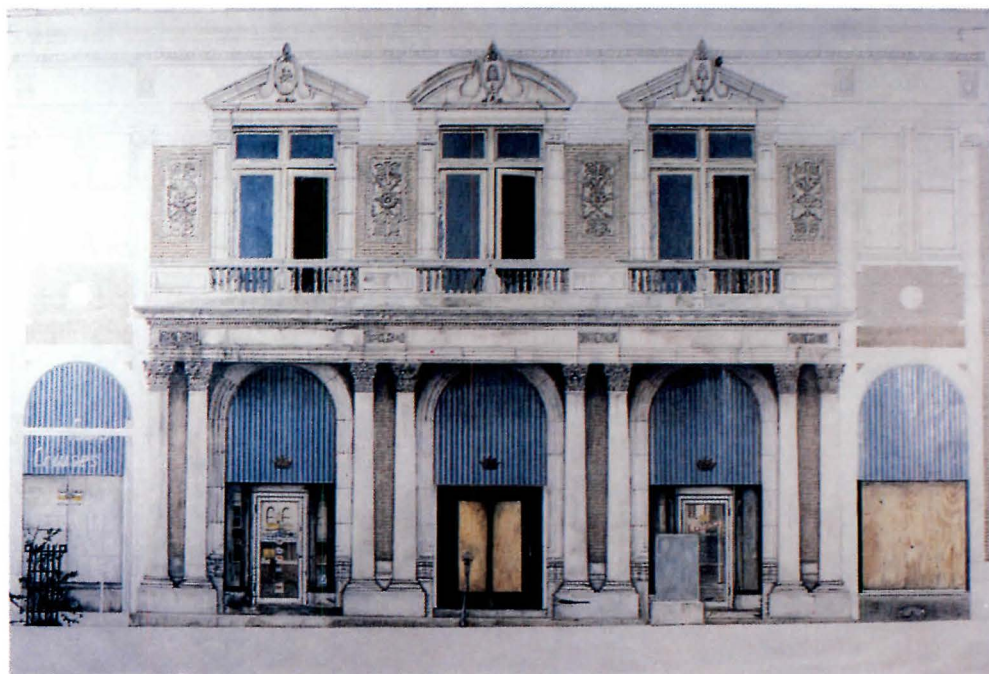
Other agencies within the university system yet outside Starkville have helped the school to grow. "That Mississippi State is a land grant institution . . . is fundamental to understanding the school's status," says Robert Wolverton, vice-president of academic affairs. The extension service, a statewide network of county agents, as well as research agencies scattered across the state all produce the understanding in counties and cities that if something needs fixing, the university is the place.

That familiarity, coupled with the school of architecture's commitment to capitalize on its unique situation within the university and within the state, led to the formation of the Center for Small Town Research and Design. The interdisciplinary center eventually produced its own graduate program, the curriculum

1985 is entitled "People, Places, and Spaces—the Creative Act in Literature."

If the first four cohesive years of instruction are derived from programmatic models, the students' fifth year is speculative, derived from an analytical methodology. First year students produce measured drawings of existing buildings as an introduction to the world of architecture and learn a vocabulary with which to name it. In fifth year the process is expanded, repeated, and modified as the students examine an area of downtown Jackson and draw it in detail. More than simple rendering, this exercise is a search for the essence of a building that leads to philosophical discussion on the nature of building itself. Students then proceed by designing "intrusions" into the real fabric of what they have explored.

As an example, an earlier class took a block of Farish Street—a black urban neighborhood that has both nighttime and daytime cultures. The fifth year class of predominantly white male students found that many of the buildings located on these throw-away streets were admirable, that they were in many cases better than the newer buildings that lined cleaner, more prosperous neighboring roads. Their detailed drawings were a tool, an an-



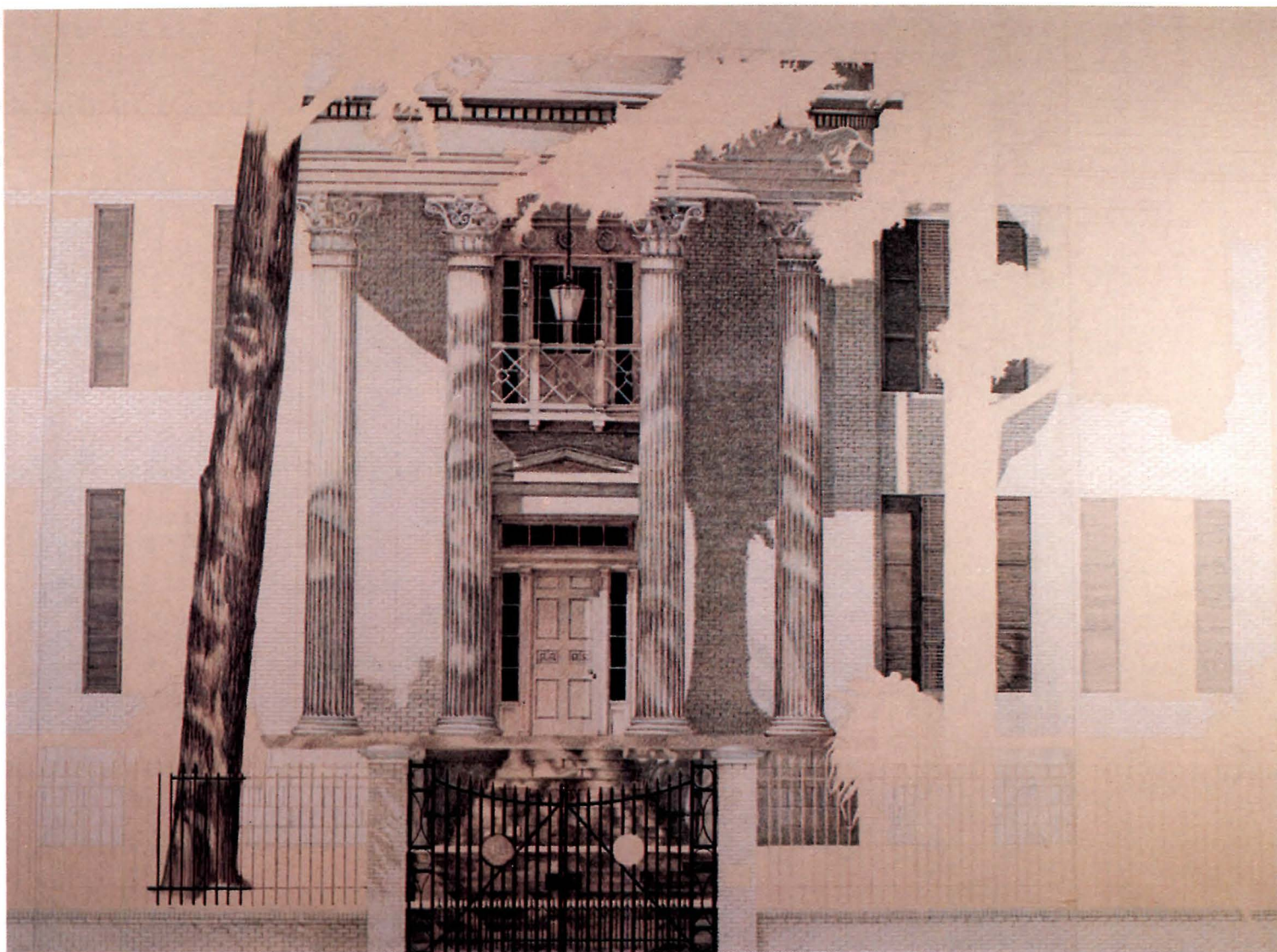
of which is unlike any other in the nation and a source of pride to the school and the university. Two degrees are possible through the program: either the master of science in architecture or the master of science in small town studies. Gerald Van der Mey is a graduate landscape architect who saw small town design as a natural outgrowth of landscape design. He now questions use of the word "small."

Associate Dean Barker, who had a major role in shaping the new program, notes that the center and the graduate program evolved at the same time that America was rediscovering its small towns. The 1980 census showed that an increasing percentage of America's growth was occurring outside of metropolitan areas and that the country was not prepared to deal with the changes bound to occur—changes to be imposed on small communities besieged by exiting urbanites. The center has addressed those issues and has gained strong support as a dividend. Parents, mayors, and legislators have felt the effects of the center's efforts, and there is a spreading awareness across the state that the center exists and that it works for Mississippi.

On these pages, fifth year student drawings of local buildings: Above left, Jackson Lumber Co. by Elizabeth Kelly; top, King Edward Hotel by Sharon Clifford; above, Greyhound terminal by Vickie Warren; right, governor's mansion by Jose Holden.

"Although the makeshift attitude of a new school had its strengths," says McMinn, a new "first rate" building has proven invigorating. Mississippi State made an early major commitment to the school's facilities when it provided over \$300,000 with which to renovate a former dairy pavilion/motor repair facility. Plans for the renewal of that large open space came with the help of Evans/Eley, a Jackson architectural firm subsequently commissioned to plan a major addition to the studio building.

The addition was completed in 1982; its equipment followed the next year. Included in the new building were primary support spaces: additional library room, gallery offices, a computer terminal center, darkroom, shop facilities, a 200-seat auditorium (whose excellent acoustics enhance a chamber music series), a jury room, as well as the first year lab. *There is some minor*



grousing heard in the corridors. "We've got too much," said one faculty member; some nostalgia for the makeshift days from students, "I liked it better when the professors had to walk through the design lab," said one; but the consensus is favorable to the building, which received honors from both the Mississippi Chapter and the Gulf States region of AIA.

From graduate education to first year analysis, Mississippi State's school of architecture has come full circle in its 10 years. The school has grown; growth produces change; and change usually brings anticipation over the future of an institution. However, there is a sense of calm assurance from students, faculty, and administration when asked about the next 10 years. Many seem to regret that McMinn is shifting to Cornell University, where he will assume the deanship of the college of architecture, art, and planning. But most seem convinced that the structure of the institution is well founded and that it will accept transition and prosper. As Michael Fazio commented, "We are looking forward to the brick and mortar work that lies ahead."

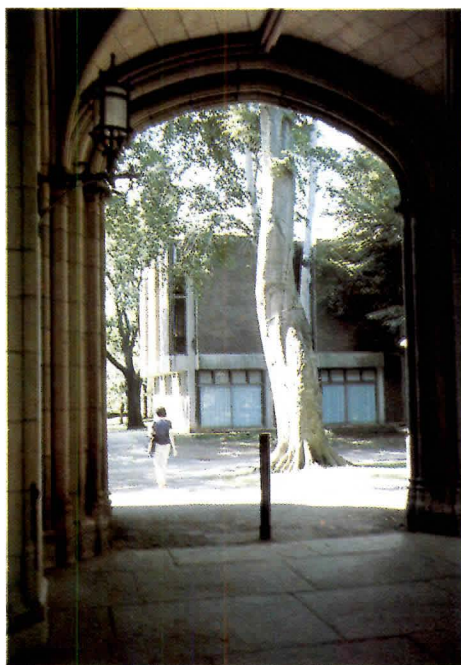
McMinn has suggested three possible routes for the school

to pursue in the future: the rich architectural history of the state could produce a center for the study of Southern architecture; exceptional computer facilities (which include an extensive new Intergraph System) could be expanded and integrated with computer science at the university; and there is the possibility for the development of an interdisciplinary center on the Gulf Coast for the study of environmental issues.

However, McMinn and Associate Dean Barker agree that the primary achievement of the last decade has been in the quality of the alumni. Most of the 160 graduates exhibit a "sense of confidence" that they can go to any office, enter any graduate school, and succeed. So far graduate students have found berths at Harvard, Yale, Rice, Washington University, and Cambridge University. Practitioners have scattered across Mississippi and spread to the major offices of the largest cities. According to Fazio, the students quietly join *their peers from other institutions as equals*, thus belying their small town origins. "We train students that are capable of performing wherever they want to go. And that is gratifying." □

Princeton: The Exploration Of Ideas

*With a single-minded emphasis
on architecture itself.*
By Marguerite Villecco



Princeton University's school of architecture is one of the nation's smallest, with only about 50 students in its professional degree program. It is also one of the most influential. Historically, through its alumni, and currently, through the design and writing of its faculty and recent graduates, the school has led the profession in examining critical issues. Today, for Princeton, the critical issue is architecture and reinterpreting the nature of things and thinking architectonic.

For many critics, the price of the inquiry has been too high. They see the school dramatically changed from the recent past and abandoning the concern for humane environments, for technological advancement, for professional activism, and for interdisciplinary endeavor consistent with the complexities of societal needs. Instead, the school seems focused on academic formalism, where student and faculty projects too often resemble monuments of the past, engage in surface imagery to the exclusion of all else, or proclaim neorational coldness toward the human condition.

The school *is* more narrow in focus than others. But its emphasis on history and theory is a *decision* that these, more than social science, programming, or technology, are a route to humanity and quality in the environment. Princeton is probing architecture, its own heritage of form and concept, its own language and critical frameworks, in search of cultural meaning. Students are becoming sophisticated in the theoretical discourse of architecture, albeit somewhat naive about the pragmatics and implications of generating form.

Alan Colquhoun, director of graduate studies, speaks of the school's evolution: "There has always been a formalistic emphasis here. Yet there is also a tolerance for pluralism. There is an implicit, not explicit, philosophy here. Earlier, the modern movement's tenets that function is the rationale for form were taught. These ideas are no longer taught.

"Princeton was among the first to move away from modernism for a number of reasons intrinsic to the school. In the 1960s, there were two strands of thought. One revolved around users, social concerns, and advocacy. The other concerned architecture as a formal and theoretical discourse, with Michael Graves, Peter Eisenman, and Ken Frampton as spokesmen. With the demise of social concern as an ideology in the early 1970s, postmodernism arose as a basically formalistic concern. Graves and Alan Chimacoff changed styles. They became more iconographic.

"Design is still based on program. But program itself is not design—it doesn't replace all else as it did in the 1960s.

"There are two sides to the school today, and they are dia-

lectically related. One looks to architecture as a cultural product, one among many and related to others. The other view is that form, whether modern or historical, is independent of cultural or ideological factors. Michael and Chimacoff teach architecture as a historical discourse, where esthetics override social or historical considerations. Architecture, and architectural form, are eternal. [Anthony] Vidler and I historicize *all* the time; that is, we look to the ideology of history, philosophy, and social history as a basis for form. Therefore, beauty cannot be absolute for us.

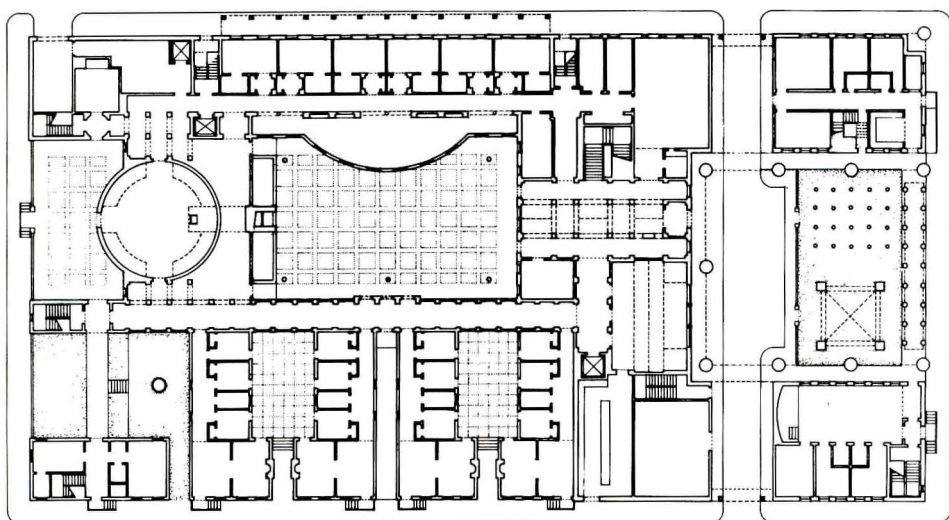
"The school also maintains some biases toward modernism. [Dean Robert] Maxwell, Vidler, and I frequently use modernist criteria to evaluate student work. Five years ago, Michael was at his zenith—a great influence. Not all students buy that today. Many explore the relation of modernism and postmodernism, the relation of architecture to modern social and technical conditions. Graves emphasizes the image. Others of us emphasize what generates the image."

"The overwhelming issue is architecture understanding itself," says Graves. "I emphasize the character of spaces, living rooms versus bedrooms. What are the differences? What is the space like? It's important to try to say it. For example, if one were to design a house for Proust, one would have to describe the swan in the bedroom, the mood, the decoration of the room, the color, texture, detail, etc. We need to be conceptually whole; thinking in terms of plan and elevation is not enough.

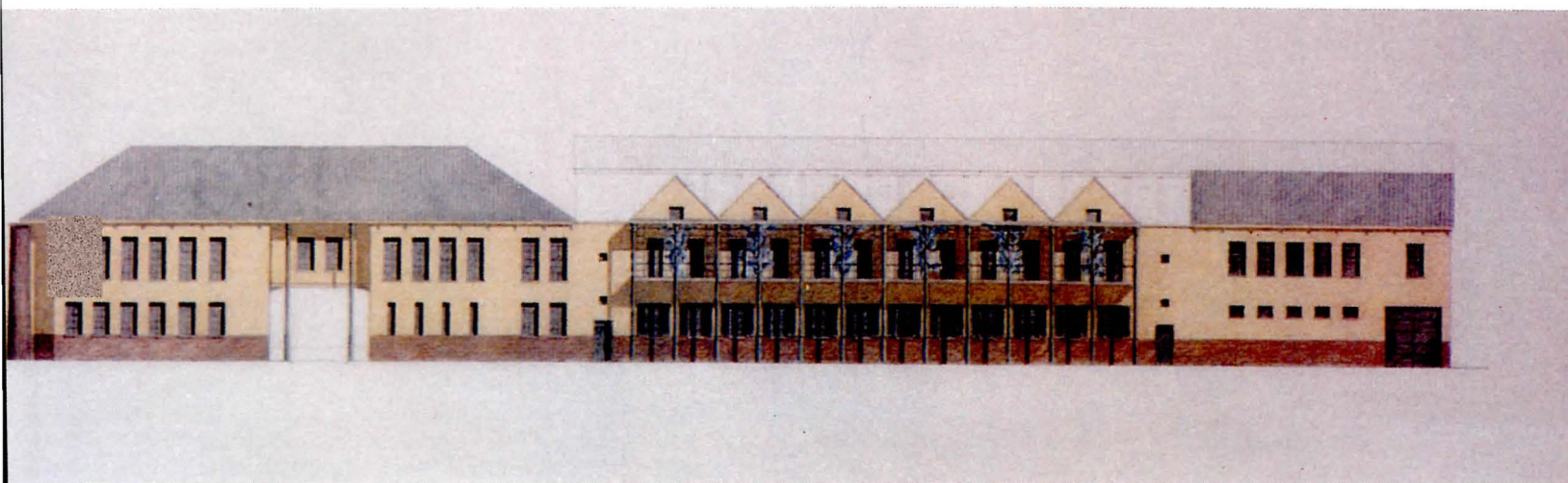
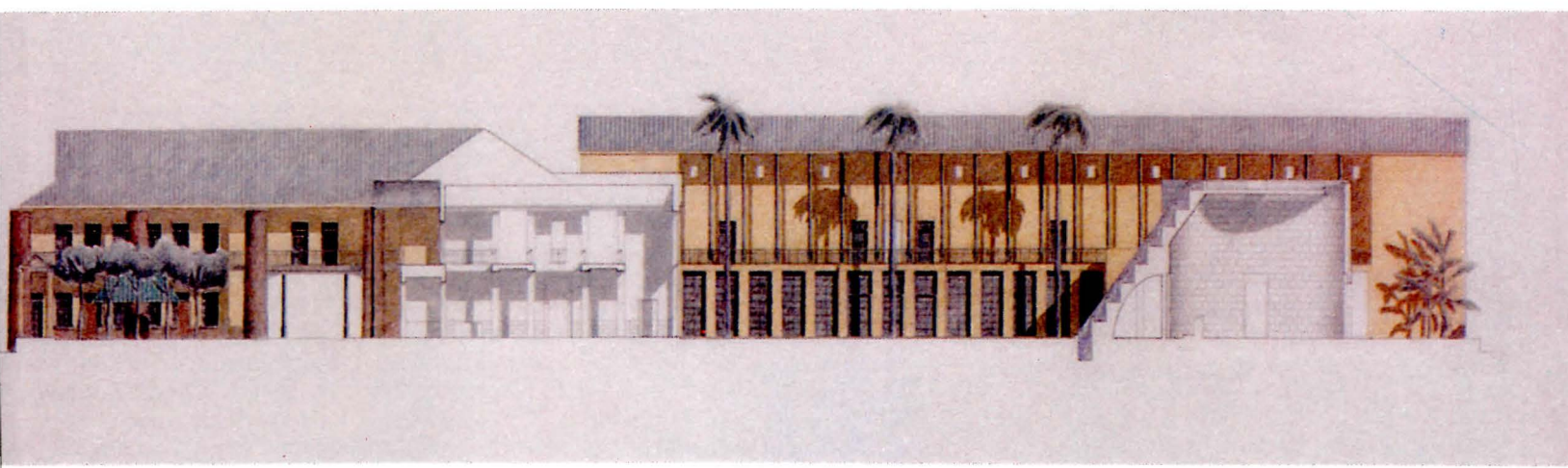
"I start with words, which are familiar. Our students tend to be verbal and articulate, but they may be less able to draw conceptually. I try to get the students to think through what *could* be and encourage them to push further and further in their exploration. The students can then start to think in ranges of words as a conceptual device for drawing."

Dean Maxwell refers to Graves as "a great artist. I don't design like that myself. He pushes surface and image to the limit; Portland is almost scandalous in that respect. But I am a great admirer, and we are happy. Michael is, by the way, a living embodiment of the [Jean] Labatut tradition at the school; he works through plan; and he is a wonderful teacher. But the school will continue if he leaves. Graves is not the only influence here."

Chimacoff says outright: "Princeton is not a spawning ground for future Michael Graveses. The faculty, including Michael, give wholehearted criticism to everything. Besides, it's almost irrelevant what things look like in a school. What is important is the *thinking*. Princeton is identified with postmodernism, but the degree of bogus, fake P-M stuff on the wall is lower here



Hospice in New Orleans, a thesis project by Lee Ledbetter. Organized around a courtyard, with a diversity of residential images, the hospice is contextual with its neighbors in scale, material, and color. Jury comments: Ten years old as a concept, hospices have yet to evolve into a type. They represent the deinstitutionalization of death and dying in favor of homelike, inward-looking surrounds. Not episodic in form or concept. The courtyard needs development as gardens. The chapel imagery is harsh, perhaps inappropriate, suggesting crematoria more than communication with God. The stairs to nowhere are a problem too. Overall, a buildable, thoughtful solution, humane and purposeful.

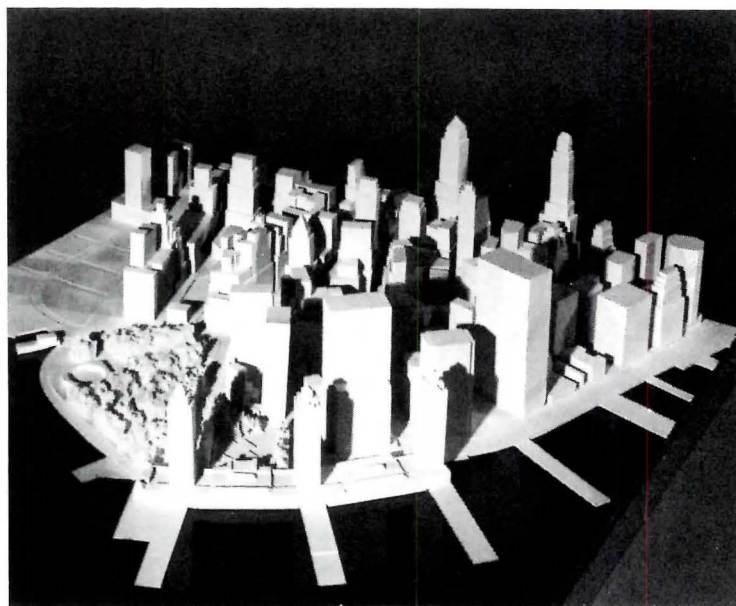
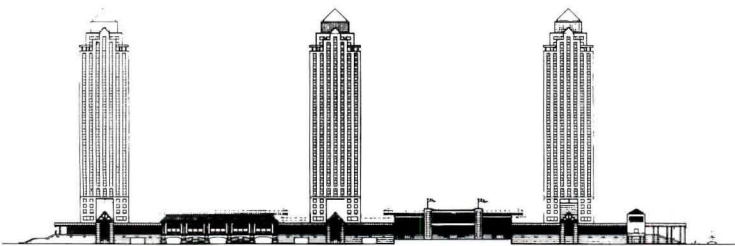
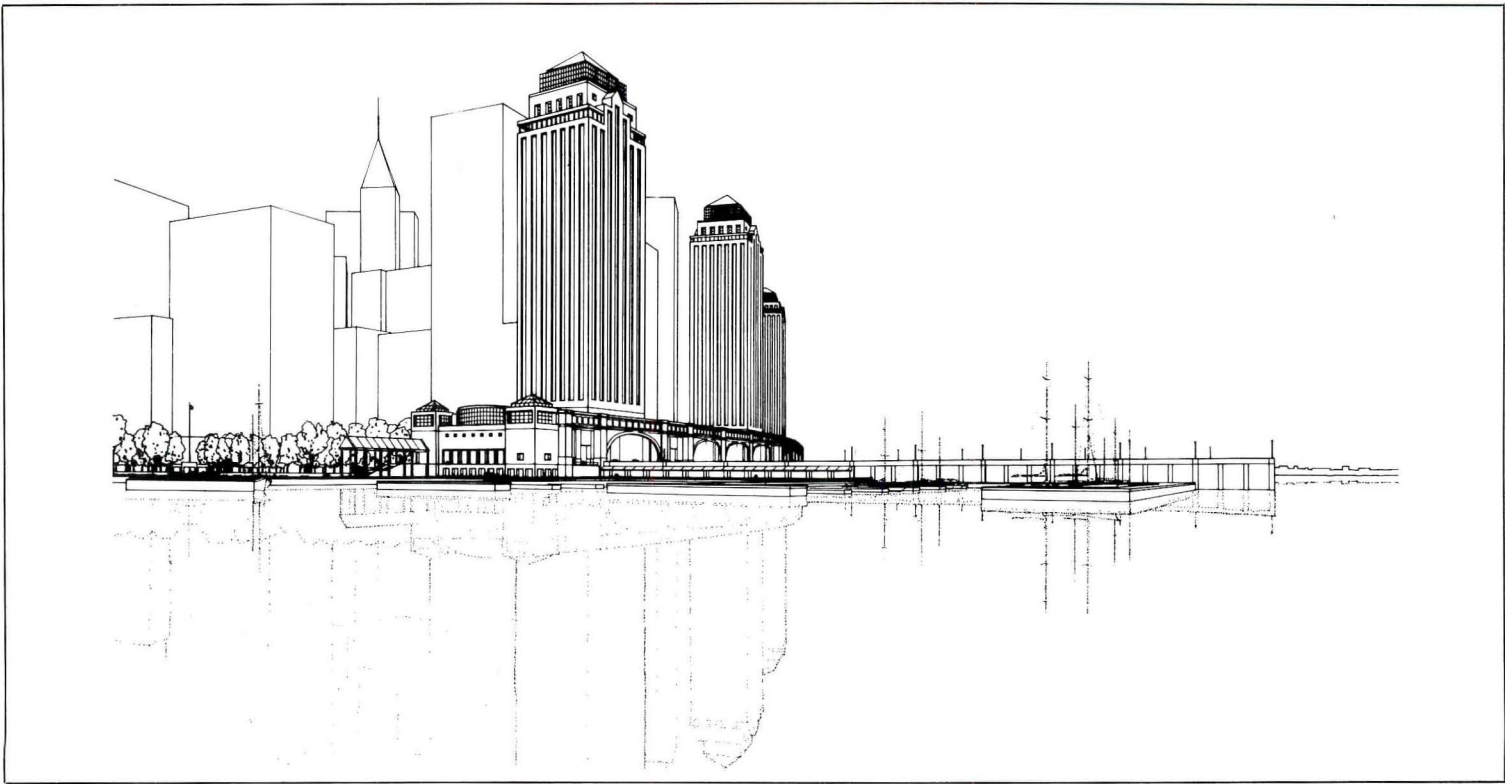


than in other places. It gets criticized harder too. There is rampant and appropriative eclecticism, interpreting and reinterpreting and taking wholesale, but this is the inquiry in design. It's the ideas, not appearance, that matter."

In fact, there is less Michael Mimiery here than in many other schools, where Xeroxes, not ideas, convey images. Many of the students at Princeton seem to realize that what Graves does is not replicable and, while they admire the man and his work, they seek their own basis for form. Graves is a model for design exploration more than solution.

Chimacoff continues, "Those who see the school in stylistic terms miss the point. Style doesn't matter, and the image of the school in those terms is based on wrong assumptions and platitudes that people get as architects and teachers: the belief that the design studio coordinates *all* things is bullshit. That technical, social, and formal issues come together in the studio—no! The assumption that schools should *mirror practice*—that's *wrong!*"

"Five years ago, a Princeton alumnus wrote a letter to the president of the university saying that the school of architec-



South Ferry Plaza in New York, a thesis project by Penny Yates, consists of a base and three towers (two offices and one hotel) at the base of Manhattan. Each of the towers terminates a north-south street, bounding the island in deliberate opposition to prevailing codes that protect water views. Jury comments: Provocative in its challenge to zoning mores. The towers are small in square footage, raising issues about rentability and program. Their slenderness is more convincing in perspective than elevation or model; scale is an issue. The progression from street to tower to pier is clear, signifying the presence and importance of the ferries.

ture was a *sham*, that it was a fashion, or decorator's school. [Then-Dean Robert] Geddes replied that we work hard to be the things you say we should be and invited him to join in a design review. He came. His presence stimulated the whole process; it was extraordinary! In a chat afterward, Geddes said, 'How are we doing?' The man replied, 'You'll have my apology in writing.'

The school is clear about its strengths and weaknesses. Michael Graves volunteers: "We are strong on history and theory; we are weak on technology and the pragmatics of building."

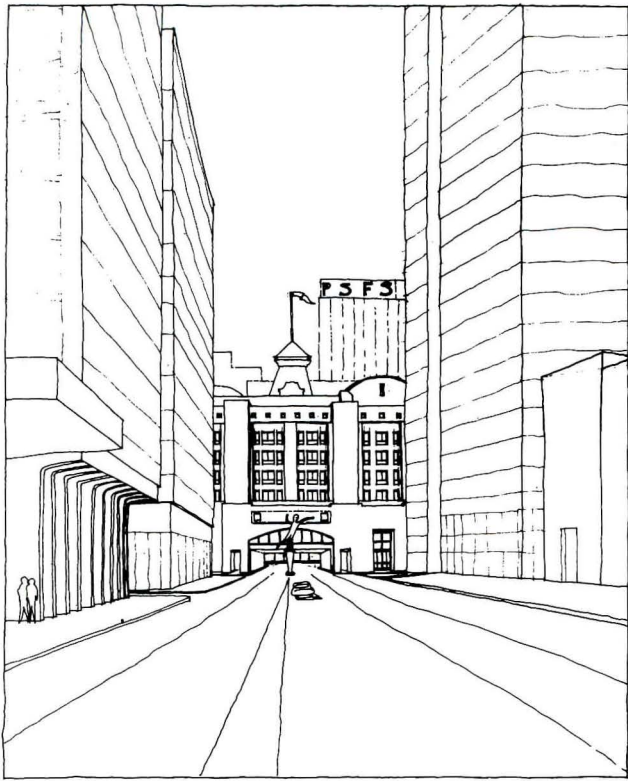
The clarity does not suggest discomfort. There is a broad sense within the school, among faculty and students alike, that the current emphasis on theory, or the conceptual frameworks for doing and understanding architecture, is essential if architecture is to transcend the eclecticism and stylistic novelties of the day. But there is also conviction that the conceptual frameworks must extend to the materiality and technology of buildings.

Dean Maxwell is eager to move into the neglected areas and to explore computers "so that technical subjects can be taught by machine. I would like to streamline and make more efficient the teaching of technical subjects so they're not spread over the whole and therefore not internalized until the end of the formal educational process. Then it's too late."

Chimacoff is described as the faculty member most concerned with technology. "As a design person, it's acceptable for me to talk about technology. It's a quirk of my personality. I like to think about how buildings are *made*. At Princeton, it's amazing how we get away with so little emphasis on technology and not have it harm students. And it *doesn't* harm them. We need to keep thinking about technology and how to address it in the current framework of the school. It's not an issue of courses on building construction. Construction is the servant of ideas; we need a broader basis than a course.

"We need to reinterpret technology to get thinking better about it. We don't need to 'do tech stuff' at the expense of more important things. What is absent and needs to be addressed is a way of *thinking* about all the complicated programmatic and material aspects of building. We need to accelerate the processes of people's minds about what happens after school. It usually takes longer than three years to get a license to kill."

Graves tells of using "war stories" in studio crits, drawing increasingly on experience in the field. In one review, when a



student presented a design for a tower atop a landmark library, Graves asked about her plans for phasing the project to assure that the use of the existing library could continue through construction. Graves is also concerned about buildings deteriorating by design: "We want buildings to look better with time. Too often we are a-tectonic and work against the elements needlessly."

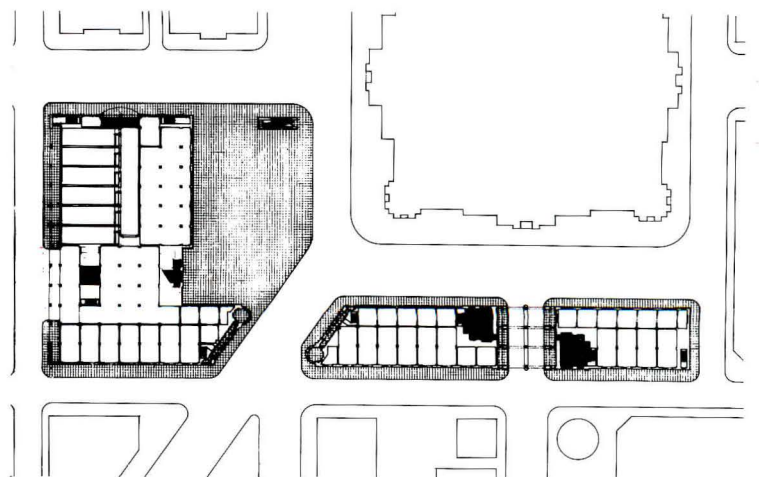
Chimacoff notes that the spirit of Labatut continues to imbue the school. "The questions have changed, but not the questioning. There remains an unwillingness to accept things at face value." Jean Labatut was critic, heart, and head of the school for nearly four decades and guided it from the Beaux-Arts to modernism. The school was then programmatically and physically linked to the department of art and archaeology.

In 1963, two years before Robert Geddes became dean, the school moved to a modern new building. The move was both physical and symbolic. Geddes was then the only "working architect" on the faculty, and, while many architectural schools have difficulty gaining academic recognition for design, at Princeton it was the opposite. Geddes had to gain university recognition for architecture as a *profession*. He did this, in part, by establishing new links between architecture and the allied professions, such as urban planning, the social sciences, and building technology. The school was renamed the school of architecture and planning.

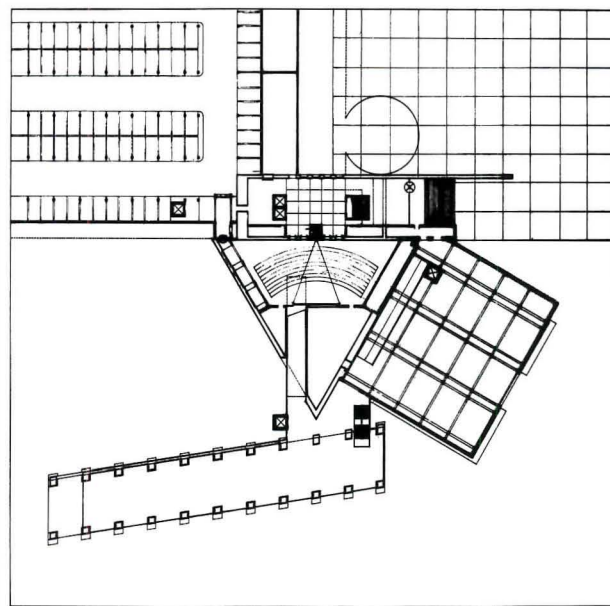
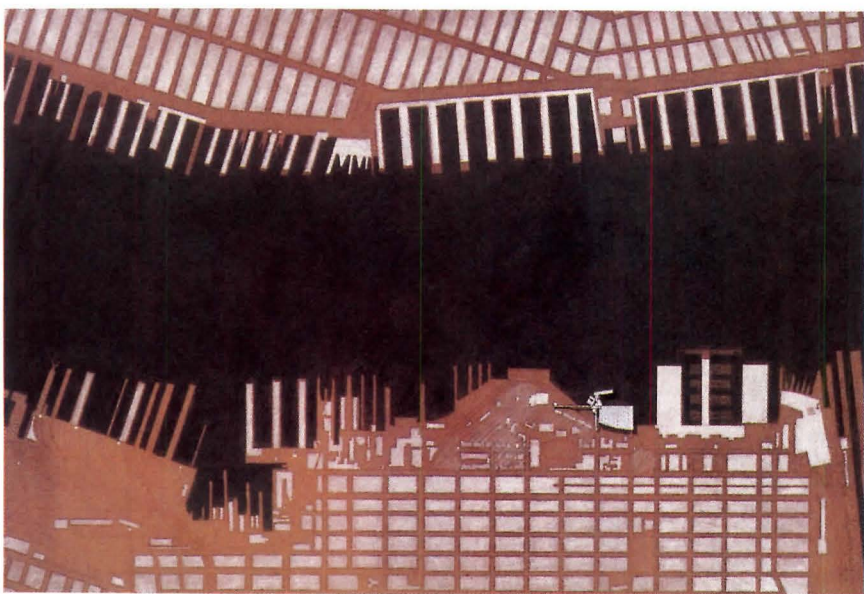
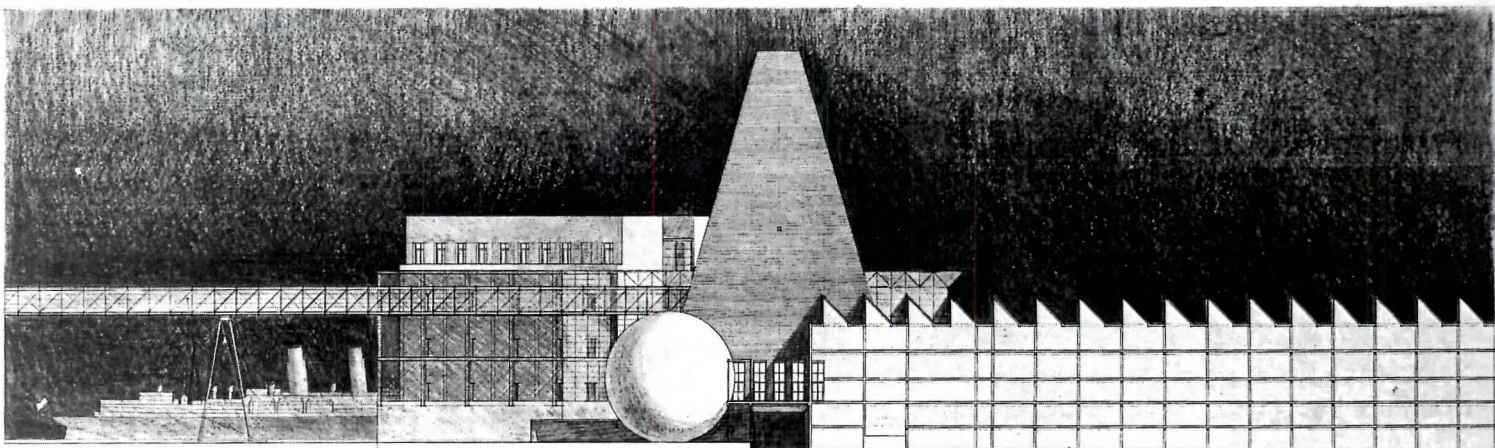
Today, it is once again the school of architecture, following the model of many other schools as planning became more and more concerned with economics and policy than with physical form. Chester Rapkin, who teaches planning and urban development, calls himself "a remnant, what's left of the planning school."

"The school of architecture is more design oriented than I would like. I like to see the needs of a city reflected in the city's appearance; I like the flow of cities. And my urban design course reflects this." But planning students, not architecture students, attend.

Another of those Geddes brought to Princeton is Robert Gutman, Hon. AIA, who holds joint appointments at Rutgers, where he teaches "straight sociology," and at Princeton, where it is said he has adopted architects as his primitive tribe. Interested in designers as well as design, Gutman teaches and writes about professional practice, its evolution and prospects. He was also involved with much of the school's community design work of the 1970s.



Mixed-use project for Philadelphia: second-year graduate project by James Wallace. The project creates a wall and enclosure on Central Square and signals entry from the diagonal Ben Franklin Parkway. A symbolic and critical exploration of the city's urban planning, the project also combines civic and commercial uses, with shops and restaurants on lower levels, municipal offices above.



Gutman has seen his own interests move to and from the center of intellectual excitement at the school. With the perspective of a scholar, he uses these changes as fodder and is now looking at the relationship between theory and practice. He is concerned, however, that students find little support for relating their formal inquiries to human conditions.

The focus today is clearly history and theory. Geddes also brought in the faculty schooled in the theoretical perspectives of Colin Rowe and their agenda for reconstituting architecture as an independent discipline. These included Alan Colquhoun, Anthony Vidler, and Alan Chimacoff, as well as Peter Eisenman, FAIA, and Kenneth Frampton, who are no longer at the school.

This tradition, strengthened by the stardom of Michael Graves in recent years, is the core of the school today. For a while, in fact, it seemed as though the popular image of the school was Michael Graves. Although he has taught at the school since 1962, he and his buildings have become the symbol of disaffection with modernism in the 1980s. And with them, Princeton itself.

Selection of the current dean, Robert Maxwell, was thus a surprise for many who expected a man in Graves' image. Maxwell is a former student of Colin Rowe and known to Princeton as a visiting critic under Geddes. An intellectual more than a practitioner, Maxwell has been called an educationalist.

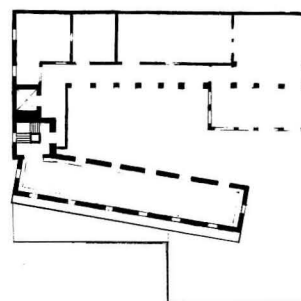
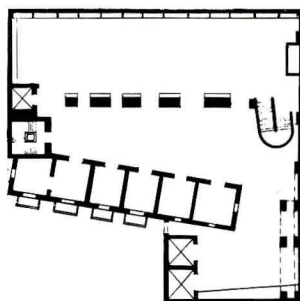
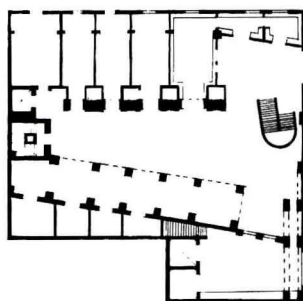
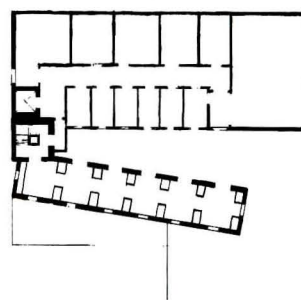
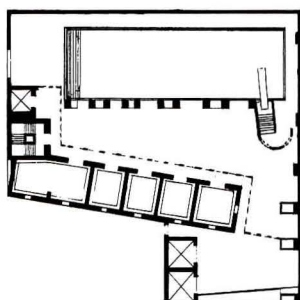
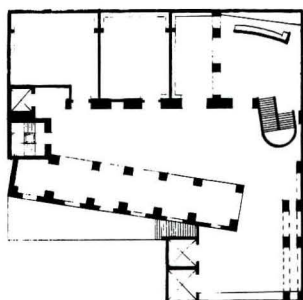
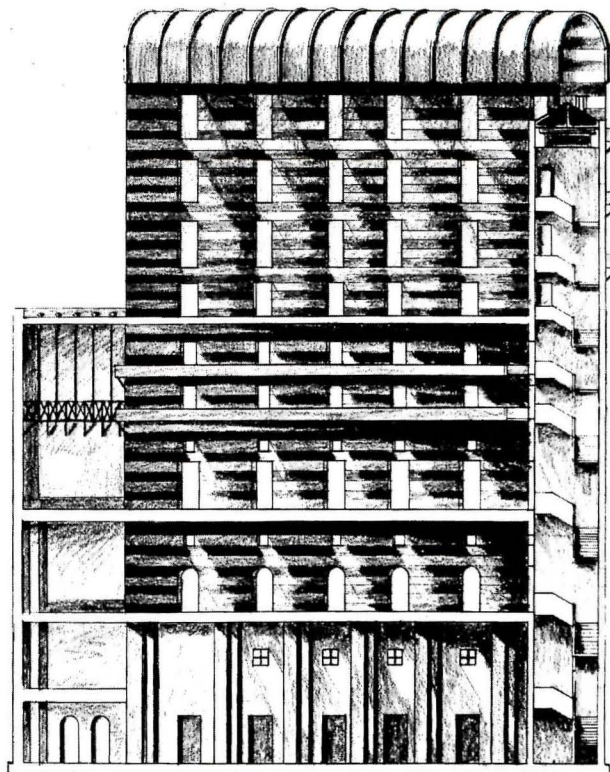
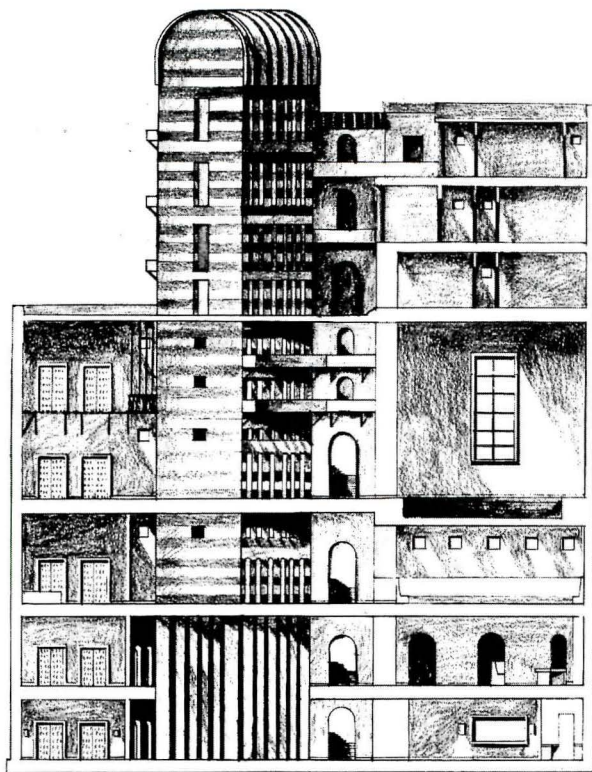
At the Bartlett School in London, Maxwell was among those seeking an integrative model of architecture, bringing technology and the social sciences into design education and practice. "We were trying to develop a scientific model of architecture," Maxwell recalls. "I still think it can be done, but it's far more complex than we realized at the time."

Museum of science and technology in New Jersey (above), thesis project by Peter Matthews. Designed for Hoboken's industrial waterfront, the museum houses its exhibits and artifacts in what the jury cited as a collision of geometry, both celebratory and ominous. Health Club in lower Manhattan (right), first-year graduate studio project by Mary Ann Ray. Located on a public waterfront square, the project has shops at ground level, a club above. Citing ancient public baths as spiritual model, the program includes exercise and bathing facilities, a library and restaurant, and overnight accommodations.

Maxwell has now turned to what he calls "The Second Theory of Architecture," a look at architecture as a critical enterprise, a more theoretical discourse. Maxwell, then, was the dean candidate to whom everyone could speak. Intellectual rigor, more than ideology, became touchstone for consensus.

"Princeton is very conservative in image," he says, "but we allow innovation in a didactic framework. My philosophy is radical conservatism; it helps us to understand the complexity of the present as a basis for change in the future."

The next five years promise important changes for the school. A number of senior faculty will retire, including Maxwell and Colquhoun. And new faculty are coming in with their own ideas. Steve Kieran is an example; he comes to Princeton with a background at Yale and at the Venturi office, a Rome Prize, and a fascination for the commercial side of architecture. Some of his students are following and/or stimulating his pursuits. Kieran was thesis adviser to a student designing a hotel and gambling casino in Atlantic City; the result bore more resemblance to



Arquitectonica's Miami extravaganzas than Graves' work. Kieran is himself exploring such nonacademic forms of architecture as highway car dealerships, topics only Venturi and accomplices have approached with any conceptual rigor.

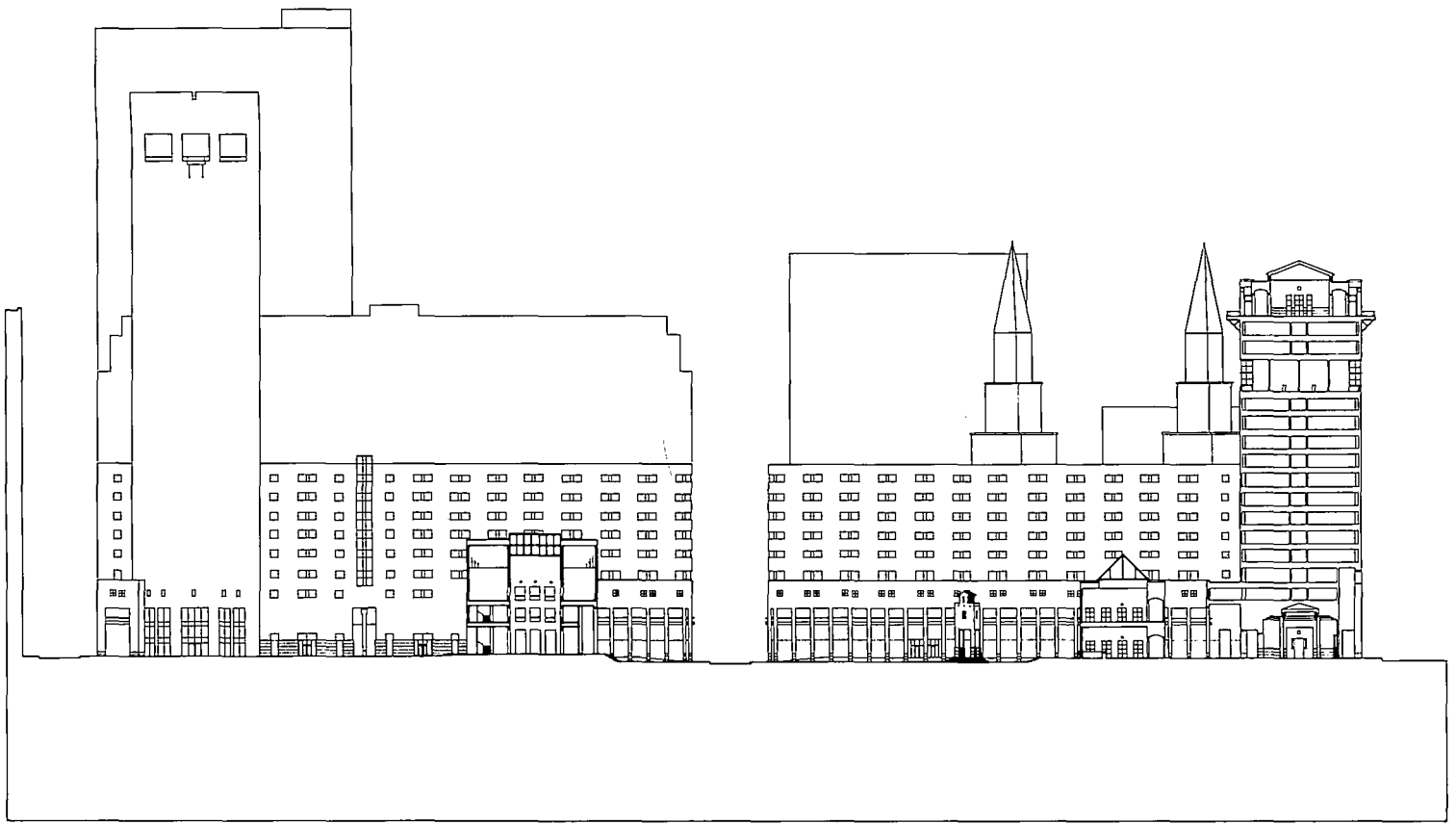
Kieran and Alan Plattus, another of the younger faculty, have proposed a study of first-year curricula for three-year architectural programs. They use a four-part hypothesis to bring structure to studio problems: analysis, design, representation, and technology. There are exercises for each of the four elements, and the goal is to design the studio sequence more coherently. A typical sequence might be to design a house, then a town; analysis would focus on spatial, functional issues; technology of framing; representation on three-dimensional as well as two-dimensional drawing; and design on overall compositional strategies for facades and building elements. Most studios go straight to building design now.

Kieran and Plattus are not the only faculty exploring change. There is, in fact, an air of exploration at the school consistent

with its traditions, but also new. The school has matured in certain areas; the core of architecture has been maintained. And now there is a slight looking outward again, signifying intellectual unrest.

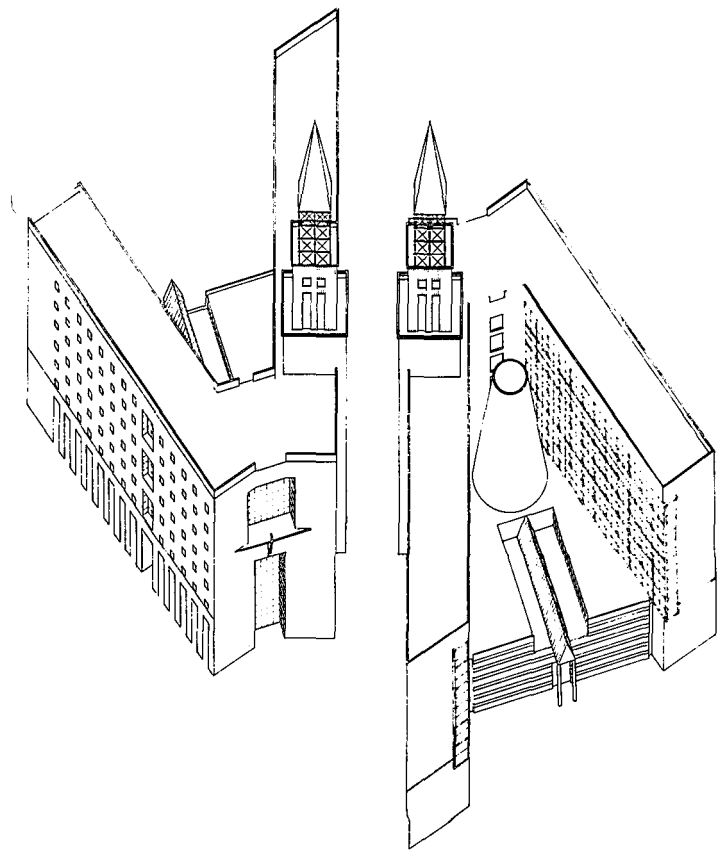
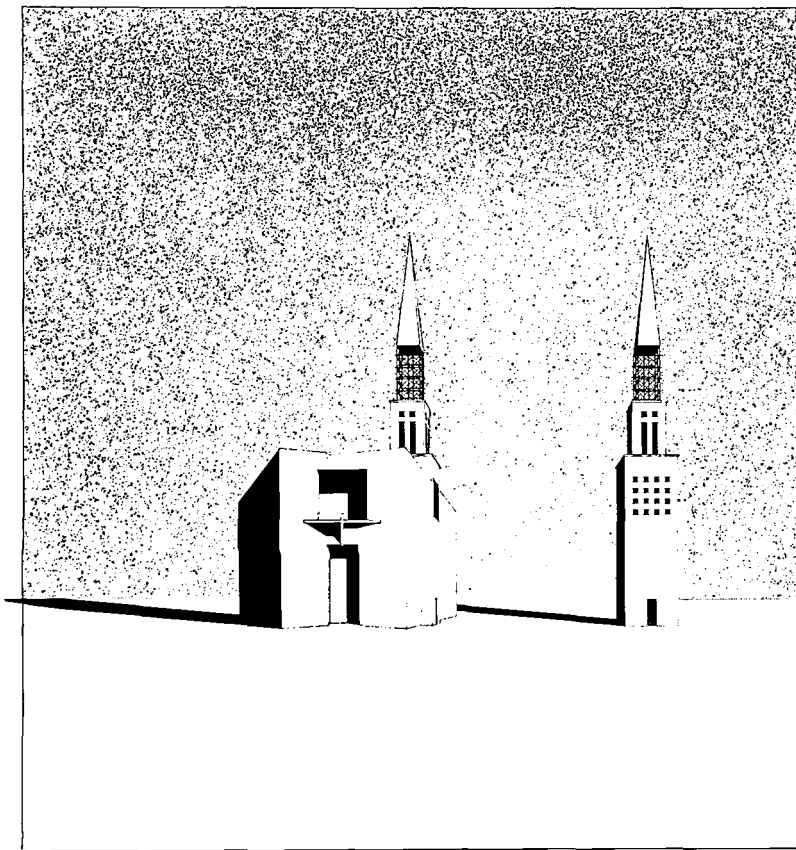
Despite this unrest, many alumni look to the quality of the students and the intellectual vitality of the faculty as assurance in uncertain times. George Hartman Jr., FAIA, was among those serving on this year's thesis jury. Chairman of the advisory committee, Hartman voiced some regret about the issues *not* addressed—the technical, the material, the social—but concluded there are no other recent graduates he would rather hire.

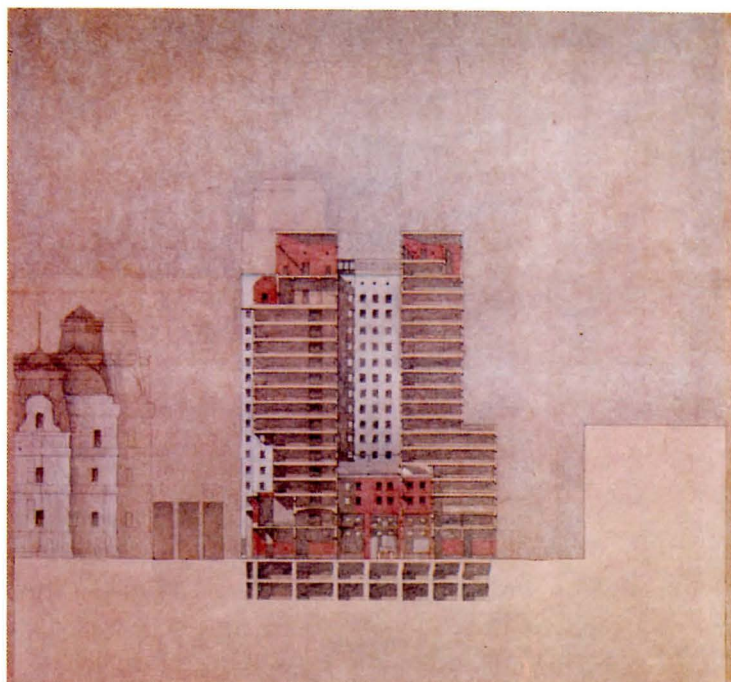
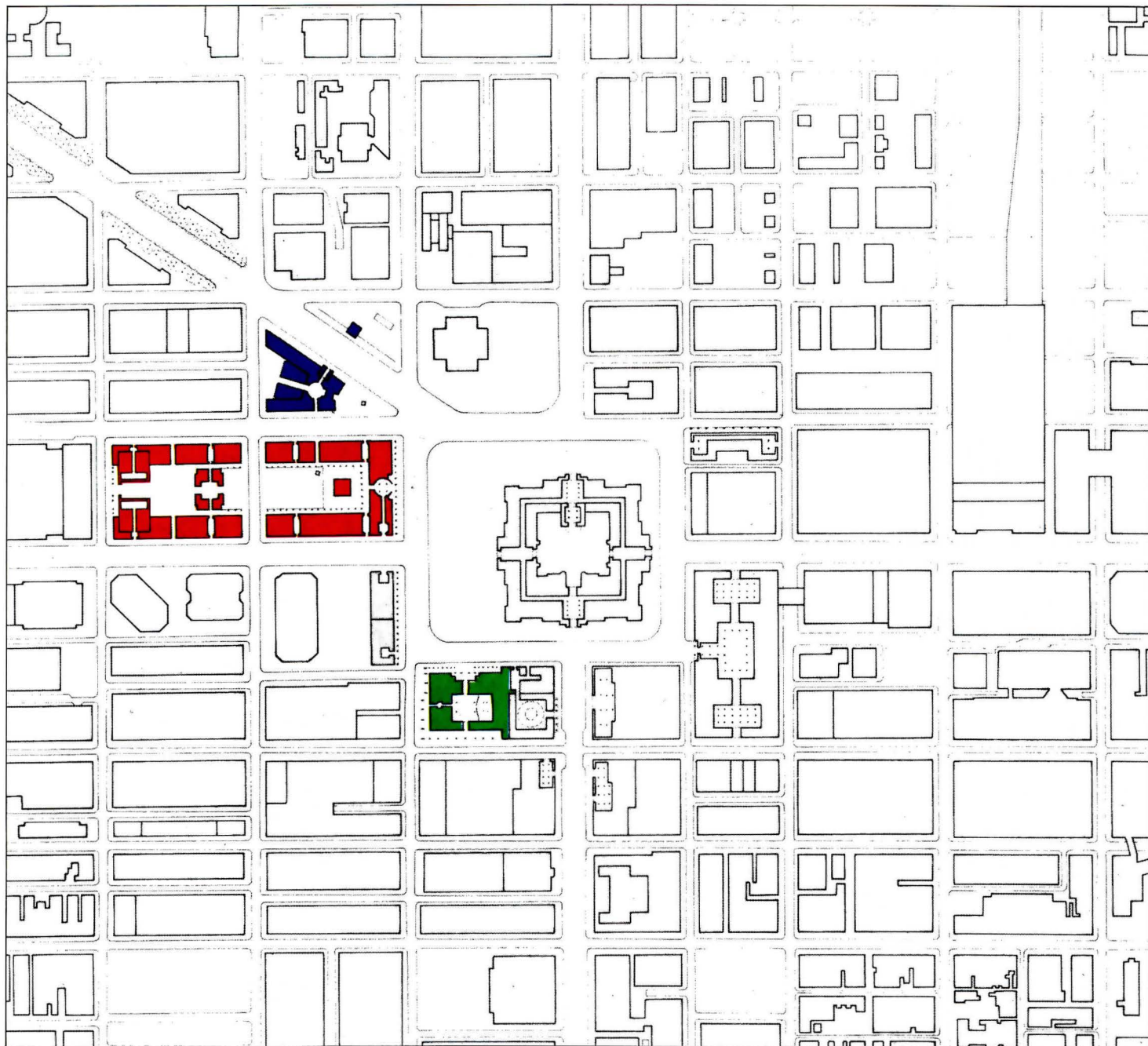
"These students are learning to think; Princeton educates people more than it trains them. And this is fine. Give me a year in an office with them, and I'll *make them architects*. That's *my* job. Educating them is Princeton's job. Training ends with skill development. Education begins lifelong learning, and *that's* what makes excellence in architecture."



This spread, mixed-use development in Philadelphia, a second-year graduate project by Leslie Mason, Ray Beeler, and Alexey Grigorieff, who developed the urban plan (across page, top) as a team and the projects individually. Visiting critic Mario Gandelsonas programmed the studio with Robert Geddes. Students were asked to explore urban and architectural designs for Central Square near City Hall, developing their own programs. The plan assumes removal of some post-1950s structures on the square's

west and south sides and proposes new development to reconstitute the square and signal entry from the diagonal parkway. The Beeler project (red on plan and above) would replace Penn Center with a mixed-use courtyard scheme. The Grigorieff project (blue on the plan and below) proposes a wedge-shaped building with its sister tower across the parkway, without specifying their uses. The Mason project (green on plan and across page, bottom) is an office building with broken pediment imagery. □

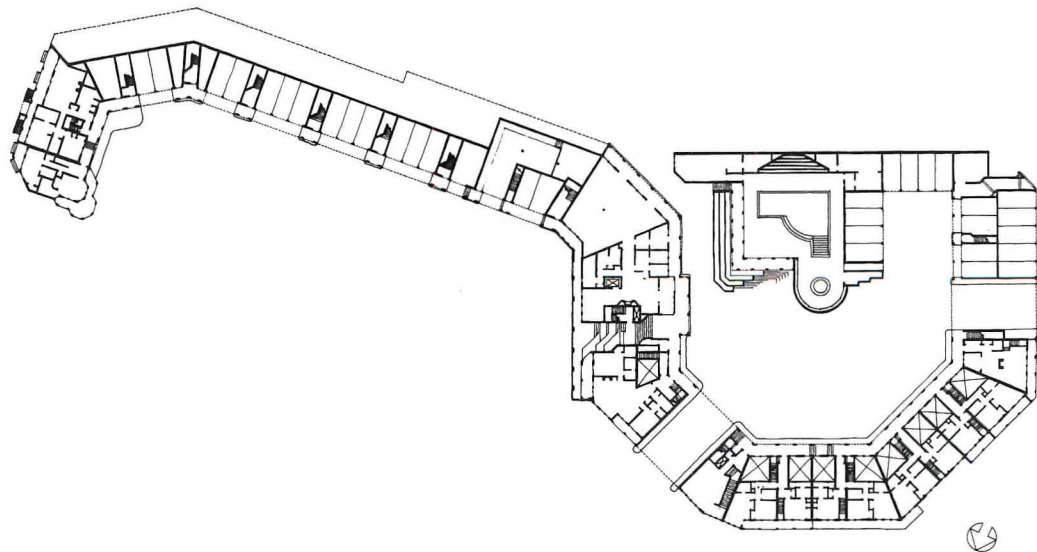




Kaleidoscope



Photographs © Russell Abraham



Colorado Condominium that is Complex in Plan and Form

William Turnbull, FAIA, once said that in designing a house the architect's role is to clarify and translate the client's desires, expectations, and aspirations into physical forms that solve functional problems of living but also reach into the world of dreams.

Woodrun Place by William Turnbull Associates happily demonstrates those ideas on an extended scale while showing that the Turnbull architectural vocabulary of interlocking plans, varied forms, and common materials can seem as appropriate to the Colorado mountains as the California coast or Mississippi delta.

It is a condominium building of 56 units on a steep slope in Snowmass, a ski resort near Aspen. The leftover site, a former dirt "borrow pit" for surrounding development that had a 30-foot drop-off, was long, tight, and difficult, requiring extensive earth work. Governed by restrictive height limitations to prevent shadows on adjacent roads and houses, Turnbull extended the plan laterally across the slope in an elongated S-curve, one crook of which wraps around a solar-heated swimming pool plaza; an entry turnaround is in the other.

The intricately massed building rises to six stories at the central tower section, which houses a ski locker room, reception, and a conference center, facilities required because apartments are rented as hotel suites when not in use by their owners. A covered passageway, important in this deep snow country, extends along the building, and 56 parking spaces are tucked underneath it.

The apartments are remarkably varied—no two are exactly alike—with 27 basic floor plans. All but two have at least two exposures; all but 12 have cathedral ceilings; most are double levels. But the trade-off for interesting floor plans is a surfeit of stairs. The upper stories of some apartments are four flights up from the car park.

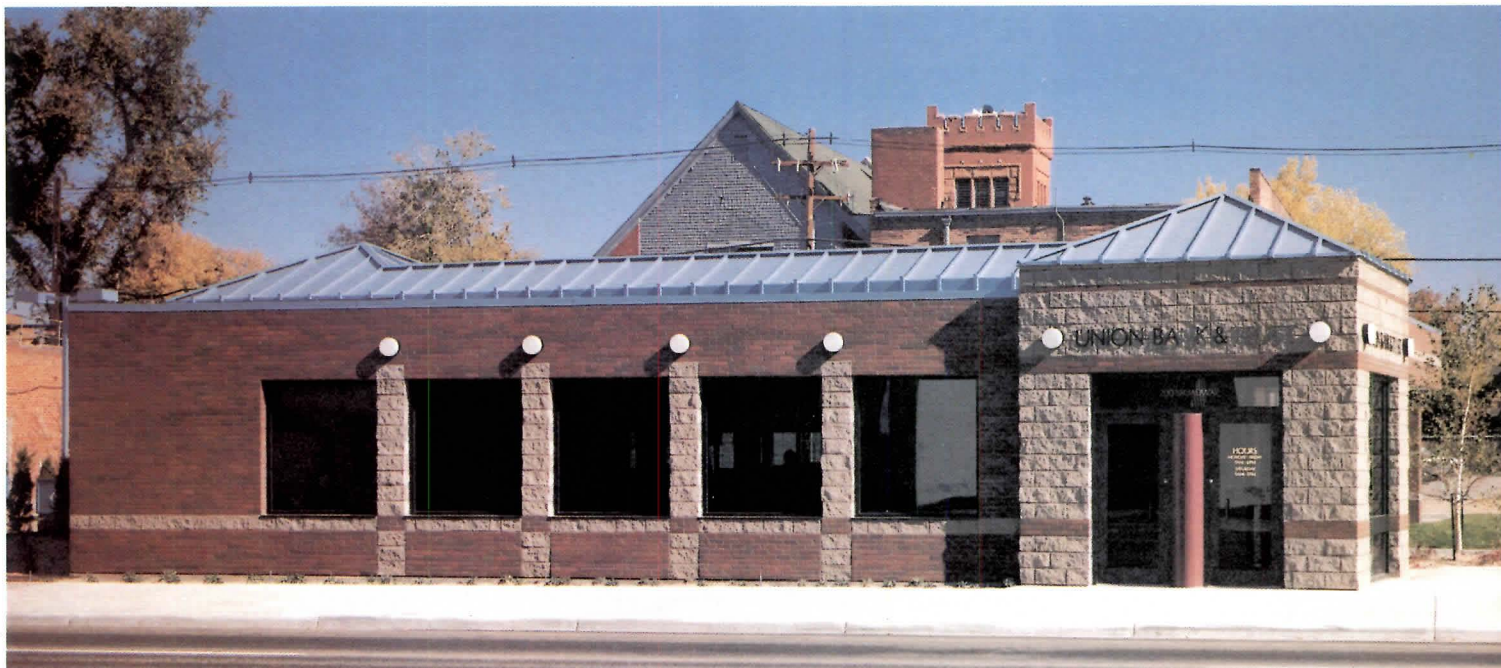
The most obvious glory of Woodrun Place is the intricacy of its exteriors, with their dormers, bays, chimneys, arcades, and recessed and cantilevered decks. The effect is that of a beautiful mountain village. ALLEN FREEMAN



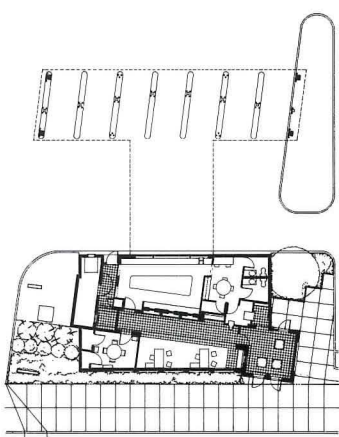
The sizable condominium building, clad in gray stucco, lies adjacent to a chairlift, and some apartments open directly onto its slope. Ground floor plan shows parking slots, lower levels of one- and two-bedroom apartments, and major common areas including a fan-shaped, centrally located conference room. Fanlight, left, is in one of the three-bedroom units, shown before it was furnished.



Solid and Subtly Colored Bank In a Seedy Commercial Strip



Philip Kantor



Philip Kantor



This little bank by Murata Outland Associates expresses solidity and safety in a subtle voice while visually holding its own along a slightly seedy commercial strip 15 blocks south of downtown Denver.

Union Bank & Trust needed eight drive-in lanes and a walk-in facility of three teller stations. Additionally, the bank wanted an old vault door incorporated into the design. Principal-in-charge Kiyoshi Murata, AIA, and project architect Richard Thomas made the door the focus of the interior and the relationship between entrance and vault the organizing element of the plan.

The 1,750-square-foot rectilinear building is sited at curb's edge with the entrance occupying a corner pavilion skewed 7.5 degrees off the plan's grid. Occupying the opposite corner and similarly off square is the vault, which is expressed on the exterior as an unfenestrated bay and inside by the gleaming metal door, now only symbolic since the vault is entered from the side. The interior diagonal axis between entrance and vault is emphasized by a gablelike vault above the teller stations.

Color and materials were skillfully selected; signage is minimal. The interior is an appealing combination of pastels and grays, and the exterior—vaguely Egyptian in brick and split concrete block—is topped by a batten seam steel roof finished in a bold blue that catches the eye from the commuter lanes. A.F.

Skewed entrance pavilion, right in top photo, aligns with roof gable that runs building's length. The gable is also expressed inside, photo below. Drive-in lanes face tellers inside bank.



Philip Kantor

Arches Give Bank Presence in A Small Town Shopping Center

The designer of a bank in quite a different setting also chose a monumental character traditionally associated with financial institutions. Architect Alex Roush of Southern Engineering/Denney Associates says he sought the solid look of the past partly in reaction to "a lot of branch banks in shopping centers—pseudo modern, flat roofed, usually one story. They disappear because they almost look like a McDonald's."

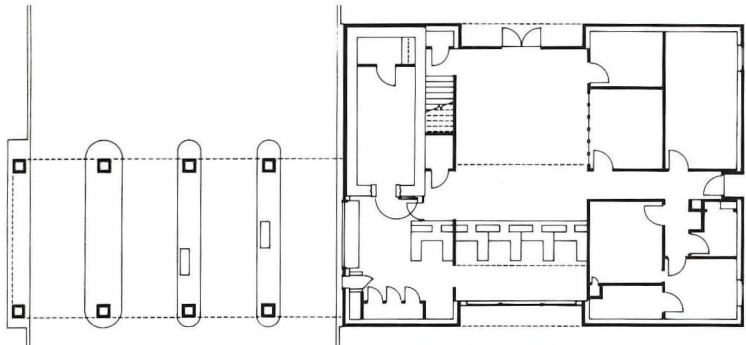
The main office of the Bank of Carroll County stands on a slight rise in front of a strip shopping center on a four-lane highway a mile from downtown Carrollton, Ga., a college town and small industrial center 50 miles southwest of Atlanta. Floating on a sea of asphalt, the two-story, brick and stucco building is a singular presence amid the fried chicken stands, discount stores, and billboards—although one of its three prominent arches, on a parapet wall at the end of the drive-through, faces town and acts as a kind of billboard. The drive-through itself, like the building, is heavyset, traditional.

In contrast, the bank interior projects a clean, "progressive" image sought by the bankers. A two-story lobby runs through the building, terminated front and back by arched windows of the same scale as the exterior arch. Natural light from the lobby enters flanking offices through glazed openings 1.5 feet square, their number and placement determined by office functions.

The new facility has drawn the kind of attention desired by the bankers: The local paper gave it front-page coverage, the *Times-Georgian's* first such design-oriented story in memory. A.F.

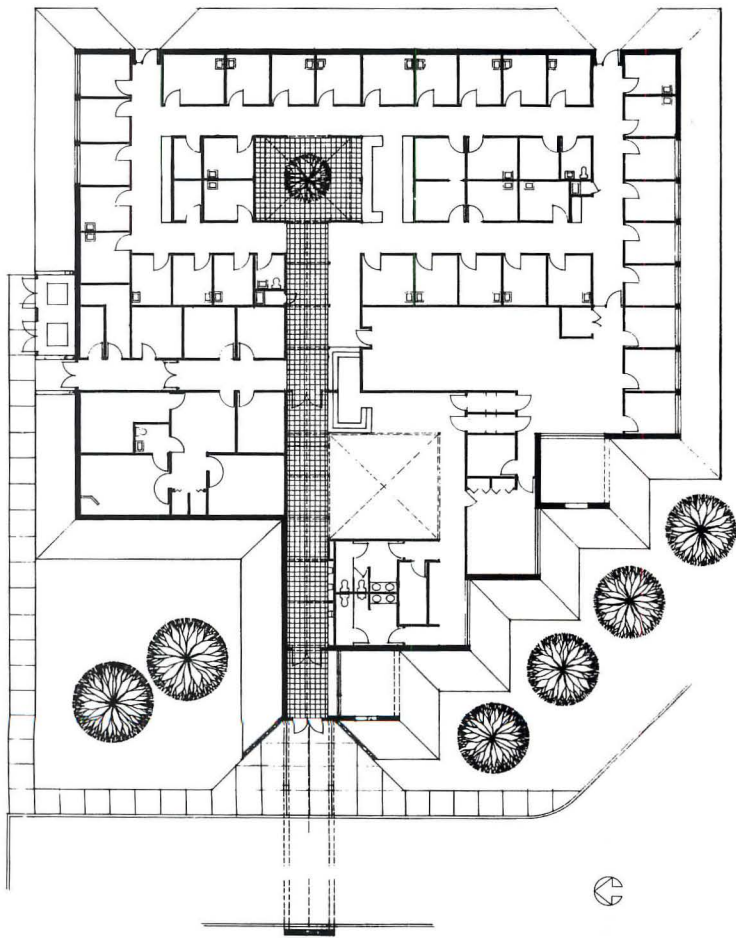
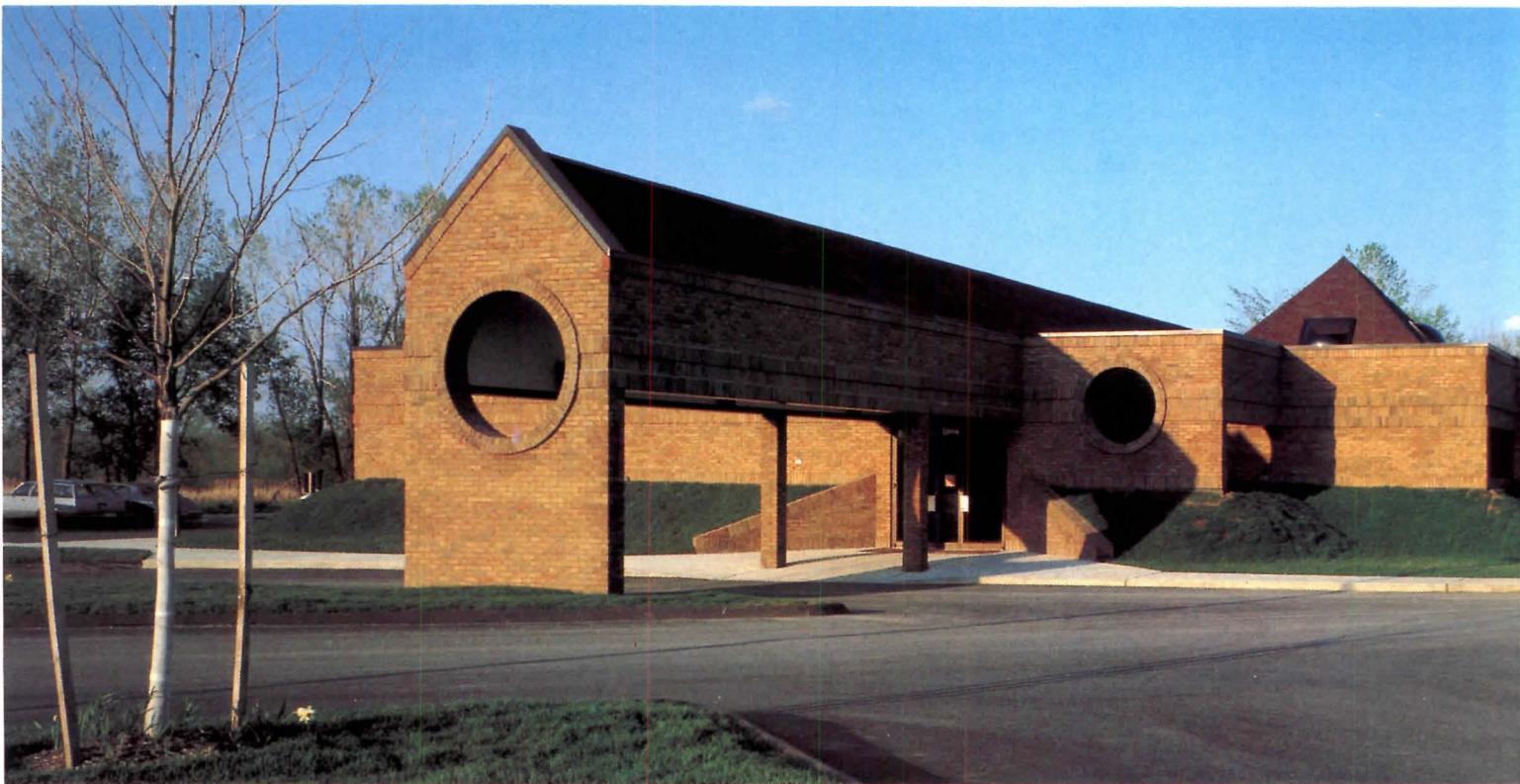


The 5,000-square-foot bank faces a shopping center with an entrance, top, similar to its backside, below. The drive-through, clad in the same brick and stucco as the building, terminates with an arch that establishes strong identity on approach from downtown. Above, the banking floor with mezzanine bridge.



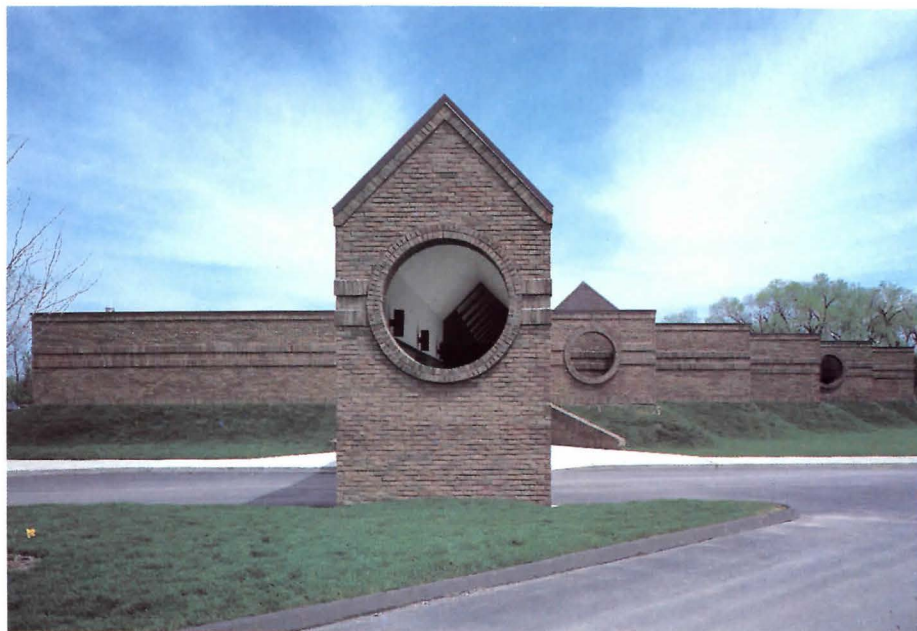
Hospital Sets Standards Of Neighborliness and Quality

Photographs by Glen Calvin Moon



It looks like many other suburban strips just off the thruway. Where cows grazed and corn grew high just 10 years ago, there's now a McDonald's, a Wendy's, a K-Mart, etc. in Canton, Mich. The land is flat; there's hardly a tree, and the houses hug the ground. Most are relatively inexpensive and totally indistinguishable from houses in new subdivisions in New Jersey or Rhode Island or Iowa. In this context, Hobbs & Black Associates' new satellite hospital is both a good neighbor and a landmark of design quality. Built to relieve the pressure on nearby Dearborn's Oakton Hospital by providing local emergency, preadmission, and outpatient care, the architects wanted it to look unthreatening, noninstitutional. Hence, the residential image of this low, gabled and hip roofed, brick building whose color and shapes complement adjacent buildings. But it outclasses anything in sight with its graceful, gabled portico straddling the entrance drive, its stepped plan that reduces apparent mass, its exemplary brick detailing, and the berms forming a thick insulation barrier.

The building's interior too is marked by a sunny disposition. The plan is a square, the southwest corner of which has been nibbled into stepped forms and pulled forward to create the portico. It is organized around a skylit spine that begins at the front entry and ends in a glazed atrium space near the rear of the building. To the right of the spine are the public areas, a waiting room with three cutouts in its gabled roof, admitting still more light, then a reception space. Colors are light, cheerful—tan tile in the passageway, and in the waiting room a tweedy tan carpet, oak furniture, and white beams, columns, and ceilings that look all the whiter for being next to taupe walls. Artificial lighting is controlled by photocells, and each major area (clinic, radiology, pharmacy, etc.) is located along the spine and an outside wall for future expansion. The little hospital will probably need more space since it now receives on average 88 emergency cases daily, and suburban strips, like nasty rashes, have a way of spreading. **ANDREA OPPENHEIMER DEAN**



A mix of residential and distinctive elements, entrance facade has portico with porthole (above and right, top). Spine to entrance, right bottom; atrium, below.





The Academic Arrival of Postmodernism

By Reyner Banham

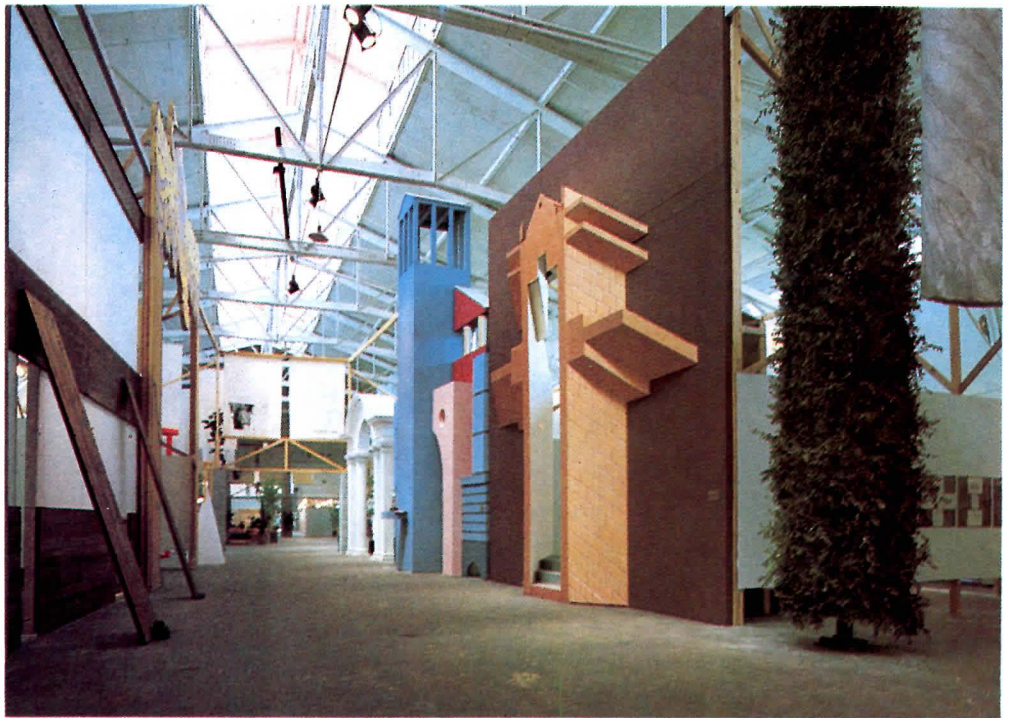
Abstract Representation. Guest-edited by Charles Jencks. (St Marin's Press, \$14.95.)
Postmodern. Paolo Portoghesi. (Rizzoli, \$25.)

The 1984 annual convention of the Wisconsin Society of Architects was entered (in theory if not practice) by way of a "ceremonial portal," which had an oversteep pediment carried on untapered columns without capitals. On the back it had some "Mycenean" details to the door-case and some square trellis making up a crow step gable. Five standard postmodern clichés in one simple prize-winning student design presumably means that postmodernism has now arrived academically and can be taught in the schools.

Does that mean that it is also safely dead? The annual turnover of "isms" in architecture is as high now as it was in Russia in 1911, and the current volume of Charles Jencks' continuing up-date on everything in sight (if not yet on site), this time entitled *Abstract Representation*, opens with a spirited burial of the best known late-pre-postmodernist Peter Eisenman. Apparently his "New Abstraction," which must have peaked about March 9, 1980, is "compelling, however esoteric, and it is highly teachable. In short, it is beginning to constitute a neo-academicism, with a doctrine comparable to that of the Beaux-Arts, and a system as mechanical as Jefferson's."

You may not have known all that stuff, and you may not feel much wiser now that you do, but even as a substitute for serious writing on architecture, it has the shining virtue (missing from so much heavyweight literature these days) of being totally wrapped up in, and fascinated with, the business and mythology of design—and quite interested in buildings too. Its rhetoric is often a bit hazy about the facts; if Jencks really thinks that the Talbot House by Taft Architects is "a \$32 per-square-foot version of the Villa Rotunda," he should go back to his Palladio quick, because its real affiliations appear to be to the older type of latifundial house of the Veneto with fortified corner towers—

Dr. Banham is a professor and coordinator of the history of art program at the University of California, Santa Cruz.



Several of the 20 or so facades of the Strada Novissima, as installed at the Fort Mason Art Center, San Francisco.

the Villa Pirani at Bagnolo, for instance. And he must stop referring to unfluted Doric columns as "Tuscan"—even allowing for Robert Stern's tendency to shrink everything to his own proportions, there is no way these dumpy items can be made to approximate the Vignolesque norms for Tuscan. (See, *anybody* can write this stuff!)

Still, there are lots of fun buildings in the book that didn't show up in Jencks' earlier books and one or two that are good, as well as fun, like Hollein's spectacular museum at Mönchengladbach or Stanley Tigerman's Anti-Cruelty Society building in Chicago. Hollein and Tigerman also get their due in Paolo Portoghesi's *Postmodern*, a text that is otherwise a very different volume, in spite of its similar deluxe magazine format and equally infuriating lack of index.

Portoghesi is of an older and differently disillusioned generation, and first became known as a Borromini scholar of substance. It's clear that his baroque studies have colored his view of history as well

as his own practice as a designer. He was, as they say, a postmodernist *avant la lettre*.

He was also one of the prime movers of that extraordinary architectural manifestation, the *Strada Novissima*, a double file of smartass false fronts by practically every postmodernist you ever heard of. First shown at the Venice *Biennale* of 1980, where it occupied a whole aisle of the ancient *Corderie* of the Arsenal, it later appeared in the church of the Salpêtrière in Paris, gratuitously rearranged as a circular *place* and finally turned up at the old army pier at Fort Mason in San Francisco, correctly re-arranged as a Western street of false fronts.

Under its alternative titles of "The Presence of the Past," or "The Presence of History," these manifestations are Portoghesi's real subject in *Postmodern*, as he himself makes clear, and the rest of the book, for all its anecdotal interest and coverage of little known members of the movement, is little more than footnotes and appendices. This emphasis on the *Strada* is proper; it was postmodernism's *locus classicus* and finest hour.

It was also, really, its last gasp, because

continued on page 81



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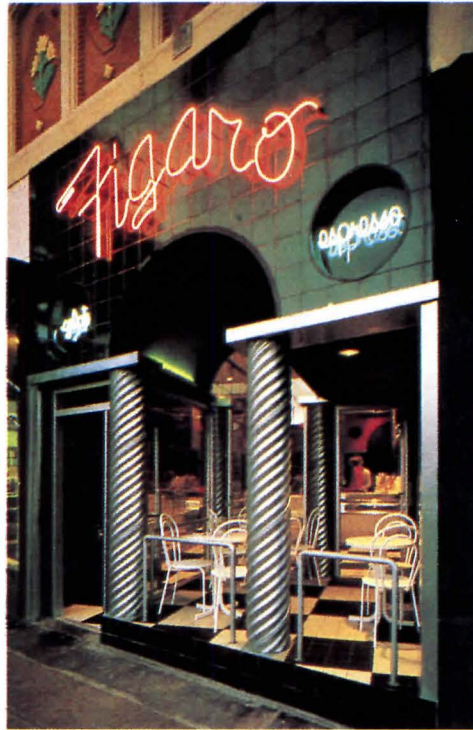
it revealed the movement for what it was—a paper-thin set of academic diversions on the margins of architecture, an ironic and evasive commentary on the alleged death of “that old modern architecture.” Never a serious alternative to modern, it was perpetually sentimental about the Beaux-Arts and all those groovy things, like doodling rusticated keystones on the back of menus at the *Café de Flore*, that architects were fondly supposed to have done before modernism took command. In the process it demonstrated a remarkable historical snobbery that seems to have escaped comment so far: With a couple of very marginal exceptions it ignored Gothic, and thus the presence of only half the past of Western architecture was acknowledged.

None of this would have mattered too much if these architectural parlor games had been allowed to find their own level, because it could then have been remembered for what it was: no more, but no less, than the very best architectural show at any *Biennale* ever. But in the present state of academic media-hype, pioneered by the Institute for Architecture and Urban Studies in New York City in the 1960s, nothing is allowed to be anything but of world-shattering importance or a threat to the very foundations of Western culture.

Pathetically, rather than cynically (let us hope), the rhetoric of postmodernism has sought to borrow the respect due to more important matters; Portoghesi, for instance, tries to co-opt the Polish Solidarity movement in support of his stylistic revisionisms (though the passages he cites could have come from any bunch of dissatisfied bourgeois architecture students anywhere in the world) and elsewhere he invokes “the postindustrial city” as the place where postmodern architecture will recover the civic significance of premodern monumentality.

Give us a break, Paolo! The postindustrial city already exists, and it is called Silicon Valley. Postmodernism is practiced in its further suburbs, it is true—not in the form of major civic monuments however, but, rather, as the private residential games of Thomas Gordon Smith, a.k.a. the Livermore classicist!

For the ultimate in presumption, however, we have to go back to Jencks' book and to an ice cream parlor in Oakland, Calif. As modest postmodern jokes go, the *Figaro* is fine with me, and its authenticity is guaranteed by the slap-happy humor of its deliberate mistakes. And the product it vends is fine too—or it was, until I read the following by its architects, Lucia Howard and David Weingarten of ACE: “. . . Italian alchemies surrounded the taking of espresso and gelati. These alchemies transform the former into the *idea* of coffee; they make of the lat-



Figaro in Oakland, Calif.: an ice cream parlor with a Vicenza Basilica motif.

ter the *pure sensation* of chocolate, strawberry, or vanilla. . . . These are mysteries (and techniques) like those celebrated (and employed) in the Roman Church, when common wafer and wine are made sacred body and blood. . . .”

And the flavor of the month is Golgotha Mocha! *Fin de siècle* blasphemies apart, however, this is sorry stuff, pretension rather than irony, and it doesn't make the product taste a lick better. While postmodernism was an inside joke it was one of architecture's more effective mind-clearing and bullshit-removing exercises. The moment it began to take itself so seriously, which was a bit before the *Strada Novissima* was extended into the Bay Area, its flimsy ironical structure could do nothing but collapse under the weight of its newly acquired pretensions.

Designing the Automated Office: A Guide for Architects, Interior Designers, Space Planners, and Facility Managers. William L. Pulgram, AIA/ASID, and Richard E. Stonis. (Whitney Library of Design, \$34.50.)

For nearly a decade, the publishing market has been flooded with books and articles on energy conservation, most of which reiterate the facts of diminishing supplies and the sharp increase in cost of energy, sometimes delving as well into the power politics of international competition and national security. The architect has been challenged to meet the demands and to use design strategies for energy conservation. Now, yet another challenge is thrown to the architect, and he or she is confronted with the problems of designing for an age of information explosion

and all its ramifications of technological equipment now available in unprecedented proportions. In published comment, now appearing, the architect is urged to use design strategy to deal with automation in terms of human needs and aspirations. And, on reflection, this challenge, too, may have its implications for power politics, and it certainly does for architect/client relationships in contemporary office design.

Changes are coming “by the micro-second,” say the authors of this book, both of whom are members of the planning and design firm of Associated Space Design, Inc., in Atlanta and are experienced in the design of automated offices. “Call it what you will—the Information Age, a Megatrend, the Computer Revolution, the Third Wave—we're knee-deep in a technological evolution that can neither be contained nor whose horizons can at this point be predicted with any clarity.” The only thing we can identify with any certainty is change, they continue, for “the relentless surge of change and technological wonders has become an expectation.” They ask what all this means to the designer, and answer: “What this simply means is that over the next decade you, the designer, can expect an increasing inventory of electronic hardware and related applications with each new project that crosses your boards—or CADD system.” It makes energy conservation sound easy.

It isn't the nature of information that is changing, the authors say, but what is changing now, when accuracy and speed of access and control are dominant, are the methods and equipment by which information is processed and handled. As traditional methods give way to electronic information processing, the changes affect not only how tasks are done and the functional relationships among office workers, but also furnishings and equipment, “and ultimately the entire office environment, its planning and building systems support.” If you, the designer, haven't given much thought to the office of tomorrow, “where office equipment, people, services, and facilities . . . are linked together in a global network of instantaneous communications and information transfer,” it might behoove you to begin by reading this basic and provocative book.

With lucid text, pertinent photographs, and many diagrams, drawings, and checklists, the authors deal comprehensively with six major issues in the specifics of designing for electronic equipment: flexibility, human factors, the project team, space planning, building systems, and furnishings. Consideration is given to the planning of the *open plan office*, the *enclosed office*, and a combination of the two. Nor have the authors neglected the

continued on page 82

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retrofitting of an existing office. Throughout, there is emphasis upon the human being and his or her needs. (Every office planner ought to learn—and heed—the 18 criteria that the authors outline for the evaluation of workstations.)

Of particular interest is a chapter entitled "Design Portfolio," which is a concise photographic collage of "real life" office design problems, with solutions and specific automated applications. The final chapter on "Planning for the Future" is worth the price of the book, giving trends in the workplace, in hardware, in software, in furnishings, and in communications. Mail delivery robots, talking calculators, and individual use printers at the workstation all make the cordless telephone seem old hat. In brief, this is an important book *now* as the designer intelligently tries to anticipate the future.

MARY E. OSMAN, HON. AIA

Historic America: Buildings, Structures, and Sites. Edited by Alicia Stamm and C. Ford Peatross. The Library of Congress. (Superintendent of Documents, U.S. Government Printing Office, Washington, D.C.)

Historic America is the title of this book; the Historic American Buildings Survey is its subject. HABS' 50th anniversary was observed last year, and this hefty tome (which might have been better in two volumes) provides a spirited collection of 15 essays that marvelously capture the historical substance, the idealistic sense of mission, and the character that has infused HABS from the start. There is also a checklist of 16,738 subjects that HABS has drawn, photographed, and researched over the years. When one goes beyond the number of individual buildings and into the actual material deposited in the Library of Congress's prints and photographs division, only modern data processing can cope—help that is on the way.

The famous 1934 "Memorandum of Agreement" between the National Park Service, the Library of Congress, and the American Institute of Architects provided a solid foundation for the Depression-born weekend improvisation of that architectural *wunderkind* Charles E. Peterson, FAIA. His recollection starts this book. Of all the cultural programs launched by the New Deal, HABS is the sole survivor. That it is an "open-ended archive" that addresses perhaps 300,000 other buildings awaiting documentation cannot be doubted when one contemplates the steadily broadening scope of this inventory; its inclusion of more recent buildings and vernacular architecture; the broad field of technology addressed by HABS' sister agency, the Historic American Engineering Record; and the development of the

survey process itself, with stereoscopic photography, microfiche and microfilm, and the dissemination of field notebooks, record photographs, and other working data.

When it is realized that half of the buildings HABS has recorded have vanished, it is easy to understand why the program has been viewed as a primary vehicle for preservation. Spectacular events such as the fire at Franklin D. Roosevelt's Hyde Park home (HABS documentation is unique) have underlined that value. A review of just the illustrations in this book brings us to the realization that there is something beyond preservation, beyond architecture. There is the broader field of history. As HABS has grown, its increasing breadth has healed the one-time breach between architecture and history in the National Park Service, and has brought archeology, material culture, folk architecture, artifacts, and building equipment under a single umbrella. It is the richness and detail of America's past that here, as in no other form of documentation or category of subjects, inspires the historical imagination. For example, the essays here on kitchens, fittings and fixtures, cast-iron buildings, and the Victorian heritage of Cape May, N.J., are brilliantly conceived to make this point. Not to neglect the larger interpretations, we are also given important accounts by exactly the right authors of such preservation hearths as New Orleans and Philadelphia; of a single architect, Frank Lloyd Wright; and of such urbanistic themes as Main Street. But the accounts most appro-

Smithfield Street Bridge spanning the Monongahela River in Pittsburgh, c. 1883.



priate to the HABS anniversary are those dealing with its origin, its meaning, its use as a collection, and its present status and future outlook.

One turns from this well-conceived and valuable book, having been given the answer to many questions. Do we need HABS? The answer is a resounding yes. Preservation needs the unique architectural emphasis that HABS provides; and it needs the institutional contribution of the Library of Congress and the professional strength and continuity provided by AIA. Should HABS and the engineering record agency be combined? This book gives sufficient evidence that the two programs are well coordinated, mutually strengthening, and that each draws support from its own constituency. What role should AIA play in HABS' future? From the beginning the Institute was deeply concerned with the special problems of unemployment of self-employed professionals and with formulating a kind of activity that would not be competitive with architects in private practice. Over the years, AIA's interest has broadened to embrace HABS' educational opportunities and other aspects of its program. This book provides a good springboard for AIA leaders as they consider future relationships with HABS.

FREDERICK GUTHEIM, HON. AIA

Mr. Gutheim is a Washington, D.C., educator and critic.

The Architect's Guide to Law and Practice. Bob Greenstreet and Karen Greenstreet. (Van Nostrand Reinhold, \$23.)

The authors—an architect and a lawyer—supply the reader with concise information on legal matters that affect the practice of architecture, such as copyrights, professional liability, forms of association, licensing, and zoning and building codes. Throughout the book, there are simulated office memos and letters that give "action required" and "action taken" to help the architect make decisions in similar situations.

Alvar Aalto: An Annotated Bibliography. William C. Miller. (Garland, \$65.)

This useful reference on Alvar Aalto, his work, and writings, is organized in five major parts, the first considering Aalto's published essays and lectures and conversations held with him. Part two covers materials about him in books and monographs, while part three is on works in collections and general reference sources. The final section references periodical articles. In addition to citing exact references, Miller provides a brief summary of each entry. The bibliography is further enhanced by Miller's comments and notes, and author, title, and building and project indexes. □

DP/architecture

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The most senior among us remember the coming of the computer into architectural offices in the early 1950s. Slide rules were still in common use, but the new tool became increasingly adapted to structural calculations.

A decade later, computers were wed to plotters to generate the first computerized designs. One who was present at the unveiling of what was then called the MEISENG system wrote, "The productivity and contributions of the individual, given such a tool, can be multiplied by a factor of many hundreds." The observation was less than profound.

In some respects the new era has, however, come slowly. It is only now that computer technology is becoming common to the architectural profession. Few ever doubted its value, but much of what has been available has also been expensive, baffling and difficult to justify for all but the largest of firms.

The great breakthrough has come, of course, with the introduction of the personal computers, and the proliferation of "user friendly" software which permits those other than computer specialists to utilize the technology.

Computation functions of the '50s are now performed by pocket calculators. The computer-plotter systems of the '60s have given way to far more sophisticated systems, increasingly practical for a broader segment of the profession. The computer capabilities available only to the larger firms in the '70s, are now largely available to all. A new world surely beckons.

Dr. Bruce Sanders, whose column FOUNDATIONS appears in this issue, has determined that the costs of computing power are being reduced by about 50% every 24 months, as personnel costs continue to rise... that processing capabilities for a "package" of comparable size are doubling about every 14 months. Thus, computers are very rapidly becoming both smaller and less expensive, but much more powerful.

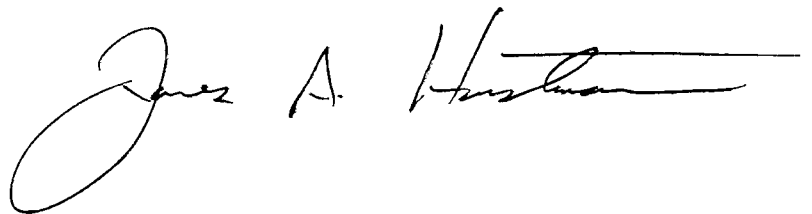
In 1960 a cubic foot of computer memory would accommodate about 15 pages of normal text material. Today, a memory package of comparable size will store the text of some 3,500 books of average size. Dr. Sanders has said that by the end of this decade, a cubic foot of memory capacity will be adequate to store the entire text collection of the Library of Congress.

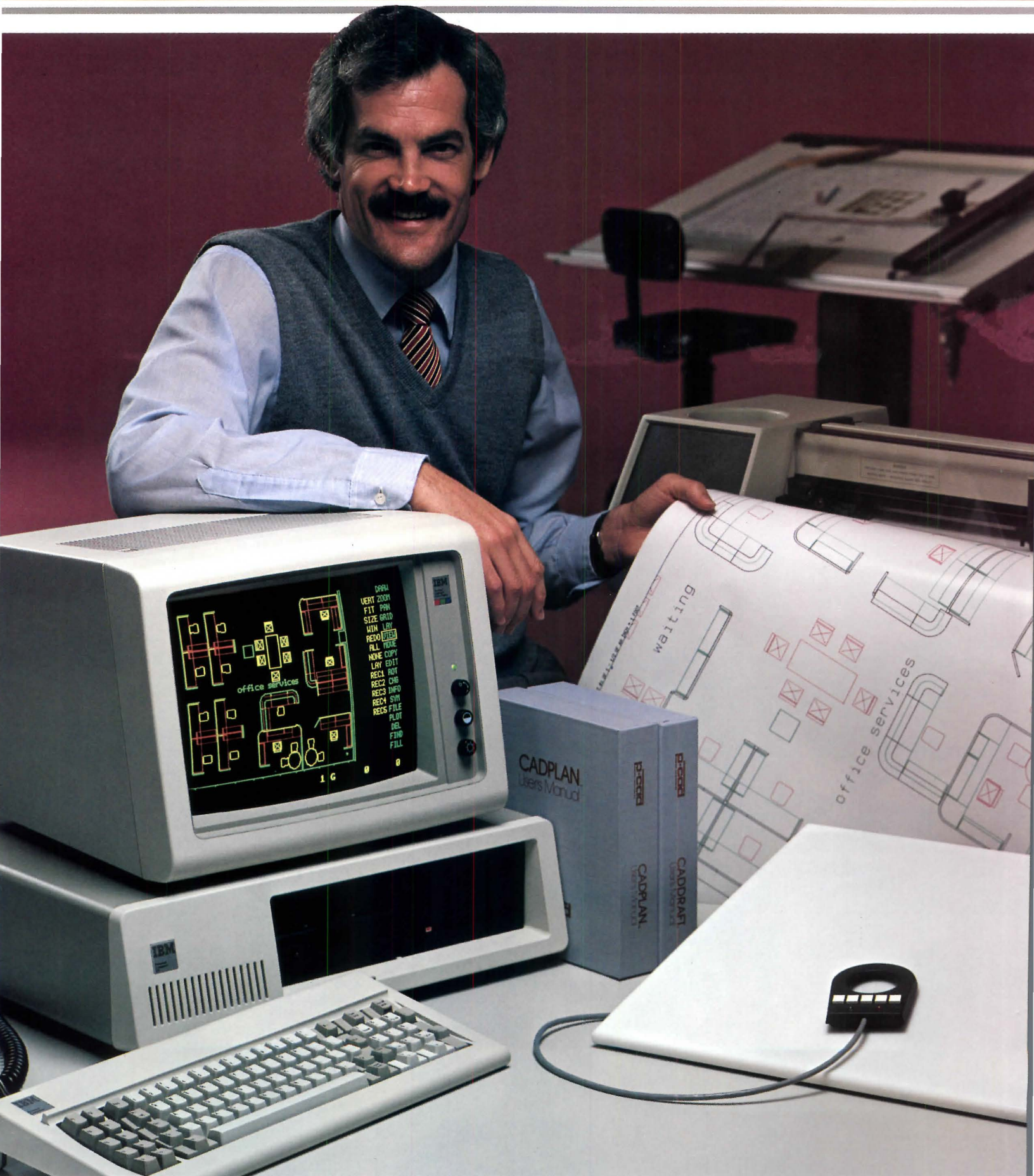
A given architectural office can no longer debate *whether* to join the trend. The questions are simply when and how?

In the early years we were so enamored with engineering and design uses for the computer, few of us foresaw that its greatest utility for architectural professionals would be simple office automation.

Computer technology today enables the smallest of architectural offices to function more efficiently, to compete more effectively. Data processing systems free senior professionals from administrative tedium and the endless handling of project information. They permit the rapid evaluation of design and material alternatives to determine economic feasibility. And so they enable senior personnel in the firm to devote more time to what they do best.

Forevermore, computer technology will be a highly significant factor in lives of both architectural professionals. This supplement addresses these opportunities.





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Computer Savvy Spells Survival for Small Firms

The competitive climate in architecture appears destined to remain. So efficiencies and marketing advantages of using a computer—for information management or design/drafting—could very well spell survival for some small firms.

So it seems to a number of architects who've gotten their feet wet with the technology.

The message is clear: Today, fewer architects resist the idea of using data processing to better manage their practices than did just a few years ago. Yet many architects still question whether the "ultimate" in technology—computer-aided design/drafting—is appropriate for many small firms. They caution that sufficient volume in the type of projects efficiently handled on a CADD system is vital.

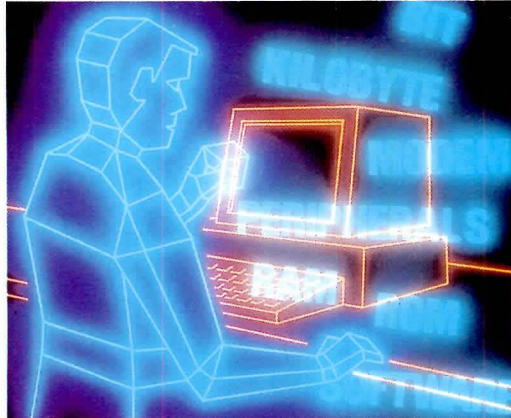
Word processing and accounting are two of the most common applications of a computer in an architectural office. They're also cost-justifiable.

"For us, the cost-justification was word processing," notes Paul Henderson, partner, Henderson Gantz Architects, St. Louis. This 20-person firm uses one IBM Personal Computer (PC) and two Compaq portable PCs that are IBM-compatible. "The computerized management systems were a plus," Henderson adds. "We issue internal management reports. During a project, we issue monthly and bi-monthly updates so we know if we're performing according to budget...for both hours and dollars.

"It helps us set objectives and monitor our activities against our objectives."

Henderson and other architects interviewed list a number of benefits reaped by hooking up with a computer.

"There's a dramatic impact on the bottom line—some direct, some indirect," Henderson says. They include accurate fee proposals, work-load scheduling, improved monitoring of cash flow and better information that affects financial decisions made by the partners.



"The computer makes us better professionals," says Joe Stoeltje, vice president, Wilson, Stoeltje, Martin of Austin, TX, referring to his 19-person firm's use of a CADD system. "We're better professionals because we're building a library of solutions to problems."

Several other principals note that the work loads are less chaotic since computers have been employed by their firms.

By reducing the routine, drudge work, computers have allowed employees to turn their attention to the challenge of more interesting tasks. And better-quality typed documents are the product of word processing systems, say architects. "Our proposals look more professional than they did before," admits another architect.

What's more, marketing efforts enjoy a boost. Quicker response times and capacity for greater frequency of direct mail solicitation are two commonly cited marketing advantages gained by using a computer.

Finally, in the area of accounting, the benefits of computers are easily tracked. "Our accounting is more accurate now," asserts one architect. Another principal adds that the firm's billing time has been cut substantially, improving cash flow and the firm's profitability.

"To calculate the fee via computer is an immense benefit. We have a good statistical base on what it costs us to do business, so we do very accurate fee proposals," Henderson says. "The

certainty of our information lets us stand firm but explain why a fee is what it is. That's helpful from a marketing standpoint, too."

More important, Henderson is comfortable with the proposals he writes. "We feel good about our proposals whether we get the job or not...because if we can't perform the job profitably, we don't want to accept it."

Increases Profitability

The reports generated by a computer help Henderson/Gantz monitor the firm's cash flow. "If there's excess money, it's invested well and for as long as possible," says Henderson. We know when we'll need money, or we can let the bank know three or four months early if we'll need to borrow. The timely reports also let us make good decisions on whether to finance or pay cash."

Improves Service

Joe Stoeltje of Wilson, Stoeltje, Martin believes his firm's new CADD installation will ultimately make the architects perform better. That will happen, he believes, because a library of solutions to problems will be compiled over the long run.

Meanwhile, Wilson, Stoeltje, Martin plans to add new services, including facilities management and life-cycle costing at the front end of a job. The firm's only been using the DEC VAX 11751 system since mid-February. But already Stoeltje can see results.

"It's not an easy transition. You don't draw the same on a CADD system as you do by hand. You multiply walls with the CADD system. That requires a change in your thought process," he says.

"We're already using it very effectively at the level we understand it," he adds.

Yet for Wilson, Stoeltje, Martin, word processing, accounting, spread-sheet and project management comprise the heaviest use of the system. Ideally, says Stoeltje, the computer will interface and integrate information with those used for word processing and accounting within 12 to 14 months. "We do have a long-range plan and the tools we'll need to get there, but all the steps are not outlined because we have to do buildings and keep up the cash flow in the meantime," he says.

Stoeltje foresees a data base that includes a description of the property, with built-in financial analysis for real estate decisions. "When we have that in the computer, when we get into the architecture, the computer will run interference and tell us the plumbing can't go where we've put it because there's a concrete beam there," he says.

On the construction side, this ideal system will produce updated drawings

so manually produced supplemental drawings will be eliminated. Additionally, accurate special drawings for the building owner's maintenance use will be easily generated. And the professionals can monitor the building and issue yearly reports if needed on building products and their performance history.

Stoeltje worked with Mark Estes, an Austin architect and computer consultant, who advised him on the acquisition of the computer system and how to maximize output from it. But more important, he believes, is total commitment to the computer from all partners and department heads. "You have to be able to understand the computer and operate it. If you don't, you've lost control of your business, and you'll never get any benefit out of the computer," Stoeltje says.

Reduces Chaos

Though many business owners believe a computer will aid them in reducing their work force, a few architects say that's not always the case. But they do credit a computer with minimizing confusion in the office.

"It hasn't reduced our work force, just the chaos. The secretary can get a lot more done," notes Kathlyn Messer, marketing coordinator, EDI, Dallas.

On the professional side, Henderson of Henderson Gantz adds, "I do a six-month work-load projection. This includes the administrative work load, projects under construction and projects that may come in," he explains. "The probabilities of whether we'll win the new jobs are included. We can schedule our workload and that allows us to have the right number of people for staffing. Now, on the computer, it's more accurate and takes less time to do than when we handled it manually. This allows us to hire people if need be... or if we're very busy but foresee a flat spot we can hire temporary people. It makes the work load in the office saner."

Reduces Repetition

For Crigler Topping, Reston, VA, and



Joe Brown: Helps expand markets.

IBM PC and Auto-Cad computer and plotter have helped cut repetitive changes, even on a small project. Their first CADD project is a \$1- to \$2-million townhouse development.

"We draw the elevations on the CADD system. For instance, we have a library—or data base—of windows, so we don't have to draw the same thing over and over again," explains partner Wayne Topping. "It's a hundred times faster than drawing a window by hand. The repetitive, boring work is removed, but you do have to spend time building your own data base."

The main problem this team cites is the uncertain start-up time and learning curve. "You don't know how much time it will take when you start out, and you compare it constantly to the manual method and try to use those same techniques," Topping says.

Still, these professionals say the learning curve was modest. "We had both worked on larger CADD systems while working for another architectural firm before opening our own practice," says Don Crigler.

"Once you overcome the one-to-two-month-long learning curve on a CADD, the system will pay for itself. Larger machines—in the half-million dollar range—have a learning curve that's a year or more long," Topping says.

Yet the Henderson Gantz firm found CADD wasn't effective for the firm's high volume of small projects. As a test

for how the firm might have added CADD to its computer capabilities in the near future, Henderson contracted to use a service bureau for three projects over a two-month period. "We approached it correctly, an experiment using a service bureau to discover the potential hassles, cost and capability," stresses Henderson. "But our projects are not of the scale or complexity to warrant using CADD. A CADD system is ideal for a hospital or a multi-story hotel. If we had a project like that, I would use CADD again."

Boosts Marketing

The benefits of computerized information management are manifold according to professionals who talked with DP/ARCHITECTURE.

Though the 400-plus employee Everett I. Brown Co., Indianapolis, has used computers for 12 to 13 years, managing partner Joe Brown credits acquisition CADD systems with allowing its new, small-size subsidiaries to grow.

"We became involved with our subsidiaries in the middle of the recession, and since then they have doubled in volume and size," Brown says. "CADD opens new markets. It gets us involved with clients that in the normal course of business we would not have become involved with—like industrial markets and the military."

One of the firms Brown acquired is 25-employee EDI, a Dallas architectural, master planning and space planning practice. The firm uses two TRS-80 model 16 PCs with Scripsit, D-base, profiles, Profiles II and Visicalc spreadsheet software and is switching to IBM PCs in the near future. It also has an Arigoni CADD system.

Marketing coordinator Kathlyn Messer cites these advantages:

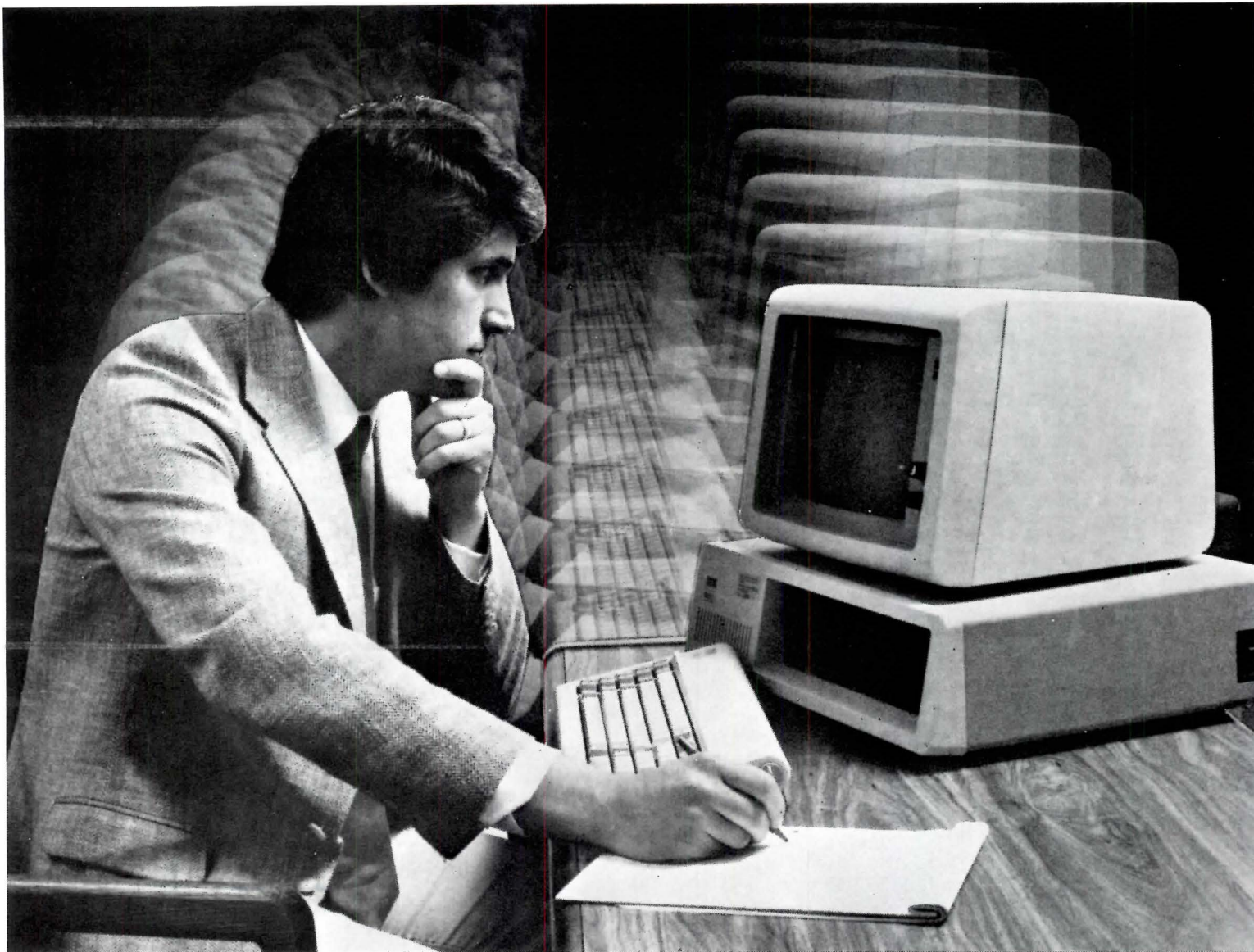
- All mailing lists are on computer. The data base filing system merges names with word processing for custom mailings.
- Flexible brochures are kept on the data base and tailored to each client

Paul Henderson (standing): Improves marketing, management.



Joe Stoeltje (standing center): Plans to integrate info.





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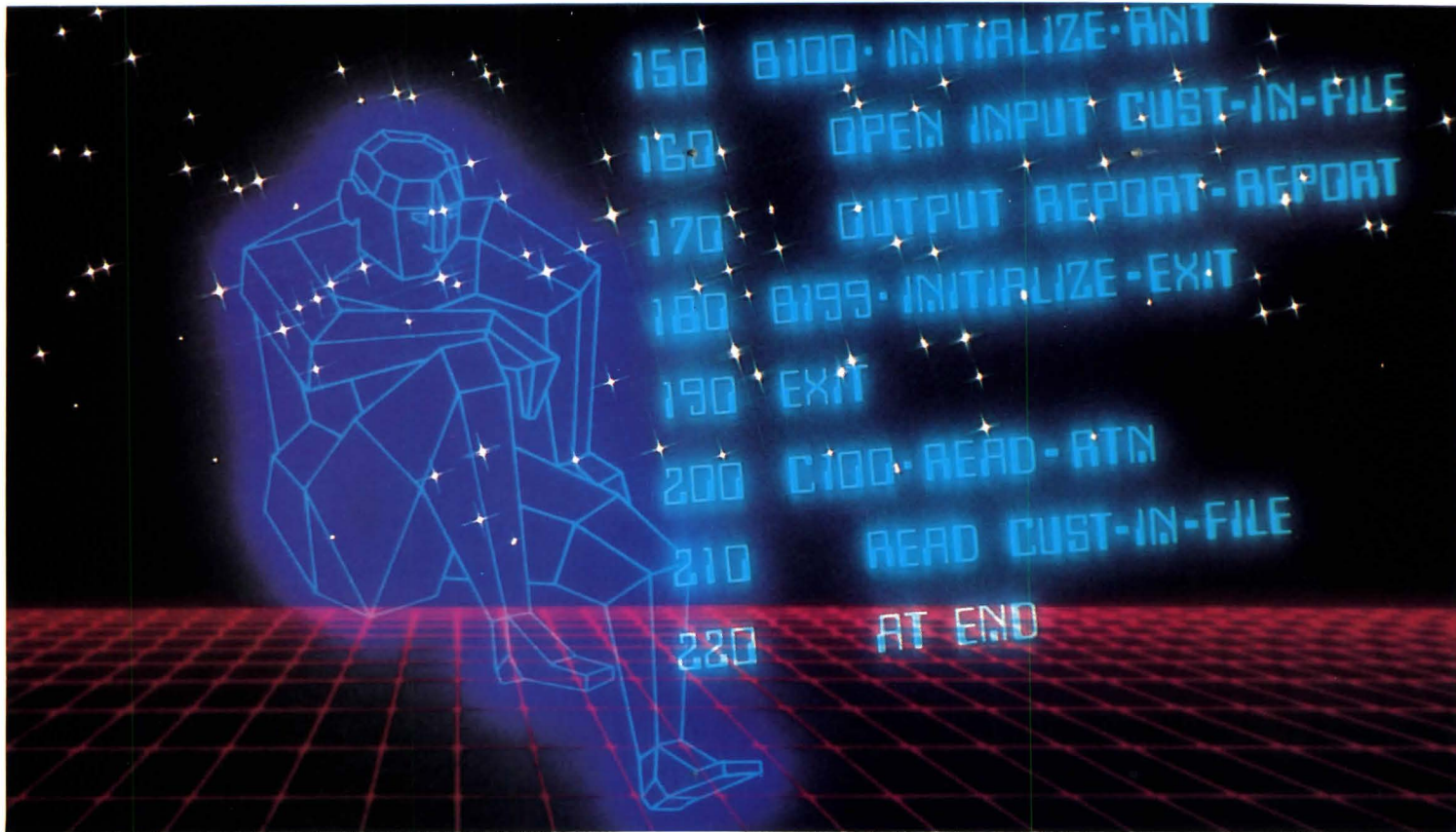
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based on their interest in space planning, interior design, architecture or land planning.

- Resumes of principals and designers are kept on the data base and tailored to the different types of projects the firm is competing for.

- Prospective client file codes identify (1) who the EDI contact is (so sales efforts aren't duplicated); (2) what services are being proposed; (3) type of industry the prospective client is in; (4) first, last and next contact date and type (phone, visit, lunch, proposal).

"The computer helps speed up marketing efforts and makes it easier to complete marketing projects," Messer says. EDI is switching from Radio Shack to IBM PCs and is adding an Intergraph CADD system to supplement its Arrigoni system.

Messer's not alone in praising the wonders a computer can make in a marketing campaign. Notes Crigler of Crigler Topping, "We hope the computer will give us free time to market ourselves, which we need to do because we're a young company."

Partner Topping is more explicit. He uses the D-base II application software to keep track of all hospitals in the three-state Washington, DC, region. "We note their names, number of beds, utilization rate level, etc. We generate mailing lists for direct mail and also determine which hospitals to focus on," he explains.

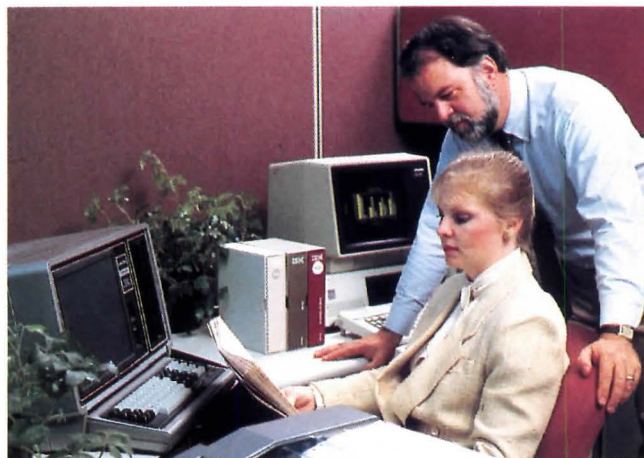
In addition to the information the computer offers the marketing planners,

the existence of a computer in an architectural firm is a psychological marketing plus. "It's a competitive edge to have a computer . . . gives the firm a distinction," Topping remarks. Yet Bud Hopkins, EDI's president says, in the Dallas market, a computer is not as much of a marketing tool now as it was when EDI acquired one two years ago. "It is an aid in our production capabilities—getting the work out faster—so that's an advantage," he says.

Using a computer also helps Henderson Gantz. "We can respond to more proposals since we've begun using a computer because it's easier to do a proposal now," Henderson notes. "It's quicker. We can do most proposals in a few hours, customizing and spending meaningful time responding to the specifics the owner has asked for. It lets us focus our intellect on the meat of the project."

One concern that should dissolve within the next few years is the shortage of draftspeople and architects with CADD experience. Because relatively few architects have CADD skills, there's the tendency for some firms to lure trained people away from other architectural firms. One firm figures salaries for employees with CADD experience will increase 25 per cent over the next few years. After that, salary increases and employee turnover should settle down as the crunch for trained people eases.

Most architects who use computers to aid their practices agree that the project has just begun. It takes time to learn and experiment. As architects become more proficient at using the computer to manage information, they're dreaming up new . . . and potentially more productive ways . . . to use their new tool.



Kathlyn Messer, Bud Hopkins: Aids marketing, production capabilities.



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*Bill Knox, Designer
Millis, MA*

"With AutoCAD, I'm landing projects that I wouldn't have earned without sophisticated CAD capabilities. It vastly improves my presentations to clients and expands the range of services I can offer. I would never go back to manual drafting."

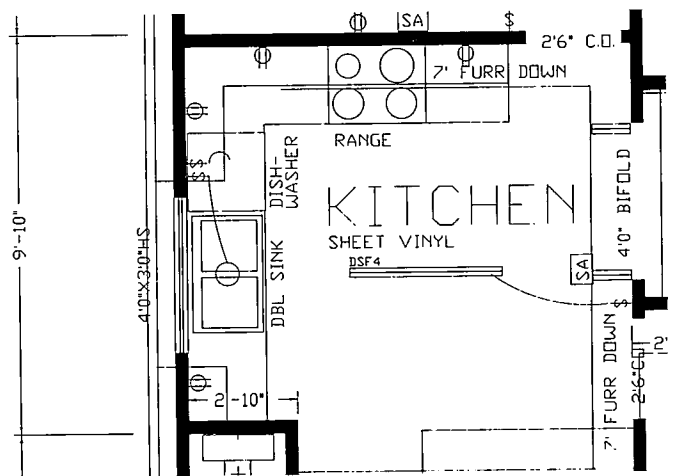
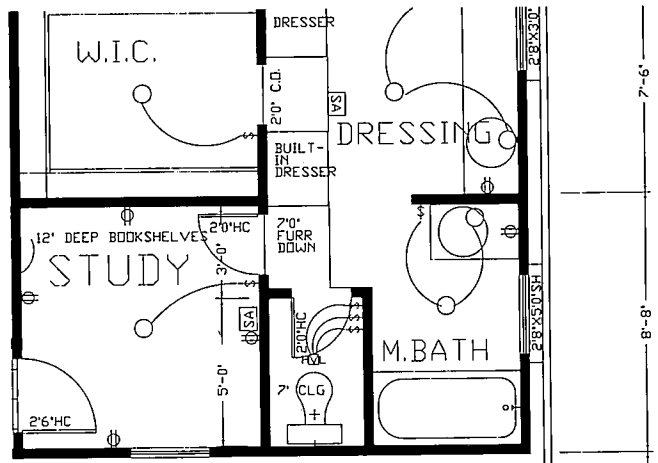
*Lansing Pugh, Architect
Austin, TX*

"AutoCAD has the best human interface on the market. Data entry is in English, so it makes sense. It's difficult, if not impossible, to find anything close to AutoCAD."

*Marshall Martin, Engineer
Los Angeles, CA*

"AutoCAD software on a personal computer accomplishes over 80% of the functions of a \$100,000 system for a total cost of less than \$15,000. And, this includes the computer, a graphics board, all the necessary expansion boards, a plotter, and AutoCAD software. That makes sense to me. We improved our productivity by using the data we stored, and making quick revisions on existing drawings. I'd like to see more architects using AutoCAD. They'd be amazed at the results they can achieve using computer-aided design techniques."

*Rudolph Horowitz, Architect
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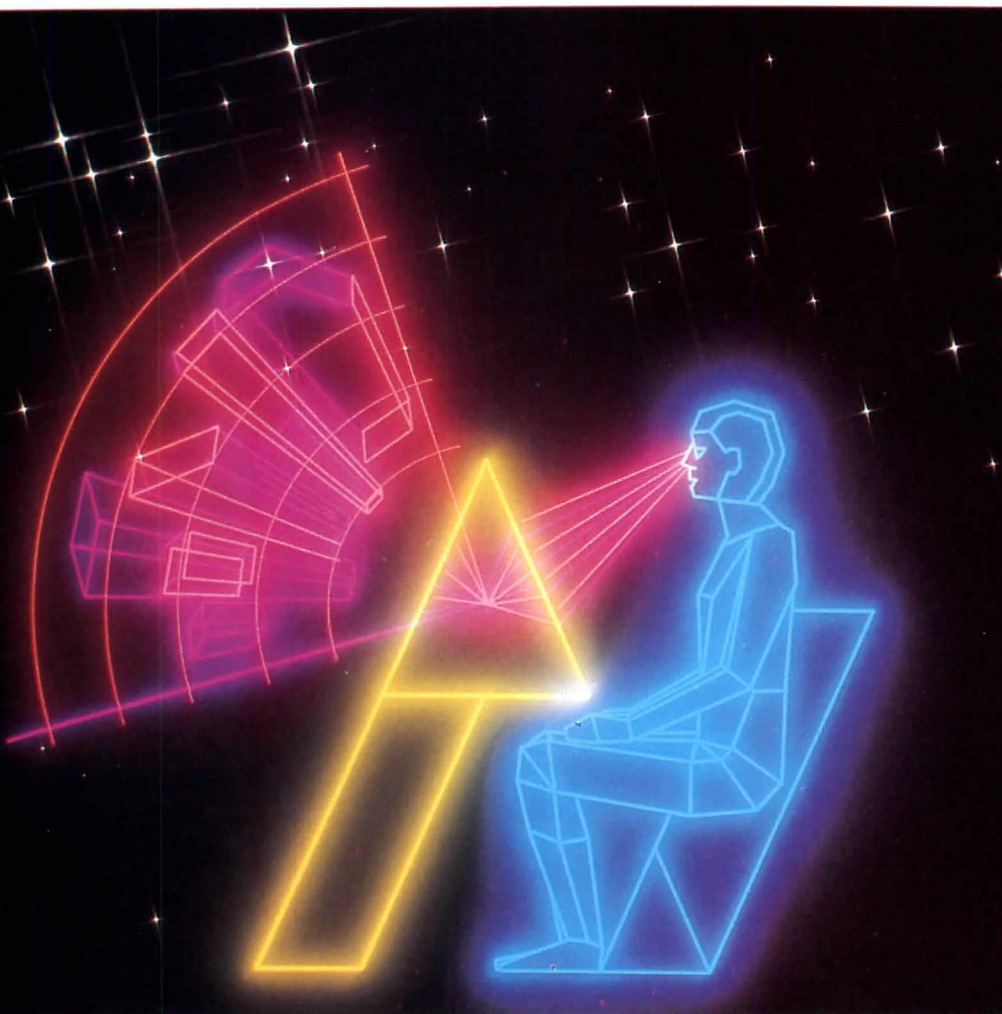
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Large Firms Change with the Computer

by Dennis O'Brien

It is getting costlier to play in the big leagues of architecture, and automation is subtly changing the rules.

Most of the largest architectural firms have millions invested in hardware and software, and are budgeting big sums for the care and feeding of their systems, including maintenance, upgrades, and especially training.

The giants—much more than the smaller firms—are being pushed into the automation of architecture by clients who are themselves automated and want computer-to-computer communications.

While there are still some notable holdouts, large firms are jumping into computer-aided design and drafting (CADD) with both feet. Often they make the jump not because they find CADD all that efficient, but because they want experience in it for the day when there will be more sophisticated integration of design and construction documents and more automated routines.

Automation has increased the capital investment required to stay in the game, and created a new category of expert—the architectural tool user and manager who creates software and data bases, and has made it possible for the big firms to offer new services like facilities management or to enter entirely new businesses.

Direct computer links have more closely tied big architect to big client.

Some of the new businesses which the larger firms are in or about to enter include time sharing their own main frames and selling or leasing architectural and engineering software. One firm, having automated itself, is offering to do the same, for a fee, for all comers.

Prefers to Develop Own Software

One of the most computer-experienced of the big firms is Skidmore, Owings, & Merrill, Chicago, which has written more than 600 software programs. Douglas Stoker, director of computer services, estimates that SOM has

invested more than \$1 million to create software along. Stoker's department, which consists of 15 architects and two engineers, has written most of the application programs which tie architecture, engineering, and project management together for eight offices.

Stoker denies that his is becoming a capital-intensive business or that architectural practice is changing all that much.

"The business is more capital intensive with a greater ratio of invested capital per employee," Stoker feels. "But you can do lousy design with a computer or without it. Great buildings are still designed by talented people."

More Work, Faster

For its investment, Stoker believes SOM gets more work, faster, from fewer people. "At the same time, quality is enhanced because so many alternatives can be evaluated and so much data processed.

"The computer shortens the turn-around time between concept and design. And it is sometimes a needed credential for some kinds of work, like that for many agencies of government or the big corporate client who wants all his project data to be machine readable."

SOM has bought software, but usually opts to develop its own as needed. Its Structural Generating System (SGS) package and several programs designed to speed the input of data were developed while SOM was working on the Sears Tower in Chicago. SOM CADD systems include graphics, vast underlying data bases, and a wide range of applications.

Training Is Costly

While the development and enhancement of software and data bases are the most costly parts of SOM's computerization, on-going training runs a close second. And to remain "state-of-the-art" also costs money. Currently Stoker's department is spending 10 per cent of its time on two massive projects designed to make SOM's computerization more efficient and less expensive. One project is a change in computer languages, from VAX Basic to C. The other is a switch from a central time sharing operation to a distributive network.

Cost savings will be significant. The new setup will allow SOM to add a work station at a cost of \$40,000 compared to \$80,000 now.

On the other side of the make-or-buy argument is Houston-based CRS Serrine, Inc., which has 3,200 people in 20 offices. Unlike SOM, CRS Serrine prefers to buy software.

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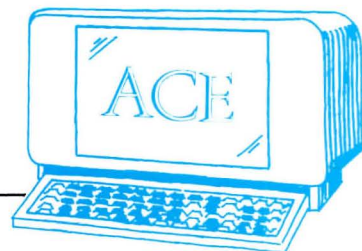
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CRS: A 'Knowledgeable Consumer'

"We feel we have gotten more bang from the buck by becoming extremely knowledgeable consumers of software," according to Gerald Pfeffer, director of computer services. "We scour the market and have developed software which helps us evaluate outside software," Pfeffer said.

It wasn't always that way. In the early '60s, CRS Sistine developed much of its own software. "But often, just as we had developed in-house capability, we found that the market had developed a better alternative. So now, we look to see if what we want is available before developing software in-house."

Pfeffer feels that the computer has forever changed the way services will be rendered and has created a continuing demand for new services.

Revolution in the 'Back Room'

Automation is converting the 'back room' operations of service businesses like banks into factories inhabited by a new kind of 'gray collar' worker. So well has CRS learned to automate its own service operations that it has set up a new business—helping other businesses automate their own offices and train their gray collar workers.

"Services are becoming products," Pfeffer says. "We will be developing new 'service products' in the same way that consumer and industrial products are developed. We will start with an idea, research the market, market test, sell the product, refine it, and finally end up with a mature product.

"We will have several such service products in the pipeline at any one time, in various stages, from inception to maturation."

Don't Make If You Can Buy

Don't make waves or your own software is the motto at Gensler & Associates, San Francisco, one of the country's largest architectural firms, with 500 employees in 11 offices. Tony Mirante, Gensler's director of computer services, brings in each computer function slowly with a minimum of expense, fuss, and disruption...and absolutely no downtime.

"We always start at the shallow end

of the pool, and by the time we get to the deep end, we are prepared to swim."

Typical of this pragmatic approach is the firm's five-year plan to bring all accounting functions in-house. "First the service bureau did it all. Then we installed micros and began inputting the data for the service bureau processing. Shortly we will bring the processing in-house."

Mirante, who worked at SOM with Stoker in developing SOM's in-house CADD system, bought outside for Gensler. "We opted for an Intergraph 751 system because it is less costly to work with a vendor who has developed hundreds of architectural programs."

Don't Build a Bureaucracy!

A big firm can, and should, computerize without building a computer bureaucracy and without hiring people who do nothing but program, Mirante feels.

"If you build a computer department, you end up with programmers seeking too many elegant and costly solutions." Even Mirante spends 90 per cent of his time on client projects.

To get maximum use out of its CADD system, architects and interior designers use it for design work during the day. At night, architectural students from nearby colleges off-load project work done during the day and do "grunt work like making base drawings or red mark pick up."

One of the last of the big firms to automate was Hellmuth, Obata & Kassabaum, Inc., St. Louis. In September, 1981, the 850-person firm hired Charles Atwood, an SOM alumnus, and gave him a management mandate and the cash needed to get the job done fast.

HOK Investment: \$4 million

In the three years since, Atwood, HOK's vice president and director of computer services, has invested about \$2.5 million in hardware and \$1.5 million in software. Atwood's department of 30 people are hard at work, developing or buying the software and data bases which will give HOK 83 new system capabilities—all in accordance with HOK's master plan.

HOK is even eyeing the possibility of setting up two new divisions or sub-

divisions, one to license HOK-developed architecture and engineering software and the other to do facilities management.

Outside Time-Sharing Clients

Henningson Durham & Richardson, Inc., Omaha, has been profitably serving as a time-sharing bureau for a wide range of clients throughout the U.S. for 13 years. These clients are linked to HDR's Cybernet 730/173 by terminals. HDR's 22 offices are linked to the Cybernet by means of Datapoint terminals.

While HDR prefers to buy software outside, it has developed a great deal of its own, according to Herman Schmidt, vice president. HDR developed NOAH, a hardware and software package utilized for management and marketing and is offered to time-sharing customers. The firm also co-developed an HVAC program which is called MDP (Mechanical Ductwork Package) with California Computer Products Inc. (CALCOMP), Anaheim, California.

HDR has two CALCOMP systems, a one-station system devoted entirely to research and development and a five-station system for design production. HDR also has a 12-station CDC 2000 CADD system which is used by its engineering group.

Two shifts work the CADD stations, "We tried three shifts, but the odd working hours had a psychological affect on people, so we dropped it," Schmidt said.

Frank P. Gagarin, vice president of marketing for Schmidt Garden and Erikson, Chicago, said his firm experimented with a turnkey CADD system for a few months and decided it was not cost-efficient.

Wants Ball-Point Pen Price

Gagarin said his firm will get into CADD "with both feet when a capable system is designed and marketed at a ball-point pen price."

Whether you look upon it as a tool or as an engine which will spawn new services for new markets, the computer seems to have changed big architecture—swiftly, decisively, and forever.



Creative Financing Makes CADD Work for One Firm

by Rhea Dawson

After three years of investigating CADD systems and the financial implications of acquiring one, one engineering firm has decided creative financing—for now—is the only way to make the system affordable.

For Matrix Technologies, Inc., there were marketing and image issues at stake as well. "If we went with a lesser-name system, our big clients wouldn't be impressed, and a big part of consulting is image. A small firm could use a small CADD system, but it's not the image we need," explains president Roger Radeloff, P.E. His Toledo-based consulting engineering firm employs 50, with a branch office in Clinton, IA.

Radeloff determined there were four possibilities.

- Form a service bureau with three or four other related firms. Ultimately, he wants CADD in-house, so this alternative was not attractive.

- Use a service bureau, at a cost of about \$50,000. The negatives he saw: Their software can't be customized to your needs. And because it has many clients, the bureau lacks flexibility.

- Contract with clients who are committed to using the CADD system sufficiently so that it pays for itself. This eliminates the need for principals to spend their time selling the CADD system's time!

- Establish a joint venture with a local technical college to provide the computer time needed and also to train Matrix employees to use a CADD system.

"I decided to enter the agreement with Owens Technical College in Toledo for the simple reason that I couldn't afford to buy into an IBM, Computervision or Intergraph system for my long-term needs," Radeloff notes.

Cost-effective Choice

There are other reasons the financial implications of the Owens venture make sense. "The system we eventually buy must be able to 'talk' to our clients' computers," he adds.

The monthly cost of acquiring and maintaining a CADD system to meet all of Matrix's needs would be about



\$10,000. Radeloff uses this rationale to tally individual costs that comprise the monthly expenses:

- System has a life of three-to-five years. To warrant the capital outlay, productivity gains four to five times over the manual drafting and project management systems must be maintained.

- Hardware from a major manufacturer of sophisticated CADD systems would cost about \$300,000.

- Operating software costs run about \$60,000. This cost doesn't include application software, which must be custom written.

- Monthly maintenance fees average \$2,000.

- Full-time data processing manager to make adaptations to the software and to train operators. Six months' time is the minimum for operators to work up to adequate speed on a CADD system, Radeloff estimates.

- Other costs to consider: Additional equipment, such as a better plotter, digitizer, more memory, modem interface and added software—and required changes that would become evident after a firm had worked with the system.

- Upgrade of the office HVAC system and other modifications needed to house a computer.

- One-year's experimental time to determine which applications of the computer are cost-effective and logical.

Work as Partners

The joint venture between Owens Technical College and Matrix Technologies is the best of both worlds, for now. A big plus is that the Computervision system already was

in operation at the college before the agreement between the two organizations was reached.

This summer, as partners, Matrix and Owens are applying for a grant from the Thomas Alva Edison Foundation, since they are working together as academia and industry.

The partnership works like this:

Matrix rents time from the college. Right now, Matrix employees use the system between midnight and 4 a.m. daily. The schedule is more flexible in summer, when Owens has a lower demand for the system. "We could put a remote station in our office if we wanted to, but our people go right to the college to use one of the terminals," Radeloff explains.

Employees interested in becoming proficient on a CADD system are willing to work the late hours... and in some cases even prefer it.

But the bottom line is that this arrangement is cheaper for Matrix, and Radeloff believes the firm is learning more about CADD than it would if a service bureau were employed.

"We rent time from the college. But this is more than using the college as a service bureau. A bureau wouldn't teach us anything. The college has trained six of our employees how to use the system," Radeloff says. The college staff also maintains the system and makes recommendations on applications.

Marketing, Training Tool

"This is less expensive for us than a service bureau because the college wants to work with us in this pilot program. The cost recoupment for us comes from selling time on the system to our clients," he adds.

Matrix uses CADD to produce process and instrument diagrams, loop diagram, electrical wiring diagrams, conduit schedules, junction box and electrical interconnect drawings, instrument and equipment schedules, and materials lists and foundation plans and details.

"Tying in with the college's CADD system is a marketing and sales tool and also keeps us up to date to see what type of system we'll go with long term," he says.

"When I buy a system, I will base the decision on one or two clients who provide sufficient business to us to support the system.

"But I would like flexibility, which means that if I buy an Intergraph system it must be able to link up to our client's Computervision system." That's not possible now, but Radeloff believes it will be in another two or three years. "The suppliers could make their computers interactive, but they haven't wanted to up till now."

FOUNDATIONS

Bruce D. Sanders, Ph.D.

So you've decided to get a computer for your office? Or you already have a computer, and you find that it isn't as useful as you'd hoped? In both cases, you learn from experience.

The common mistake made by businesses acquiring computers: Failing to keep your focus on what you do for a living. Too many people in too many organizations buy or lease a computer the way they might buy a record player. You find a nice stereo system, and then you look for some good records to play on the system.

But because of different industry standards, you can't do that sort of thing with computers. You might find a good-looking piece of equipment, but sometimes you can't find the software—the set of instructions—to perform the jobs you want to complete.

If you already have a system that doesn't do as much as you'd hoped it would, beware so you don't repeat that mistake when you make your next purchase!

Begin by pairing what computers do best with what you want your organization to do. List the ways that *you* can use computers. Then locate the software to do those jobs. Then, and only then, carefully select your hardware. Next comes installation of the system, followed by integration into your work routines, and upgrading or revision of the system over time. Throughout the process, keep your focus on what you do for a living. Automation is the answer, not the question.

Targets of Opportunity

The pairing of what computers do best with what you want your organization to do has been called spotting the targets of opportunity. So many of the fundamentals of automation change so quickly that it's reassuring to know that the signs of targets of opportunity have remained much the same years.

- *Large volume.* If you do a great deal of any one type of task, consider automating it. Computers are at their best performing routine, repetitive chores, doing the same thing a million times in a row. People, on the other hand, enjoy changes in routine. By giving the routine work to the computer, you increase accuracy and worker satisfaction. And you save money.

In many offices, preparing letters and keeping financial records are large-volume tasks. Rather than having an



office worker type similar paragraphs in different letters, have standard paragraphs stored in the computer's memory and trot out these paragraphs to be customized for each letter. When keeping financial records, use software that places each entry in all the right ledgers.

- *Fancy math.* Computers can add, subtract, multiply, and divide with great precision. They also can make logical comparisons, seeing if one number is greater than another, for example. Automate tasks that involve manipulations of numbers. Examples of such tasks include scheduling and job cost estimating.

- *Time pressure.* Computers operate at superhuman speeds, but computers do cost money. Identify tasks where the machines will earn their keep by saving money or making money through quick action. One example of such a task in many organizations is cash management. The best cash managers are those with the least cash, for the money is out earning more money through investments. However, the death of many organizations begins with limited liquidity, so skilled cash management involves quickly moving money from one pot to another.

- *Common source document.* A source document is the paper that you write on or type on that contains information to be entered into the computer. An order form is often a source document, as is a list of item

costs. If the information on one source document can be used in many different ways, it is a natural for automation. Often the information from one form sets off project scheduling, cost accounting, materials management, and subcontracting or delegating. Good computer systems have integrated software, which means that once the information from a source document is entered, it can be used in a wide variety of ways.

- *Willing employees.* Automate in places where people are willing to have the computers come. Look for people *excited* about working with a desktop computer. Look for employees who *want* to learn about office automation because they hear it will make their jobs easier or because their children are learning about computers.

There are times when you must deal with employee resistances as part of the automation process. This is especially true in small organizations because you don't have enough employees to simply work around the resisters. Then the challenge becomes finding the sorts of tasks employees are more interested in automating.

Finding the Software

After you've identified your organization's targets of opportunity, find the software to do those jobs. Select software before you select hardware because the software that handles the targets of opportunity in your firm may work best on certain kinds of equipment.

Software—that set of instructions that tells the equipment what to do—comes in two flavors, custom and packaged. In large organizations, custom software might be written by programmers who work for that organization. Often contract programmers working independently or in a service bureau are hired to do custom programming. Good custom software fits the strengths and limitations of your organization and your organization's computers.

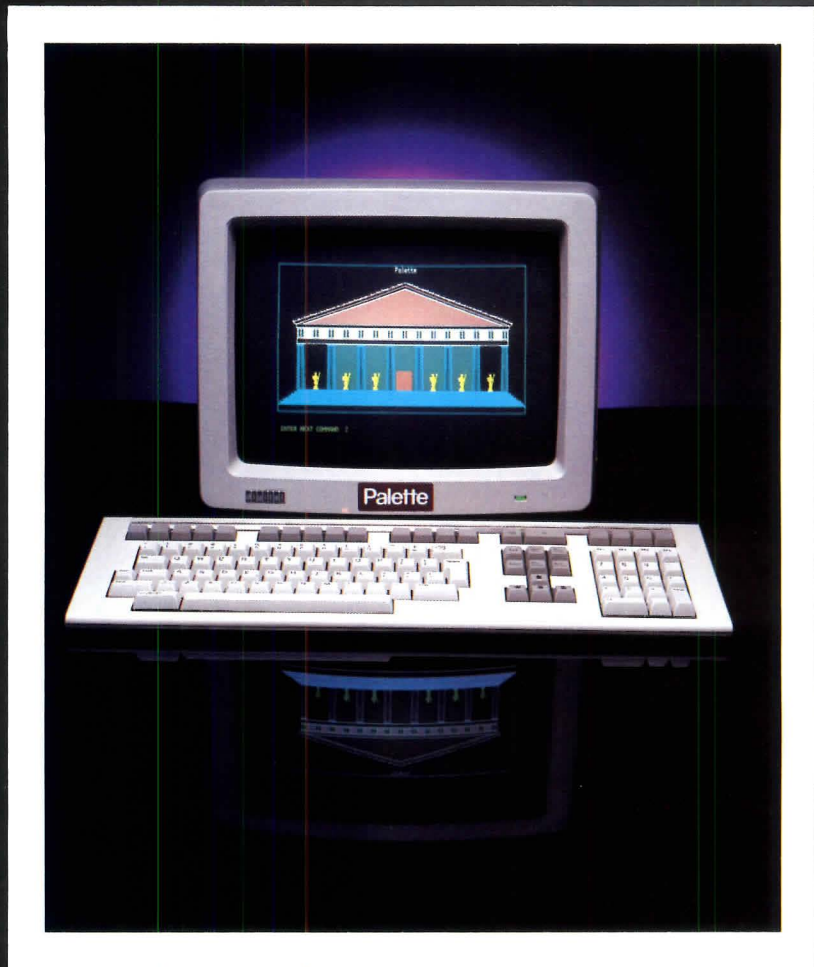
Good packaged software, also called canned software or off-the-shelf software, does a group of jobs well for many different users. The disadvantage of packaged software is that it is not customized to your needs. However, the cost advantages of packages are so great that it makes sense to look first for a workable package to see if one exists...or if an existing package can be customized to meet your needs.

But how do you find the packages to meet your needs? Actually, there are three problems:

- *How do I find out what packages exist?* Many hardware vendors are pleased to give you directories of software that will operate well on their machines. Software vendors provide

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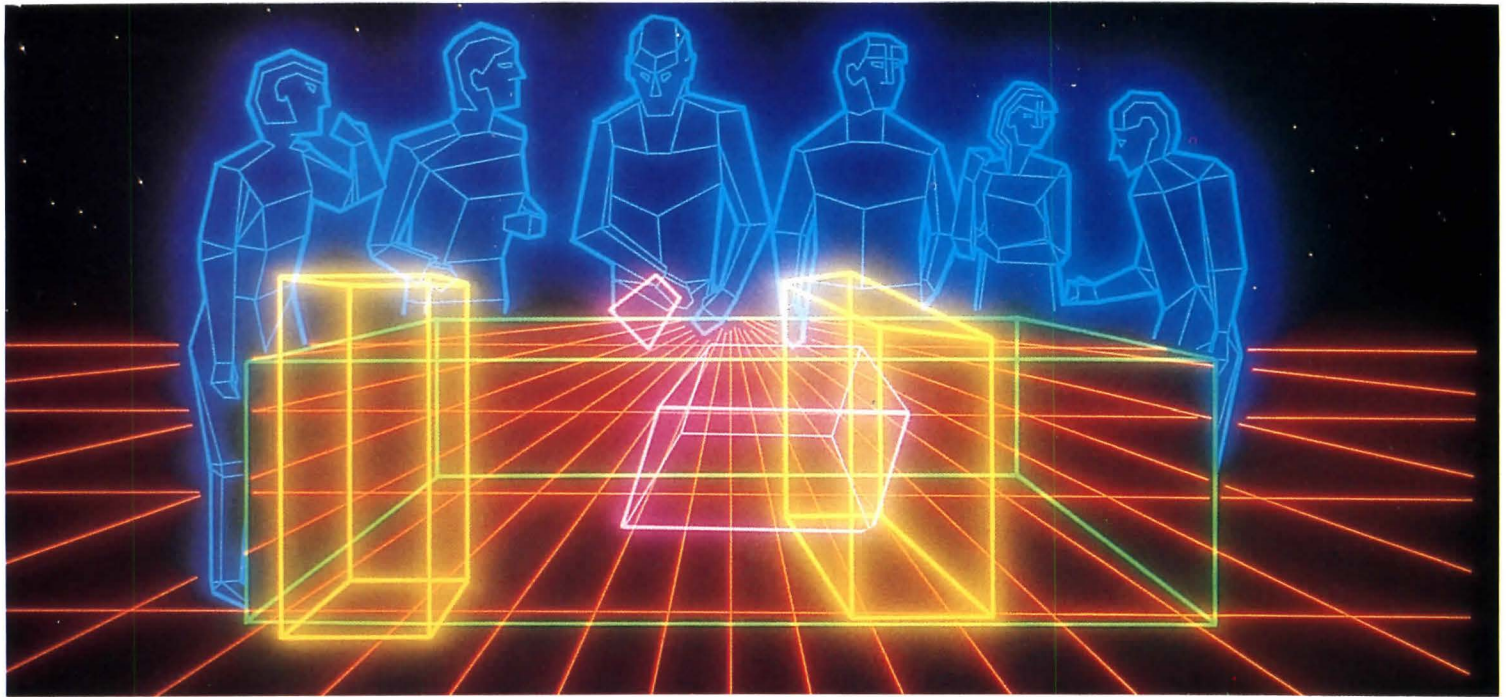
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catalogues of their respective offerings. Most microcomputer periodicals regularly review software packages. There are organizations that publish both comprehensive directories and directories of software for particular applications. Among these organizations are Datapro Research Corp., in Delran, NJ, and International Computer Programs, Inc., in Indianapolis, IN.

Don't select a package based just upon its listing in a directory. The directories are useful in finding out what is in the marketplace. You'll want to follow up by contacting the vendor, perhaps talking with data processing professionals, and also judging the quality of the software, which leads to the next problem.

• *How do I judge software quality?* Directories aside from those published by software vendors frequently include quality ratings. Look for tests of quality that involve giving the package to a group of business people like you and asking them to try it and report on it. An alternative is a survey of users of that package. Conclusions from these sorts of tests are more directly related to your needs than surveys that present a package to a few data processing professionals to ask them what they think of it.

A related method for judging software quality is to talk with members of user groups. A user group is, as you would expect, a group of people who use a particular hardware system or a particular software package or use computers in a particular way.

Ask the software vendors you're shopping with if a user group exists and, if so, how to contact the group. Then ask some of the members what they think of the software package. At first glance, it would seem that members of a

user group are a biased population. After all, these are people who have decided to stay with the software. But if a software product is inferior, the user group may be applying pressure on the vendor to make changes. If that's the case, members will no doubt be pleased to provide you a stirring narrative of their tribulations.

And don't forget another nice way to judge quality—try out the software, which leads to the third issue.

• *How can I try it out?* In reality, you won't really be trying out your software until you use it for a while in your office. But keeping this in mind, you can get some ideas about how the software works.

If you are making a large purchase, the vendor may be willing to arrange a site visit to another installation. Trade shows can provide you an opportunity to at least fool with the software. User group members may enjoy showing off a package and letting you try it out. A number of retailers hold classes in the use of popular software packages. Don't be surprised if there is a fee for the class, but ask to have your fee credited towards a subsequent purchase of the software.

Finally, the Hardware

When you find some promising software packages, the decisions about hardware are easier. As you look in the software directories, most listings will say what engines are best for driving each package. As you talk with members of user groups, you'll hear software and hardware discussed as parts of a system, not in isolation. As you try out the software, you'll be trying it out with a certain hardware configuration.

Encourage the people who will use the system day after day to participate fully in deciding what comes into the office.

Realize, however, that the unfamiliar is frightening, so you may want to ask employees to stretch their muscles and give a new system a fair trial. The IBM Personal Computer keyboard has the keys arranged differently, spaced differently, and at a different angle than on the keyboard of an IBM Selectric. But after using the IBM PC keyboard for a brief time, as on a site visit, and talking with others who use the new keyboard, the secretary may decide that the key arrangement, spacing, and angle are the products of a genius.

Although you make your final decisions regarding software before your final decisions regarding hardware, the decision-making process overlaps. In addition, there is one perfectly acceptable blatant violation of the rule, "Software before Hardware." You may be wise to place your order and place a deposit on hardware before placing your order for software. Packaged software usually can be delivered quickly, but there is a much longer delivery time for many hardware systems. Having your fresh new software diskette and manual with no hardware to use it on is as frustrating as having a brand new record with no record player.

In at least this way, acquiring a computer system is, after all, like acquiring a stereo system.

Bruce D. Sanders, Ph.D., is the author of Computer Confidence: A Human Approach to Computers, published by Springer-Verlag. He is the director of Sanders Seminars, based in Vacaville, CA. Dr. Sanders produces and presents seminars throughout the U.S. about computer systems and office automation.

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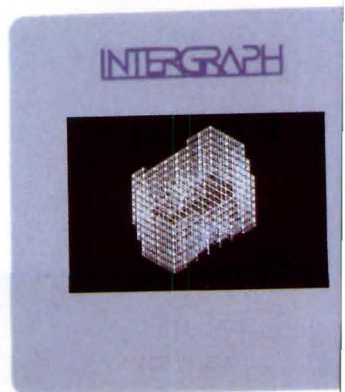
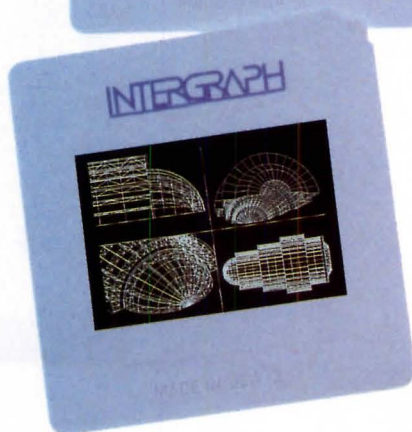
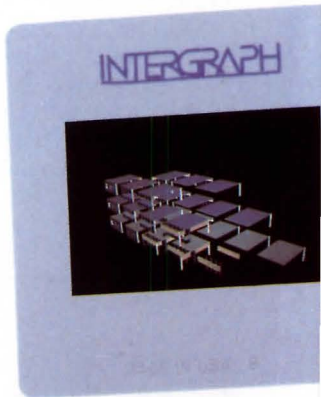
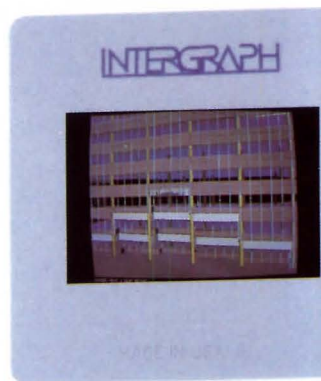
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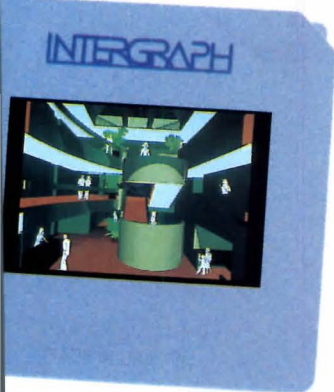
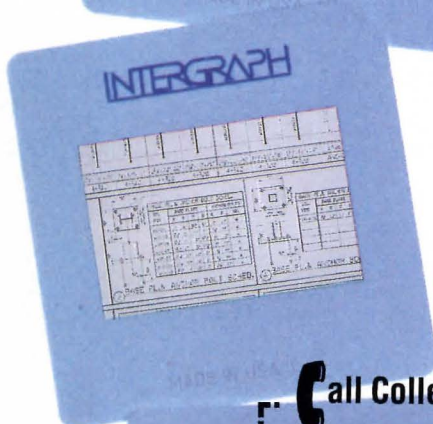
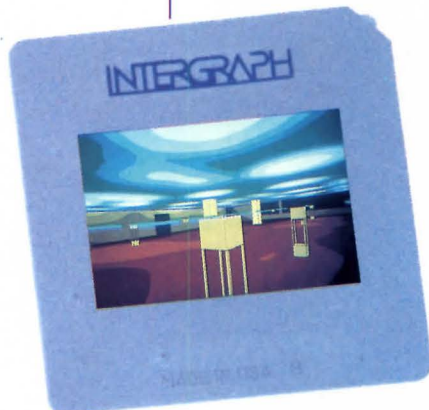
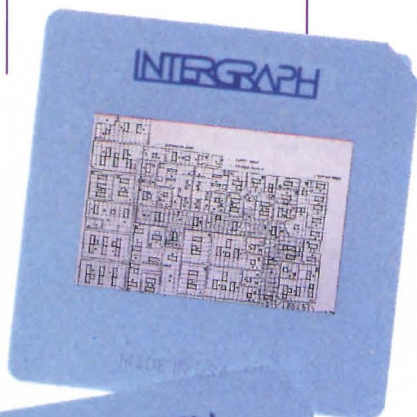
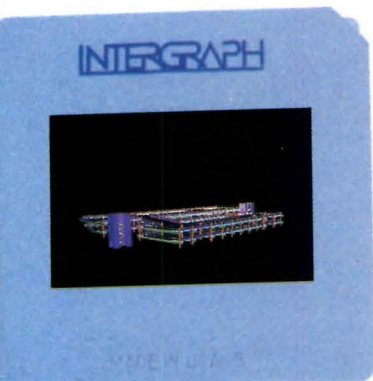
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The Financial Implications of the Computer for Architects

by Dennis O'Brien

Architecture is being transformed from a labor-intensive into a capital-intensive business.

That is the feeling of many architects, both large and small, as they ponder how the computer—and the large investment it requires—will affect the business of architecture.

Some are even convinced that architectural firms with large computer outlays will, like big auto manufacturers, operate in shifts to get full utilization from the equipment.

Others feel the big firms, better able to make substantial capital outlays, will have an almost insurmountable competitive advantage over the smaller firm. The more automated of the smaller architects say the smaller, nimbler organization can better integrate computers into its operations.

Another scenario: More architectural firms will be pushed into engineering and construction so that more functions can be handed over to the computer, thus maximizing its efficiency.

Still others think the cyclical nature of architecture will be made less so by automation. Architects will tie themselves to long-term clients with such computerized services as facilities management or subspecialties like communications planning.

Whether large or small, architects who have successfully integrated the computer into their practice say that it reduces manpower requirements, adds new capabilities, makes them stronger competitors, and more closely involves the client in the planning and decision-making process. Most feel computers improve the bottom line, but are hesitant about quantifying dollar benefits.

Lawrence D. Boozer, director of computer operations for Zimmer-Gunsul-Frasca Partners, a 70-person firm in Portland, OR, uses the computer for word processing, job tracking, specifications, and financial management. "Without the computer we would need to triple our accounting staff to handle all of our projects"

The computer, according to those who have tried it, also:

- makes the bidding process more precise.

- allows better decisions to be made earlier in the design process, because more data can be processed and evaluated.

- gives a better handle on architecture as a business by more precisely controlling projects, billings and payroll.

The computer confers many non-financial benefits which can attract new and repeat business. There's undisputed razzle dazzle in using a computer-aided design and drafting (CADD) system to "spin" a building graphically, in 3-D and full color, while the client watches the screen.

Getting into computerization at the word processing and spreadsheet levels can cost as little as \$3,000 for a complete work station, such as an Apple IIe, CRT monitor, disc drives, and software. In fact that's where the smaller firm without any computer capability probably should start. "While you are trying to make up your mind about computers, get an IBM PC or an Apple and just put it in the office," suggests David Thompson, an associate of RTKL Associates, Inc., Baltimore. "Play with it. See what it can do."

Howard Kessler: Economic overkill.



From word processing, a natural progression is financial management, including general ledger, project correspondence, mailing lists, accounts payable and receivable, payroll, billings, contracts, proposals—and finally CADD.

But make haste slowly counsels Charles Davis, founder of Davis Associates, a 13-person firm in Chicago that is perhaps the world's most automated. "Implementation must be made in a methodical manner, step by step."

Some Say CADD Too Costly

The long leap into CADD requires a substantial investment. A turnkey system from Computervision which includes hardware as well as a number of software packages—mechanical design, architecture, piping, plant design, cartography, wiring diagrams, and many others—sells for \$100,000 to \$350,000 and beyond.

More modest stand-alone CADD systems range in price from \$45,000 to \$60,000. Typical of these is the Graph/Net system offered by Graphic Horizons, Inc., Boston. It includes a CRT, drafting desk with tilting top, and a "puck" which the operator moves over the desk to "draw." Software is also provided, including programs for layout optimization and perspective analysis as well as symbol libraries. The price includes installation, and training in the architect's office.

Howard Kessler of Kessler, Mercier, and Associates, Inc., a 10-man, Chicago-based firm, sums it up for many. "CADD systems just aren't there yet in terms of pay back. Drafting is the easiest application to automate, but also one of the least expensive services a firm can buy. At today's prices, a CADD system, for the smaller firm, is economic overkill."

Time Sharing

Some firms introduce themselves to CADD through time-sharing arrangements. Zimmer-Gunsul-Frasca is working with an engineering firm on a \$45 million, 90,000 square-foot research facility for Oregon Health Sciences University, using CADD for design and engineering drawings. Zimmer-Gunsul pays up to a maximum of \$5,000 a month to CADI, Inc., a Seattle service bureau. "On the basis of our experience on this major project, we will decide how and how fast we will be moving into CADD," says Boozer.

Larry Kasser of Lawrence Kasser Associates, Saxtons River, VT, with only two full-time employees, managed to plunge into CADD with a lease outlay of only \$1,200 a month for five years for a \$60,000 Graphic Horizon System, including a \$5,000 plotter to make hard copies of drawings. Kasser skipped spreadsheet and financial

management applications entirely, going right into CADD. His assistant, an architect from Bangladesh who had never even seen a computer, "produced a full set of project drawings within three days after we sat him in front of the screen."

One economy offered is storage: "The drawings are on disc."

Time consumed in drawing, design, and production of documents has been reduced about two-thirds. Kasser also is building a data base of details of projects already done including listings of typical kinds of spaces, and components of those spaces like doors, wall finishes, carpeting, floor finishes, and furniture.

"Whenever we can re-use those spaces, we will be getting another payoff on our investment."

Kasser feels his system pays for itself by enhancing his ability to meet his clients' requirements and aesthetic expectations.

"We figure that the CADD unit is an employee that costs \$7.50 an hour, about what a clerical employee would cost.

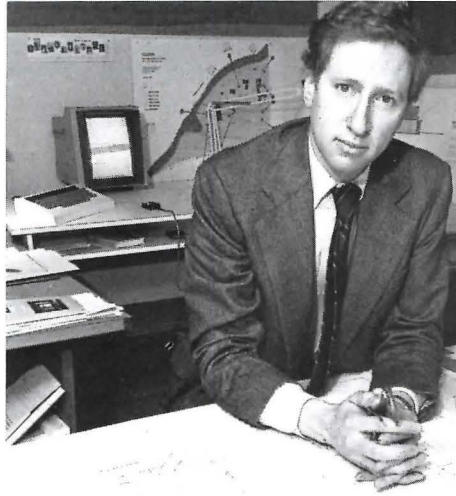
Leasing Arrangements

At the end of the lease period, Kasser can buy the equipment for about 10 percent of its value. His lease arrangement "passes through" the 10 percent investment tax credit.

Most equipment is leased for periods of three to five years or else purchased outright. Typically, leases provide for the buy-back of the equipment by the lessee at the end of the lease for a nominal amount.

Many firms lease major hardware and software from the partners. That is how RTKL recently acquired an Intergraph system costing \$750,000. The partners obtained a bank loan, bought the equipment, then leased it to RTKL.

The benefits in such a case are that partners qualify for investment tax



Larry Kasser: Enhances performance.

credit, the first-year expensing privilege, and depreciation over the five-year lease. The payments are deductible business expenses for a company which at the end of the lease period may buy the equipment outright for a nominal sum. If it does so, a firm can depreciate the equipment again, using the purchase price as the depreciable basis.

"We liked Intergraph because it is based on the VAX, an industry standard, because of its data base capacity, and because we felt the company had the largest commitment to the AE market."

Fast Tax Write-Off

Hardware and software can be written off on an ACRS (Accelerated Cost Recovery System) basis over a period of five years, provided the equipment went into service after 1981. If ACRS is chosen, the depreciation is spelled out in IRS tables: 15 percent for the first year, 22 percent for the second, and 21 percent for the third, fourth and fifth years.

There is also a one-shot deduction of up to \$7,500 which may be taken in 1984. The law allows this amount to be expensed in the year of purchase rather than depreciated. The 10 percent

investment tax credit can be taken only for the amount remaining after the first-year expensing amount is deducted.

So on an investment of \$65,000 for a stand-alone CADD unit and plotter, \$7,500 of the cost may simply be expensed for the first year. The \$7,500 must be subtracted from the \$65,000 to arrive at the amount which is eligible for the 10 percent investment tax credit.

How to best handle the first year one-shot expensing deduction (which will rise to \$10,000 in 1986) and the investment credit should be left to a firm's tax expert.

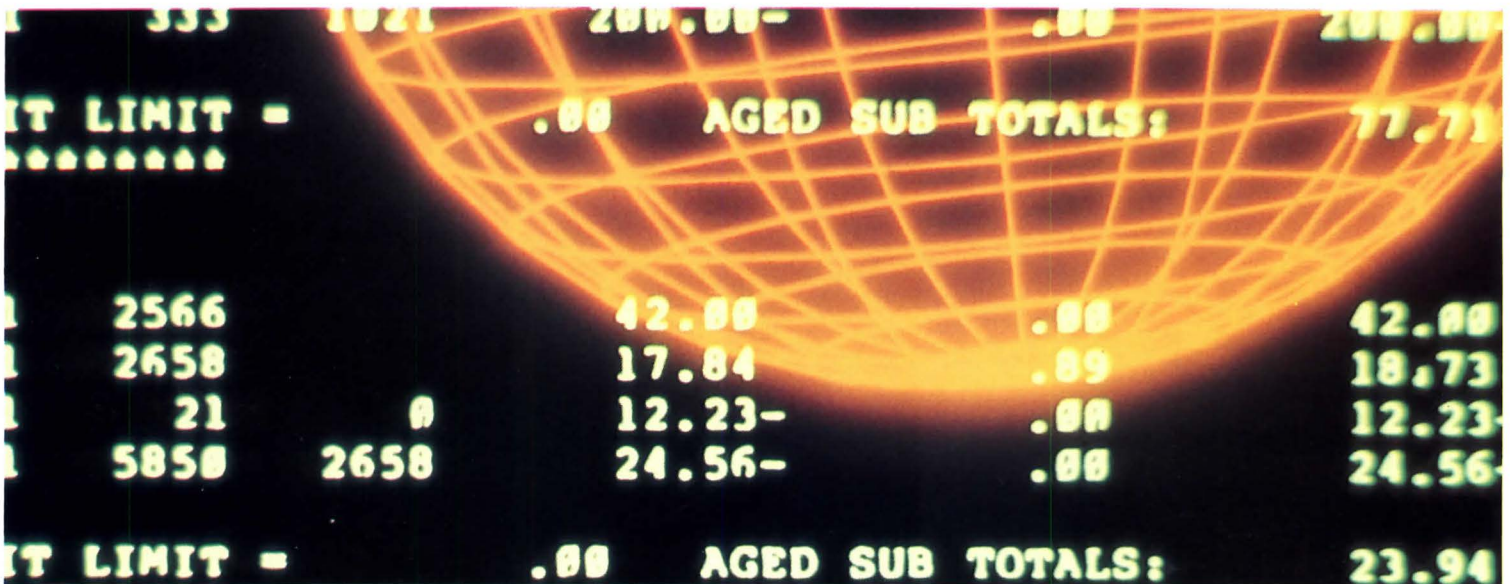
Capital-Intensive

Davis Associates does nearly all of its work on computers and has \$300,000 invested in them, for a per employee investment of nearly \$25,000. Davis who was director of computer operations of Skidmore, Owings and Merrill before founding his firm, has written nearly 1,300 software packages. These include a program which calculates the energy effects of the sum as it travels around a building.

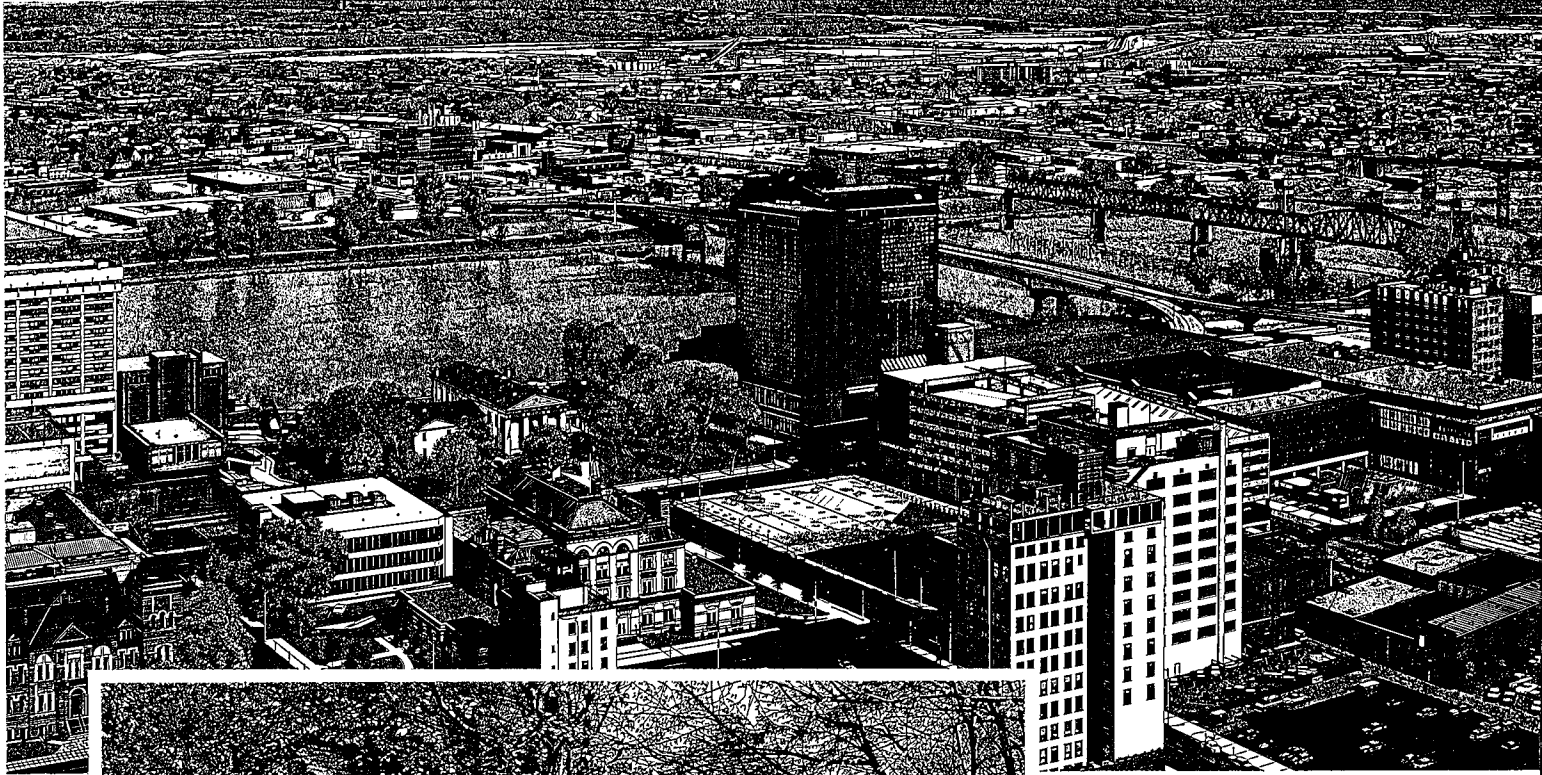
For Davis, the computer "adds a new dimension of service." He recently used it to compare how well 11 existing buildings and a proposed new building would suit a client's needs. The computer-generated analysis included what the impact of each alternative structure would be on the client's earnings per share projected for the next 15-years.

Computers may well exacerbate difficulties caused by architecture's cyclical nature. People trained in both architecture and use of the computer are valuable and hard to replace. "On the down cycle you can't afford to get rid of the equipment and you can even less afford getting rid of people," Davis says. Therefore, architects will increasingly pursue less cyclical,

(Continued on page S30)

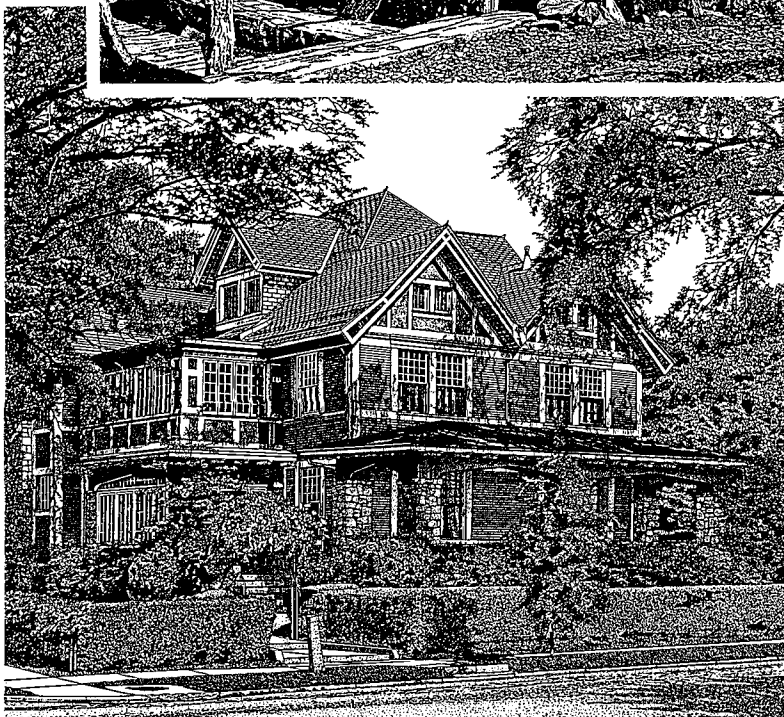


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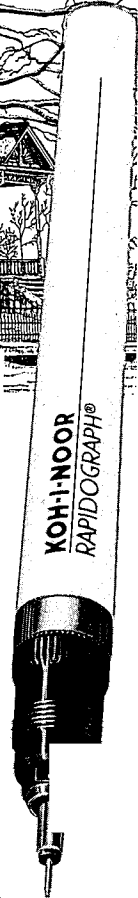
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Renderings



architectural detailing by Richard DeSpain

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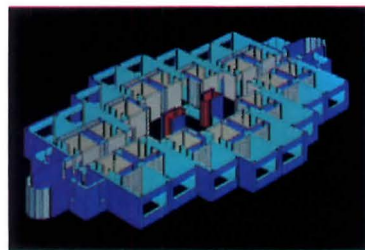
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Product Reviews



Competes with Low-Cost CADD

Graphics software, developed by Martinet Corporation, competes with low-cost CADD programs. The software program produces high-quality detailed color graphics on high-resolution desktop terminals. Program is \$3,000, available for purchase in-house or through time-sharing bureaus. Software features user-friendly command prompts, flexibility to create lines, curves, polygons, circles, etc., from a palette of 64 colors, capability to view four perspectives at once, ability to fence off areas for drawing changes, and zoom in and out features. Program includes grid command so accurate pinpointing can be made, vendor claims. Circle 100.



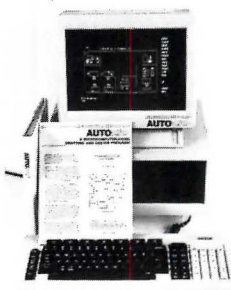
Skok Introduces Artech

SKOK Systems introduces a new high-performance, low-cost CADD system—Artech—for architects and engineers. The work station includes a powerful 32-bit Hewlett-Packard computer and can be connected in a network, displays two- and three-dimensional images on a 19-inch color screen, and enables users to enter operational commands via a graphics tablet. The tablet contains more than 300 directly accessible instructions. Artech can also be upgraded. The Artech DesignStation is priced at \$27,000. A fully configured system—including all hardware and software for a functional entry-level system—is priced at \$59,500. It includes a complete work station, a dual disk drive, a D-size plotter, and SKOK's Arplan™ two-dimensional design and drafting software. Circle 102.



Streamlines with Universal Parts

Harter Corporation introduces the Harter I/F system of integrated computer support furniture. Key benefit, claims manufacturer, is the universality of parts; there are neither rights nor lefts. Other benefits of the freestanding work stations within the line are efficient power/communications distribution, ample overhead storage and infinite linkable arrangements, which saves floor space and increases efficiency. Line includes adjustable, semi-adjustable and non-adjustable VDT stands and is available in 12 finishes and 9 laminates. Circle 103.



Autodesk Updates

Autodesk Inc. has introduced another revision of its AutoCAD software. The software is intended for professional and precision drawing applications including schematics, space planning, mechanical drafting, architectural drafting, graphics design, and free-hand sketching.

The new release adds these features to AutoCAD: a "break" command permitting partial delete of drawing elements, "cross-hatch" command to permit the use of user-defined hatch patterns along with a library of 38 pre-defined patterns, a free-hand sketch mode, fillets, automatic polygon close, alternate arc/circle specifications, circular/radial arrays, alternate text fonts, and units in scientific, engineering, decimal, or feet and inches.

AutoCAD is written in "C" and operates on 15 microcomputer systems. Circle 104.



New for DEC Pro 350

Palette CADD software, by Palette Systems, Inc., is now available on the DEC Professional 350 personal CADD station, in addition to remaining available on the DEC VAX and PDP 11 computers. Palette on the Pro 350 provides the same functionality and performance normally found in larger computers, company claims. It has the capacity and speed to draw full-size working drawings with detail. All Palette files are compatible over a wide range of Digital computers, so low-end CADD can be introduced and upgraded to a larger system without re-creating the data base. Palette provides costing on 25,000 construction items; basic drawing capabilities include arcs, ellipses, polygons, parallel lines, French curves, cross-hatching, shading, line thicknesses, line textures, layering, and various sheet sizes. Circle 105.



Features Ergonomic Design

Systemate line of moderately priced, fully adjustable ergonomic furnishings has been introduced by the Magnuson Group. Work stations are offered in split-top styles with tandem or individual height adjustment of keyboard and CRT surfaces. They are fully height- and tilt-adjustable under heaviest computer hardware loads, including CADD, supplier claims. Products feature twin bevel-gear drives with anti-friction thrust bearings for effortless, positive height and tilt adjustment by operator from seated position, manufacturer says. Mobile storage cubes and ergonomically adjustable seating are included in the line, which has work surfaces from 36 in. to 72 in. long and connectable at angles of 90, 120 and 135 degrees. Circle 106.



CAD with 32-Bit CPU

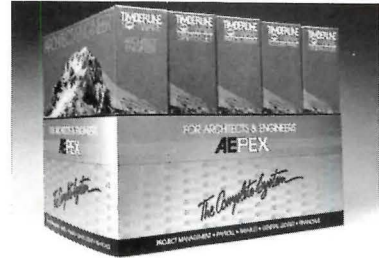
System 25, a new computer-aided design (CAD) system from CalComp features a 32-bit central processing unit, distributed processing, and a modular building approach that enables system expansion. It combines micro-computer technology with Cal-Comp's high-speed graphics display subsystem. It generates bills of material, creates or edits drawings and plans, generates ancillary information from electronically stored drawings, and provides control of design information. Features include VAX™ compatibility, Ethernet™ local area networking ability a UNIX™ operating system and Multibus™ interface technology. The system consists of two displays—a 12-inch alphanumeric screen and a high resolution (20-inch monochrome or 19-inch color) graphic screen—and keyboard. Circle 107.



Scans Drawings into CAD

Formative Technologies, Inc., (FORMTEK) produces CAD systems that mix raster and vector images and eliminates manual copying. Called FORM:SCAN, the automatic raster scanning software allows users to incorporate any existing drawings into CAD—from size "A" to "E," bypassing tedious hand copying or digitizing, supplier says. After the image is in the system, FORM:SCAN can scale, pan, zoom, rectify, or resize it to produce accurate size-corrected raster drawings. To convert the raster to a vector drawing, one uses a transparent overlay window in FORM:DRAW, the drafting system. The output is then available from the plotter. It is also possible to combine raster images with scaled vector drawings without redoing an entire drawing. For example, a user may take a scanned floor plan image

as background, and using FORM:DRAW replace only the necessary area with an intelligent vector drawing. Circle 108.



Automates Project Management, Billing

Timberline Systems Inc. introduces a package called AEPEX and designed for architects and engineers. It allows architects and engineers to automate their project management and billing. AEPEX is priced at \$4,900 and includes four modules: architect/engineer, general ledger, payroll, and accounts payable. The package runs on personal computers manufactured by IBM, Texas Instruments, DEC, and SAGE. Circle 109.

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(Continued from page S25)

long-term businesses like facilities management.

Davis is quick to quantify benefits of the computer. "Without automation, we would need 35 to 40 people to produce the amount of work we turn out now with a staff of 13." He estimates that about half of his firm's work is done on the computer, representing a third of all billables.

Jana Davis, who oversees financial management and administration, says she would need three or four additional people to do all that she now does with a computer.

Another change the computer has wrought: "It is cutting out lower-level positions," Davis says. "Getting experienced people who are familiar with our computerized operation is difficult. Training for us is a major problem which impacts our growth."

Charging for Computer

How should clients be charged for computer use? Larger firms, particularly those with elaborate CADD systems, charge wall clock rates for some functions like data entry and a special per second rate when the computer is

being put to its highest and most intensive use in a number crunching application like structural analysis.

Davis and Thompson feel that a firm should try to get back three times the annual costs capitalized of the hardware and software costs, plus overhead which is assignable to computer use. Both admit that they don't always reach this goal.

Some firms bill computer time directly to the client when the client agreement permits this. On a lump sum contract, computer time is billed internally to the department using the time.

Kasser's two-man firm in Vermont charges clients for computer usage on an hourly rate which includes prorated overhead plus a gross mark-up. Where the contact is for a lump sum, Kasser includes an estimated amount of computer time.

The Real Advantage

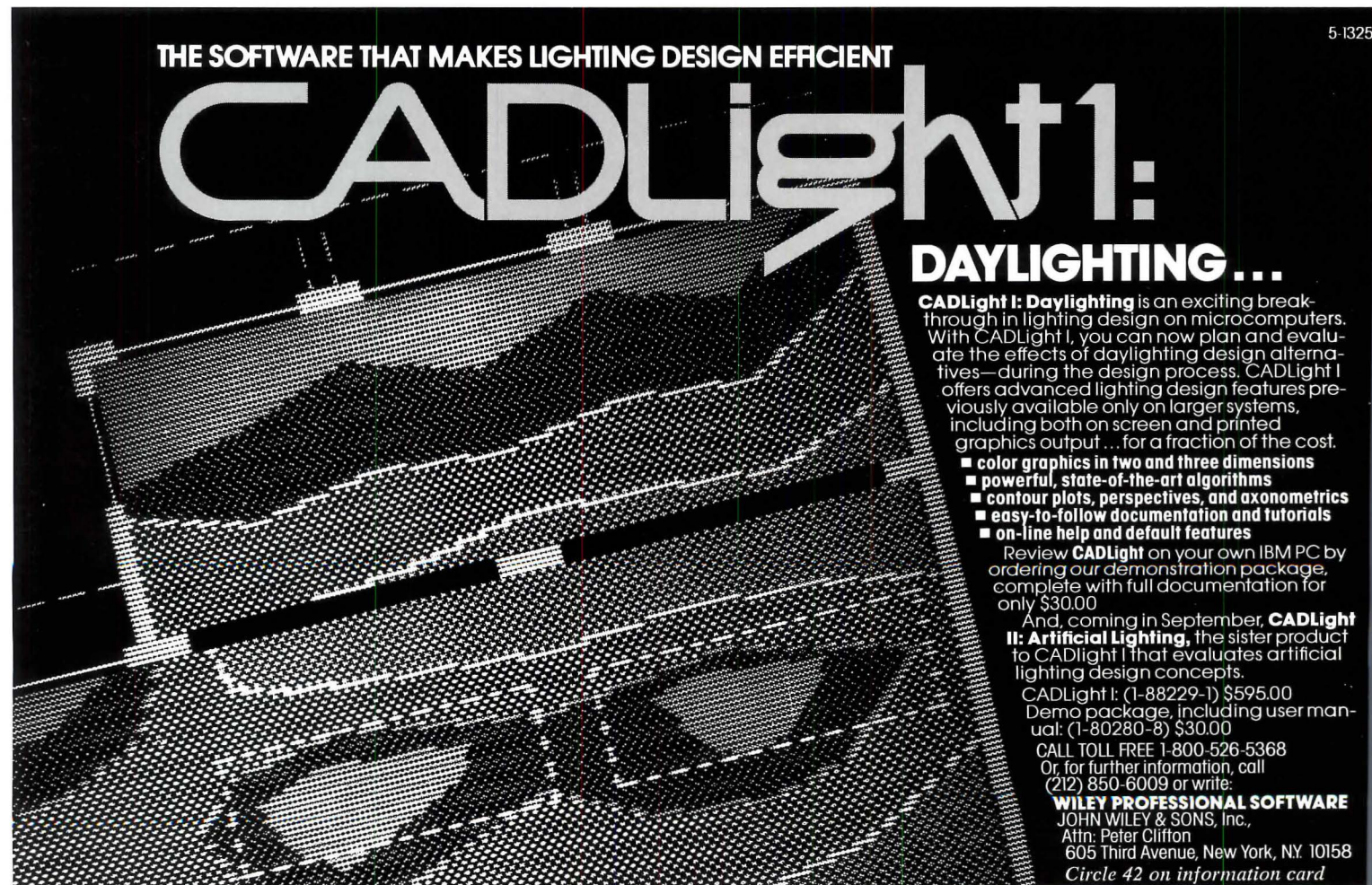
But every architect interviewed by DP/ARCHITECTURE stressed that the objective in adding computer capability is not primarily to make architecture more profitable, but to

make the staff more productive, add capabilities and products, or simply to come up with better architectural solutions.

Davis disagrees that capital investments by the larger firms are making the business capital intensive. "The big firm with several million dollars, in hardware and software, is still investing less than \$5,000 per employee. That level really doesn't qualify as capital intensive."

Davis is apparently delighted with his own computer investment. "Any firm, large or small, which doesn't automate to the hilt is missing a great opportunity. They are forcing themselves to manage with less information, design with less information about the clients needs, and produce work of less quality. It won't be long before the marketplace either denies them a place or forces them to automate."

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Letters from page 6

get involved and took certain questionable legal steps to block the change.

So the university is once again struggling with the old name until the courts can decide the fate of the University of Louisiana. *H. Jay Mueschke, AIA President, South Louisiana Chapter/AIA Lafayette, La.*

Chapel in Houston: It was a pleasure to see Kagan-Rudy Chapel included in the May issue of ARCHITECTURE (page 284). The writing and photos of Allen Freeman captured the quality we feel in the structure.

The team design character of the project was not stressed, and I'd like to take this opportunity to acknowledge the architectural contribution of associate Scott Boydston. I'd like also to affirm the art contribution of Pat Johnson, who, working from my cartoons for the 12 tribe medallions, enriched them for bronze casting.

What the small town of Fayetteville is providing is an atelier environment conducive to just the kind of architecture/art synthesis Kagan-Rudy affirms.

Clovis Heimsath, FAIA Fayetteville, Tex.

DEATHS

John W. Stenhouse, AIA: A past president of the Washington Metropolitan Chapter/AIA and a partner in the Washington, D.C., firm of Faulkner, Kingsbury & Stenhouse, Stenhouse designed St. John's Episcopal Church in Bethesda, Maryland.

Frederick A. Elsasser, AIA, Union, N.J.
Richard E. Savage, AIA, Little Rock, Ark.
George Munson Schofield, AIA, Nyack, N.Y.
Herbert Lynn Wassell Jr., AIA, Little Rock, Ark.

BRIEFS

Legal Information for A/Es.

"Litigation Avoidance" is a monthly, eight-page newsletter for architects and engineers providing information on legal concerns edited by Vernon Reed, AIA. Subscriptions, costing \$42 a year, may be obtained from: "Litigation Avoidance," 15 W. 10th St., Kansas City, Mo. 64105.

Conference on Competitions

The International Committee of Architectural Critics will meet Sept. 25-26 at ICC Center des Congres Internationaux,

West Berlin, to discuss recent competitions—including La Defense, the International Building Exhibition, Berlin, and competitions in socialist countries—and the role of critics in these events. The working language will be English. Contact Fritz Bornemann, Bozenerstr, 13-14, 1000 Berlin 62.

Financial Survey of Design Firms.

While the national economy showed some signs of improvement, profits for design firms nationwide have dropped .5 percent since 1982 and 2.5 percent since 1980. Overhead costs have also steadily risen. These conclusions are based on a biennial survey, endorsed by AIA, by Birnberg & Associates of Chicago of 245 firms throughout the U.S. and Canada. The 80-page report is available for \$38 through Birnberg & Associates, 1905 North Halsted St., Chicago, Ill. 60614.

Call for Manuscripts.

Urban Resources, an interdisciplinary journal directed to urban planners both in academia and practice, has set Sept. 1 as the deadline for the receipt of manuscripts submissions for the 1984-85 volume. The winter issue will focus on health facilities, urban universities, and housing. Con-

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tact the editor, Urban Resources, Division of Metropolitan Services, University of Cincinnati, Cincinnati, Ohio 45221.

Highway Design Competition.

The town of Wethersfield, Conn., has set Nov. 5 as the deadline in a national design competition for a visionary concept to guide the future development and improvement of the town's primary commercial environment. For more information, contact Joseph F. Prierz, AIA, Silas Deane Highway Design Competition, Pierz Associates, 115 Garden St., Wethersfield, Conn. 06109.

Architecture Lecture Series.

AIA Foundation's subscription lecture series "The Shape of the Future: Current Issues in Architecture" is scheduled for Oct. 17 and 24 and Nov. 7 and 14 in Washington, D.C. Lecturers include Robert Geddes, FAIA; Helmut Jahn, AIA; and Stanley Tigerman, FAIA.

Call for Papers.

The Environmental Design Research Association has announced Nov. 1 as the deadline for the receipt of papers on interdisciplinary practice and research in behavior, design, and environment for its

16th annual conference to be held in New York City in June 1985. For more information, contact Madeline Goss, EDRA 16/1985, Environmental Psychology Program, CUNY, 33 W. 42nd St., New York, N.Y. 10036.

Architectural Drawings Exhibit.

AIA Foundation's exhibition "Honor and Intimacy: Architectural Drawings by the Gold Medalists, 1907-1983" will be on view Sept. 6-Oct. 28 at the Art Institute of Chicago. The exhibit includes drawings by Wright, Kahn, Fuller, Johnson, and other recipients of the gold medal. In February the exhibit will open at the Octagon in Washington, D.C.

Concrete Building Awards Program.

Portland Cement Association has set Sept. 14 as the deadline in its annual awards program for concrete frame buildings and renovations using concrete products. For more information, contact Glen Simon, Portland Cement Association, 5420 Old Orchard Road, Skokie, Ill. 60077.

Park Design Competition Finalist.

The three finalists in the Bellevue, Wash., two stage design competition for a 17.5-acre downtown park are EDAW of Seat-

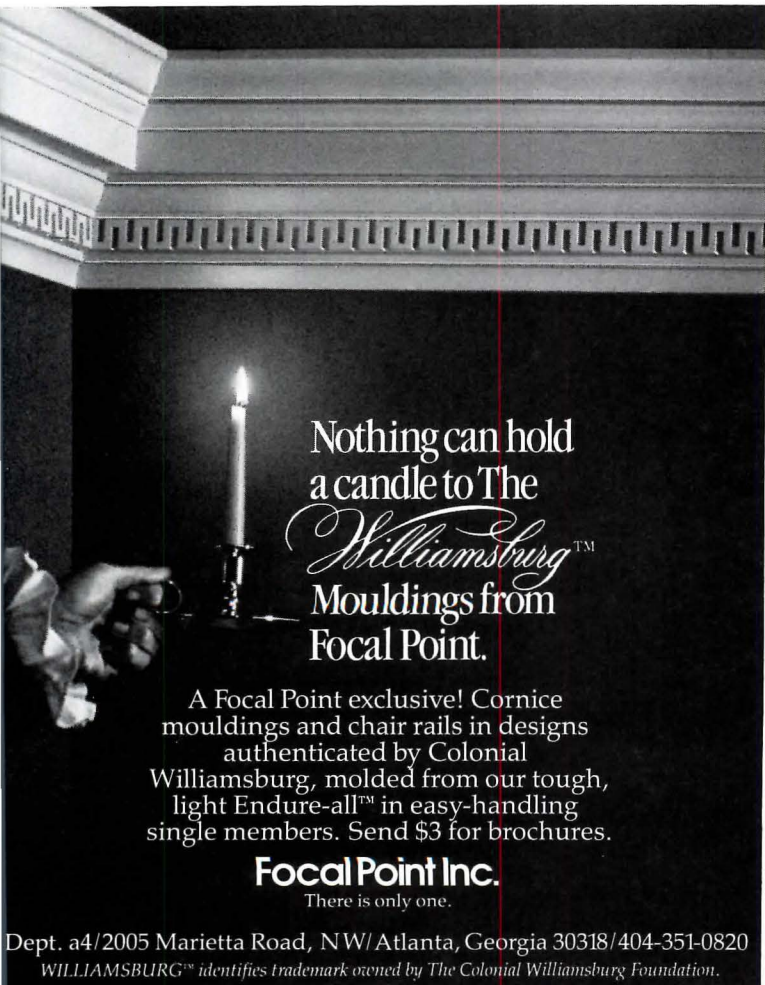
tle, Beckley/Myers Architects of Milwaukee, and Jongejan/Gerrard/McNeal of Bellevue. Each will prepare additional drawings for the final stage of the competition, to be held in October.

Housing Contest.

New Shelter magazine has announced a contest for the "total home." Due by Sept. 30, entries will be judged on overall design, energy and space efficiency, and cost efficiency. Official entry forms may be obtained by sending a self-addressed stamped envelope to *New Shelter*, Total Home Contest, Dept. JA, Emmaus, Pa. 18049.

Architectural Research Publication.

The first issue of the Journal of Architectural and Planning Research was published in June in cooperation with the Architectural Research Centers Consortium, Environmental Design Research Association, People and the Physical Environment Research, International Association of Applied Psychology, and Royal Institute of British Architects. Subscriptions to the quarterly are available for \$40 (\$65 institutional) from Elsevier Science Publishing Co., P.O. Box 1663, Grand Central Station, New York, N.Y. 10163. □



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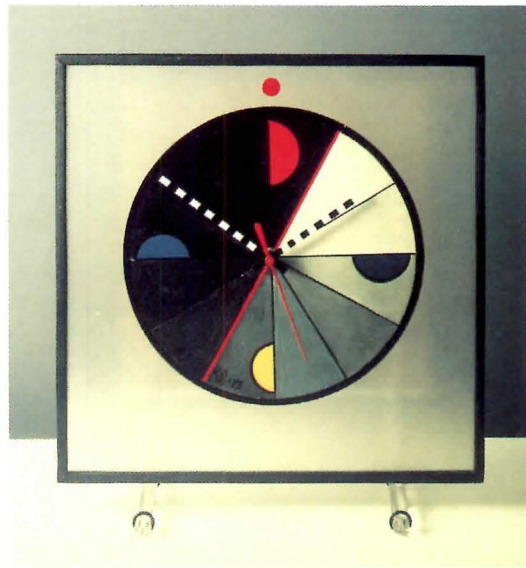
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Furnishings

*As resources for design
and objects of design.
By Nora Richter Greer*



In describing his new collection of lounge seating for Knoll Overseas, Ltd., designer Ettore Sottsass, known as the originator of the Memphis movement in furniture design, said, "What counts is the language of the object, putting over a bold new message." For the Westside Collection (2), Sottsass ironically and whimsically combines bold, primary colors and straightforward geometric forms—rectangles for the chair's legs, squares for the backrest and seat, and inverted triangles for the armrests.

This search for a new language is also evident in the other furnishings seen on these pages. From Acerbis International, the Lunar-tic clock (1) is intended, according to its designer Kurt Delbanco, to give the impression of movement of the day, from dawn to sunset, and of the year, from winter to summer, in a rhythm of cheerful colors. The quartz timepiece has a second hand and a scratched plastic front, and its circular face is set in a semitransparent square framed in black rubber. Designed

by Ivo Pelleri and manufactured by Leit Italia, the Crazy Horse bed (3) has a rigid plywood frame clad in dacron resin and supported by "hoofed" iron feet.

Formica Corporation in conjunction with the Gallery at Workbench (in New York City) commissioned 19 craftsmen to design furniture using Formica's new surfacing material Colorcore. Michael Pierschalla of Cambridge, Mass., combined Colorcore with white oak, wenge, and Baltic birch plywood for a pair of 16x16x60-inch chairs (4), which are meant to "examine the relationship between color and core, surface and support," in Pierschalla's words. The 5x24x72-inch arch lamp, designed by Peter Dean of Boston, is derived from the form of half of an arch. Dean was interested in the "volumetric aspect of Colorcore—its ability to make something look as solid as stone." The entire collection will travel to 12 cities under the auspices of the Smithsonian Traveling Exhibit Services. □

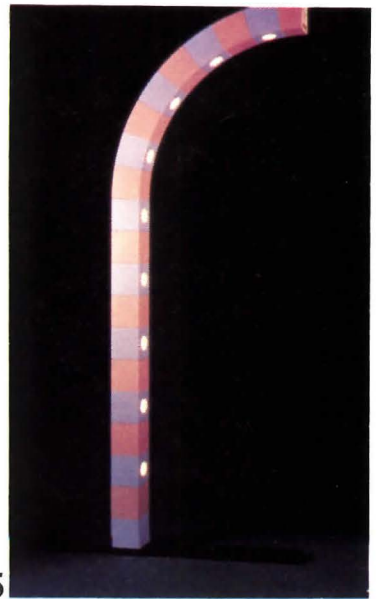




3



4



5

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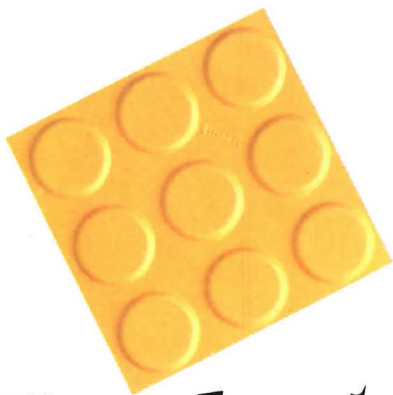
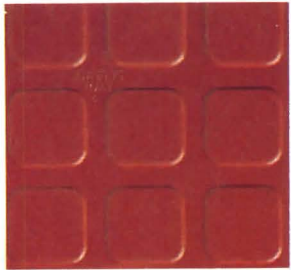
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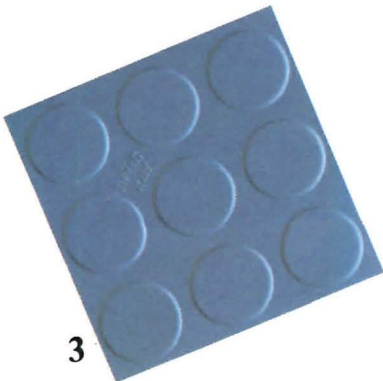
Circle 51 on information card



Products

A selection of notable offerings and applications.

By Lynn Nesmith



3



1

In a design by R. Duell & Associates of Santa Monica, Calif., a Temcor aluminum dome (1), the world's largest clear span aluminum dome, houses Howard Hughes' flying boat, the "Spruce Goose." Measuring 415 feet in diameter and constructed of 6,000 aluminum struts of different lengths and 4,000 coded triangular panels, the prefabricated structure was assembled in sections and lifted hydraulically up a temporary construction tower. The exterior has an ivory-colored fluoropolymer finish and is backed with a thermal and acoustic fiber glass insulation. (Circle 201 on information card.)

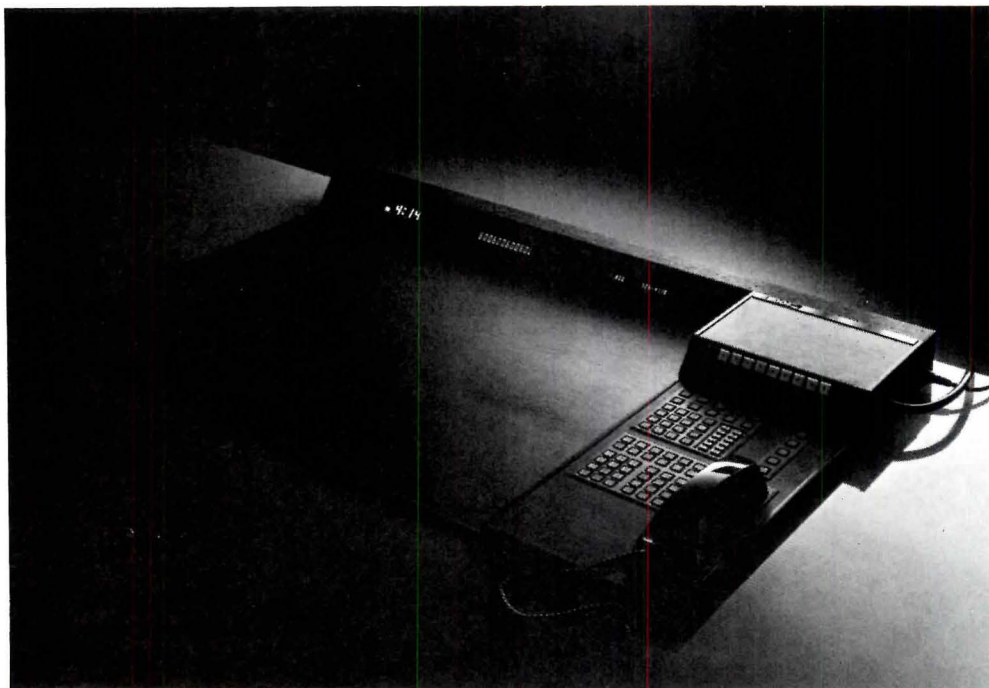
Access flooring system by C-Tec (2) uses welded steel panels with a one-inch-thick composite core that is laminated to an electrogalvanized steel top and bottom sheet. Thermal and acoustical properties of the panels are designed to reduce the reverberation or hollow sound in the raised space. The system is designed to support heavy equipment and does not require stringers for heights less than 18 inches. (Circle 202.)

Pirelli rubber flooring (3) by Jason Industries has a raised textured surface of circles, rounded squares, ribs, or H-patterns and is designed to provide a resilient, nonskid surface with acoustical properties. Three tile sizes are available in 35 colors for commercial, institutional, and residential installation. (Circle 203.)

Products continued on page 124



2



Electronic Desk Pad.

System 600 electronic component (above), available in black or brown leather, has a 38x24-inch work surface, digital clock, memory calculator, and a telephone that accommodates nine incoming lines. It has digital readouts of the phone number and time of call. Tape cassette jacks allow recording of phone conversations, and a

30-day battery powered memory ensures retention in case of power failure. (Smokador, Roselle, N.J. Circle 215 on information card.)

Fiber Cement Building Board.

FlexBoard II, a nonasbestos, flexible panel is made of fiber and cement combined under pressure and hydraulically repressed

for interior and exterior wall, partitions, soffits, and ceilings in commercial, industrial, and residential installations. Sizes range from 2x4 to 4x12 feet, and thicknesses from 1/8 to 1/2 inch. (Manville, Denver. Circle 216 on information card.)

Hardwood Flooring.

Chamonix hardwood flooring pattern is a 28-inch-square preassembled module available with a number of custom designs using a variety of woods including walnut and teak. (Kentucky Wood Floors, Louisville, Ky. Circle 217 on information card.)

Fire Management System.

Computerized fire alarm control system is designed to detect fires, alert occupants, recall elevators to the lobby, communicate record keeping data, and activate sprinkler systems and pressurization fans. It can be programmed to provide energy management and security functions. (Johnson Controls, Inc., Milwaukee. Circle 220 on information card.)

Lighting Management System.

CompuMate computer-based lighting control system for medium to large buildings has the capacity for combined switching, dimming, photocell control, operations *continued on page 126*

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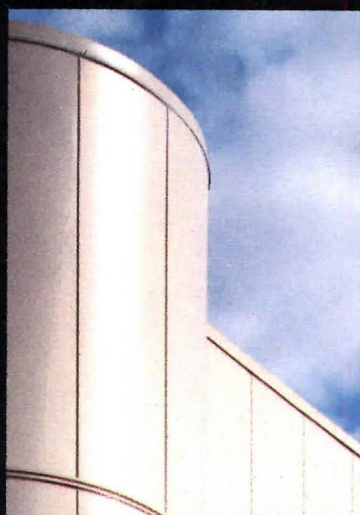
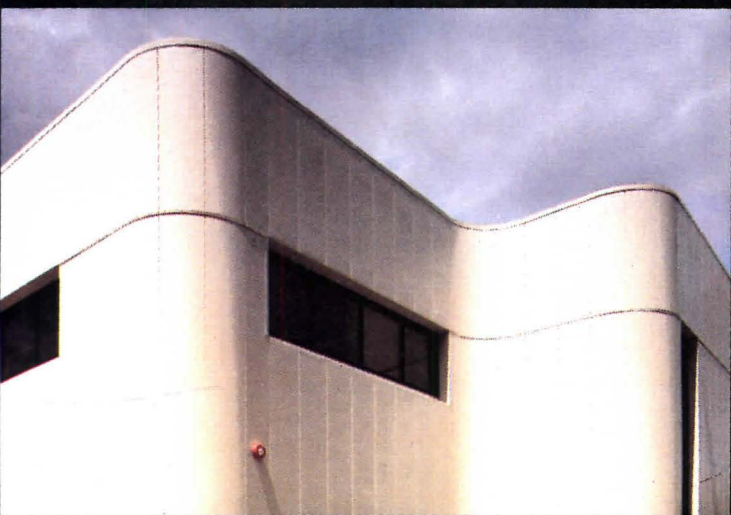
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Products from page 124

schedules, and manual overrides for fluorescent, incandescent, and HID lighting. It is designed to control more than 8,000 switching functions and more than 300 independent dimming channels and can schedule up to 20 months in advance with an internal calendar that automatically compensates for holidays, vacations, daylight savings time, and leap years. (Wide-Lite, San Marcos, Tex. Circle 218 on information card.)

Security System.

DHF entry security system incorporates existing telephone lines in apartment buildings with as many as 750 units. The system has a Lexan plate covering the display face and double louvers protecting the speaker. Nonvolatile memory is designed to protect memory content during power failures. (Syntex Systems, Inc., Glendale, Calif. Circle 210 on information card.)

Wooden Louvers.

Prehung InsulLouvers have heavy duty linkage and fully assembled hardwood frames. Louvers are made of lightweight hardwood with a 1/8-inch dead air space on either side of a foil-faced polyisocyanurate insulation core. Lap joints fea-

ture tubular rubber seals in rabbeted grooves. The interior facing surfaces can be painted, stained, or left natural, and exterior faces can be custom surfaced for desired levels of solar reflection. Motors and automatic control systems are available. (First Law Products, Inc., Keene, N.H. Circle 211 on information card.)

Solar Battery Charger.

ARCO solar M63 photovoltaic module is compatible with 12-volt storage batteries and produces an electrical output to match the needs of the battery being charged. The self-regulating unit has an interlocking, lightweight, anodized aluminum frame, four-inch-square solar cells, and an impact resistant tempered glass front. The two junction boxes have screw fastened lids for security. (Solarwest Electric, Santa Barbara, Calif. Circle 212 on information card.)

Energy Control System.

Amimat electronic control for residential and light commercial hydronic heating systems has a programmable electronic controller, a four-way mixing valve with a bimetallic motor, and a solid-state water temperature sensor. The system is designed to eliminate frequent circulator

starts and reduces thermal shock and low temperature corrosion of boiler surfaces. The continuous circulation of tempered hot water is intended to provide more uniform room temperatures and to prevent noises caused by thermal expansion and contraction of pipes and baseboard radiators. (EnerJee International, Morrisville, Pa. Circle 213 on information card.)

Underfloor Wiring System.


Multi-A-Cell wire management system houses power, phone, and electronic cables in individual compartments within a single underfloor duct. All wire service receptacles are in a below floor access box with a steel reinforced module cover surfaced with carpet or tile to match the area flooring. Individual wires exit from small retractable openings. Desks and chairs can be placed directly on the flush covers. The system can be used with a number of floor constructions, including two-way monolithic pour, slab on grade, or two pour fill on slab floorings. (Midland Ross Corporation, Pittsburgh. Circle 214 on information card.)

Storage System.

Closet Maid sliding storage system has vinyl-coated baskets with frames that can

continued on page 129

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Products from page 126

be stacked or placed side by side. Baskets measure 13x19, 16x19, and 19x19 inches in three depths with front or side entry. (Clairson International, Ocala, Fla. Circle 219 on information card.)

Window System.

Perma-Shield Narroline window units are made of two panes of Andersen high performance insulating glass. Bonded with a microscopically thin metallic coating on the outer surface of the inner pane, the coating is designed to serve as a barrier to the outward flow of radiant heat from the inside. Units are available in white or Terratone colors with finished or unfinished interiors. The glazing bead system is square with a two-piece bottom rail and upper check rail. (Andersen Corporation, Bayport, Minn. Circle 231 on information card.)

Vinyl Cork Flooring.

Oblique vinyl-clad bonded cork flooring has natural cork sandwiched between a moisture-resistant backing and a pure vinyl surfacing. Tiles measure 12-inch-square with edges sealed against moisture. (PermaGrain Products, Media, Pa. Circle 233 on information card.)

Ceramic Tiles.

One-, two-, and three-inch square ceramic mosaics are back mounted on mesh paper in one-foot-square sheets for residential and commercial installations. Mosaics are available in 35 colors. (Aztec Ceramics Corporation, San Antonio, Tex. Circle 234 on information card.)

Solar Window Wall.

Sunwall passive solar wall is constructed of a structural aluminum grid core with two bonded, reinforced fiber glass face sheets separated by a dead air space between the panels. (Kalwall Corporation, Manchester, N.H. Circle 235 on information card.)

Storage Components.

Stac-Trac drawer and pedestal system can be used freestanding or under work surfaces. Drawers are attached to each other and the work surface by a position locking mechanism designed to be easily changed for flexible office arrangements. (Trendway Corporation, Holland, Mich. Circle 236 on information card.)

Fireplace System.

Prefabricated Newporter fireplace has an open-end design with 270-degree view for open corner wall, flush wall, or room divider installations. The unit has a vent-free front suitable for brick, stone, or other noncombustible face designs. A full brick patterned refractory on the side, back, and bottom increase reflected heat

efficiency. (Rampart General Fireplace Systems, Santa Ana, Calif. Circle 208 on information card.)

Wallcoverings.

Merrimack collection of wallcoverings are made of 12 percent mohair and 88 percent worsted wool with vertical and diagonal cords in seven colors. Rolls measure 54 inches wide. (Donghia Textiles, New York City. Circle 206 on information card.)

Compact Security System.

Magnum Alert 700 is a self-contained, microprocessor controlled security alarm system. The single key station system has three programmable burglary zones, exit/entry delay timer, manual and automatic shunting, and day zone supervision. A flush mounted faceplate, measuring 8 $\frac{1}{4}$ x4 $\frac{3}{8}$ inches, houses all electronics. (Nepco Security System, Copiague, N.Y. Circle 207 on information card.)

Pressed Metal Ceilings.

Embossed metal ceiling panels and cornices are stamped from lightweight tin plate or sheet steel. Measuring 2x8 feet, the panels are available in a number of patterns based on a uniform grid. Cornice molding is available in strips ranging from two to nine inches in width. The ceilings may be painted with an oil-base primer or oil-base paint, or coated with a clear polyurethane. (Chelsea Decorative Metal Co., Houston. Circle 240 on information card.)

Roof Coating.

Polyurethane liquid roof coating material is designed to provide a rubbery, seamless membrane that self-bonds to urethane foam, new or old decking substrate, and common roof obstructions. It can be sprayed or troweled without mixing. (Polymer Plastics Corporation, Hauppauge, N.Y. Circle 237 on information card.)

Insulation Wrap.

Tyvek air infiltration barrier, made of fine, high-density polyethylene fibers, is designed to be placed over exterior sheathing before siding, windows, or doors are installed. It reduces air leakage and reduces the air movement through the wall cavity. (Du Pont Co., Wilmington, Del. Circle 238 on information card.)

Cork Flooring.

Designer Cork vinyl bonded flooring is made of natural cork oak covered with a layer of transparent vinyl designed for installation in high-traffic commercial areas. All edges are sealed against moisture penetration. Panels measuring 11.75 inches square are available in eight patterns. (PermaGrain Products, Media, Pa. Circle 239 on information card.) □

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Résumés des Articles Principaux

L Université de Harvard.

Page 36: Le centre GSD a parcouru toute une recherche fondamentale sur le plan spirituel durant les dernières années, reflétant l'esprit de l'architecture en général. Dans une époque portée à tout ce qui s'oppose à l'orthodoxie le GSD s'est orienté vers l'étude d'autres voies en architecture en plus du programme de formation courant pour les stagiaires. Des changements en matière de programme et d'administration nécessitent une période supplémentaire d'adaptation et de transition.

Cooper Union.

Page 42: La Cooper Union pour l'étude des sciences et des Arts de New York City a été fondée en 1859 comme centre de débat et critique. Son école d'architecture maintient cette tradition de façon modernisée; basant son enseignement sur les questions fondamentales de l'architecture dans son temps. Les étudiants sont encouragés à explorer et créer une approche personnelle de l'architecture.

L Université de la statue du Mississippi.

Page 56: L'École d'architecture à l'MSU est relativement récente, ayant ouvert ses

portes comme institution il y a qu'une dizaine d'années, le programme a une solide attache régionale au point de vue thèmes architecturaux et cela se reflète dans le cas particulier de plan d'architecture de villes avoisinantes comme Meridan et Starkville, aussi bien que sur le parcours vers Atlanta et Colombus dans 1 Ind. Le départ du doyen William McMinn, qui a élevé l'école jusqu'à son stade de formation actuelle, marque une nouvelle étape dans le développement de l'MSU.

L'Institut de Technologie de l'Illinois.

Page 50: Le programme d'architecture à l'Institut de Technologie de l'Illinois à Chicago a été réalisé par Mies van der Rohe et comprend l'étude des principes et fondements de l'architecture, comme la structure, la forme, l'espace, et la construction. L'école est restée fidèle aux préceptes de Mies à tel point qu'il lui semble difficile de s'adapter aux changements futures dans le domaine de l'architecture.

L Université de Princeton.

Page 62: L'École d'architecture de Princeton, bien que petite, a maintenu néanmoins une forte influence dans le domaine

de l'architecture aux U.S. La pensée de l'école a évolué de l'étude des Beaux-Arts sous le patronage de Jean Labatut, vers la prise de conscience sociale sous le doyen retraité Robert Geddes, vers une nouvelle approche de l'architecture dans son contexte, mis en évidence par les maîtres de Princeton tels que Michael Graves et son nouveau doyen Robert Maxwell.

Kaleidoscope.

La place Woodrun de Snowmass, dans le Colo. (page 70), est un ensemble de 56 condominiums, centre de conférence, et relaxation, réalisé par l'architecte californien William Turnbull. La banque de l'Union et Trust de Denver dans le Colo. (page 72), a été réalisée par Murata Outland et associés de Denver et emprunte des tons de terre à l'intérieur et à l'extérieur en rapport avec la texture attribuant ainsi une couleur locale. La branche de Carrollton de la Banque de Carroll Country (page 73) située à Carrollton en Ga., a été réalisée par la firme locale Denney et Associés fait intervenir l'utilisation de rayures nature et brique pour ressortir dans un environnement de supermarché. L'hôpital d'Oakwood à Canton dans le Mich., (page 74), réalisé par Hobbs et Black Associés de Ann Arbor, Mich., est une structure résidentielle en brigue à l'intérieur ensoleillé.

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Resúmenes de Artículos Principales

Universidad de Harvard.

Página 36: La GSD ha experimentado un auto-análisis fundamental en el curso de estos últimos años, como reflejo del estado de la arquitectura en general. En una época en la que no existe una ortodoxia dominante, la GSD opta por investigar nuevos derroteros de la arquitectura además de impartir capacitación a los practicantes. Los cambios en el profesorado y el personal de administración preconizan otro período de transición y ajuste.

Cooper Union.

Página 42: La Cooper Union for the Advancement of Science and Art en la Ciudad de Nueva York fue fundada en 1859 como lugar de debate y crítica. Su facultad de arquitectura continúa esta tradición de forma nueva, basando su enseñanza en la formulación de preguntas esenciales acerca de la arquitectura en la época contemporánea. Se anima a los estudiantes a explorar y crear un enfoque personal a la arquitectura.

Instituto de Tecnología de Illinois.

Página 50: El programa de arquitectura del Instituto de Tecnología de Illinois en Chicago fue concebido por Mies van der

Rohe e incorpora la enseñanza de los principios y aspectos fundamentales de la arquitectura, tales como la estructura, la forma, el espacio y la construcción. La facultad ha permanecido fiel al programa de estudios de Mies en la medida en que puede hallar difícil ajustarse a cambios futuros en la arquitectura.

Mississippi Statue University.

Página 56: La facultad de arquitectura de la MSU es relativamente joven, ya que fue instituida hace solo poco más de una década. El programa está fuertemente comprometido a temas regionales de la arquitectura y esto se refleja en problemas de diseño que examinan la arquitectura de localidades cercanas tales como Meridan y Starkville, así como giras a ciudades tales como Atlanta y Columbus, Ind. La partida del Decano William McMinn, que hizo pasar la facultad a través de su etapa formativa, señala una nueva etapa en el desarrollo de la MSU.

Universidad de Princeton.

Página 62: La facultad de arquitectura de la Universidad de Princeton, aunque pequeña, ha mantenido una fuerte influencia en la arquitectura en los Estados

Unidos. La concentración de la facultad ha cambiado de las Bellas Artes bajo la dirección del decano Jean Labatut, a la conciencia social del decano Robert Geddes, jubilado, y a una nueva evaluación de la arquitectura como su propio contenido, según demuestran miembros de la facultad de Princeton tales como Michael Graves y su nuevo decano, Robert Maxwell.

Caleidoscopio.

Woodrun Place en Snowmass, Colo. (página 70), es un complejo de condominios de 56 unidades, centro de conferencia y balneario, diseñado por el arquitecto californiano William Turnbull. El Union Bank & Trust en Denver, Colo. (página 72), fue diseñado por Murata Outland Associates de Denver y utiliza colores de tonalidades de la tierra dentro y fuera del edificio en combinación con materiales de sabor local. La Sucursal de Carrollton del Banco del Condado Carroll (página 73) en Carrollton, Ga., fue diseñada por la empresa local de Denney Associates y utiliza bandas valientes y ladrillo para destacar en su marco de centro de almacenes. El Hospital Oakwood en Canton, Mich. (página 74), diseñado por Hobbs and Black Associates de Ann Arbor, Mich., es una estructura de ladrillo a escala residencial con un interior soleado. □

Minnesota Judicial Building Design Competition

The State of Minnesota, The Minnesota Judicial System, and the Capitol Area Architectural and Planning Board announce a national competition for the design of a Minnesota Judicial Building to be located in Minnesota's Capitol Area. This project presents a major design challenge.

The winning design must incorporate an existing building which is on the National Register of Historic Buildings with new facilities which are to be added on an adjacent site. The project includes renovation of approximately 100,000 GSF and 125,000 GSF of new construction, and will provide facilities for the Minnesota Supreme Court, Court of Appeals, and state law library.

The competition is open to all firms or teams which include personnel with NCARB certification or architectural registration in Minnesota. From credentials submitted by the registrants a limited number will be selected as finalists, and will be invited to submit competition design proposals. The finalists will be paid a cash stipend to be determined. The winner will be awarded a cash prize and the commission to further develop the project.

The criteria for the selection of the design finalists will include previously-demonstrated ability to accomplish projects of this type and scope.

Registration will be by letter accompanied by a non-refundable check for \$50.00 made payable to the Capitol Area Architectural and Planning Board. Registrations should be addressed to:

Walter H. Sobel, FAIA and Associates
Professional Advisor
Minnesota Judicial Building Competition
Capitol Area Architectural and Planning Board
Room 122 Capitol Building
St. Paul, Minnesota 55155

Detailed information regarding the competition and credential submission requirements will be sent to all registrants. Letters of registration are due September 26, 1984.

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