AMAJOURNAL

Long, low, linear light.

Sterner's Illuminated Rail-Lite is the ideal solution to stairway and walkway lighting problems.

LONG. For interior and exterior malls, pedestrian overpasses, stairways, path systems . . . wherever you need a uniform light source that can go the distance, consider Sterner's Illuminated Rail-Lite. It is constructed of heavy gauge extruded aluminum in one-piece sections up to 16 feet long. It can be mitered to change direction and go around corners. Also available non-illuminated to provide continuity of design throughout the project.

LOW. A Sterner Illuminated Rail-Lite puts the light right where you want it — down low, close to the steps or walkway — not up on top of a pole where it can interfere with the mood you have created. Available as free-standing or wall mounted railings. They satisfy OSHA requirements for safety and construction.

LINEAR. The usual solution to stairway and walkway lighting has been the use of standard step and riser lighting fixtures. But the light distribution from these fixtures is unsatisfactory because they create mere pools of light. The best solution is the linear light path laid down the entire length of the stairway or walkway by Sterner's Illuminated Rail-Lite.

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EVENTS

Jan. 27-29: Iowa chapter convention, Olmsted Center, Drake University, Des Moines, Iowa.
Feb. 1: Abstracts due, call for papers, for a seminar/workshop on the planning, design and implementation of bicycle/pedestrian facilities, to be held July 6-8 in Palo Alto, Calif. Contact: Metropolitan Association of Urban Designers and Environmental Planners, P.O. Box 722 Church St. Station, New York, N.Y. 10008.
Feb. 6-9: Seminar on Designing Defensively: The Architect and Security, Marriott Hotel, Los Angeles. Contact: International Security Conference, 2639 S. LaCienega Boulevard, Los Angeles, Calif. 90034.
Feb. 7-11: Fundamentals Course in Commercial and Industrial Lighting, Nela Park, Cleveland. Contact: Manager, Lighting Education, General Electric Co., Nela Park, Cleveland, Ohio 44112.
Feb. 10-11: Institute on Energy Conservation Methods in Heating and Airconditioning Systems, University of Wisconsin, Madison.
Feb. 10-12: North Carolina chapter winter meeting, Pinehurst Hotel & Country Club, Pinehurst, N.C.
Feb. 14-15: Institute on Selecting Projects for Value Studies, University of Wisconsin, Madison.
Feb. 17-19: American Institute of Landscape Architects annual convention, South Coast Hotel, Costa Mesa, Calif. Contact: Robert R. Cardoza, 1599 Superior Ave., Suite A-4, Costa Mesa, Calif. 92627.
Feb. 18-19: Montana Technical Council, joint A/E conference, Colonial Inn, Helena, Mont. Contact: Dennis Williams, Northern Testing Labs, 528 Smelter Ave., Great Falls, Mont.
Feb. 24-25: Federal Programs Conference for A/Es, New Orleans. Contact: Patricia Parker, AIA Headquarters.
Feb. 24-26: South Carolina chapter annual meeting, Hyatt Hotel at Palmetto Dunes, Hilton Head Island, S.C.
Mar. 2-3: Material Handling Systems and Control Conference, Fairmont Colony Square Hotel, Atlanta. Contact: Material Handling Institute, 1326 Freeport Road, Pittsburgh, Pa. 15238.
Mar. 5-7: National Housing Conference annual convention, Statler Hilton Hotel, Washington, D.C. Contact: NHC, 1126 16th St. N.W., Washington, D.C. 20036.
Mar. 6-9: Construction Industry National Legislative Conference, Hyatt Regency Hotel, Washington, D.C. (Sponsored by about 25 contractor/construction industry organizations.) Contact: Construction Industry National Legislative Conference, 815 15th St. N.W., Suite 902, Washington, D.C. 20005.
Mar. 14-16: Energy Technology Conference and Exposition, Sheraton Park Hotel, Washington, D.C. Contact: Nancy McNerney, Energy Technology Conference, Government Institutes, 4733 Bethesda Ave. N.W., Washington, D.C. 20014.
Mar. 21-23: American National Metric Council annual conference and exposition, McCormick Inn, Chicago. Contact: ANMC, 1625 Massachusetts Ave. N.W., Washington, D.C. 20036.
Mar. 24-26: Conference on the Technical Design of Solar Thermal Systems for Buildings, University of Colorado, Boulder.
Mar. 29-30: Institute on Airport Environmental Planning, University of Wisconsin, Madison.
Apr. 1: Applications deadline, Cintas Fellowships in the Arts for young architects, artists, writers and musicians of Cuban citizenship or lineage who currently reside outside Cuba. Contact: Institute of International Education, 809 United Nations Plaza, New York, N.Y. 10017.
June 5-9: AIA convention, San Diego (reconvened convention and study mission to Guatemala and the Yucatan and Cancun, Mexico, June 9-19).

LETTERS

Then—as Now: In the "Letters" column of the October 1976 issue, Charles N. Bayless, AIA, commends the "America's great architecture" poll (July '76 issue) for the selection of Thomas Jefferson's University of Virginia design as the "most significant work of architecture" in the nation's 200 years.

He cannot "understand the nomination of a building whose windows constantly pop out," however. The implication here is that the University of Virginia had no technical problems.

Yet in the book *Mr. Jefferson, Architect* (Guiness and Sadler) we read: "Jefferson originally decreed that the . . . student rooms would have flat roofs . . . ; the flat roofs gave trouble and were eventually replaced with hipped roofs of conventional design" (p. 139); and also " . . . a cupola which was not in Jefferson's original design but which had been necessitated by leaks in the skylight" (p. 125).

The best architecture of any period tries to stretch beyond the present technology, and is therefore more subject to technological shortcomings.

Luckily, the absence of technical problems has never been a major criterion for measuring architectural quality, or we would never have heard of such great architects as Frank Lloyd Wright, nor perhaps of the University of Virginia.

Harvie P. Jones, AIA
Huntsville, Ala.

The Uses of Art: In addition to the artistic merits of Dale Eldred's suspended 500-pound sphere sculpture (Oct. '76, p. 43) which draws patterns in the sand, it also demonstrates, by the pattern it traces, the axial rotation of the earth. A similar sphere was suspended from the dome of the Pantheon in 1851 by the French physicist Jean Foucault for that purpose. The sphere, when put into motion, becomes a pendulum whose motion continues in the same direction while the earth turns and changes surface direction below it. The resulting pattern traced in the sand will thus appear slightly different with each swing until the earth completes one revolution, at which time the pattern is repeated. *Edwin J. Goodwin Jr., FAIA*
Houston

Correction: The September issue contains an article on a student competition in which energy was part of the design medium. On page 46 in a section entitled "Garbage housing becomes respectable," two quite separate projects have been confused, presenting an entirely false impression.

Of the illustrations on that page only one ("east elevation") has any connection with solar energy research in any shape or form. The larger lower picture is an external view of the Garbage House built by Martin Pawley (visiting critic at RPI) and six senior architectural students. The house was designed and built during the spring of this year and is part of a long-term exploration of the potential for low-cost construction offered by consumer wastes and packaging. It has no connection with the competition or with solar energy and has no solar collection equipment installed—nor is any contemplated.

The upper right-hand photograph is equally misleading. It shows part of one element of a flooring system designed by senior student Robert Beck, which uses waste cardboard newsprint cores, steel cans and scrap steel strapping. This floor system has been tested to compliance with New York State building codes for domestic suspended floor loadings. Once again, it has no connection with the competition, nor with solar energy.

The students involved in designing and building the Garbage House were Robert Beck, David Capelli, Marquand Johnson, Timothy Ryan, Scott Stinson and Deborah Jones. The only faculty member involved was Martin Pawley.

Patrick J. Quinn, AIA
Dean, School of Architecture
Rensselaer Polytechnic Institute
Troy, N.Y.

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Owner: Renaissance Center Partnership, Detroit, Michigan; Architect: John Portman, Atlanta, Georgia; General Contractor: Tishman Construction Co., New York, New York; Fireproofing Contractors: The Berti Co., Detroit, Michigan; Service Art Co., Detroit, Michigan; McNulty Bros. Co., Chicago, Illinois.

GRACE

Circle 3 on information card

Residence, Highland Park, Ill. Architect: Robert M. Ro

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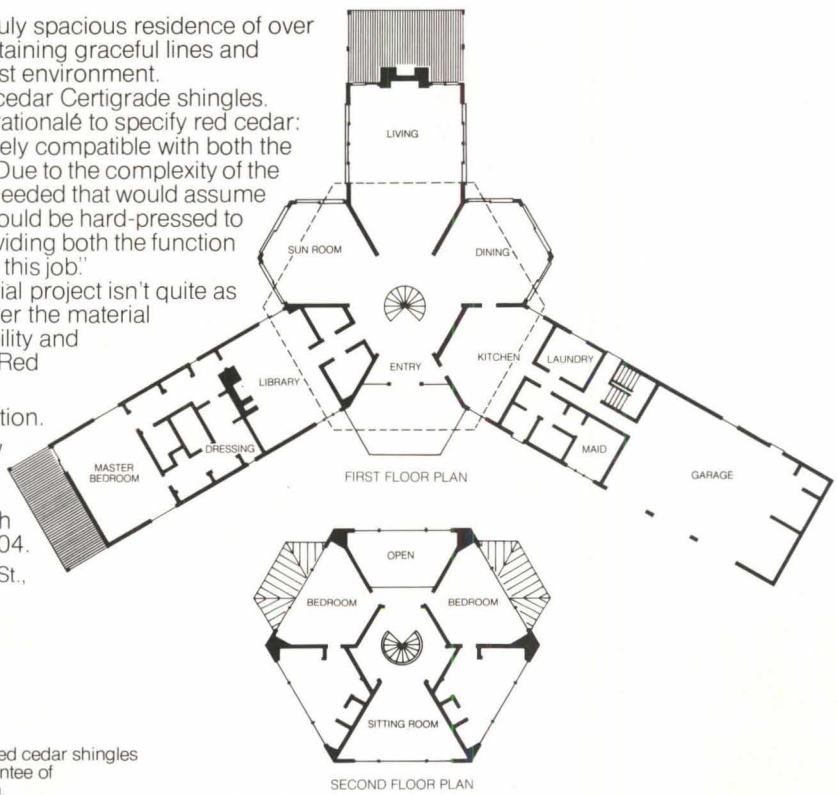

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AIA JOURNAL

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BPA

Inaugural Parade Stand Designed for Recycling, Incorporates Solar Heat

The 39th President of the U.S. will view his inaugural parade from structures that are different from anything used in past Presidential inaugurals. They have been designed to symbolize many of the priorities and attitudes Jimmy Carter will bring to the Presidency, according to their architect, Paul Muldawer, AIA, of the Atlanta firm of Muldawer & Patterson. The six-person interdisciplinary office specializes in social planning and urban design.

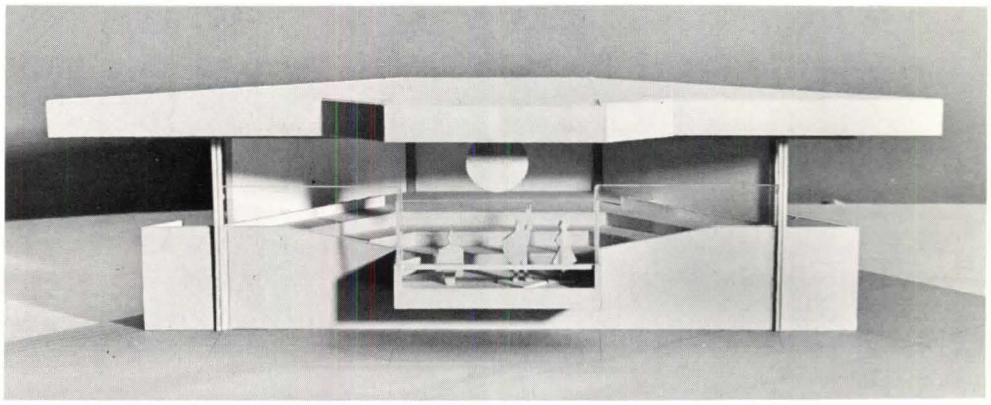
In the past, explains Muldawer, the Presidential inaugural parade stand was enormous and on an axis with the White House, obstructing its view. This year's stand will again be placed on the White House side of Pennsylvania Avenue, but not directly in front and at an angle to the Presidential mansion. The intention is to preserve the vista to the White House.

The stand—with steel frame and translucent roof—will be less expensive and smaller than in years past, and will be recycled for another use instead of simply being dismantled and never used again, as has been routine.

It will be warmed by a solar heating device, consisting of plate collectors. Solar heat will be gathered and stored before the ceremony by a solar storage bed. The mechanical engineers are Rosser White Hobbs Davidson McLellan Kelly of Atlanta. The structural engineer is Bennett Pless, also of Atlanta. Landscaping is by Clyde Robbins & Associates; sculptor Charlie Mitchell is making a Presidential seal of wood for the occasion.

Past parades, says Muldawer, included boxes set up in Lafayette Park across from the White House for a handful of VIPs, which caused $100,000 worth of damage, according to the U.S. Park Service. There will be no boxes this year, only a platform for handicapped persons, erected in such a way as to cause minimal damage to Lafayette Park.

In former years, bleachers, up and down Pennsylvania Avenue, consumed 75



percent and more of viewing space. This year, they will occupy just the upper end of the Avenue, and take up only about 25 percent of the total viewing area. And rather than being specially constructed for the occasion, they will be rented from the Georgia Institute of Technology and returned after the ceremony.

Says Muldawer, "The structures are a translation into physical form of what this administration stands for: Carter's humility and thrift, his respect for the office of the Presidency, for historical preservation, for the natural ecology, energy conservation, the handicapped and his desire to bring government and people closer together."

McGinty and Botsai Take Office for 1977

John M. McGinty, FAIA, was formally installed as AIA's 52nd president in the organization's 119 years of history on Dec. 3. He succeeds Louis de Moll, FAIA, of Philadelphia. McGinty is a principal in the McGinty Partnership, headquartered in Houston (*see* p. 32).

Also installed was Elmer E. Botsai, FAIA, of San Francisco, who will serve as first vice president (president-elect). A graduate of the University of California at Berkeley, Botsai is senior partner in the San Francisco-based firm of Botsai, Overstreet & Rosenberg and chairman of the department of architecture at the University of Hawaii. He has served as AIA vice president and as treasurer and has chaired many Institute task forces and committees.

Three vice presidents also took office: Herbert Epstein, FAIA, of Brooklyn Heights, N.Y., Ehrman B. Mitchell Jr., FAIA, of Philadelphia, and Robert L. Wilson, AIA, of Stamford, Conn.

At the same time, Robert M. Lawrence, FAIA, of Oklahoma City, assumed his duties as Institute secretary, to serve a two-year term. In 1975, Charles E. Schwing, AIA, of Baton Rouge, La., was elected to a two-year term as treasurer and continues in this capacity.

Ten new regional directors also took office: Jay W. Barnes, FAIA, Austin, Tex.; Gridley Barrows, AIA, Auburn, Me.; Gerald L. Clark, AIA, Phoenix; Anna M. Halpin, FAIA, New York City; Lynn Molzan, AIA, Indianapolis; Roger N. Ryan, AIA, Akron, Ohio; Henry Silvestri, AIA, Los Angeles; Saul C. Smiley, AIA, Minneapolis; Harold H. Tarleton Jr., AIA, Greenville, S.C., and Thomas H. Teasdale, AIA, St. Louis.

Chairmen of commissions and major committees in 1977 are: Zeno L. Yates, AIA, commission on community services; Jerome M. Cooper, FAIA, commission on component affairs; Whitson W. Cox, FAIA, commission on education and professional development; William R. Jarratt, FAIA, commission on government affairs; Adolph R. Scrimenti, FAIA, commission on practice and design; Robert A. Burley, AIA, public relations committee; David L. Perkins, FAIA, Production Systems for Architects & Engineers, Inc.; Carl L. Bradley, FAIA, energy committee; Jerome M. Cooper, FAIA, secretary's advisory committee, and Charles E. Schwing, AIA, finance committee. *continued on page 10*

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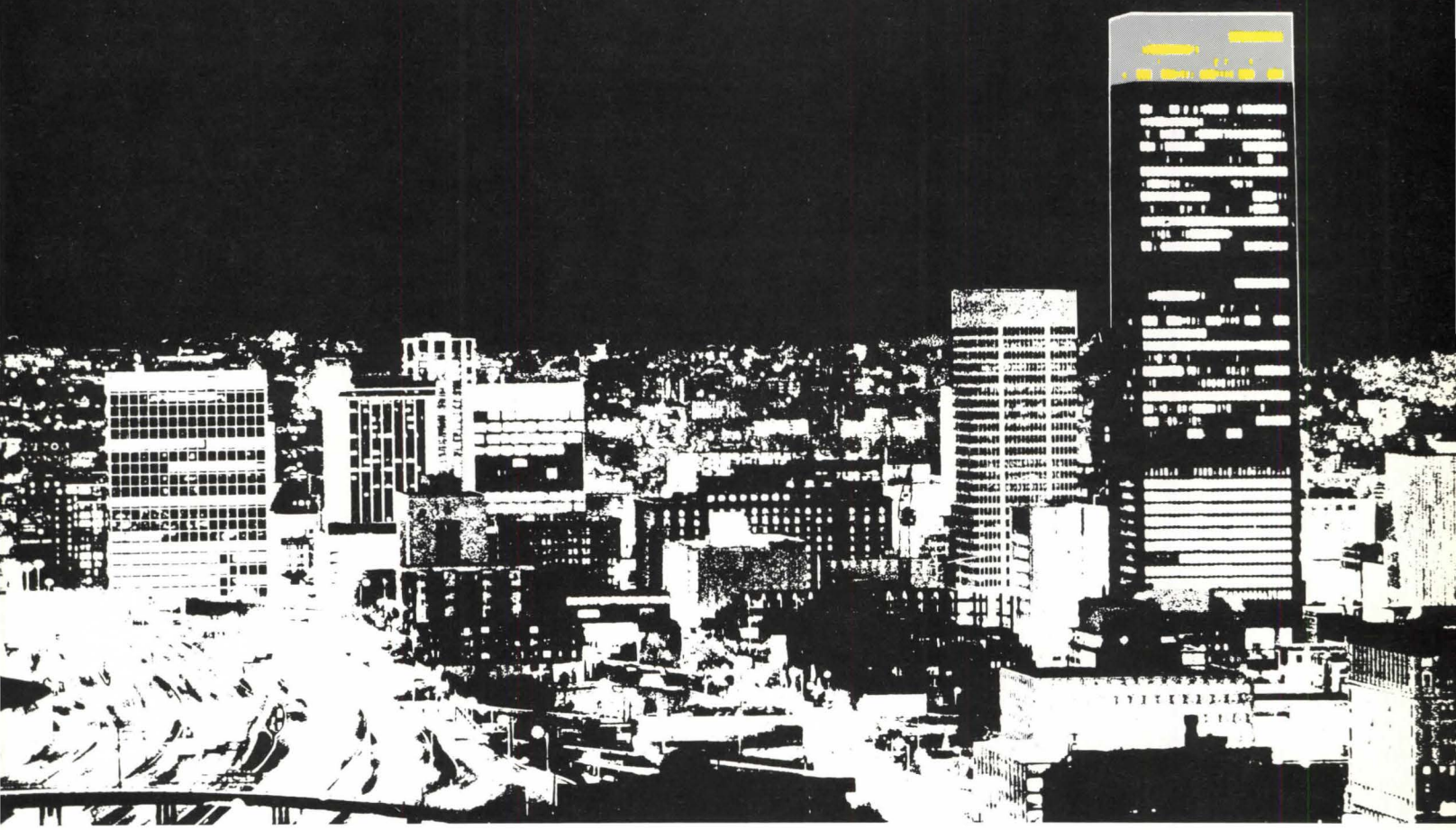

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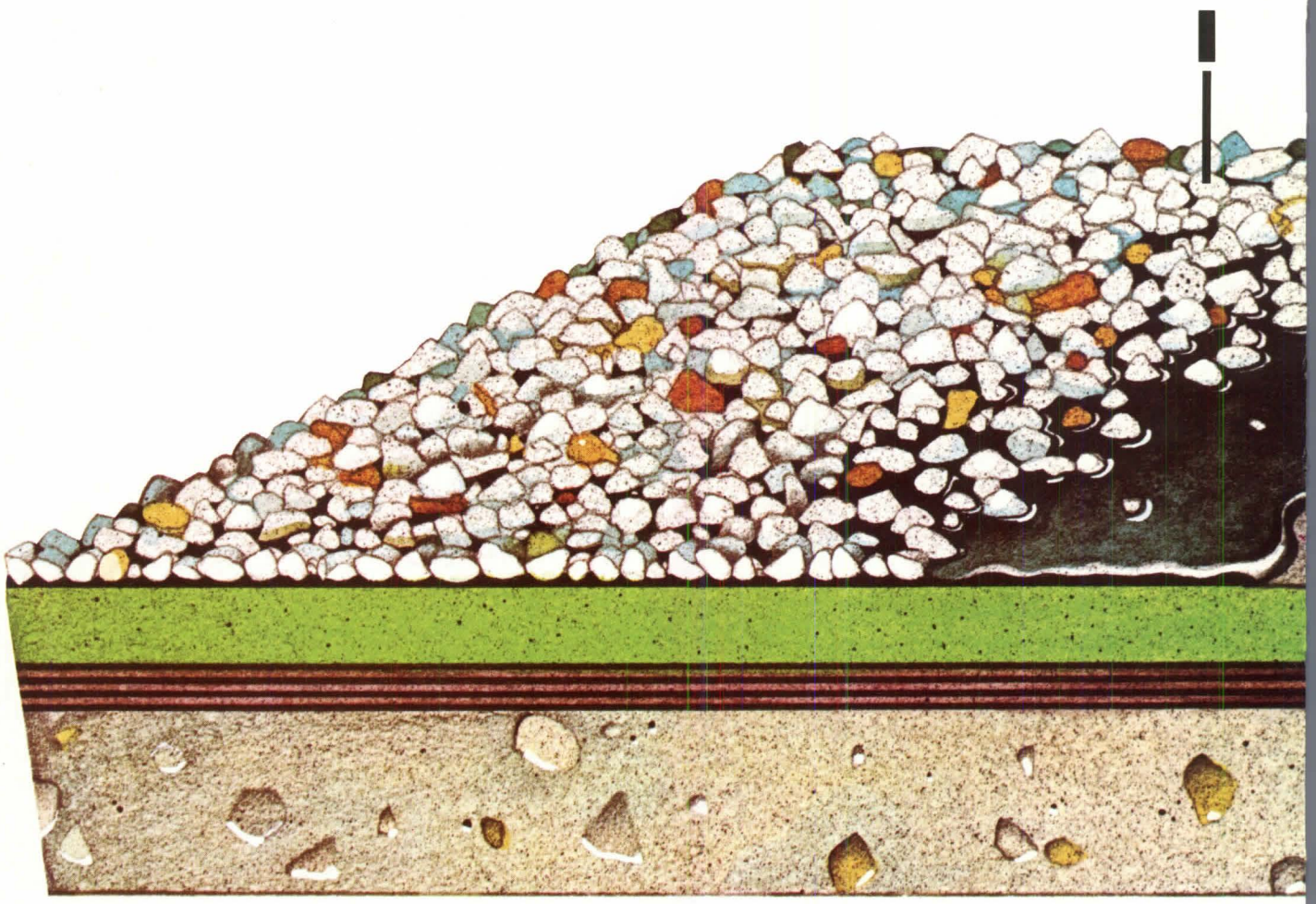

1 A conventional application of 300 lbs. of slag or 400 lbs. of gravel per 100 sq. ft. protects roof from flaming brands, harmful rays of the sun, and impact damage caused by hail and roof traffic.

2 Top pouring of hot asphalt keeps gravel in place and provides first line of protection against moisture.

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4 Flood coat of hot asphalt keeps Tempchek insulation in place, and provides the second line of protection against moisture. The asphalt is beneath the insulation, and will not alligator.

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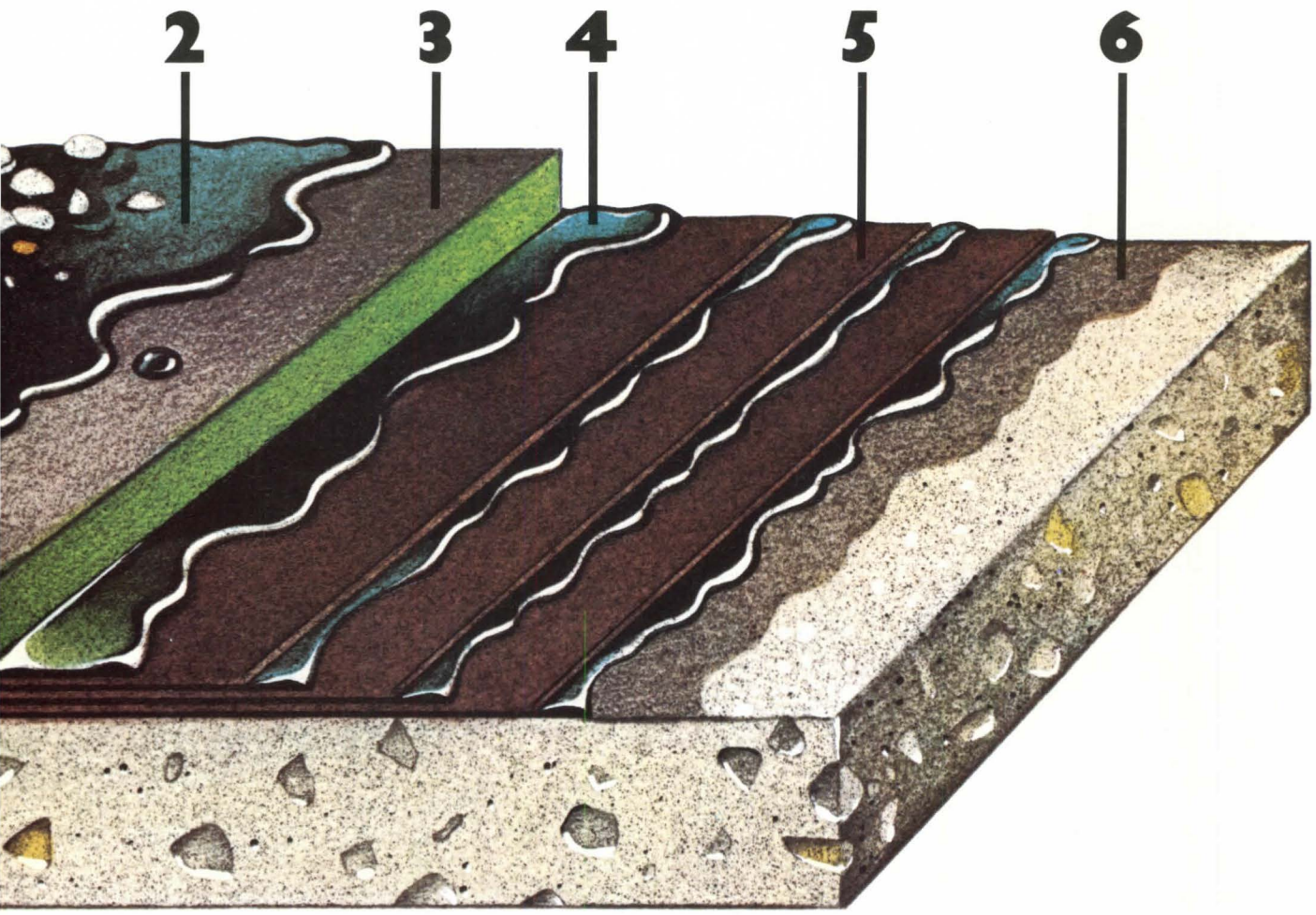

5 Built-up roofing membrane provides the third and most important line of protection against moisture. Serves as a vapor barrier as well. Roof membrane is protected from thermal shock, punctures and blistering by the Tempchek insulation above.

6 The Celotex Inverted Roof Assembly systems are readily applied to conventional nailable and non-nailable decks. Shown above is a concrete deck, with asphalt primer.

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Task Force Will Advise On International Concerns

Going On from page 6

Increasing opportunities—and problems—are being generated by the ever-increasing number of American A/Es who practice abroad. As reported to the AIA board of directors at its meeting in Washington, D.C., in December, the Institute commission on government affairs is forming the architect/agencies international task force which will be responsible "for the development of a program of future Institute activity and information on the exportation of professional services and technology." The task force will assist the commission "in the formulation of Institute policy and directions in the international arena" and will monitor U.S. and international governmental policies, procedures and activities in the international marketplace." The task force will be chaired by George E. Kassabaum, FAIA, of St. Louis.

Meanwhile, the AIA JOURNAL, in cooperation with the Institute's government affairs department, will continue to inform U.S. A/Es, as occasions arise, of job opportunities in foreign countries. The following positions supplement those noted in the Nov. '76 (p. 19) and the Dec. '76 (p. 64) issues:

Jordan: A country which has no oil but is attaining modest growth levels financed by phosphate exports, grants and loans from wealthier countries and the World Bank, grants and remittances from Jordanians abroad and tourism, Jordan needs highly skilled personnel to carry out many of its plans. Jordanians generally favor the turnkey approach to projects and often specifically seek American planning and consulting firms and architects.

Firms are urged to submit immediate response to a request for assistance in the planning and design of facilities and housing for about 40,000 people at a site 13 kilometers north of Amman. Firms which wish to prequalify in order to receive a scope of work should indicate experience in the field of city planning.

Contact: Cherie Loustaunau, business facilitation staff, U.S. Department of Commerce, (202) 377-4441.

Morocco: Another country which has no oil but possesses 60 percent of the world's non-U.S., non-Soviet phosphate reserves, Morocco is currently revising its five-year plan, placing increased emphasis on the agricultural sector: irrigation projects, sugar processing facilities, etc. Government projects afford opportunities for American A/Es, as well as for those seeking to invest in joint ventures with local partners in order to take advantage of the incentives provided by the Moroccan investment code.

Design services are currently required for a tourism/residential complex in Agadir, with hotel capacity of 9,700 beds and tourist facilities for 30,000 inhabitants. In February, $15 million in infrastructure contracts will be put up for international bid. Contracts will include construction and installation of water systems, electricity and other infrastructure for the complex. Construction of the luxury hotel will begin as soon as land is acquired.

As soon as possible, contact: Pete Zantal, business facilitation staff, U.S. Department of Commerce, (202) 377-4441.

Saudi Arabia: The Asir Province, a rapidly developing region in the southwest, is undertaking a wide-ranged development program which offers opportunities for U.S. firms in the following areas: design and construction of two universities and a number of smaller schools, contact: Director, Ministry of Education, Abha, Asir Province, Saudi Arabia; over $1,160 million in U.S. Corps of Engineers supervised construction, contact: U.S. Army Engineer Division/Middle East, P.O. Box 445, Winchester, Va. 22601; design and construction of hospitals and clinics, contact: Director, Ministry of Health, Abha, Asir Province, Saudi Arabia. Those desiring contact with local Saudi companies may write to: Ibrahim Al Hassan, Director, Ministry of Commerce, Abha, Asir Province, Saudi Arabia.

Also prequalifiers are sought immediately for 2,000 houses and barracks of various sizes in a project estimated at $140 million. Contact: Andras Behr, business facilitation staff, U.S. Department of Commerce, (202) 377-4441.

Syria: This country is seeking a turnkey proposal, with preference given to companies offering financing, for a teaching hospital at the University of Damascus. Preliminary plans have been completed for the project, estimated at $50 million. Contact: Cherie Loustaunau, business facilitation staff, U.S. Department of Commerce, (202) 377-4441.

United Arab Emirates: Dubai is in the final planning stages for a large industrial area at Jebel Ali. Contracts have been awarded recently for the design and construction of an aluminum smeltery, an international airport and a large desalination plant. Opportunities still exist, however, for U.S. firms for design and construction of at least 60 warehouses and other on-shore facilities of the port and for housing and facilities for a city that may reach a population of 25,000 by the mid-1980s. Contact: Charles G. Courrier, American Commercial Office, P.O. Box 5343, Dubai, U.A.E.

For additional information telephone Patricia Parker, assistant director, federal agency liaison, at AIA headquarters, (202) 785-7384.

Regional Directors See Slow Economic Recovery

Most AIA regional directors sounded words of cautious optimism when they presented reports to the board at its December meeting in Washington, D.C. The reports contain such comments as: "The general economic conditions are slowly improving"; "the area has generally experienced good building activity"; "the area reports slow recovery," and "as opposed to our last year's report, which was dismal, there is now an atmosphere of guarded optimism in most chapters."

Among the problems and matters of special interest noted by the regional directors are: energy, ethics, design/build/bid, recertification, liability insurance and procurement of architects.

The reports indicate as well, as one director expressed it, that the regions "look to the Institute for strong actions and strong leadership in facing national problems which plague the profession."

Although dues are kept at the 1976 level, a total income of more than $6 million is estimated for 1977—14.5 percent higher than that estimated for the 1976 budget.

The 1977 program will be carried out with a new organizational structure at AIA headquarters, approved by the board of directors. Group executives, accountable to the executive vice president, will be responsible for the detailed management and coordination of the specific areas for which they are responsible.

The office of program development (group executive: James A. Scheeler, FAIA) is responsible for the commissions and departments which develop programs most directly related to the practice of architecture. The commissions/departments include: community services, education and professional development, government affairs and practice and design.

Energy programs, which are directed and coordinated by the board's energy committee, come under a special project. Also a part of this group is the Production Systems for Architects and Engineers. In addition the group executive coordinates the affirmative action plan for the integration of women into the profession.

All Institute research activities are now consolidated in the AIA Research Corporation, whose president, John P. Eberhard, AIA, also acts as a group executive.

The office of component/information (group executive: Richard H. Freeman) is "charged with packaging Institute resources and information and delivering it to members and the general public." The responsibilities of the group executive include component affairs, the AIA JOURNAL, the public relations department, pub-

continued on page 60

Model 3352–Photographed at the Hyatt Regency, San Francisco.

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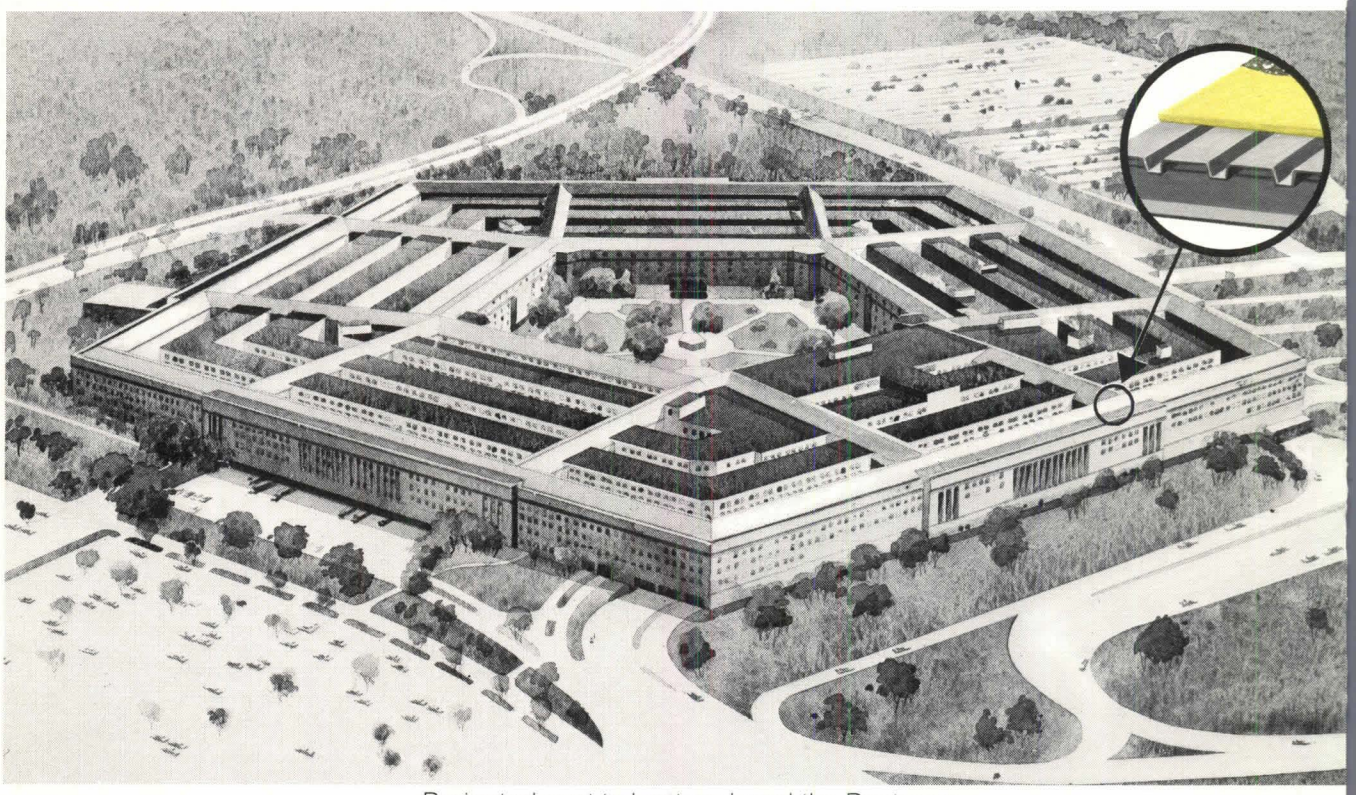
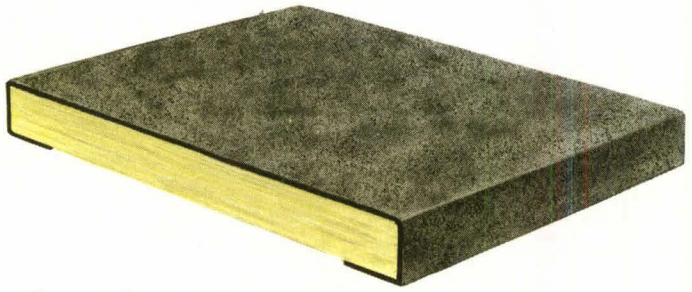


Projected cost to heat and cool the Pentagon
for the next 20 years, if it were built today using only 15/16-inch Fiberglas roof insulation:

$2,541,454



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office building.

If it were being designed b
today's architects for *today's* soa
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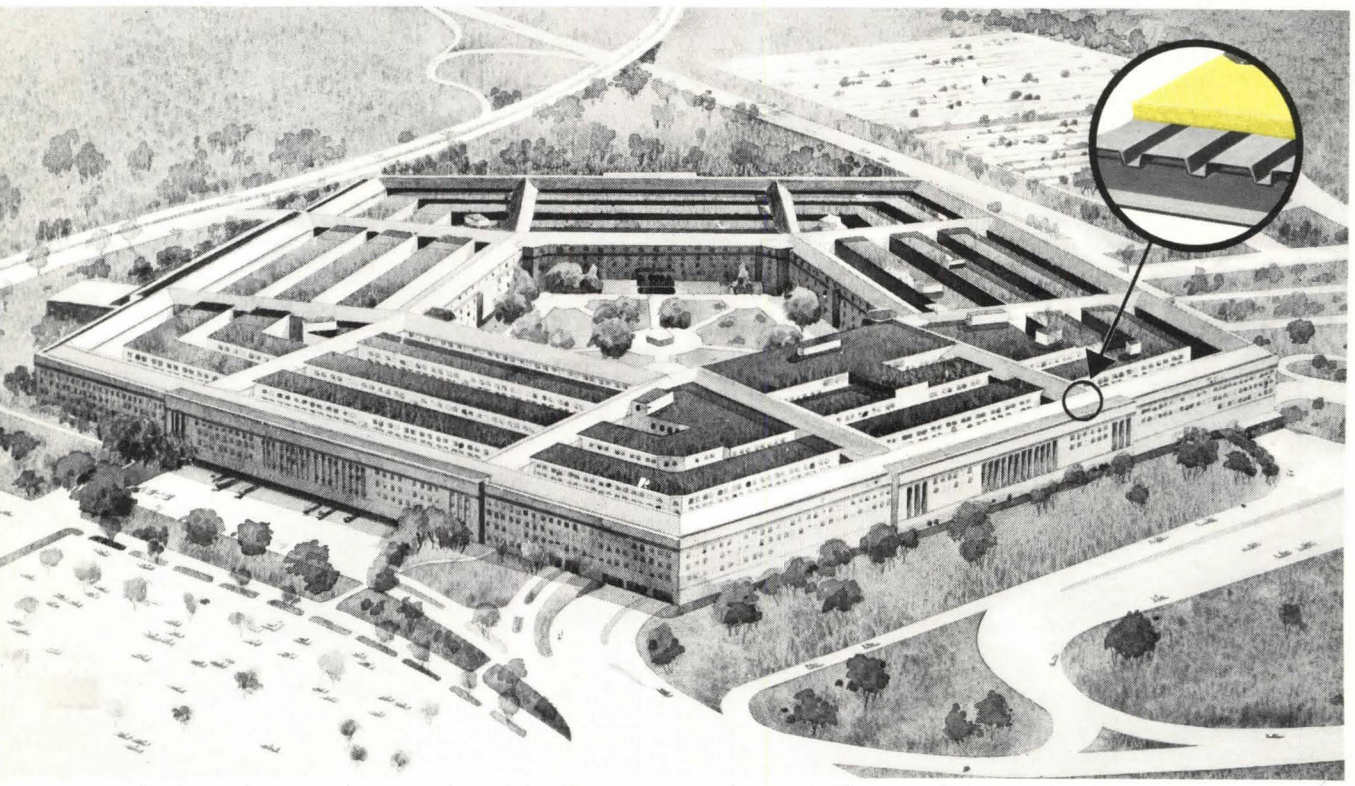
trust it would have the specific
tions of the version on the right.

This version has a full 2¼-inc
layer of roof insulation, instead
the thinner layer that has been usu
for offices, schools, stores and oth
commercial buildings for the pa
20 or 30 years.

Using thicker 2¼-inch Fiberglas

*T.M. Reg. O.-C.F.

cheaper than oil



Projected cost to heat and cool the Pentagon for the next 20 years, if it were built today using thicker 2¼-inch Fiberglas roof insulation (*after* allowing for the cost of thicker insulation!):

$1,207,500

f insulation saves money two ferent ways:

A saving of $1,333,954

1. It saves on energy costs. Esti- ted savings per year, based on s heat and electric cooling in the shington area, with a projected rease in energy costs at 7% per ır and estimated future savings counted at 10% per year: $66,697 r $1,333,954 every 20 years.

2. It saves on construction costs. e estimated first cost of this energy-tight Pentagon would be *lower* than if the less efficient version were built! Reason: the improved thermal performance of the roof would permit use of smaller-capacity, *less costly* heating and cooling equipment. Amazingly, the estimated savings would be large enough to cover the added cost of the thicker roof insulation *twice* over.

Important: Thicker Fiberglas roof insulation also makes sense when it's time to re-roof *existing* buildings. It should pay for itself in a few years, then go on saving thousands in fuel bills for years to come.

Ask our "talking" computer

Our EMS II (Energy Management System) computer can give you savings figures on your next roofing job — by phone! You'll get projected energy *and* equipment savings, plus *payback* period. (Actual savings may vary.) For details, call your local O.-C.F. rep, or write: M.F. Meeks, Owens-Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659.

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The results are in.

Grueling, independent tests by Bowser-Morner Testing Laboratories—using National Bureau of Standards performance criteria for built-up roofing systems—have proven what we've been saying all along:

When it comes to thermal shock performance, our Fiberglas* Perma Ply-R built-up roofing system is superior to conventional systems.

As defined by the National Bureau of Standards, "The Thermal Shock Factor (TSF) is an indicator of the roof membrane's ability to withstand the normal temperature changes of its environment. Values of the coefficient of expansion, tensile strength, and load-strain modulus can be used to calculate the TSF."

The heart of our system is the unique, inorganic Perma Ply-R felt. It works two ways to give the system its strength.

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Second, Perma Ply-R helps create a monolithic roofing system. The strongest kind of system there is. The reason: Perma Ply-R is a porous felt. So it meshes totally with the bitumen.

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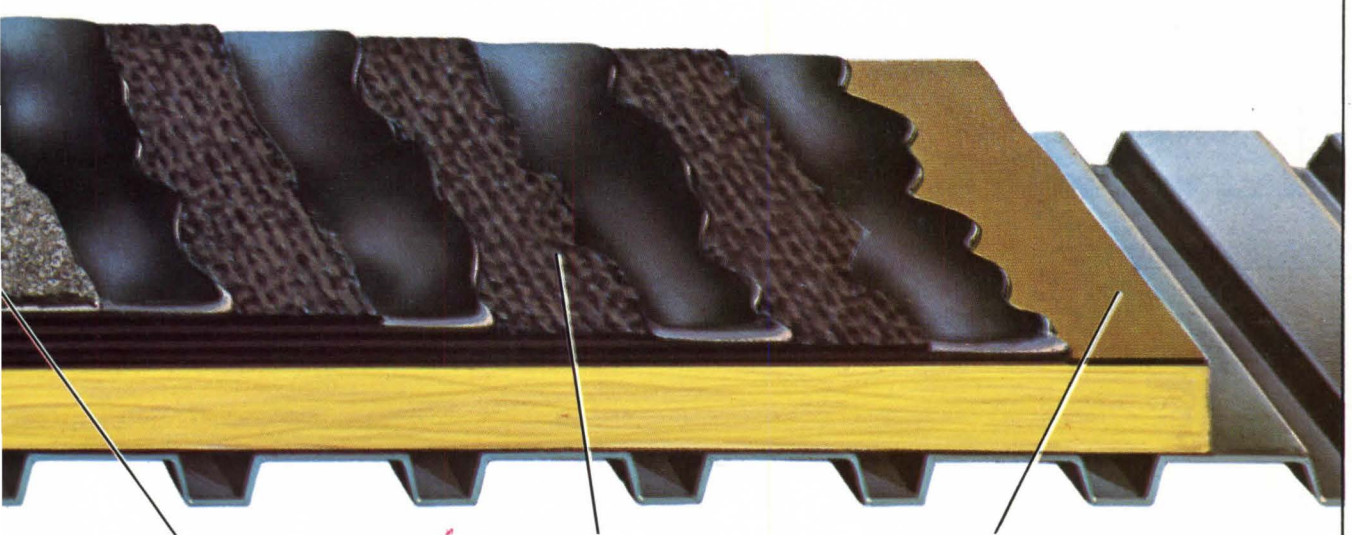
Simple.

Properly installed, our Perma Ply-R system minimizes the possibility of splitting, blistering, and internal deterioration of membranes. It has the potential to outlast any other BUR system money can buy.

If you want to see the "Thermal Shock Performance Comparisons," please contact your local Owens-Corning representative or write: M.I. Meeks, Owens-Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659.

They've got the test results that prove every word.



Our Perma Cap surfacing sheet combines two materials: Fiberglas—so it's tough, won't warp or rot. And inert, non-combustible white ceramic granules that reflect sunlight and help minimize thermal shock.

Our Fiberglas Perma Ply-R is a porous felt. So it can mesh with the bitumen, creating a monolithic roofing system that minimizes interply blistering and adds to the roof's outstanding thermal shock performance.

Our Fiberglas roof insulation has its own Fiberglas reinforced asphalt cover. So the bitumen can be applied directly to it, making the insulation an integral part of the membrane.

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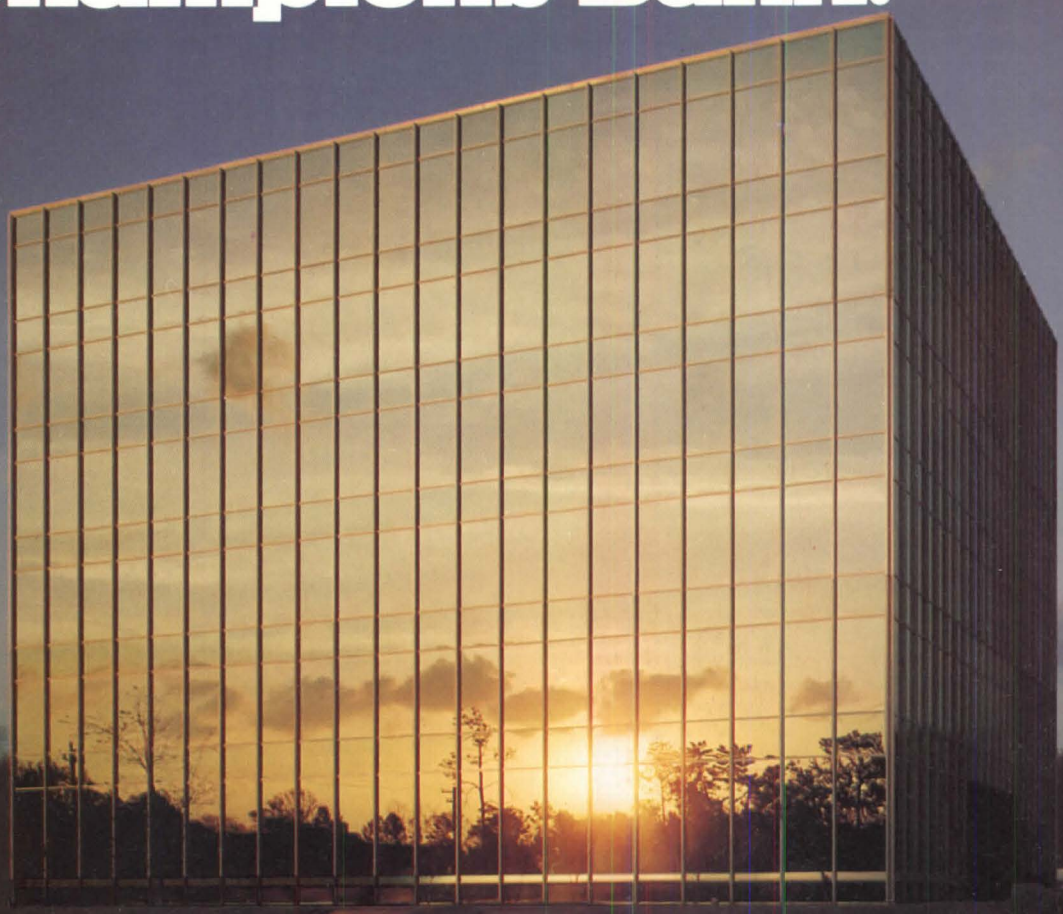
Vari-Tran® is saving at Houston's Champions Bank.



A glance at the chart will tell you how much.

When it comes to saving money, you can't fool a banker. The owners of the Champions Bank Building had their architects take a careful look around before they decided on LOF's Vari-Tran® 1-108 coated glass.

When the owners compared ¼" Vari-Tran coated glass to ¼" grey glass, they found they'd save $111,363 right away—on heating, cooling and distribution equipment. And, they'd save all year long when it came to operating costs.

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	1/4" Grey Glass	1/4" Vari-Tran 1-108	Savings
Glass	$ 36,486	$ 69,380	$-32,894
Heating, Cooling and Distribution Equipment	184,020	72,657	111,363
Comparative Initial Construction Costs	220,507	142,047	78,460
Annual Heating Costs	2,208	1,613	595
Annual Air Conditioning Costs	36,776	13,503	23,273
Annual Insurance Premium	1,103	710	393
Annual Property Taxes	8,820	5,682	3,138

Owners—Champions Bank & Joe A. McDermott, Inc.
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AIA JOURNAL

Jimmy Carter on Architecture as A Public Service

Twice in recent years, Jimmy Carter spoke at annual meetings of the NCARB. The first time was in Atlanta in 1973 when, as governor of Georgia, he gave an extemporaneous discourse that emphasized efficiency and economy in government and touched upon several themes of special importance to this profession. Two years later, as a candidate for the Democratic nomination, he dropped in on the New York meeting and spoke briefly. We offer some excerpts from the Atlanta address as examples of the thoughts of our 39th President.

". . . We are faced more and more with a conflict between the utilization of rapidly developing land, the preservation of historic sites which often are not the best use of the land economically, the prevention of deterioration of core city areas and the development of suburban or rural areas without materially destroying the quality of life there. All in all, it's a difficult proposition.

"I am particularly proud of what Savannah has done. I doubt if there is another city in the nation which has so successfully protected ancient homes which were in danger of being destroyed by an urban renewal project. . . .

". . . One obvious need in our country is for you as a group and your peers to begin to play a major role in analyzing how this energy problem—which should not ever have materialized in the first place—can be attenuated or alleviated . . . . buildings can be designed by you so that energy losses will be minimal. . . . In the face of inadequate governmental guidance, professionals like you who understand heat losses and energy requirements and proper design techniques can take the initiative in proposing to your clients methods of alleviating the potential national problem and at the same time realize tremendous savings. . . .

". . . There is no other human endeavor, in my opinion, that so closely combines the practical aspect of creation, a deep involvement in the future of society and at the same time the hopes and dreams and the ideals of art as does architecture.

"Recognizing this unique characteristic of your own profession, I can see a great opportunity for you to help order the quality of life in the future. I think it would be a mistake for you, who are among the elite members of a fine profession, to be timid in exerting your own influence on the future life of our nation. . . .

". . . I don't believe my own commitment to public service is innately more complex than your own. Because when you design a beautiful building, your service to the public is equal to mine or perhaps superior to mine. There ought to be a constant probing and an understanding of people and a studious approach to complications of modern society that will let you predict future needs. It is incumbent upon you because you have been blessed by God with superior ability and talent and insight and you have chosen a profession that I think has the almost unanimous respect and admiration of our people. You deserve it.

". . . I pride myself on being eager and willing to learn from those who know more about many of the things that affect my own life, such as you and your efforts to constantly upgrade and lift a great profession—a concept I deeply admire."

Progress Report on the Pilot Phase of the Intern Program

Mary E. Osman

The architectural profession has launched an unprecedented and revolutionary program to provide entering members of the profession with opportunities for exposure and exploration in the broad issues of architectural practice. A pilot project for the intern-architect development program (IDP) is now underway in Colorado, New Jersey and Texas. About 100 graduates of architectural schools, intern-architects who possess varying degrees of experience and scholastic achievement, are already participating in the program. They work in some 60 offices where key decision-making architects, as their professional sponsors, counsel and guide them. The offices vary from one- to 25-person firms and include, as well, state and federal government agencies.

Some 100 graduates are at work in 60 offices in the three-state pilot project.

The program, designed specifically to meet the special needs and interests of the intern-architect who, for the first time, is being exposed to the problems and opportunities of practice, has immediate and positive values for the young professionals themselves. In the long range, it is aimed at developing future architects "who will be better qualified to serve the needs of society and, thereby, raise the standards of performance of the architectural profession," says Dwight M. Bonham, AIA, who co-chairs the IDP coordinating committee as representative of the National Council of Architectural Registration Boards.

The IDP committee, which has been responsible for the development of IDP's objectives and criteria, is made up of representatives from AIA, NCARB, Association of Student Chapters/AIA and Association of Collegiate Schools of Architecture. Herbert Epstein, FAIA, is co-chairman, representing the Institute.

Both AIA and the other sponsoring organizations have long been concerned about the gap between education and registration examination, a period when young professionals "vanish from the profession's view into the unknown," as Charles A. Blondheim Jr., FAIA, president of NCARB, has expressed it.

"We know they are out there, somewhere, but no one except an employer really knows what they are doing," Blondheim says. Moreover, NCARB has learned from questionnaires to professional examination candidates that virtually none of them had ever participated in a fruitful and organized period of internship.

A meaningful experience between education and examination would be "technically enough," Blondheim says. But just as crucial, he says, is the necessity at the developmental stage of a career to provide the young professional with opportunities to gain lifelong learning habits and the "judgment and integrity that must serve the architect for a lifetime." Indeed, lifelong professional development to enable the architect to make judicious decisions and maintain integrity is a principal element in AIA's code of ethics.

A coordinating committee was established by the Five Presidents' Council (composed of representatives from AIA, ACSA, ASC/AIA, the National Architectural Accrediting Board and NCARB) to develop a strong, workable program in which an individual would build on formal education to acquire a sound internship experience. Among the committee's specific objectives for the IDP are: to provide the intern-architect with the opportunity to become more sensitive to the responsibilities of serving society; to expand the young professional's perceptions of the profession and its duties; to better prepare the intern-architect to enter the profession and to make a more effective contribution to the firm in which internship is served; to determine and eliminate weaknesses in educational preparation; to create additional learning experiences, and to help the young professional acquire lifelong professional development habits.

Bonham puts the purposes of IDP in more succinct terms: "IDP is conceived as a continuation of the formal education process—it is nothing more than that. Its intent is to ensure reasonable exposure and acquisition of professional knowledge to enhance every intern-architect's *ability* to make professional-level judgment decisions based on sound, practical learning experience."

The pilot IDP project began in February 1976. Despite the national economic recession and its effect upon the profession, the coordinating committee decided that the project was too important for the future of architecture to wait. "Many firms were not hiring new employees," says James E. Ellison, AIA, administrator of education and professional development at the Institute and AIA staff member for the coordinating committee. "Nevertheless, the coordinating committee is optimistic that the economic situation will improve and that job opportunities for intern-architects will increase to give them vital experience. Meanwhile, it is essential that intern-architects be better prepared for the registration examination and—more important—be better prepared to enter the profession and make a more immediate contribution to society."

The two major contributors to the pilot program are AIA and NCARB. Among NCARB's responsibilities are the program's overall design and criteria, preparation of documents and forms, implementation and housing of the recordkeeping system and the training of professional participants. AIA's responsibilities include the identification of professional sponsors, primarily from AIA member firms; the selection of professional advisers; the development of supplementary educational resources (about which more will be said later), and the encouragement of the architectural profession's cooperation. Epstein characterizes the AIA/NCARB collaboration on IDP as an "enthusiastic partnership."

A three-way relationship between intern, sponsor and professional adviser.

By the spring of 1976, when the intern-architects had been chosen and the professional sponsors in whose firms or organizations they work had been selected, AIA had identified 17 professional advisers from outside the intern-architect's place of employment who work on a part-time, voluntary basis to counsel the intern-architects on an individual and group basis. A state IDP coordinator had been appointed to work in each of the three pilot states to maintain liaison with registration boards and AIA components and to make periodic reports to NCARB. And Samuel T. Balen, AIA, director of professional development at NCARB,

was given the responsibility of heading the pilot project.

Meanwhile, committees at AIA and NCARB had developed a training syllabus, recordkeeping forms, supplementary educational materials and procedures—"in short," as Bonham says, "the nitty-gritty."

The primary beneficiaries of all this effort and concern, as Bonham says, are the intern-architects themselves. The program, however, "is nothing unless the intern-architect is devoted, dedicated and motivated to the opportunities, advantages and benefits which the IDP structure has to offer," he says. Ellison points to one primary aspect of the program, which is "self-assessment by the young professionals."

A key role is played by the employer or professional sponsor. "The ancient concept of apprenticeship is the model," says Balen. "The fledglings learn from their mentors by actually working with them and by observing their performance." The professional sponsor has the responsibility to see that the intern-architect has the opportunities to gain both the breadth and the depth of experience necessary, give guidance and instruction on a daily basis and provide an assessment of the intern-architect's progress.

The professional sponsor's role as teacher means that the architect "does what comes naturally," Balen says. "Among professionals, architects are unique in this respect. From time immemorial, architects have had a creed to teach the inexperienced and to help point the way. Teaching is an underlying quality in just about every architect."

Also essential to the program is the professional adviser who helps by directing the intern-architect in acquiring the practical experience that may be difficult to get at work. He guides the young professional in matters of broad concern to the profession and the building industry of today, counsels in matters relating to registration and examination requirements, guides in practical training progress and opportunities, helps evaluate the pilot project and the progress of individuals and meets occasionally with the professional sponsor on matters of mutual concern in the program.

Schools of architecture, whose strong support is essential, are also beneficiaries of the program. Bonham says that the intent, through cooperative effort, is "to strengthen the IDP programs by recognition of practical learning periods while the individual is still in school and by developing a cadre of educator-advisers, as well as including educators on essential committee deliberations and developments." But the final beneficiary, says Ellison, "is the profession itself, for IDP's ultimate aim is to bring a new standard of excellence."

Ultimately, the program's aim is to create 'a new standard of excellence.'

In setting forth "road maps" for the intern-architect to follow, the coordinating committee agreed that experience should be gained in three basic areas of practice: design and construction documents, project administration and office management. In addition, there should be adequate exposure in many related areas, such as computer programming, interior design and historic preservation, to name but a few.

"It is unrealistic to presume that every intern-architect will gain exposure in every required area in every office," Balen says. "The sponsoring firm must practice for a profit, but the firm's own interests can be served at the same time it fulfills its responsibilities to the intern-architect."

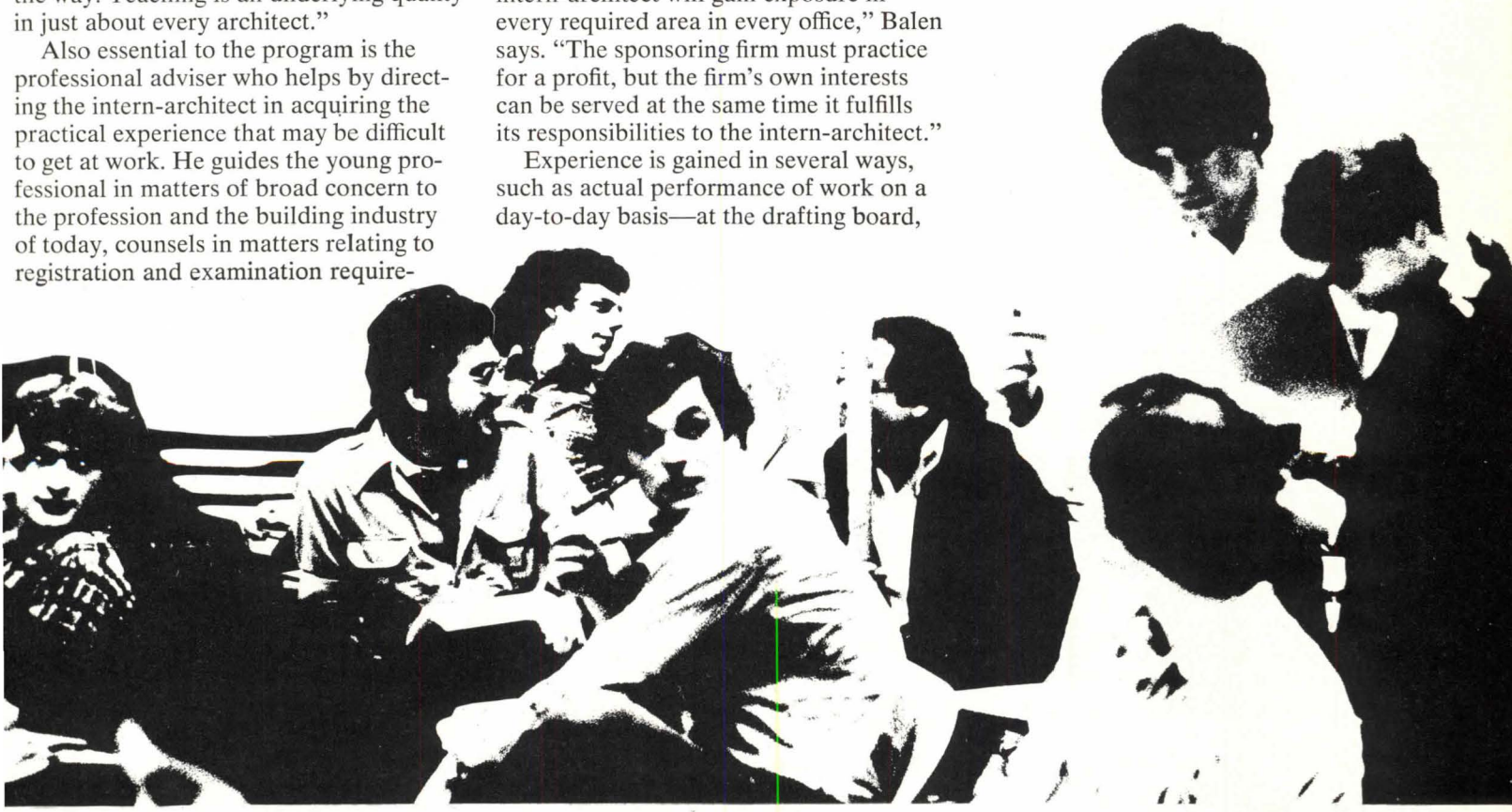
Experience is gained in several ways, such as actual performance of work on a day-to-day basis—at the drafting board, in visits to construction sites, in research of products, etc.; in observation of professionals at work on a variety of projects and in varied situations; by reading and study; by work after hours on projects where experience cannot be gained during the work day, and through supplemental education programs.

"The pilot project operated during its first nine months only through participation and observation," says Bonham. "But the road map was not complete." What was required to complete the map, he says, was supplementary education materials.

One of AIA's responsibilities in IDP, as mentioned, is the prepartion of these materials. And now introduced into the pilot program is a series of what is called "SupEdGuides," prepared by AIA's internship task force, chaired in 1975 by Elmer E. Botsai, FAIA, and in 1976 by Epstein. Oriented to the special needs and interests of the intern-architect, the SupEdGuides are what Epstein calls "good news" and have been universally acclaimed in IDP evaluation sessions.

Each SupEdGuide is designed as a self-contained learning unit on a single topic. Intern-architects themselves met regularly with AIA representatives and consultants, who helped prepare the materials, to identify topics considered pertinent and to help design the materials. As Epstein says, the topics were "not superimposed from on high."

"These topics," says Ellison, AIA staff member in charge of preparation of the SupEdGuides, "were expanded in outline



form by the intern-architects, then compared with the IDP practical training areas by AIA and its consultants. The result is 28 initial SupEdGuides in six series, all with an office practice or project delivery emphasis. This year, additional SupEdGuides will be developed, some with similar emphasis, most related to current issues in architecture."

A general "catalog" of SupEdGuides has been prepared. (This and other materials are in a pilot phase and are not available for wide dissemination beyond the pilot IDP participants.) This is not a catalog of titles but of SupEdGuide abstracts; each abstract includes a brief description of the topic, pertinent questions and suggestions about related or prerequisite SupEdGuides. Included also is a matrix to help the intern-architect develop a self-evaluative record of progress. (*See* p. 23.)

"The idea," says Ellison, "is for the intern-architect to read the abstracts to find out if he or she is comfortable with the knowledge possessed on the subject and how well the key questions can be answered. The decision may be made that there is no need to pursue a particular topic further, so the intern-architect goes on to another, working out an individual study approach and schedule." And, of course, developing meanwhile a habit of lifelong learning.

The supplementary education materials focus on six major areas: (1) alternative opportunities in architecture, (2) the architect's office, (3) getting business, (4) delivering projects: pre-design, (5) delivering projects: design and (6) delivering projects: construction. In the last named category, for example, there is a SupEdGuide on contract documents which explains the role of such documents, their structure and format. Penetrating questions are posed, difficult problems are given and activities are suggested.

Epstein emphasizes that the SupEdGuides are valuable not only for the intern-architect who wants to gain knowledge of areas not covered in practical experience, but also to the intern-architect who can use the materials as a tool to help perfect special areas of knowledge and skills. "The SupEdGuides," says Epstein, "are useful also to young practitioners, as well as to people like myself who can use a refresher every now and then."

One important aspect of the IDP is recordkeeping. Each intern-architect has an NCARB file. "The aim," says Balen, "is to provide a method and procedure for recording and maintaining an individual's professional development in a single, uniform document and, in so doing, to commence a habit of recording and filing the important activities of one's total professional career."

The intern-architect also keeps a record which helps to identify those areas where concentration should be applied, and to identify acquired skills. "Perhaps the most important use of the record is the intern-architect's own self-evaluation," Ellison says. "Even with the best effort of the professional sponsor and the continuing advice of the professional adviser, the basic responsibility for all decisions related to internship rests with the intern-architect."

Another key to the success of the pilot project is communications, Balen says. And to help in this regard, NCARB now distributes a newsletter, edited by William Houseman, to all participants in IDP.

Bonham reports a "positive attitude" on the part of all participants in the pilot program. "We are encouraged by this acceptance and desire to be 'pioneers' in an inventive, imaginative program," he says. It is interesting to note that in one of NCARB's evaluations of the pilot program that professional sponsors were asked whether "the results of IDP thus far merit going nationwide with the program." The answer, unanimously, was "yes."

In addition to the SupEdGuide materials, AIA and its members have other challenges to meet if a national IDP is to succeed, says Ellison. "One crucial responsibility is for AIA members to volunteer as IDP professional advisers. On the other hand, professional sponsors, with intern-architects in their employ, have a clear, historical responsibility to be teachers and to provide as many varied opportunities as possible for intern-architect exposure. AIA components must be involved, too—in identifying professional advisers, conducting group learning sessions and, above all, serving as a positive setting or home for the informal peer group activities of intern-architects. And, finally, the Institute itself must keep its members fully informed of their individual and collective responsibilities in making IDP a success." Ellison welcomes comments and suggestions.

Moving toward national implementation with criteria made mandatory.

After the IDP pilot project is finished in May, committees will evaluate the results. Bonham predicts that the eventual recommendation will be to implement the program on a nationwide basis, with adoption of the criteria as mandatory by registration boards. It is also mandatory, he says, that "the profession make this offering, and mandatory that future architects take the offering in its truest form—professional help, guidance and encouragement." □

Interns, Sponsors, Advisers Meet to Compare Notes

William Houseman

One of the intern-architects enrolled in the New Jersey pilot IDP was talking about the problems he'd encountered in trying to gain "meaningful experience." He was one of a dozen young people who, along with a sprinkling of professional sponsors and advisers, had sloshed through a torrential rainstorm to attend an IDP assessment meeting in late October at the Princeton campus.

"I am working for a very small office," he said. "I am the only one, in fact, who works for this architect. We do 100 percent residential work, and about 75 percent of that is early American. My boss has his office in New England. He spends about 95 percent of his time there. I run prints. I answer the phone. I go to the post office. I drive to the airport. I do some drafting. I build models. And I argue with clients."

Asked why he didn't get another job, the intern-architect said he'd tried but couldn't find anything better. "But that's not my point," he continued. "My point is that I don't believe there is anyone in this internship program who knew until now that there was an intern — me — who worked for an architect like that. A lot of the talk I hear here about certain categories of experience is all Greek to me. I have no idea of what you're talking about —and working in this office, I never will."

In speaking his mind so bluntly, this young man was confirming why the coordinating committee felt it was important to organize assessment meetings last fall in all three pilot IDP states. Over a half year had passed since the program was activated in late winter, and it was time to find out how it was working. Besides the Princeton meeting, one was held in Colorado and three in Texas. (One of the reasons Texas became a pilot state was its size; the coordinating committee surmises that if the program takes hold and thrives in that vast swatch of geography, perhaps it can be made to work anywhere.)

A little under half of the intern-archi-

Mr. Houseman is a consultant of NCARB and the National Endowment for the Arts, a writer on environmental subjects and president of the Environment League.

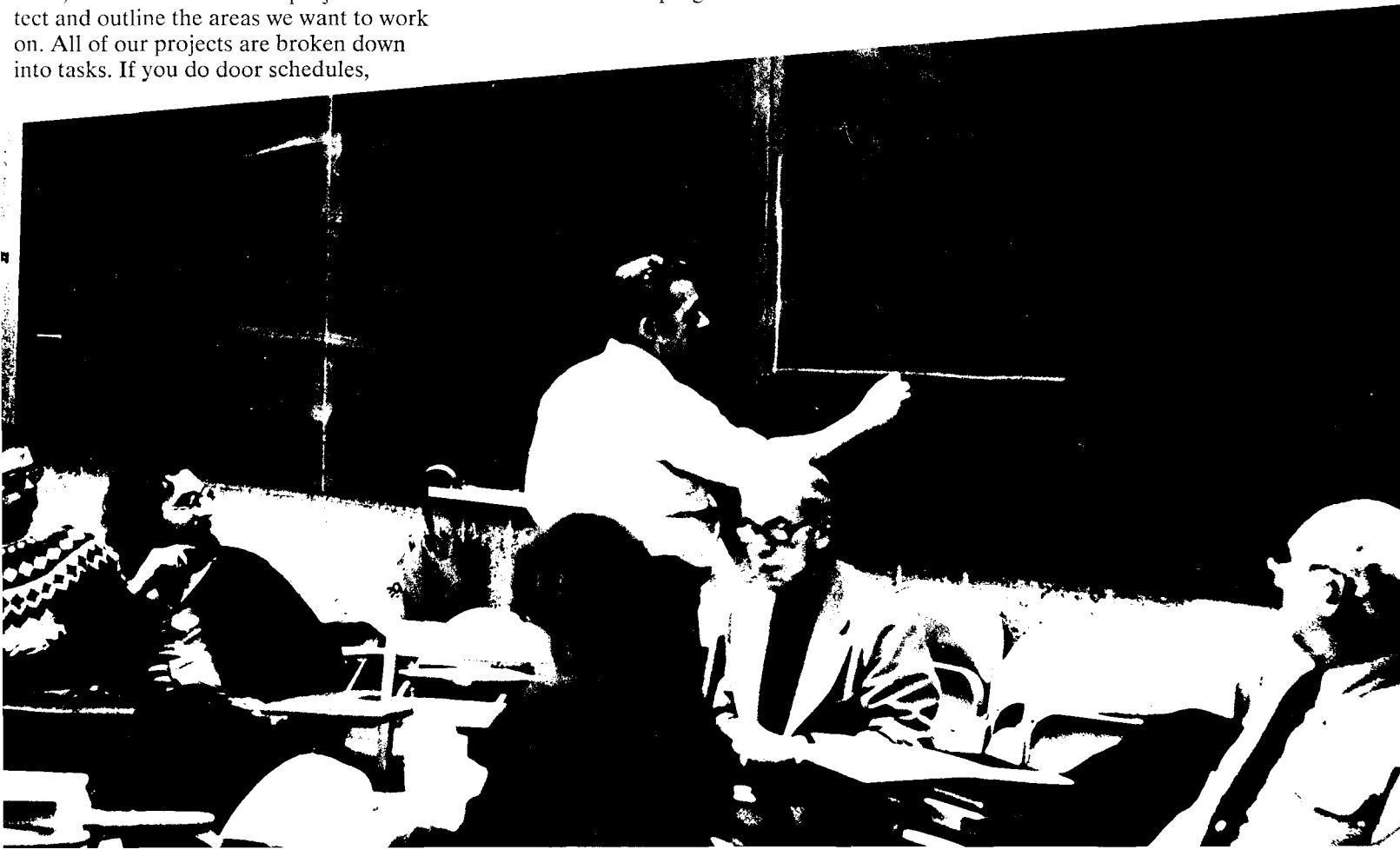
tects in the pilot IDP showed up for the assessment meetings. Because they probably comprise the most positively motivated group within the program, their upbeat attitude came as no surprise to the coordinating committee members who covered the various sessions. What did surprise them, though, was how well the intern-architects understood their personal responsibility for making the program worthwhile. A Houston intern in a small office expressed the idea this way: "No matter what AIA or NCARB can do for you in terms of handouts, mailouts, what to do, when to do it, it's finally up to you. If an intern is to be the self-starter—well, he's also the 'ender.' Just because 5 o'clock rolls around doesn't mean the pencils must hit the drawers and a big gust of wind flashes through the exit doors. What I am driving at is simply that you can do as much as your heart desires. You can stay till 9 o'clock at night, or you can go out and come back. Every once in a while we'll run into one another and say, 'Oh, you're here.' I've found that the answers are available if you just ask the right questions of different people."

Another Texas intern-architect furnished the down-to-earth substance to support his Houston friend's high-minded theory. "The way our firm is structured," he said, "there may be three or four people on a team at the early stages of a project. Starting with the design development, we will meet with the project architect and outline the areas we want to work on. All of our projects are broken down into tasks. If you do door schedules, opening schedules and so forth, you're responsible for everything, including the specs, related to that task. That entire part of the project is yours then, so we're getting the actual experience of drawing it, writing the specs; and when the shop drawings come back, we're usually the ones who check them. We've done this on several projects. Another intern in our office and I have worked on two projects together where he was assigned to the interior details on one while I was on exterior details. Then we switched on the next project. Of course the project architect is ultimately responsible, no matter who's telling you that you've got to get experience. But by having the individual team members go over the specs first, for example, the project architect can feel that a lot of effort went into those details that he can include in the specs—things that one man sitting by himself and writing specs may miss."

'If I do all the things that I'm supposed to do, will I pass the exam?'

Perhaps the most common confusion to emerge from the IDP assessment meetings had to do with the program's goals. A New Jersey intern-architect asked the question that was repeated everywhere else: "If I finish the program and do all of the things I'm supposed to do, *will I pass the exam?*" Samuel T. Balen, AIA, IDP's national director, has heard the question so often that he tries especially hard to broaden the participants' perspectives. He said in New Jersey, "If you commit yourself to completing the IDP successfully, I guarantee you that the professional exam will be one of the least difficult hurdles you'll ever have to face. While it's true that one objective of the program is to provide documentation to NCARB and its member boards that you have qualified to take the exam, the goal of the program is much more ambitious. It's to make you a better architect."

Yet the professional exam remains a reality and a hurdle. As such, it can offer the intern-architect a convenient standard of reference; it can quiet any anxieties an individual may have about whether the experience he or she's acquiring squares with the profession's measurable expectations of what he or she ought to be acquiring. At the Dallas/Fort Worth Airport meeting, one articulate intern-architect accentuated the subjective benefits of the IDP: "Self-evaluation has been one of the most helpful elements in the program. I'm at the stage of my experience—I'll be taking the exam this year—where I need to know whether I'm ready. So I got a lot out of just seeing where I thought I was in



the profession. It was a hard thing to do. But it made me more aware of where I had to increase my skills. This process, plus talking with my boss—we have a small office and he sits right behind me—has enabled me to put more emphasis on aspects of our practice where I've been weak. If, for example, my boss has contractors coming in who are trying to shave money off a project, or if we're filling out a request for a payment—he'll go over it with me. Some of these things he lets me do, some he still does. But at least he is aware of my involvement in gaining experience, and sometimes he makes me aware of it, too."

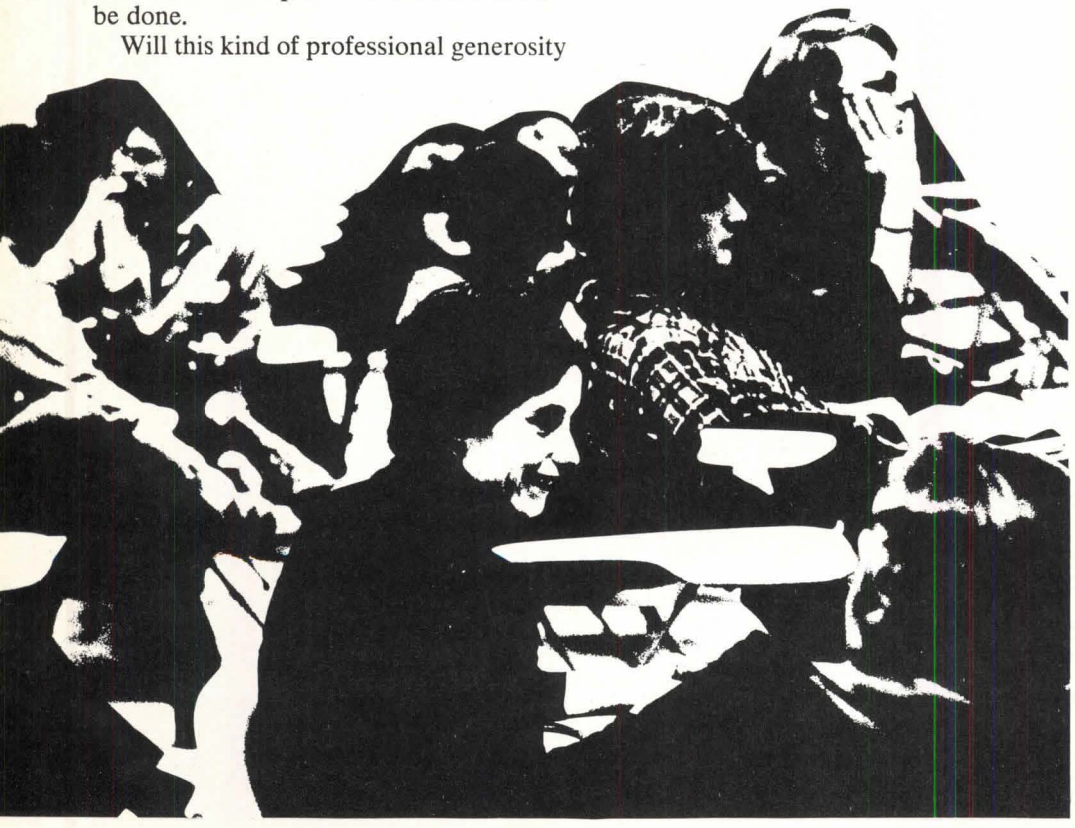
Some of the sponsors ask, in effect, 'what's in the program for the firm?'

For the most part, the professional sponsors and advisers who attended the IDP assessment meetings chose to listen while the program's prime beneficiaries—the intern-architects—did most of the talking. The message came through from them, however, that the intern-architects are not the only pioneers in the program. Being a sponsor or adviser in west Texas or Colorado Springs can evoke a sense of isolation in mature practitioners as well as in young aspirants. It is natural for a sponsor to wonder, for example, about the economic consequences of perhaps bending over backwards to give an intern-architect experience in some peripheral aspect of the practice—particularly if there is essential pick-and-shovel work to be done.

Will this kind of professional generosity pay off? If so, when? Will the young person still be around to help with his increased competence? If he's not, does it really matter? A Fort Worth sponsor described the nature of the internship challenge: "The real big question that AIA is going to have to answer—and then sell to its components—is: What good is it going to do for a firm to take part in this program unless it not only helps the intern but also helps itself?"

He then identified some of the shadings of opinion that must be recognized and coped with. "We're not going to return to the old atelier, where the boss is spending all of his time teaching his intern. It's got to be too much of a business for that to happen. We are going to find all kinds of attitudes, ranging from that of the principal who says, 'I'm not going to waste my time teaching an intern; that's the kid's worry, and if he intends to disrupt my shop, let him go somewhere else'—to the other extreme: the architect who will spend some time at the possible expense of his own business to help these young people learn some things, even if it's not going to help the firm. Somewhere between these extremes, there must be firm ground on which a majority of architects can stand."

The professional adviser, the AIA architect outside the intern-architect's firm who is committed to working in the IDP, is also in an on-the-job learning situation. In theory, the IDP presumes that both this person and the sponsor share an identical philosophical interest in furthering a particular intern-architect's professional development. In practice, however, they may still share this interest but are finding nonetheless that their differing professional vantage points may require rather more tact and probity than might be exercised in their ordinary day-to-day peer relations.



The role of the adviser is clearly proving its worth, most importantly from the intern-architect's perspective. Said one Houston intern, "When we guys from different offices meet with our adviser, our own office practices are exposed for comparison with everybody else's; and this gives you a point of reference with another intern. The intern's not standing alone but finds he's in the same boat with three or four others. Our adviser has led us to think in this larger context, and we all compliment him highly."

Of all the participants in the assessment meetings, the only ones who expressed outright skepticism toward the IDP came from the student ranks. A "pre-meeting" was organized at Princeton to acquaint the New Jersey architectural students who are approaching graduation with IDP's essentials. Sam Balen made a formal presentation, and members of the coordinating committee briefed the students on the extensive supplementary education efforts, the advisory system and the profession's commitment to making the IDP a success.

A tradition of professional generosity toward aspiring young people.

Came question time, and the first question: "Why would any architect want to bother working in a program like this? What would be in it for him?"

The coordinating committee members present stirred nervously, not sure of whether the problem implied by the questions was technical or generational. One of them rose and spoke. "It may sound corny," he began, "but architects take an idealistic view of their responsibilities toward the young people who will come along and take their places. The architects who have arrived have always believed in helping the architects who are on their way up. It's the way architects are."

After the meeting, the coordinating committee people, along with the sponsors and advisers, got onto the subject of student skepticism. One adviser volunteered, "You have to remember that very few professionals here in New Jersey ever come into the schools. The students know architects only as teachers, so there is no special reason why they should assume the architects who are going to be their employers are also idealists."

"We've got our work cut out for us," a coordinating committee member said. □

AIA SUPPLEMENTARY EDUCATION PROGRAM

SupEdGuide TITLES

Legend:
Symbols indicate the level of IDP subject coverage in SupEdGuides.

■ Principal Coverage

▣ Secondary Coverage

IDP PRACTICAL TRAINING AREAS

DESIGN AND CONSTRUCTION DOCUMENTS

1 Environmental Analysis
2 Programming
3 Client Exposure
4 Schematic Design
5 Building Analysis
6 Code Analysis
7 Cost Analysis
8 Design Development
9 General Drafting
10 Quality Control
11 Material Research
12 Consultant Coordination
13 Document Coordination
14 Specifications

IDP PRACTICAL TRAINING AREAS

CONSTRUCTION ADMINISTRATION

15 Bidding Procedures
16 Submittals
17 Instructions
18 Inspections
19 Progress Meetings
20 Dispute Considerations
21 Contractors Requisitions
22 Project Closeout

OFFICE MANAGEMENT

23 Management
24 Personnel
25 Contracts
26 Public Relations
27 Promotion
28 Professional Responsibilities

IDP RELATED SPECIAL ACTIVITIES

29 Computer Programming
30 Construction Management
31 Planning
32 Interior Design
33 Landscape Architecture
34 Building Construction
35 Environmental Engineering
36 Structural Engineering
37 Project Development
38 Applied Research
39 Teaching
40 Community Service
41 Professional Activities
42 Feasibility Studies
43 Environmental Statements
44 Energy Conservation
45 Historical Restoration
46 Code Compliance Review
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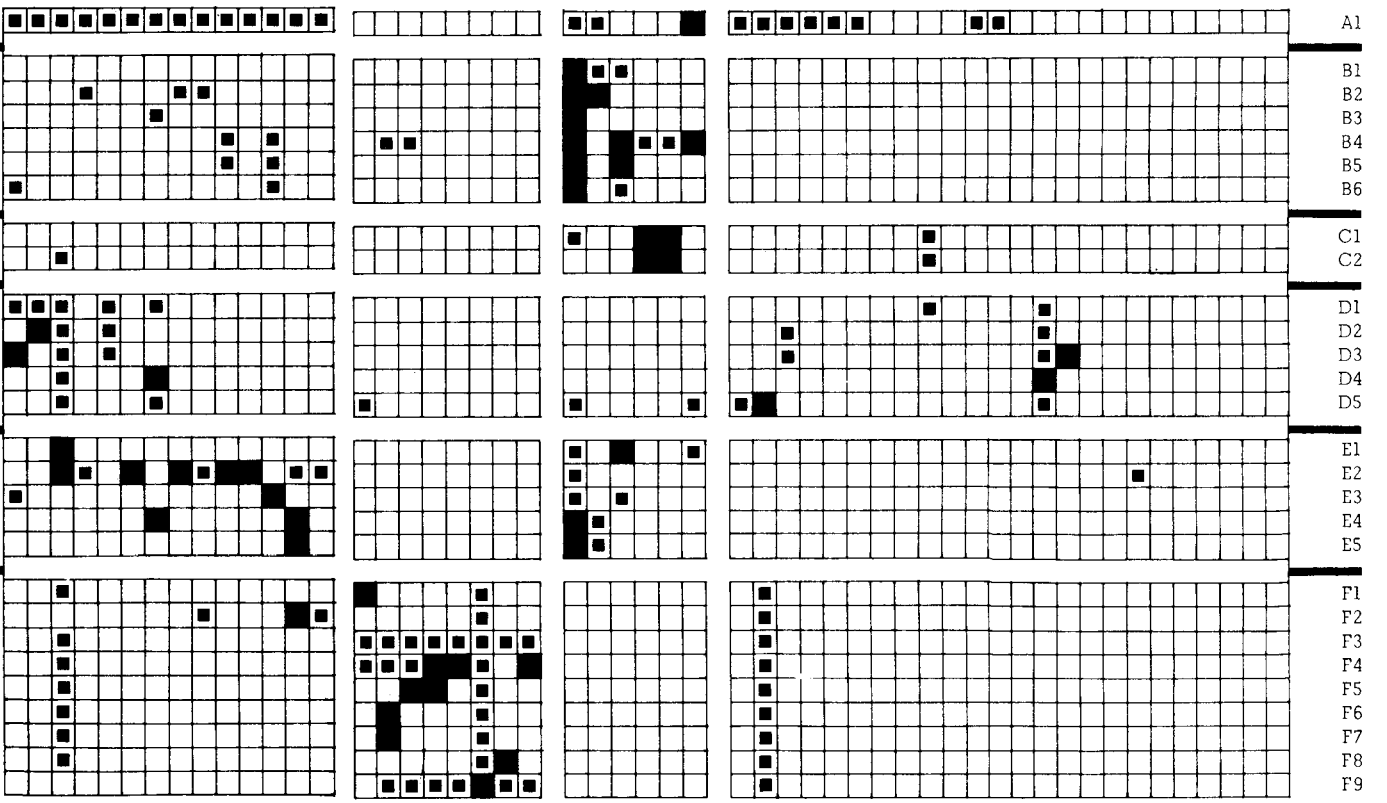
Alternative Opportunities in Architecture	A1	Architects' Roles	A1
The Architect's Office	B1	Types of Practice	B1
	B2	Internal Office Arrangements	B2
	B3	Financial Aspects of Practice	B3
	B4	Legal and Ethical Considerations	B4
	B5	Insurance Aspects of Practice	B5
	B6	External Arrangements	B6
Getting Business	C1	Organizing for Getting Business	C1
	C2	Marketing Methods	C2
Delivering Projects: Pre-Design	D1	Project Initiation	D1
	D2	Program	D2
	D3	Site	D3
	D4	Financing	D4
	D5	Delivery Approach	D5
Delivering Projects: Design	E1	Negotiating the Owner-Architect Agreement	E1
	E2	Managing the Design Phase	E2
	E3	Selecting the Team Members	E3
	E4	Budgeting Project Costs	E4
	E5	Controlling Project Time	E5
Delivering Projects: Construction	F1	Proposal and Award	F1
	F2	Construction Contract Documents	F2
	F3	Relationships During Construction	F3
	F4	Progress of the Work	F4
	F5	Site Visits	F5
	F6	Submittals and Approvals	F6
	F7	Changes in the Work	F7
	F8	Construction Progress Payments	F8
	F9	Claims and Disputes During Construction	F9



Evaluation: The University Of Illinois' Chicago Circle Campus as Urban Design

Nory Miller

At the time, it captured everyone's imagination. The University of Illinois' Chicago Circle campus was what the 20th century was all about. It had a mission, a democratic American mission. This was no Ivy League school; it was low-cost, take-a-subway, get-your-equal-opportunity-here education for everyone, including a stratum of society that had never been to college before.

No more revolutions in the cafe, this

Ms. Miller is managing editor of *Inland Architect,* affiliated with the Illinois Council and Chicago chapter/AIA.

was government talking and it was talking big—118 acres; $177 million; 20,000 students, maybe 30,000.

For years, the university's Chicago branch had been stuffed into makeshift quarters on an old shipping pier. But the St. Lawrence Seaway was opening and the pier had asked for its freedom. Circle's time had come. It was the late '50s and provincial, gangling America had become the richest, most powerful country in the world.

When the University of Chicago was built, 60 years before, it painstakingly modeled itself after Oxford, even choosing limestone that would weather and "look established" quickly. But America had gained confidence since then and Circle was not only new, it was to look new. *And improved.*

For architect, planner, mastermind, the university chose Walter A. Netsch Jr., FAIA, of Skidmore, Owings & Merrill. Still young, Netsch already had been involved in two huge planning projects—the wartime atomic research community at Oak Ridge, Tenn., and the Air Force Academy in Colorado Springs.

The site was Congress Circle in Chicago's Little Italy and Greektown neighborhoods, urban renewal land previously scheduled for housing. The site was fed by every manner of highway and public transportation not far from downtown and prepaid largely from federal and city coffers.

After five years of master-planning and three years of construction, the doors opened in 1965 to the first 9,000 students. The second building phase had only just begun, yet the campus captured an honor award from the local AIA chapter and a total design award from the National Society of Interior Designers.

Architectural Forum devoted 25 pages to the campus in its September 1965 issue —more pages than it had ever devoted before to a single project. The magazine described Circle as "a slightly scaled-down

model of what a 20th century city might be."

And that is the point of taking a second look at the urban design of Circle campus, 11 years later. It is not entirely farfetched to think of Circle as the product of the "best and brightest" of its moment. It is the campus, the new town, the downtown. It is urban renewal and total design. It is, perhaps, what we knew then.

Netsch's game plan reads a little like the International Congresses for Modern Architecture (CIAM) Athens Charter, at the time the profession's most sincere and serious urban design manifesto, although he rejects the comparison. As CIAM was dedicated to recognizing and separating the four basic activities of mankind into homogeneous zones, Netsch proposed grouping campus functions—lecture halls, classrooms, labs, offices, etc.—into similarly separate buildings. As CIAM was evangelical on the subject of separating trucks from cars and cars from people, so Netsch "pedestrianized" his campus and created an elaborate double walkway system.

These were Netsch's main planning innovations, but there were many complicated urban design decisions, both by Netsch and his client. Equally complex are the contemporary reactions by the "users" of Circle campus.

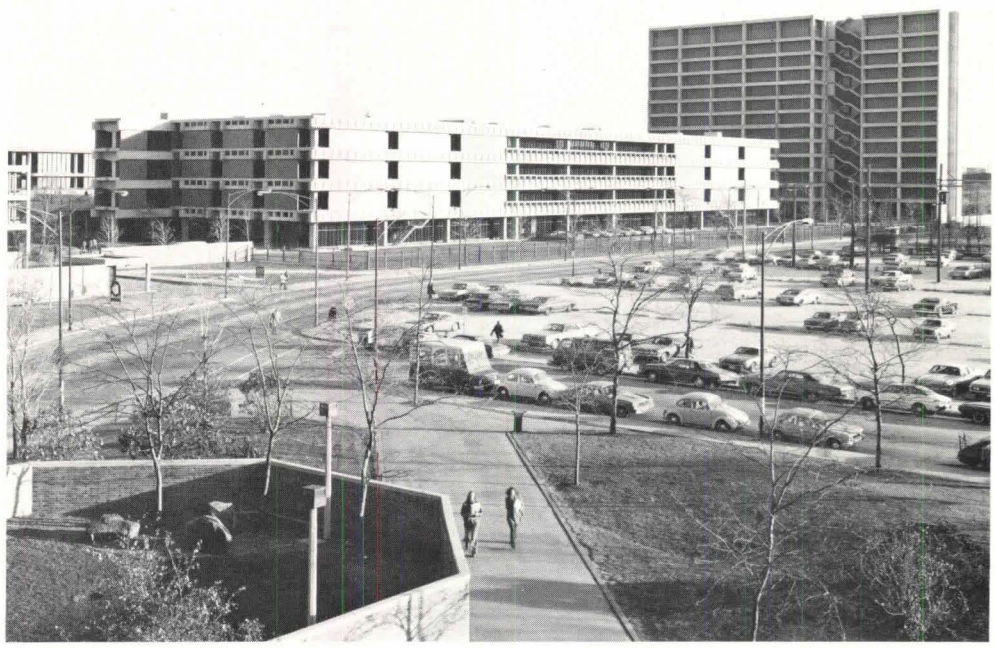
Today, clearly the most common complaint—by professor, student or staff—is that in 11 years, a campus "community" has failed to gel. It's a tricky problem. A commuter school means somewhere else is home. And most students have outside jobs besides. So does a number of faculty.

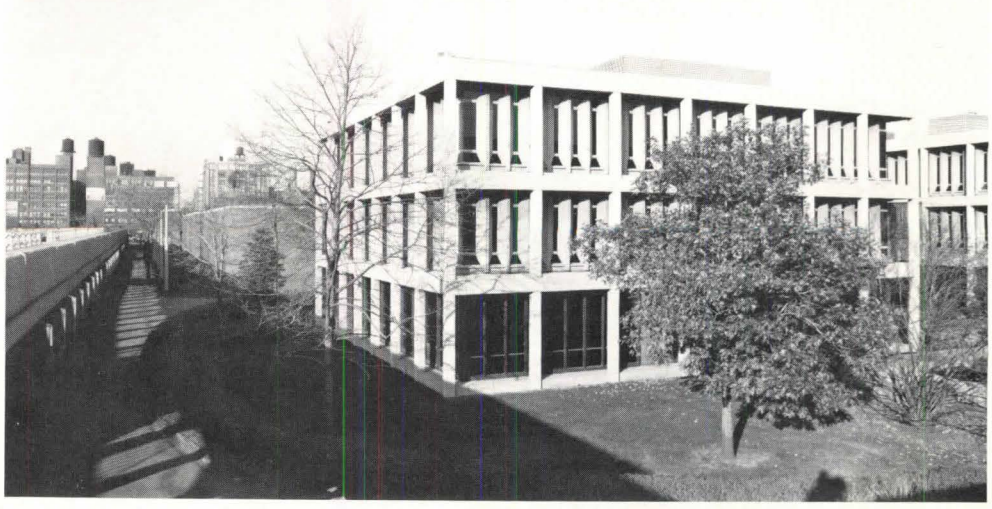
However, say the user-critics—and the overwhelming majority of people interviewed were disaffected with the campus—there were mistakes in physical planning that aggravate the situation.

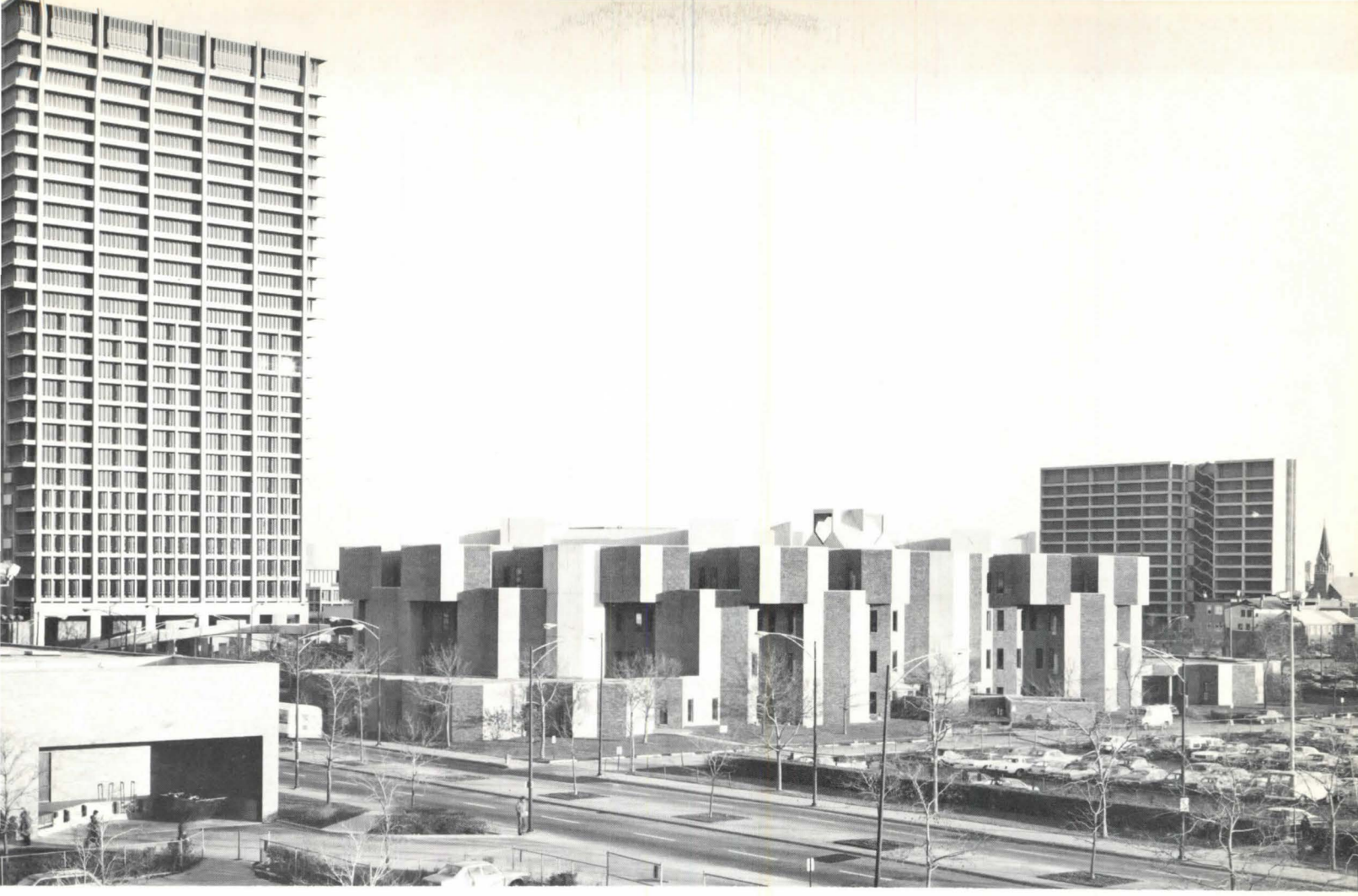
Circle was to be new and improved and the old ideas of organizing a university into colleges or into disciplines were ideas from other centuries with other economies and other missions. At Circle, classrooms were all in classroom buildings, offices were all in a highrise office building, lecture halls were all in the lecture center, lounges were all in the student union. One advantage, Netsch argues, is that this forces faculty to do most of the traveling between classes while students just head across the hall. Since there are fewer faculty than students, congestion is avoided.

It also permits heavier use of fewer physical facilities. The same room can be scheduled for chemistry, psychology and American literature all in one morning.

University Hall and amphitheater (photo left); library and office tower (below); classrooms (bottom); behavioral science building (center of photo right).







As a planning idea, this only got to first base. By the time the first phase of buildings opened, it was already clear that the second phase was going a different route. The faculty was dead set against the original plan. And it was also becoming apparent that instead of the estimated 300-400 graduate students, Circle was headed toward 3,000-4,000, maybe more. Graduate students, architect and client agreed, need their labs, faculty offices, libraries, etc., close together.

But the first phase buildings, designed for lower division students, *are* grouped by function—the lecture center with different-sized halls, the central library, student union, the little classroom buildings. And both the present director of physical plant and head of auxiliary services are still enthusiastic. The goals of efficiency and traffic control have been well served.

Some faculty comments: "It is disastrous academically; there is little rapport between students and teachers"; "We don't have a community, we have an hourly changing of the guards."

Students are also resentful. Frequently, one hears a variation of the comment: "This place is like a factory which turns out graduates instead of products."

A survey completed in 1970, using a sample of 1,000 returned questionnaires from students, gives a fuller explanation. The majority of the students answered that not enough space had been provided for studying (66 percent), having fun (60 percent) or being alone (80 percent). It turned out that students infrequently used the student center lounges or the vending machine "minicenters" in the classroom buildings or the TV rooms. Students also answered that they infrequently talked to an instructor outside of class. The survey indicated that the library was the main place for studying and the student union cafeterias were the main places to socialize and that these weren't enough.

Thus two problems emerge. One is how spaces are grouped, the other is what spaces were provided at all and at what scale. One cannot very well be alone in a corral-sized lounge.

What happens between classes was thought 'as important as what happens in classes.'

The administration is well aware of these problems and is trying to correct them. Says Vice-Chancellor Eugene Eidenberg: "We have a very efficient physical plant—but that doesn't work as a commuter campus." So the process now is to convert other rooms, as widely distributed on campus as possible, into lounges, nap facilities or study halls and to add recreation like ice skating (actually part of Netsch's plan that got cost-cut), indoor tennis and a rathskeller—to the limited extent that money and space are still flexible.

All seem to agree that whether offices or libraries or labs are spread throughout the different campus buildings, the "residual" spaces should definitely have been.

Netsch had hoped that the out-of-doors would provide many of these residual spaces. He planned to punctuate the grounds with "urban events" that would capture one's attention on the way somewhere for a moment of rest or conversation. "What happens between classes," said Netsch in 1965, "came to be regarded as being as important as what happens in classes."

One of the observations that the 1970 student survey indicated was that students turn out to spend very little time outdoors at Circle.

Some of Netsch's plans were never realized. His ice skating rink was trimmed off the budget. And one of his corner-of-the-campus gardens became a parking lot instead. His two tree gardens equipped with four kiosks each—one for garbage, one for folding chairs and two for hot dog and ice cream stands—sit calmly in the middle of campus with the garbage still waiting for the chairs and the food.

Yet the reaction to what was realized is less than favorable, with the exception of the classroom building courtyards.

Absolute center of the campus is what Netsch calls Circle's agora. It is the roof of the lecture center—ground plane to the

second-level walkways. In each corner is a sunken exedra and in the middle, a full-scale amphitheater. It was to be a place for intellectual discourse or socializing, taking a nap, soapboxing, plays and concerts.

Even in nice weather, say the students, this is cold and forbidding. Says a chemistry prof: "It was great during the 1969 demonstrations but now it's not used much. We're down to Jews vs. Arabs once a year." Vice-Chancellor Eidenberg volunteers: "It ain't like sitting on grass."

It ain't like an agora, either. Instead of a bustling marketplace with hundreds of reasons to be there, what Circle has is a leftover roof with some crater-like dents in it.

Much of what is greenery on campus is hedged off from the students and exists only as a foil to the buildings. The one real garden is at such a far corner of the campus that many students don't know it's there.

"There are lots of spaces between buildings," observes one professor, "but few function as social spaces." "The voids are leavings, not places," observes another.

Like St. Elia's classic sketches, Circle campus has highways in the sky. Not for cars, though. Cars are banned from "the city"; they are left in parking lots around its edge. The highways are for pedestrians. Netsch calls them pedestrian expressways.

They are large, organized on a grid and built in granite where it could be afforded and concrete where not. At ground level is another circulation system for pedestrians —a series of intimately scaled, asphalt paths curving from one building to the next. Wherever possible, the upper walkways shelter the lower ones from rain and snow.

Netsch created the double circulation system to relieve traffic congestion between classes. Not one person interviewed mentioned any problem with congestion. On the other hand, not one person admitted to using the "expressways" more than rarely.

In winter, everyone agrees, the skyways

A system of two-level pedestrian 'expressways' designed to ease traffic congestion.

ice up and are dangerous. During good weather, most of which occurs during the lower enrollment summer program anyway, they just aren't that convenient. Why not?

- "The walkways aren't the shortest way to go from one building to another."
- "You walk to University Hall on the walkway and all you get to is a windy, empty platform where you wait for an elevator. It's cold and it's dangerous."
- There are doors at the second levels of buildings but lobby activities are at the first. So why go up to go down?

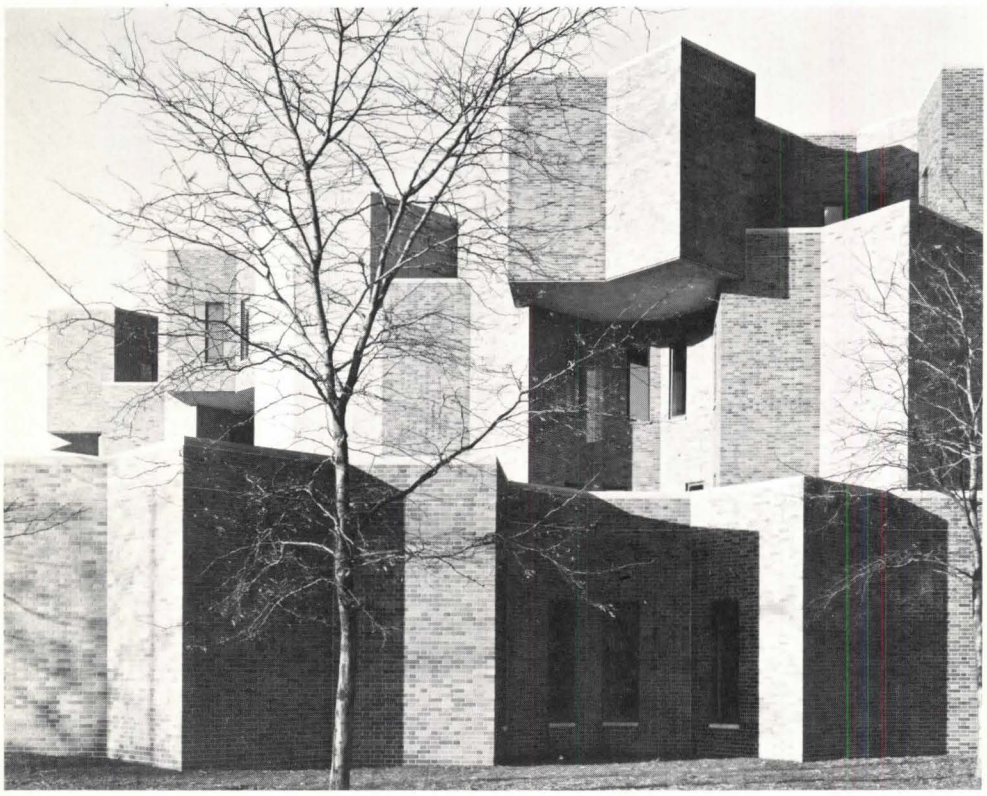
Meanwhile, maintenance people complain that the walkways weren't designed for efficient snow removal. Snow has to be knocked off and then picked up again from the ground, they say. Students complain of getting an avalanche of snow from above in the process.

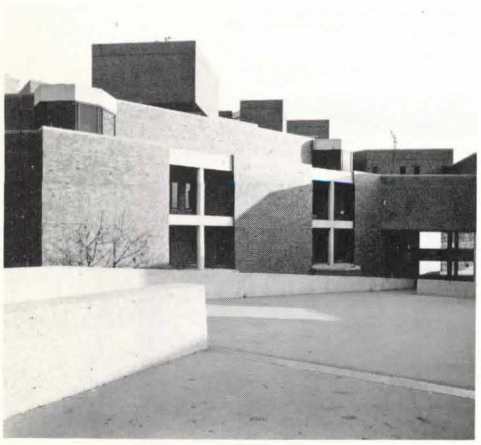
Others find that the structures cut them off from the rest of the campus and make it difficult to get around. "They block any clear view of the campus," says one student.

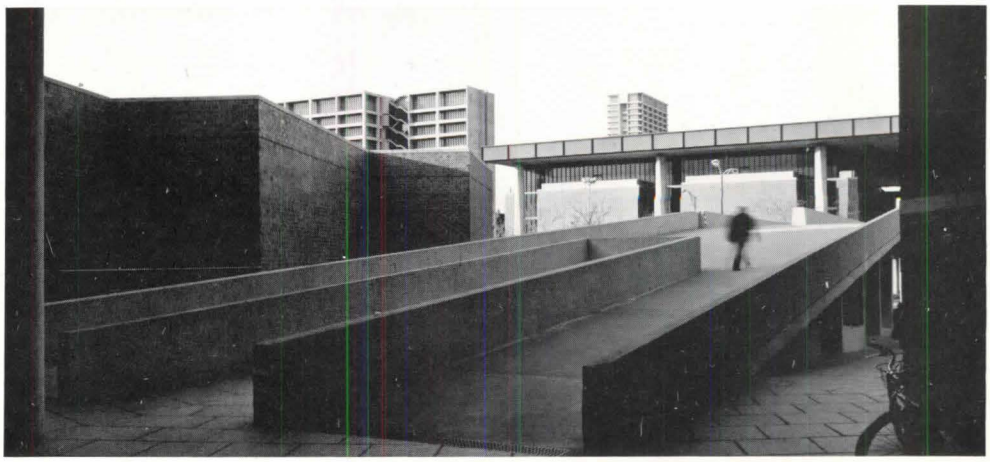
Most agree they do work as shelter for the ground paths except to the classrooms where, for esthetic reasons, the ground path enters on one side and the walkway on another. "It was a clear case of conflict between classic form and linear system," says Netsch.

"When the structure of the walkways weakens," says the director of physical plant, "we'll tear them down. No one uses them anyway."

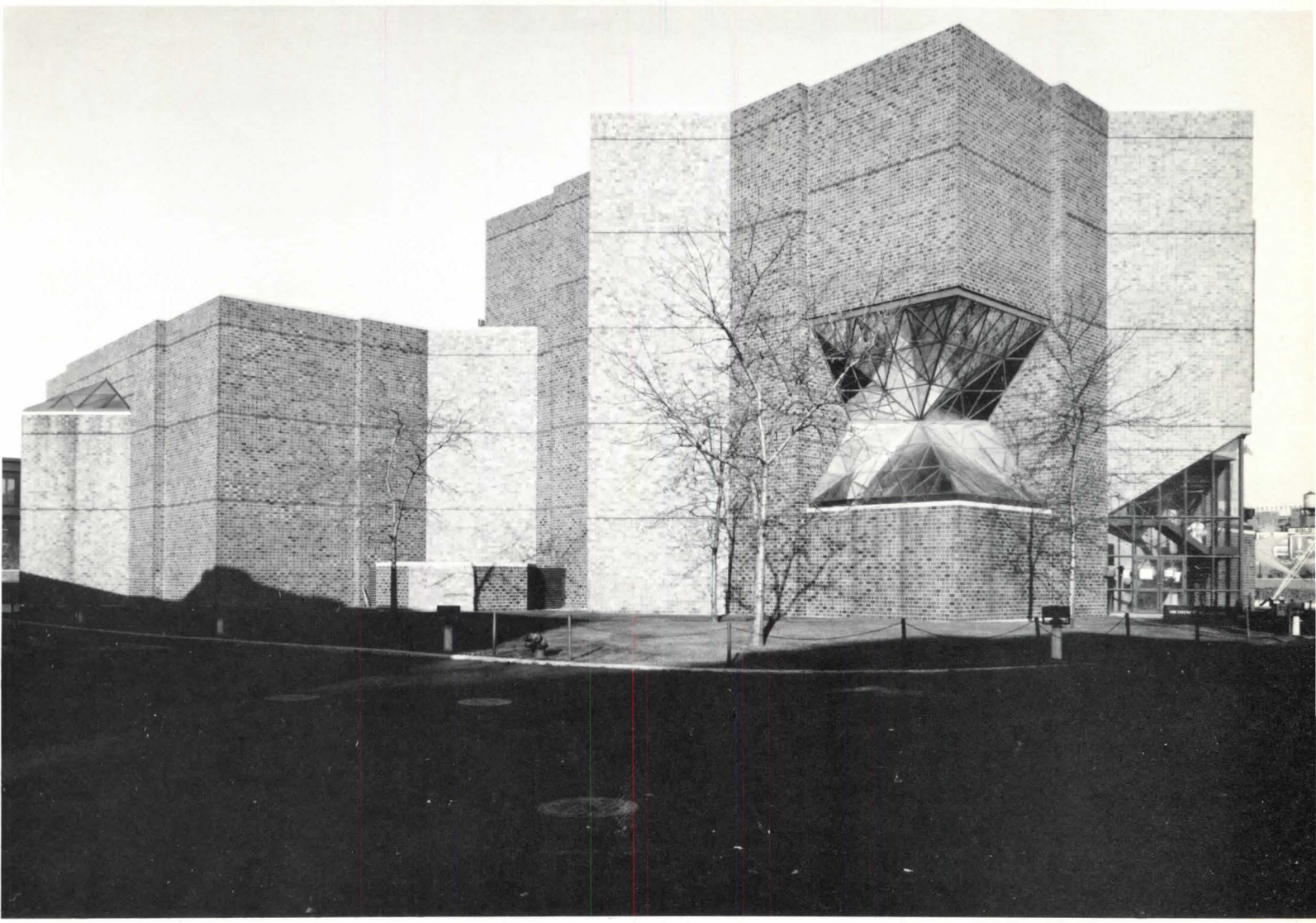
While pedestrian is separated from pedestrian with the two systems of walkways, one thing that is not separated from anyone is the servicing of buildings. Trucks use the same ground paths as peo-







Behavioral science building (left); science and engineering building (below left); a ramp to elevated walkways (below), and the art and architecture building (facing page).



ple and loading docks and garbage bins frequently adorn main entrances. Garbage also is a charter tenant in the kiosks of the two tree gardens. An education professor exclaimed: "I have never been so aware of garbage in my life."

Says the director of physical plant: "The campus was planned without enough attention to deliveries and refuse removal. Until we put in an extra driveway to University Hall, toilet paper and garbage had to be hauled 150 feet in and out on the janitor's back."

Circle is built as a series of small buildings dotting the landscape rather than a continuous sheltered space. Netsch still has hopes that the buildings can eventually be joined by galleries in which the walkways would simply be upper corridors.

He grouped the buildings according to his "drop of water" theory which means that generalized, heavily trafficked functions occur in the center of the campus—things like the library, lecture hall and student union—with specialization increasing as one goes outward. The layout is axial and gridded. Netsch may have been led to the grid by early intentions of using existing utilities. But even in his earliest criteria, he emphasized the importance of an "orderly, coherent design with an understandable relationship between each element and the whole."

The buildings are all walk-up, no more than four stories, with two exceptions. Largest is the faculty and administrative office building—University Hall—a 28-story highrise. Netsch thinks of University Hall as a symbolic and navigational landmark for the campus.

Amazingly, nearly everyone grumbles about getting lost—even longtime employees. Although Circle's ground plan is almost classically clear in aerial view, it apparently is not so in the thick of things. Teachers and students alike groused about "constantly walking into blank walls"; having to "walk all the way around to get into a building"; there not being "a system you can learn like street patterns." It is a situation not helped by the almost total absence of exterior signage. Says one art instructor, visiting for a semester: "The thing is, you can't even ask directions. No one knows how to explain where buildings are except by other buildings. There are no visual reference points."

A compact collection of mainly small buildings presided over by a highrise office tower.

The relative location of generalized and specialized buildings seems to have been successful and the compactness of the layout is appreciated. Most of the buildings are located on about one-third of the site.

There is no agreement about a series of buildings instead of one enclosed space. Some like trudging through the snow to class, others protest. Many, however, suggest that the gales on campus are indeed formidable, and suspect the buildings of accentuating wind velocities.

Lowrise appears to have been absolutely the right decision, but many add that Netsch didn't go far enough. Twenty-eight-story University Hall is a very unpopular building. On the one hand, even though it is reserved for office space, there is sufficient student traffic to overwhelm the elevators. On registration days, it is a spectacle.

On the other hand, there is quite a number of faculty who claim only to go there once a semester—registration day—and to live out of their pockets the rest of the year.

One English teacher said the tower made her feel like she was in a medieval castle frowning down on the serf students

—"the opposite of the professed democratic mission of the urban campus."

The 28th floor is the office of the chancellor and vice-chancellor. Netsch calls it the campus' "ivory tower." Current Chancellor Donald Riddle, as every chancellor before him, calls it embarrassing.

There is a separate elevator from the 27th to the 28th floor. "It isolates the top administration," says Riddle. He wants to move out and turn the place into a faculty club.

Previous chancellors have wanted to turn it into a museum, a graduate library and a student center for the humanities.

Circle is now doing a new master plan. It's a complicated situation. Netsch worked out what kinds of spaces to build

Cutbacks, changing enrollment and a broke legislature require a new master plan.

based on elaborate projections of student enrollment. Then the enrollment changed —more graduate students, fewer science majors, more professional school trainees —than expected.

In addition, a number of buildings and extensions from phase two and three never got built. A Nixon Administration cutoff of aid to higher education, the end of the baby boom and a broke Illinois legislature didn't help.

"It's not that we don't have enough space," says the vice-chancellor. "It's that we don't have the right kind of space for our current needs. But the state won't give us building funds because we have all the square footage our enrollment justifies.

"The problem is that the mode of construction is pretty unyielding. It's a major expense to adapt anything to a different use. I don't think anyone could really have predicted the future, but it's foolish to freeze an academic program by building so inflexibly."

A widely disliked symbol of this inflexibility is classroom seating that resists rearrangement by either faculty or students. Other hard to change ways in which the plan has not proved out:

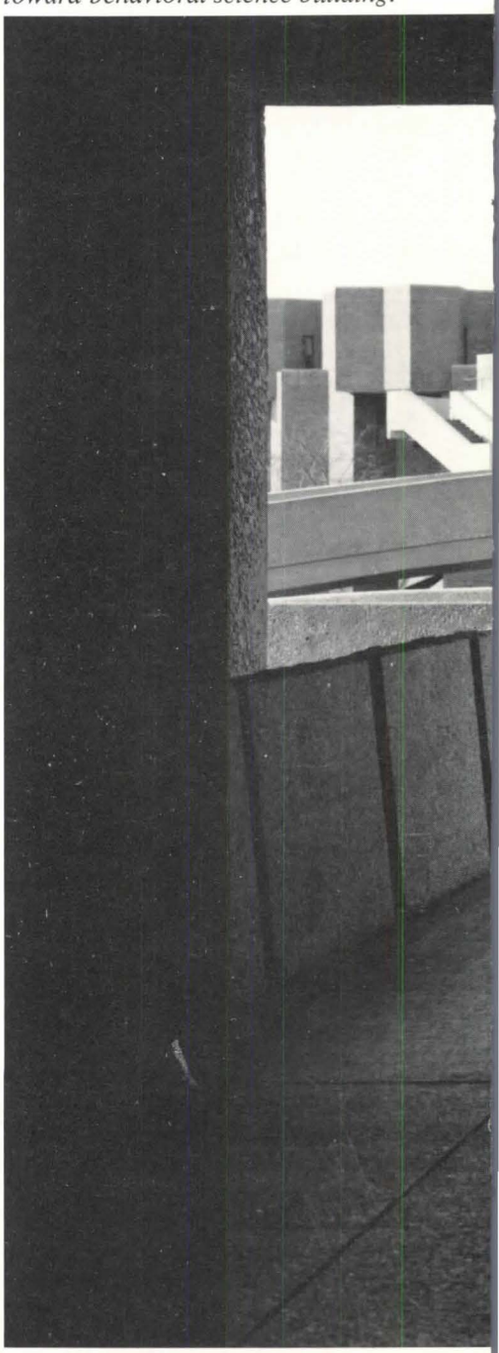
- No one foresaw the need for "defensive" design necessitated by the escalating rates of crime and vandalism.
- The technical wizardry of closed-circuit TV for every lecture hall goes practically unused. Students didn't like it. There is also a deck washing system "with pump and everything" that has not been used.
- The computer center is in far more demand that it can handle. It was geared for scientists but is now overwhelmed by the social researchers.
- The library has had to be retrofitted for electronic information retrieval.
- The energy crunch and price rise have made maintenance and budget administrators antagonistic to the inoperable windows and reheat coils of the HVAC system.
- The same people grouse about the custom details which make replacing a few floor tiles or a door a major expense and headache.
- When Circle was planned, the trustees made a conscious decision not to design for the handicapped because the university's main campus in Urbana was fully equipped. Since then, the Occupational Safety and Health Administration has made things pretty hot.
- Netsch himself pointed out another. In the early buildings he used rough materials inside to discourage graffiti. "But spray paint is something else entirely," he admits, "and we found for the later buildings that plaster makes the most sense because it can be repainted."

Somewhere along the line, urban design means: How does the campus fit into the neighborhood? Once upon a time that was a very tense question. The Italians and Greeks living in Circle's neighborhood had so little use for a huge university on home turf that they went to court. To the Supreme Court. And they lost. The Greeks moved to another part of Chicago. So did a lot of Italians.

The university had such fondness for the guy next door that it instructed the architect to build a wall—solid brick in some places, fence in others—around the whole campus.

The animosity, say the faculty and administration, is just beginning to die down now. Now the biggest argument is how to keep the students from using up all the street parking.

Rotunda of the behavioral science building (left), and view from University Hall toward behavioral science building.



There is no question, of course, but that the animosity had to do with wrenching a piece of land away from people who wanted to hold onto it. As a result, the neighborhood has really never "come back," none of the neighborhood things like cafes and little stores and sandwich places that usually adorn a college area has sprung up. That frequent attempts to proffer campus facilities to community organizations have met with only limited success may indicate the serious and destructive aspects of this kind of radical urban surgery. Yet is it too soon to really tell what the full cycle will bring.

The physical design seems to be a deterrent to community relations, as well. Neighbors complain of the wall, the stretches of parking lot between it and them and the "different" and "mean" look of the campus.

What is of more concern to on-campus people is the fact that Circle is deserted by 4 P.M. weekdays and on weekends. It is so deserted that it is not only susceptible to criminals but to packs of dogs. There is little physically to be done at this point—Circle is a large single-purpose environment, separated from its neighborhood. Administrators are instead working on extending classes into evening hours and catalyzing the erection of student housing nearby.

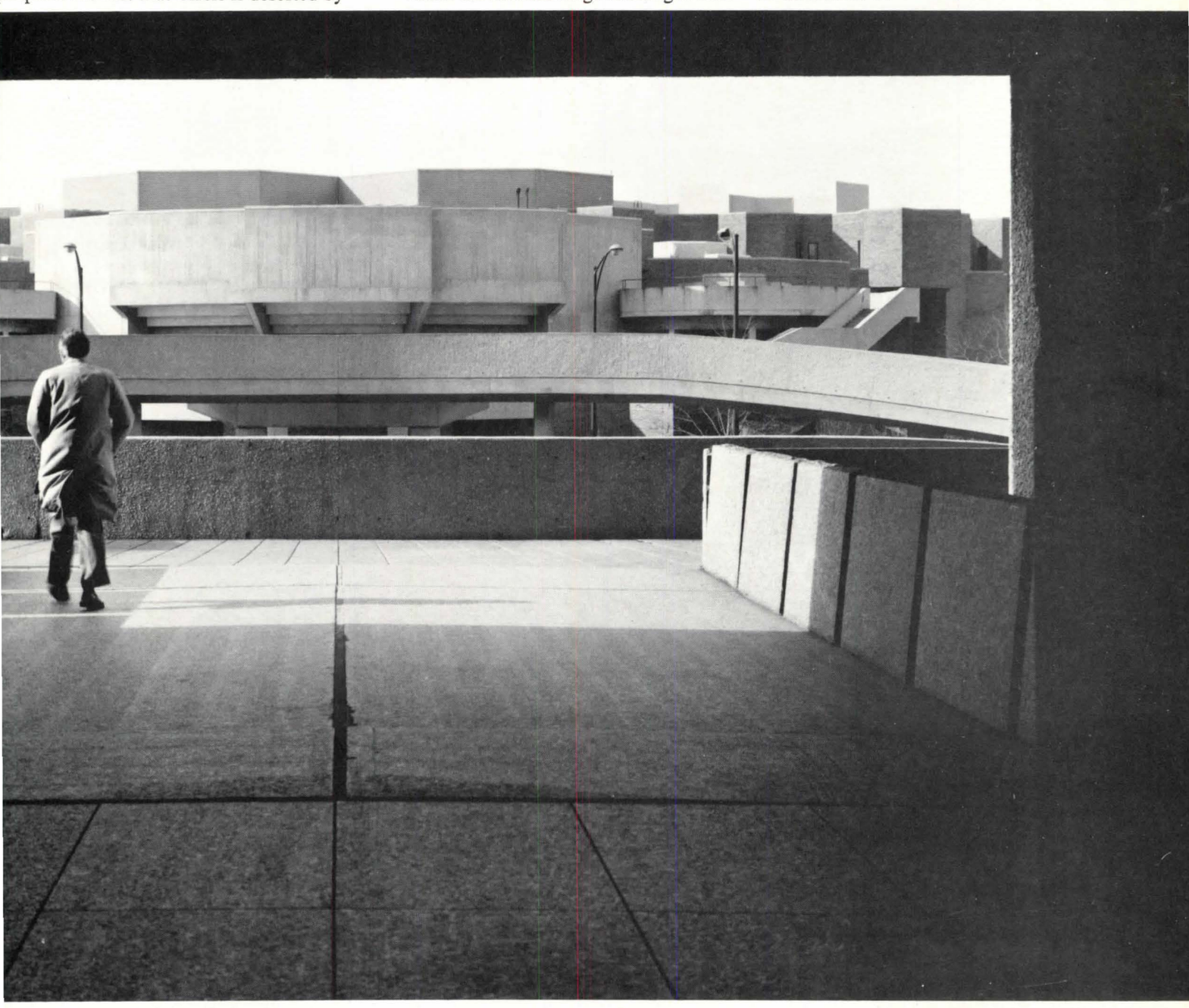
'Many of the roots of the problems at Chicago Circle campus are the same as in our cities.'

Circle campus was built with ambition and a sense of adventure by both client and architect. Its disfavor today almost mirrors the disfavor in which the general planning implements and goals of the midcentury are held.

There are shortcomings that might have been predicted even at the time: the redundancy of a second pedestrian circulation system; the resistance to use of the upper-level system; the visibility of garbage; most important, the unsuitability of a fixed program for anything as volatile as education.

But many of the roots of the problems at Circle campus are the same as in our cities. That single-use zoning, expressways through urban centers and large-scale urban renewal "islands" are in disrepute is apparent in city council chambers across the country.

The disillusionment is not so much with technology—for now many are willing to give up washing machines, electricity or even computers—but with an environment that calls up the image of the machine. If TV teaching and highrises are unpopular on Circle campus, it is the images of impersonality and power that are no longer so attractive. □



Profile: AIA's New President John M. McGinty of Houston

Andrea O. Dean

The Institute's youngest president, 41-year-old John M. McGinty, FAIA, of Houston, has the energy and inventiveness characteristic of his home city, and tends to think big, in good Texan style. But he was early snatched from Houston —and the dangers of regional parochialism—by secondary schooling in the East. For undergraduate architectural training he returned home to Rice University and was graduated in 1957.

Then, after a couple of years of practicing in Austin, McGinty went to Princeton to further stretch his mind and obtain in the process an advanced degree. "Like a kid in a candy store," he says, "I sampled courses in art history, American literature, Christian ethics, philosophy."

He then joined the McGinty Partnership, founded by his father, and became a principal in 1966. It is a small, successful firm specializing in health facilities and other institutional work.

In 1967, Jack McGinty became the only architect ever chosen to be a White House Fellow, a program which each year selects no more than 19 out of thousands of applicants "to provide gifted and highly motivated young Americans with some firsthand experience in the process of governing the nation and a sense of personal involvement in the leadership of the society," according to the program's literature. McGinty spent his fellowship year as an assistant to then-Secretary of the Interior Stuart Udall, and says of the experience: "It showed me the possibilities of political and social involvement; it built my self-confidence." It also gave him a firsthand experience in the process of government to bring to his job as president of AIA.

This is the stuff that envy and mistrust are made of, especially since Jack McGinty seems to be hard to know and therefore easily taken for that ominous thing, an unknown quantity. There are those, especially among the older or more conservative or both, who have misgivings. Some of their fears: "He's a hip-shooter; makes decisions that seem premature." "He's too hard-driving, maybe ruthless; he's about a world apart from this year's President Lou de Moll, who is a sweet, gentle guy." "He's business *rather than* profession-oriented." "There is something unfinished about him. He's like a man who hasn't found his calling."

If his detractors fear that McGinty may be excessively ambitious, hard-driving and hard-nosed, his advocates and friends perceive him quite differently—as a man with purpose, willing to take an unpopular position but also to compromise, as an unideological pragmatist, a man of integrity. Some specific remarks: "Jack hasn't got a hysterical bone in his body; he is unflappable. The way he plays tennis tells about him: He got to be good by working hard at it. He plays as hard as he can, an unemotional game, is a good loser, but doesn't crow about winning." Louis de Moll comments, "The fact that Jack is impatient is good, in fact super. His attitude is one of 'to hell with it, let's get things done'; he won't be deterred easily."

Another friend points out that McGinty's tendency toward tough-minded pragmatism is tempered both by an intellectual bent and a predilection toward the intuitive, and that his growing to maturity when the architectural profession itself was in transition has made him open to change. Still another of his advocates observes that he is a man with a strong sense of social justice; he was a founder of the Houston design center and is active in community and charitable activities. This friend says, "McGinty will be a vigorous president and will invigorate the Institute."

Not quite so vigorous are McGinty's statements about himself. When talking in his characteristic Texas drawl (a very fast drawl) about what he labels "externalities"—the profession, AIA, the world—McGinty speaks confidently, purposefully and with a twinkle in his green eyes. But, he says, he is not an introspective man, and becomes hesitant and uncomfortable, in fact goes blank, when asked to talk about himself. "Someone else can tell you better," he says, twiddling his fingers now, looking you less directly in the eye and trying to get off the hook with, "I'm a reserved person." He finds it easier to concede weaknesses than to talk about strengths: that he is perhaps too much of a generalist, for instance; that he thinks he came to the board of directors as an arrogant man who thought he could talk anyone into anything, but was quickly cured. He nevertheless says, "I think I'm a politician in terms of being able to get support to get something done; that's probably what I do best, that and seeing how things relate to each other, all fit together. But I'm not particularly ambitious. I am a person who likes change, who gets bored easily. I admire people who like detail, but I'm impatient with it myself. I'd rather be remembered as a good man than the best

president of AIA or the best anything else."

A look at some of McGinty's work for AIA and his approach to his role as president may give a less ambiguous picture of the man.

Jack McGinty sees this period in AIA's history as transitional: "In a world of rising expectations and diminishing resources, our job is without question becoming more complex and more diverse," he says. He believes that, as in the late 1960s, the Institute must again rethink "who we are and what we're about," and make decisions which will have crucial effects on its direction for the near future. This involves, he asserts, reevaluating AIA's membership (who we are), its ethics (what we do and how we do it) and dues (how we pay), all of which are inextricably linked to each other in his mind. In all three areas McGinty favors substantial changes to reflect a changed society and profession.

Architects 'can no longer be narrowly defined as people who design buildings.'

He regards architecture as "an exploding profession. We can no longer be narrowly defined as people who design buildings," he says. "We have architects now who are engaged in large-scale planning, urban design, in research; we have architects who aren't designing anything; what they're doing is seeking new knowledge and exploring new systems. We have architects in development trying to put together teams for financing, construction management, land acquisition." He thinks that one among many signs of a broadening out of the profession is the 30,000 students who are now in architectural schools despite appallingly high unemployment rates in the profession. The students sense, says McGinty, that architecture is an expanding profession offering increasingly diverse roles for practitioners.

The question to McGinty is whether the AIA will continue to be The American Institute of *Architects* or will limit membership to those in traditional practice, who McGinty thinks are declining in number and importance. He believes that the Institute must try to diversify its membership and broaden its mission and services. What binds the profession together these days, according to his view, is not *what* its members do, but *how* they do it. As it affects AIA's ethical code, now under debate, this means, says McGinty, that there should be greater emphasis on "performance specifications, competence and integrity. These are what distinguish us from salesmen and package dealers, not the manner in which we receive our compensation or publicize our services."

He points out that architects can respond to challenges by consumers (taking such forms as increased liability and antitrust suits, as well as Ralph Nader's and the Federal Trade Commission's contention that professional licensing is self-serving) as "attacks on the profession and can join with the doctors, lawyers, engineers and dentists in circling the wagons in a defensive posture against the public. Or we can see in this challenge the opportunity to increase the effectiveness of our performance, to do a better job in education, in design and in project delivery."

Since McGinty believes that the AIA ethical code should apply to the full range of architectural professionals, he favors a code which permits contracting and even commission agents, but under tightened professional ground rules and more stringent requirements for competency, honesty and disclosure. "There are some people who might think I'm playing fast and loose with some of our basic professional views," he says. "But I don't see it that way. People with very opinionated, fixed positions are threatened by change." He points out that when an injunction against fee competition was removed from AIA's ethics in 1972, there were doomsayers who believed "we had sold out the future of the profession." What happened instead, he says, is that AIA developed the concept of cost-based compensation, which has forced architects, "with their fee schedule crutch gone," to become sophisticated businessmen. Neither fees nor quality of work has declined.

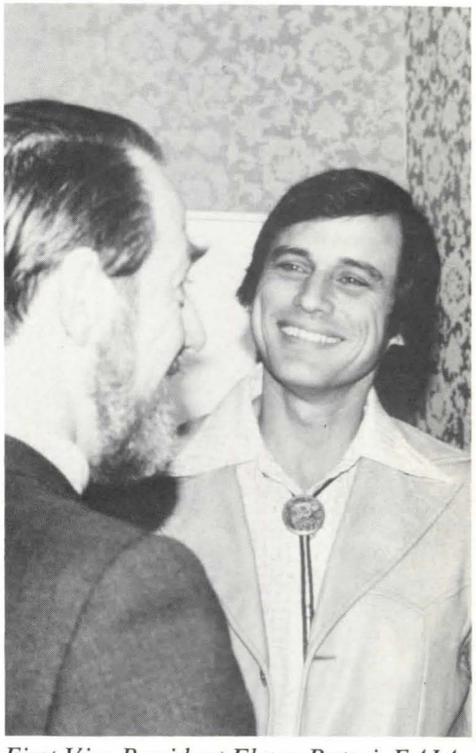
McGinty contends that some issues now regarded as matters of ethics are not ethical questions at all. Advertising is one. "The ethical question here," he says, "is not whether advertising will hurt the small firm—that's a business judgment. The ethical question is how truthful, how informative is the advertising. I'm not necessarily speaking for or against advertising —the courts will soon force it on us anyway—I'm just saying that the only ethical question about it is *how you* advertise."

Conversely, he points out, there are ethical questions which AIA should address but has not. Among them is funding for nonprofit architectural research groups and the fact that some are in direct competition with private firms.

McGinty was one of the authors of the ethical changes proposed by the board of directors at the 1976 convention, which were sent back for another year's study. His comments about the process by which the Institute's ethics are undergoing transformation are instructive. "I admit," he says, "that my tactic in drafting drastic changes and scaring people to death was to force them to focus on issues. It's a rather abrasive way of doing things, but also the way democracy works. For the result, after batting this thing back and forth for another year, will be a more thoughtful code of ethics than we now have or than the one we proposed at the 1976 convention."

It is partly for this kind of tactic that McGinty has been accused of shooting from the hip, which he calls "leaping ahead." He says, "I get things worked out to my own satisfaction long before I can communicate them, prove them or demonstrate how they work. Both before and after I make decisions, I'm willing to listen to people, hear what they're really saying instead of just the words, and I'm willing to change my mind."

Just as McGinty regards challenges to the profession as an opportunity for growth by the Institute, he also views the economic crunch of recent years as a spur for positive change. The Institute is now in a serious financial bind because of skyrocketing costs. McGinty's response is that a better and more equitable dues system must be created than the present one, which puts the entire burden on a diminishing breed of traditional practitioners. As chairman of the planning committee this year, McGinty has also masterminded the reorganization of the headquarters staff and of the commission/committee system for greater cost efficiency.



First Vice President Elmer Botsai, FAIA, with President McGinty.

The new president has also been chairman of the AIA energy committee, for whose existence and direction he gives full credit to the first chairman, Leo Daly, FAIA. "When McGinty first came on board," says AIA energy program director Joseph Demkin, "he was a whirlwind." As is his habit, he tried to address the broader issues relating to energy conservation,

such as urban planning and regional development. It was largely McGinty's work which brought AIA into the political arena on energy policy; the results have been some positive legislation.

What will Jack McGinty turn to when finished with his term as president? First he'll return to his practice, which he says he hasn't yet got out of his system. "It's very easy," he says, "to interpret my wide-ranging interests as indicating a lack of commitment to design. Design is to me the most exciting intellectual skill of all and most essential to our profession." His practice is small and traditional, but has diversified indirectly by joining in an association with the Crane Design Group,

Compassion for the poor coupled with distrust of 'gigantic government.'

which specializes in urban planning and related activities. Nevertheless, as a friend of McGinty puts it, "He's wasting his time twiddling around with the practice for long."

So then what? "I don't know the specifics of what I'm going to do next," says McGinty, "but I'm almost certain that when I'm through with my career I'm not going to be doing what I do now. I guess I get bored quickly. I suspect that somewhere I'll make a radical shift."

Politics maybe? At this point McGinty thinks that's not likely. He says he has lost his faith in "large scale, knee jerk ways of doing things. Federal policy destroyed the cities by diverting billions from one side of the economy to the other. Health programs have been a ripoff, housing programs have failed." He feels that direct subsidies to the poor provide the best hope. "If people have money they'll find the best deal in housing, for example."

He also feels that the best thing the government can do is to encourage individuals and organizations in the private sector to "do their own thing." Government, he believes, has become too gigantic, bureaucratic and cumbersome. "I don't say this from a redneck, conservative, antigovernment point of view, because my politics tend to be fairly liberal, especially about social problems."

If McGinty's politics seem less than consistent, it may be well to remember that he was a supporter of maverick Jerry Brown for President, and still now doesn't mind saying so. "Brown said and did things I really responded to," he says, and points to the halting of the highway building program in California and the appointment of the energy-conscious Sim van der Ryn as state architect.

And like the elusive Governor Brown, Jack McGinty is hard to pigeonhole.□

Change Studied In Membership, Dues Structures

Allen Freeman

As noted in the above profile, AIA's new president believes that proposals for change in the Institute's ethics, dues and memberships must be considered in relation to one another. The most recent set of proposals for ethics changes were summarized in the Novmber 1976 issue. Below are summaries of task force recommendations on dues and membership which are being presented at grassroots on their way to the convention in June. Ed.

The dues structure task force has compiled four alternatives to meet the Institute's financial obligations. These solutions reflect the considerations of the task force and the thoughts of those attending hearings in New York City, Tampa, Fla., St. Louis and San Francisco, and are evaluated in light of 11 dues criteria identified by the task force. Those criteria are:

1. There should be a minimum and a maximum level of dues.
2. Dues should be based on the current year's personnel.
3. The system should not require any information which the members could consider an invasion of privacy.
4. The system should allow for quarterly payments of dues.
5. The system should be simple and easy to understand.
6. The system should allow for inflationary increases.
7. The system should be equitable for the largest number of members possible.
8. The system should encourage accurate reporting.
9. The system should be affordable to the largest number of members possible.
10. The system should not endanger the financial stability of the Institute.
11. The system should encourage membership increase and retention.

Here are the solutions as laid out by the dues structure task force:

Solution one: Assess regular dues *only* at the rate of $170 per corporate member, $15 per associate and $15 per retired member who wants the services of the Institute. The task force believes this satisfies criteria one through six, eight and ten, and questions whether $170 is an affordable level for members.

Solution two: Assess regular dues of $70 per corporate member, $15 per retired member, and supplemental dues based on the number of employees in a firm on a graduated scale. Employees are defined as all individuals working in a firm including principals, whether salaried or not. The task force says this solution satisfies all criteria except eight and ten.

Solution three: Assess regular dues of $78 to all members and supplemental dues at the rate of 4 percent of a firm's total FICA payments. This is basically the system in use; to simplify and equalize, supplemental dues on principals would be eliminated. The task force says this satisfies criteria three through seven, nine and ten.

Solution four: Assess regular dues at $70 per corporate member, $15 per member emeritus, and supplemental dues based on registered architects in a firm, as follows: $100 per AIA member and $150 per nonmember. A $100 credit per firm would ease the burden on small firms. The task force cautions that the data used to formulate this system are incomplete and may need further modification. This solution satisfies all criteria except eight and ten, the task force says.

The dues task force recommended the second solution. However, Charles E. Schwing, AIA, Institute treasurer and chairman of the dues structure task force, cautions: "Continuing study of the proposals indicates that this recommendation may have been made prematurely." Schwing also says that the continuing studies have indicated a need for a revision of the data in the original report and that more accurate numbers will be presented at grassroots.

To consider the problems of membership, a membership study task force was appointed in July 1975. At the 1976 national convention, the task force was charged with continuing and expanding its work, and last August a second report reflected that expanded study. The report recommends:

- Full AIA membership should be available to licensed architects only, with rights, privileges, titles and obligations as currently established for corporate members. These members should be called AIA members.
- AIA associate membership should be available to all nonlicensed employees in professional or technical capacities directly related to the practice of architecture and under the supervision of a licensed or registered architect.
- Current benefits, rights and programs for associates should be expanded in order to make associateship more meaningful and to stimulate associate participation.
- Responsibilities of associates should parallel those of members, including com-

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A California Artist's Architectural Odyssey Across the Nation

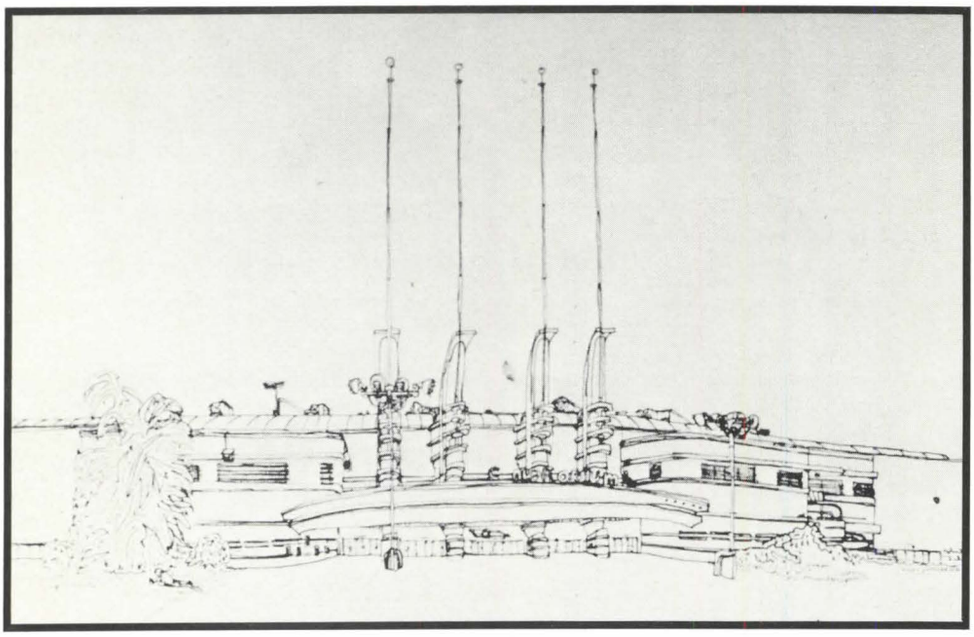
In July 1974, Robert Miles Parker chucked his job as an art therapist in a mental health center and undertook an architectural odyssey. He and a friend set out in an old van from San Diego in a journey across America.

Gas station attendants, waitresses and the like guided the artist to his subjects, which ranged from hamburger joints to mansions, from farmhouses to skyscrapers, but preferably structures "covered with little things that give the eye something to do," as Parker puts it.

Parker is bearded, in his 30s, dresses in jeans and rumpled shirts and obviously enjoys meeting people as much as he does drawing their environments. He works on site in pen and ink at sittings of up to 10 hours and in all kinds of weather. Accurate representations are important to Parker, but beyond that he tries to capture the mood at the time of the drawing. Raindrops caused smudges on one, for instance, and Parker considers them valid to the drawing.

He is back in San Diego now and winding up the project with a collection of about 400 buildings in all 50 states. Some of the drawings helped pay the way (his travel companion acted as agent) but Parker has at least a photographic print of each from which selections will be made for a book to be published this year by DaCapo Press, Inc., New York City.

Following are samples of Parker's work, along with comments by the artist.



Pan-Pacific Auditorium, Los Angeles

Los Angeles is the home of the glittered-out-Rocky-Horror-Show people. The exciting thing is, you don't know what's real. Neither do the people who live there. But that doesn't matter. It is all done for style. That's what is real here—style.

Just look at the Pan-Pacific Auditorium. Space fantasy, pure space fantasy. Future architecture, circa 1935. The sides are like two boats coming into a dock. The center is like four Godzilla claws waving in the yellow Los Angeles sky. The whole effect is a rocket ship blasting off for some Buck Rogers planet secretly nestled in another galaxy.

Now the children play with their remote-control buzzing airplanes in the weedy parking area. Once all of Los Angeles presented itself on the stage. Now it's just foul-mouthed kids making horrible noise with their toys.

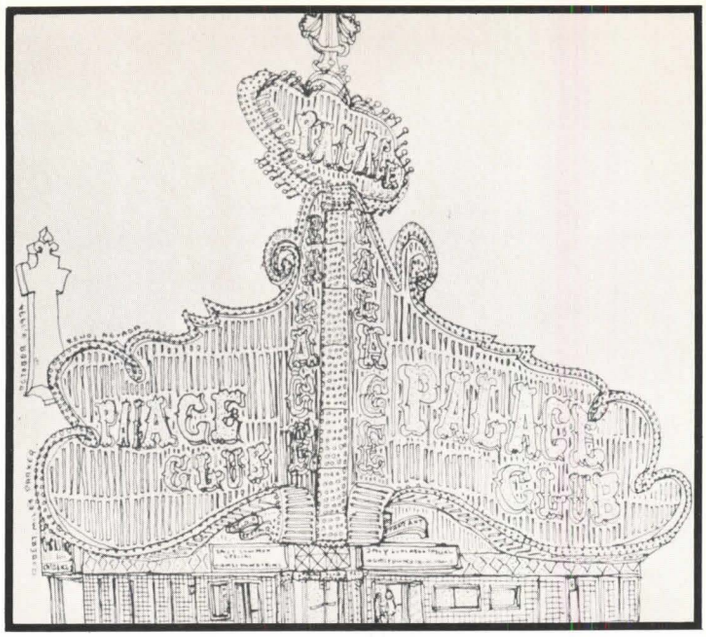
Carson Mansion, Eureka, Calif.

I wonder if this isn't the grandest Victorian house of them all. It is hard to believe that the kind of person who would build such a structure wasn't laughing all the time. It's rich and wonderful and quite crazy.

William Carson, the builder, was just an ordinary man with ordinary tastes. His business was logging. Redwood made him a king, and as a king he created a castle. When he died in 1912, his whole town closed up for the day.

The 18-room mansion was built during the 1880s. Carson's lumber millworkers were able to continue working through the depression of 1885-86; they simply shifted their labors to the Carson house. There were even two full-time wood carvers.

California madness. The dizzying heights and the spectacular complications may well have suggested to Victorian prophets the West Coast of the future. The rest of America always labels California eccentric. Carson built eccentricity's grand mansion.



Palace Club, Reno

What an absurd thing to do: put nickels in a machine and watch pictures of bells and things whirl around. What a way to pass time.

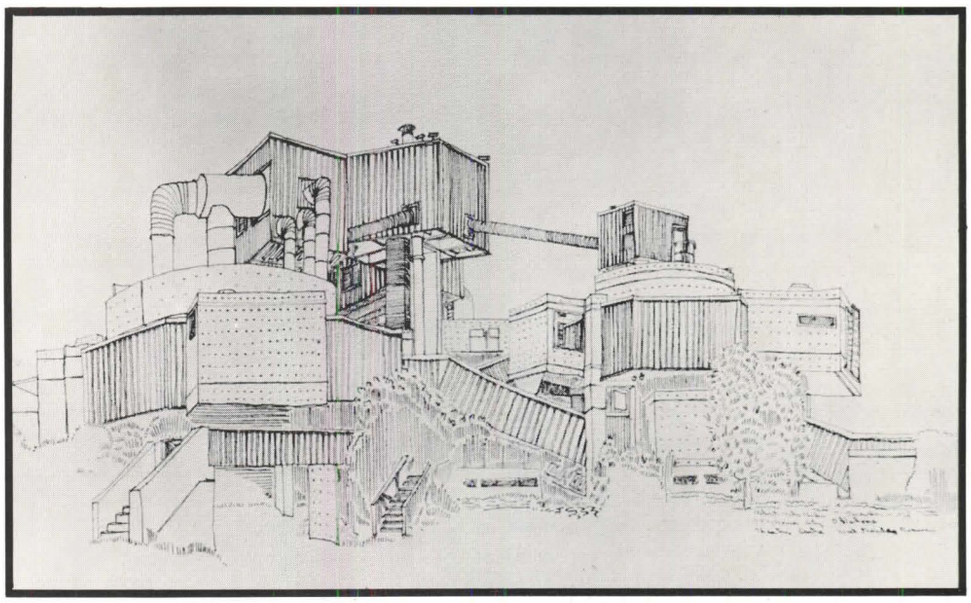
Old people come on tours and play the machines. It is one of their few means of recreation. The locals call the senior citizens "gummers." So many old people—wrinkled women in pants outfits and booze-eyed men in sports costumes. Flocks of neon and people.

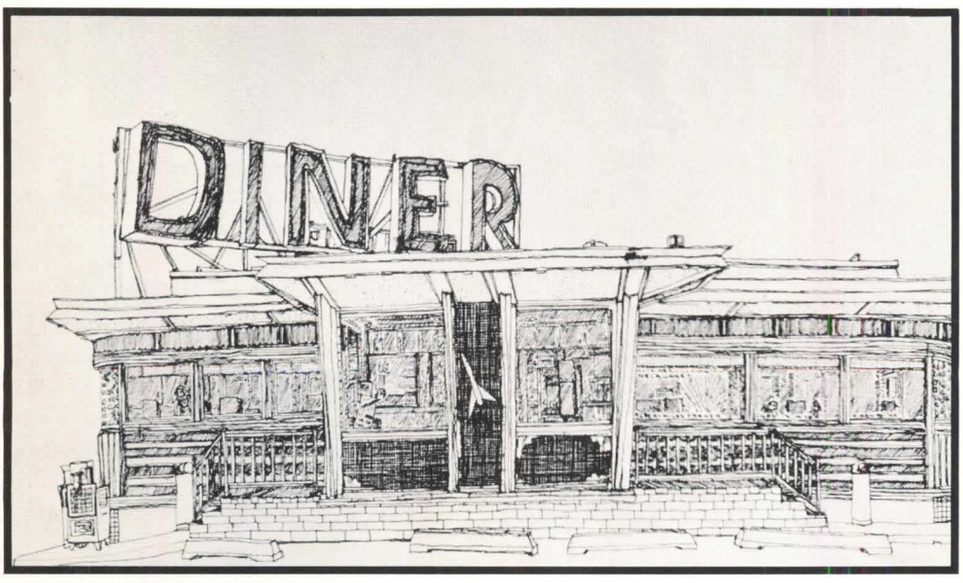
At night the streets are bright with a myriad of colors from the signs and people. Everything is ringing and flashing just like the gambling machines. The Palace Club is lush in its vulgar reflection of the atmosphere.

Theatre Center, Oklahoma City

Oklahoma is a new state (admitted to the union in 1907) and a feeling of newness is most prevalent in Oklahoma City. The Theatre Center, originally called Mummers Theater, is a great example of the newness. There are not many modern buildings that make such a delightful statement. When you see this place, you want to get out and walk around. Ramps beckon, corrugated walls wiggle. It's a construction site; it's a Southwestern grainery.

Most of Oklahoma City's past has been destroyed. They're trying to create an entirely new metropolis. I'm not sure how they're doing; it's rather confusing there. But if the people create more buildings like the Theatre Center [by John M. Johansen, FAIA] everything will be okay.





Diner, Wilmington, Del.

Right outside Wilmington, one of our nation's oldest cities, is this monument to the future. Probably built before the time of junk food, places like this suggested to the weary traveler the essence of streamlined home cooking. You could be sure that somebody named Mabel had just made fresh apple pies, and that the coffee would be strong and good.

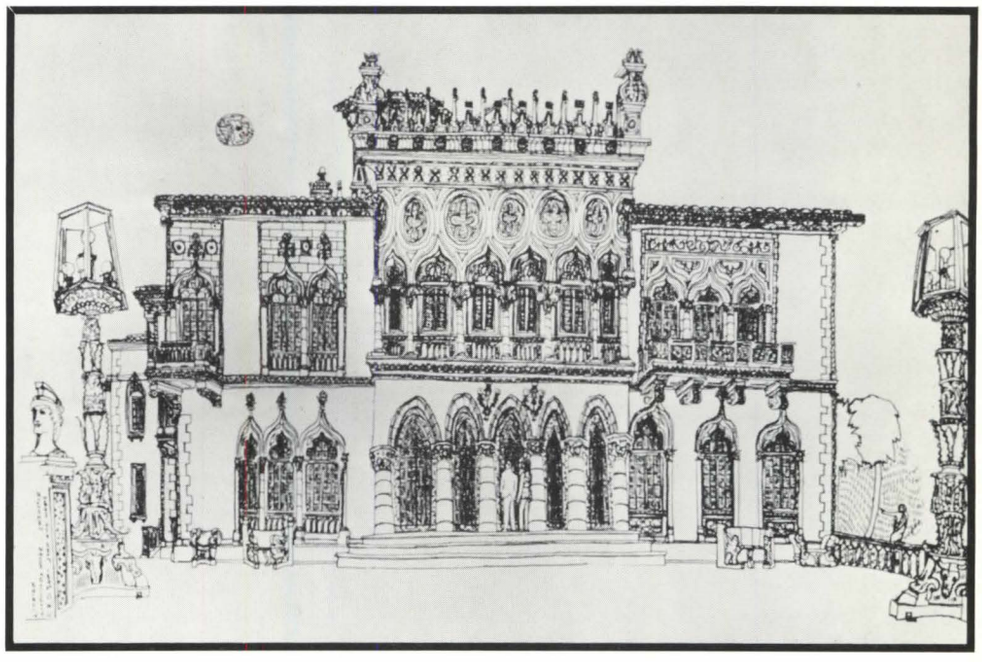
The diner was built to reflect America's great technology. Stainless steel wraps around a hull; one is prompted to think of an aeroplane or an ocean liner. Or a railroad car. Once sleek and stylish, diners now appear a little passé. But one could almost suggest that they, with the passage of time, have become not only stylishly obsolete, but strangely more human.

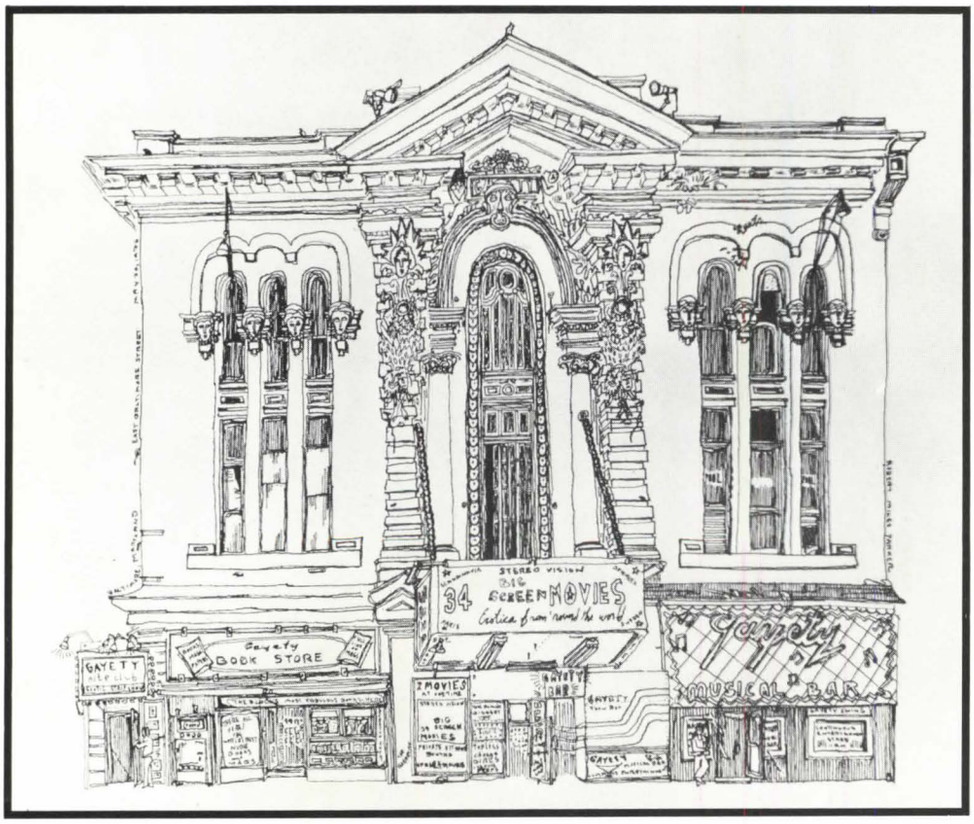
Ca' d' Zan, Sarasota, Fla.

John and Mable Ringling's house. It's a carnival, a circus. How appropriate. If you sit long enough and just watch the building, you can hear the laughter of all the people who played there, people whose portraits are painted on the ceiling of the third-floor game room, painted in outrageous costumes of the '20s—dressed as roosters or peacocks, or maybe as clowns or wild animal trainers. The center portraits are John and Mable Ringling, of course.

The Ringling mansion reflected their affection for Venice. Mable had a gondola that would bring the laughing guests up to the marble wharf, and when they were helped ashore, here's what they saw: each windowpane a different shade of colored glass, each column carved with little lambs' heads on the top, lions in a row growling out from the roof, stone ladies holding lamps, other statues grinning under lamps supported by cows' heads and horses' hooves.

As evening pulls out its blues and pinks, the stage is set for a return: The building beckons, pelicans wink—or is it the statues? Champagne corks pop, or maybe it's fish jumping in the bay. Ringling built a fantasy that still sings to the tune of a distant calliope.





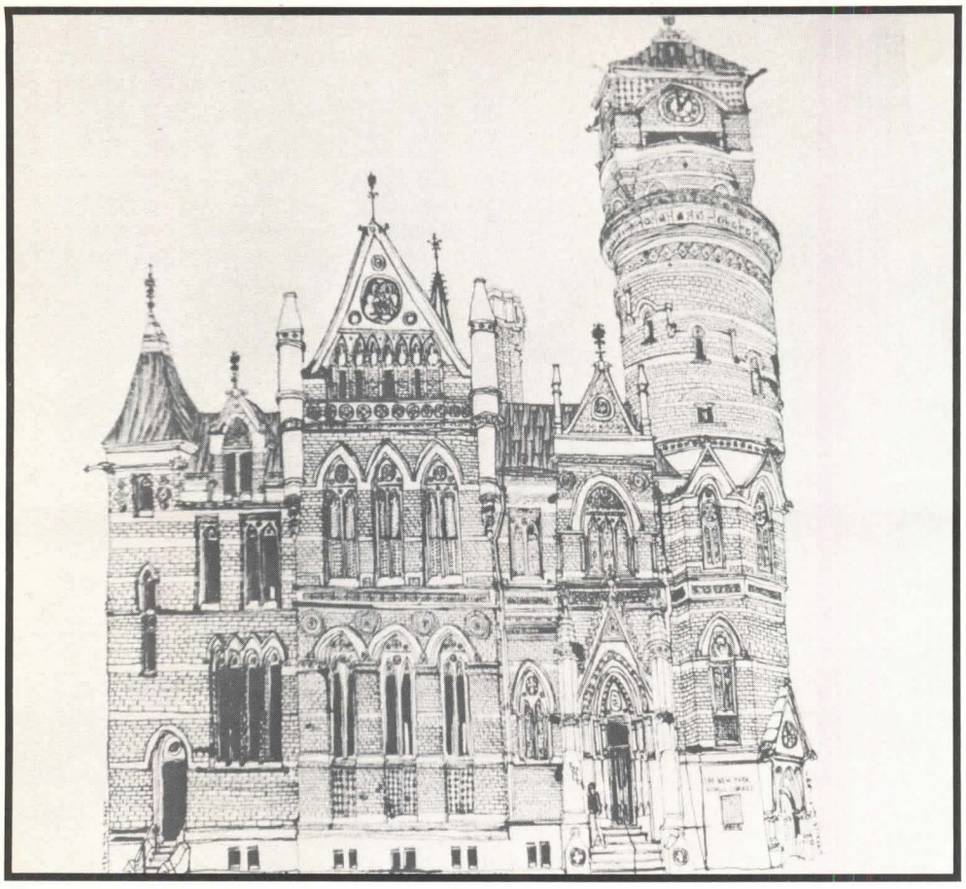
Gaiety Theatre, Baltimore

I often feel that buildings talk, and if the sound doesn't come from the structure itself, it surely wraps about and tells a story.

The Gaiety Theatre began as a legitimate burlesque house. It was a true pleasure palace, and a passer-by knew from the grandeur of the building and the carved ornamentation that just inside those doors he could escape to a world much nicer than his dreary own. The masks of Comedy and Tragedy, now dripping from pigeons, and the crumbling faces buttressing windows and columns are not only ornamentation. Ugly though they may appear to the modernist, I find them comforting, human.

The poor Gaiety has a quizzical look now. Some people say it soon will be destroyed; some want it restored. The interior of the theater burned out in 1964. That part of the building is now hollow and haunted. But even in such a state, one can feel the color, the flashing and throbbing colors of East Baltimore Street. At street level, the vulgar '70s blare out. Lights, signs and bar-barkers shout for your attention: "Live show here . . . Hey Buddy, come on in . . . Hot live show inside . . ."

There is still a spirit, perhaps tawdry now, but very much alive.



Jefferson Library, Greenwich Village, New York City

If any one structure reflects the madness of Greenwich Village, it is the library. It is strong and commanding, eclectic and gentle, all at the same time. The library is a mammoth building, originally the Jefferson Market Courthouse, a women's court.

New Yorkers like to keep things humming, and you can hear the humming when you sit and look at the library. The sound is friendly.

Not unlike the grotesque building, Villagers are individuals. One, "Rollerrina," an accountant by day, dresses in pink frilly formals and skates the streets by night. He looks okay silhouetted beside the library's mad towers and arched eyes.

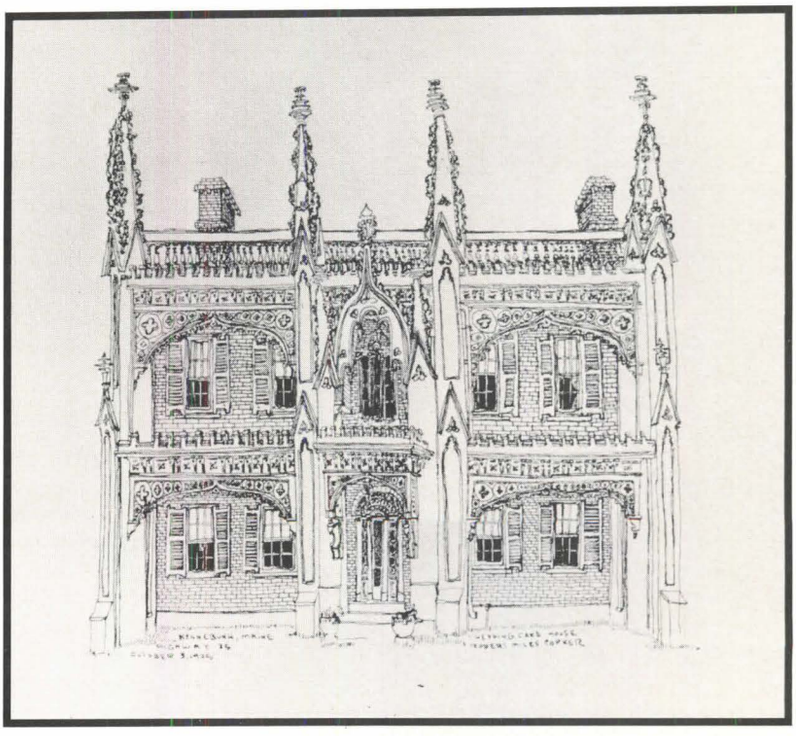
The courthouse-library was designed by Vaux and Withers along Victorian Gothic lines and built in the 1870s. In 1885, it was voted one of the five most beautiful buildings in America. □

Kennebunk House, Kennebunkport, Me.

The house, though built of brick, was painted bright yellow so it would look like wood. In the 1850s, 30 years after its construction, George W. Bourne, the builder (who obviously believed an idle hand to be the Devil's workshop) added the fretwork. He carved each piece of wood by hand and then painted it all white to look like stone. Great. Every part of the house denies the concept of "truth to material."

Bourne felt he was copying the cathedral in Milan. The brick part of the building is in the federal style. The cathedral droppings give the house the distinction of being classified as "an outstanding example of American-Domestic-Gothic Revival."

Tossing class aside, the Kennebunk house is sedate Maine's answer to California's Carson mansion, and these American cousins are a delight to contemplate.



The Pitfalls of Building In the Developing Countries

Edmond Pachner

The buildings are in chaos; walls out of plumb, windows out of level, floors strewn with debris, site covered with litter. Chickens scurry through gaping openings, cookfires in corners stain the walls with smoke and grease, naked children play in the dust and ancient crones squat in open doorways smoking newspaper-wrapped cigars. There is a group of five or six men: One is hammering nails out of a weather-beaten board. Another is placing concrete blocks haphazardly one atop another, mortar splashed everywhere. The others stand about watching or talking, or sit on the ground eating, or curl up in the corner sleeping. Barefoot men pick their way among nail-studded litter, carrying gasoline tins on their heads, with watery concrete coursing down their shoulders. Now and then a man, slightly better dressed, directs them where to empty the tins.

Though it resembles a bombed-out city with refugees and reclamation squads, this is a new, multimillion-dollar project being built with the assistance of a loan from an international organization to a developing country. It is already six months overdue and will not be completed for another year. If the loan money is used up or the time runs out or the imported equipment is not delivered, it may never be completed.

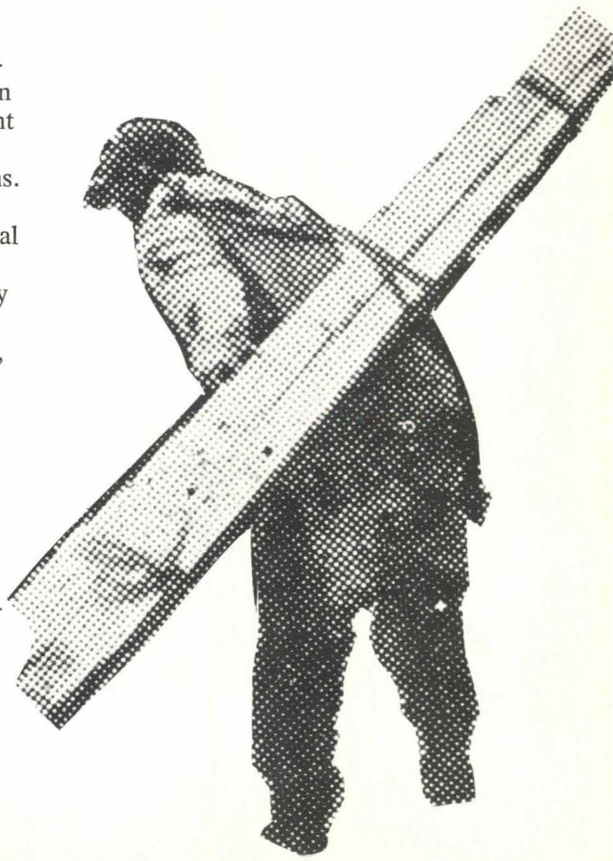
This is not an isolated example; it happens wherever projects are originated through loans by sponsors such as the Agency for International Development to borrower governments of third world nations. For some reason this program seems to generate irresponsibility, from the laborers to the heads of the local governmental departments.

Either because of low pay, malnutrition, lack of training or specialization, laborers seem to have no interest in either the work or the end product. The contractors, though in a position to profit by efficient organization, nevertheless make no work schedules, no shop drawings, no inspections and almost no effort to direct the workers. Sometimes they do not even speak the same language. They have one specialty: to substitute improper materials for specified ones, especially cement. This is so frequently and baldfacedly done that by sheer averages, and in the absence of an adequate supervisory force, it is usually successful.

The client/borrower is usually represented by well educated but underpaid technicians who see the project as an opportunity for making political as well as monetary gain. This is often done by stinting on personnel or facilities to perform agreed-upon services, such as supervisory assistance and importing foreign materials. Liaison with other government departments furnishing such personnel and facilities is often left to the sponsors or consultants who are not equipped to provide them. In addition, delays in necessary client decisions hold up the project, and delays in payments to the architect/engineer and the contractor divert their attention from the project to bill collecting —this in a country where the debtor is also the judge and jury.

The solution to many of the problems of providing better, longer lasting buildings on schedule with less delay and confusion depends on the agreement between the sponsor and the borrower government and on the construction contract as well as on the actual designs and specifications. The following are a few suggestions:

- All personnel and facilities for technical services, purchase of materials and construction work should be provided not by the borrower, but by the sponsor, the architect/engineer or the contractor and, if possible, paid for directly by the sponsor. If the borrower provides or pays for them, there are often work delays and poor results. This is due to the shortage or inadequacy of personnel or facilities caused by its diversion to use for other purposes. In addition, due to personal relationships between officials and technicians, it is impossible to enforce schedules or quality.
- All coordination with other local government departments such as the user, customs, health, zoning and building departments should be performed by the borrower. All approvals should be obtained and guaranteed by him at every step of the way.
- Individual projects, even under the same program and with identical client, architect/engineer and contractor, should have separate contracts. This avoids confusion in ordering, invoicing and payment requisitions and allows revising or canceling one project without affecting others. Where possible, earth-moving and rough grading of the site should also be under a separate contract and should be completed before commencement of buildings and utilities.
- Completion schedules should be included in the contracts. They should take into account not only the program for each trade, but for each section of the project.
- Payment schedules should be coordinated with completion schedules, section by section and trade by trade. Liquidated damages should be assessed against each section upon its scheduled completion date. This will encourage the contractor to follow the schedule to the letter.
- Local codes and ordinances, no matter how outdated, should be studied and followed, or else exceptions should be requested in advance. Requirements such as permanent ventilation, washable walls and close-mesh enclosed balustrades usually reflect the experience of many years. They may be ignored only at the risk of delays and compromises.
- Local customs and requirements should be conformed to no matter how different from those of developed countries. For instance, religious taboos are a part of everyday life in Africa, and a project may not be built over an ancient burial ground



Mr. Pachner wrote an article entitled "Our Recent Ruins" for the May 1968 AIA JOURNAL. Since then, he has spent several years supervising construction of architectural projects in developing countries.

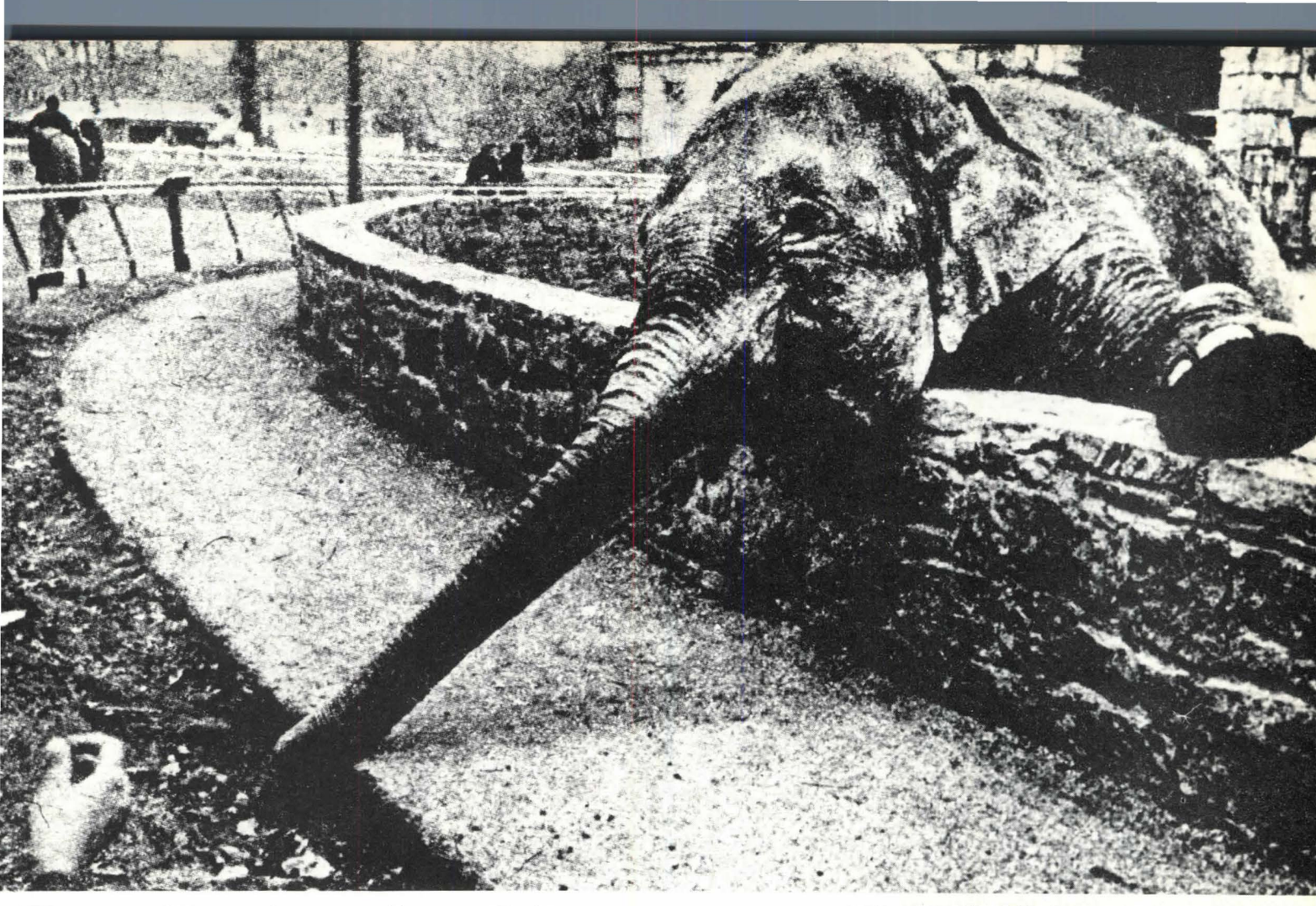
without the local priest allaying the resident spirits; in Moslem countries a toilet may not face (or back) toward Mecca. Providing security enclosures is exceedingly important in poor countries where pilfering is widespread, and storage space for bulk foods, cooking fuel, garbage and trash must be considerably larger than in countries where daily deliveries and pickups are common. If such customs and requirements are ignored, there will be delays and extras when they are later requested. Or the project will bristle with jerry-built shacks and alterations made in an effort to make it usable. Or no one will use it for fear of divine retribution.

- Imported materials should be avoided wherever possible. They often arrive late and neither conform to local usages nor fit with local materials. Their delayed arrival can result in large sections of buildings having to be left open to receive them. Difficulty in obtaining replacements due to lack of foreign currency and problems of communications can make the entire project nonoperative in a couple of years.

Where use of imported materials is unavoidable, only those should be used that can be easily installed with local materials, conform to local usage and are easily replaced. Installation of imported materials should be carefully and completely detailed as there will be no local licensed dealer to depend on. In addition, the buildings should be so designed that should this material arrive late it will not delay construction or give the contractor justification for an extension.

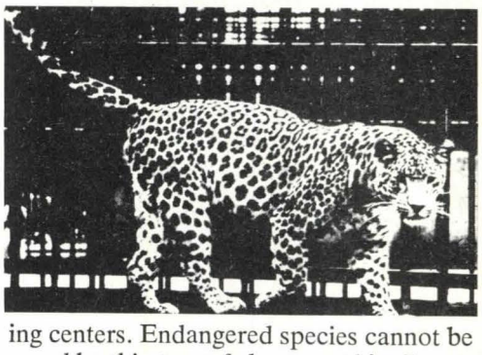
- Local materials manufactured in a nontraditional manner should be used sparingly. When used as major items, they should be developed under a separate contract administered by the architect/engineer. There should be at least one year's head start to allow for setting up plants, testing samples, training personnel and constructing a small pilot project before the main project is commenced. It is important that every required variation of the product be tested in the pilot project so that there will be no last minute substitutions during construction. The completion schedule of the project should be based on the proved speed of production.
- Local materials site-installed in a nontraditional manner should be encouraged. The method of installation should be carefully detailed and the work done under the guidance of an expert selected by the architect and paid for out of the construction contract.
- Lack of coordination between trades leads to difficulties and delays. Therefore structure, masonry, finishes, doors, windows, plumbing and electrical work should be so detailed as to be, as far as possible, independent of each other. For instance, plumbing pipes should not be sealed in concrete or masonry floors or walls. It delays the work and, since pressure testing is almost unheard of, leaks and blockages become major problems after completion.
- A visit to the capital in Chandigarh, or La Ville Radieuse in Marseille, or the city hall in Sao Paulo—all in sad states of deterioration—will show what can happen even to masterpieces. This can be eliminated partly by design: Avoid large glass areas near the floor where they will be kicked out, or out of reach where they will not be cleaned. Avoid reflecting pools and planting bins which become repositories for garbage. Avoid exterior exposed wood which if left unpainted will warp, check and feather, and if painted will flake and peel. Avoid exposed concrete which, if left unpainted, will become ingrained with dirt, age in different colors or pop out at patched points, and if painted will flake, peel or discolor. Obviously, natural stone, brick and ceramic tile are the most lasting materials.
- Sitework and utilities, the first items started and the last ones completed, are often confused and unsatisfactory. To avoid this, all buildings, grading, paving, drainage, sewerage, water and electric distribution should be combined on one drawing, on coordinated sheets if necessary. This will ensure that these elements fit together and do not collide at unfortunate locations. Where possible, joint service trenches should be used to localize installation and maintenance work. Also it must be remembered that rainfall in tropical countries comes in sudden torrential downpours. Adequate runoff and drainage must be provided in the planning stage, not the finishing stage.
- Cleanup may seem an obvious item, but maintenance of a litter-free site should be emphasized in the specifications and enforced in practice. This promotes job efficiency and avoids having the project buried under a mountain of trash or, even worse, having a mountain of trash buried under the project.

Some of these suggestions may seem impractical or may seem to inhibit design freedom; others may seem obvious. But they can help avoid problems in construction and maintenance and promote timely completion of better projects. □



Zoos Designed to Meet Animal and Human Needs

Morris Ketcham Jr., FAIA



What is a zoo? In character, size and location, there are wide variations: indoor caged menageries, regimented open-air paddocks, congested national park highways lined with bears hungry for handouts, "safari" wildwoods operated for the auto trade and carefully organized wildlife parks. In each case, zoos serve both animals and men.

Zoos are great educational, recreational, research and wildlife conservation centers which can teach all of us to understand and appreciate nature and to fight for its preservation. In 1969, zoos and aquariums were visited by 90 million people, more than visited museums and attended all baseball and football games combined.

Yesterday, zoos were menageries inherited from the 19th century. They were organized more for zoologists than for their animals, which were collected and displayed one by one, species by species, in separate cages or paddocks, crowded together like stamps in an album. One zoo still boasts that it has on display all 32 kinds of rattlesnakes, each in a glass-fronted box, even though only a zoologist can tell all of them apart. This is a fine example of an instinct shared by both magpies and humans.

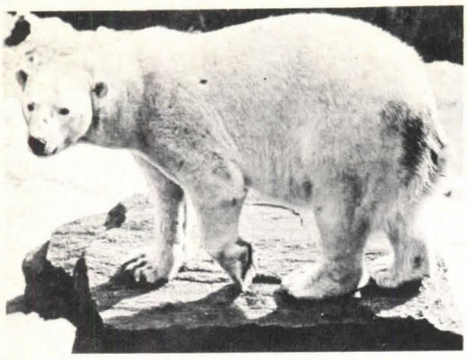
In recent years, tropical safari-type zoos have spread across the country, particularly along the Eastern seaboard. Their warm weather operations occupy large woodland areas. When necessary, their animals are kept in heated winter-time shelters hidden from public view. Like Yellowstone and Yosemite, they rely on the private car for visitor transportation through large wildlife areas, which makes for traffic jams caused by car halts at key points on busy days; unlike the national parks, they segregate predators from prey, lions from zebras.

The safari zoos are far more than mile-long roadside collections of bears hungry for handouts, but they fail in visitor safety control and as animal habitats and breeding centers. Endangered species cannot be saved by this type of showmanship. In fact, animal stock renewal for these areas is a constant drain on wildlife populations throughout the world. Let us hope that the popularity of these zoos will diminish long before they exhaust their available wildlife supplies.

In the early 1900s, European zoos began to build outdoor animal displays in which moats were substituted for paddock fencing, thereby minimizing visual separation of animals and visitors. Outdoor animal spaces were selected and developed for appropriate size, character and landscaping. Moats also separated animals from animals, making it possible to combine different species, including predators and prey, in one display, as in the original African plains exhibit at the Bronx Zoo.

Adapted and further developed in both European and American zoos, this approach led to the concept of the zoological wildlife park, which promotes the comfort and mental health of animals in more spacious and appropriate natural habitats

Mr. Ketchum, a past president of the Institute, is an architectural consultant in New York City.



than could ever be achieved in the "shame of the cage."

Not every animal can be exhibited outdoors. Those too small, too delicate or too nocturnal are kept within the shelter of specialized animal activity exhibit buildings. Large indoor habitat areas with artificial climate control and artificial or natural day or nighttime illumination then create the indoor equivalent of the outdoor wildlife park.

Any zoological wildlife park can be a combined zoo, aquarium and botanical garden, organized as a series of natural habitat areas where plants and animals of both land and sea can live in harmony, suitably protected from each other and from the public. For visitors, the well planned zoological wildlife park is an extraordinary combination of education, recreation and adventurous exploration. A successful zoo must be planned as a balanced combination of animal preservation, visitor education and recreation and animal research.

Zoo visitors are largely families who are attracted even more in hard times because zoos are inexpensive family entertainment.

The site of the zoo should be carefully evaluated as to visitor accessibility, visitor education and visitor recreation. Accessibility depends on site relationship to highways and to public transportation. A zoo can attract visitors from its own neighborhood and city, from the metropolitan region and beyond. Zoo keepers have found that gas shortages don't prevent the average zoo visitor from arriving by car. The proportions of those using public transportation has greatly decreased in the last 20 years, reflecting the national trend of increasing auto traffic and highway construction.

Because zoos are family recreation, a zoo's parking facilities get high usage in terms of passengers per car. And with the many crowded school and tourist buses seen at most zoos, it becomes evident that to serve zoo visitors one must serve their transportation needs. From morning opening hour, incoming traffic volume grows steadily until midafternoon; a peak outgoing traffic problem comes at closing.

Once they have arrived, visitors should enter a pavilion providing ticket booths and turnstiles, graphics and guide books, strollers to rent for small children or wheelchairs for the handicapped. From there, visitors should begin to explore the zoo on foot, by bus, by minirail or monorail or by a combination.

Exploration on foot implies either moated exhibits on pedestrian pathways or caged visitor walkways exceeding in height each animal's leaping power. If a zoo is divided into zoogeographic areas, each should have a transportation stop and orientation structure containing an auditorium for wildlife movies, maps and educational information, indoor climate controlled habitat areas for animals, plus comprehensive views of the outdoor environment.

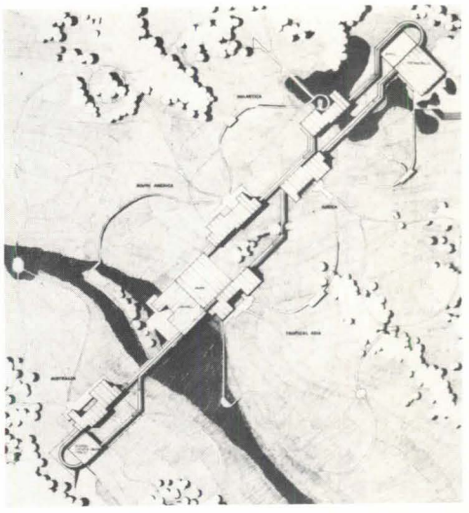
By monorail, first-time visitors can become familiar with the layout of the zoo and then disembark at one of the orientation buildings for further exploration. Caging visitors instead of animals yields substantial construction and operating savings. Eliminating costly moated exhibits can reduce initial cost by 30 to 50 percent; eliminating the need for a large zoo police force cuts operating cost.

For zoologists, scientists and students, zoos should be backed by nonpublic environmental science research centers with technical laboratories, conference rooms and lecture halls.

Zoo architecture, like all good architecture, must function properly, be built for the right cost and be easily maintained. Beyond that, it should never be self-assertive. Instead, it should either act as stage scenery for animal shows or, in the case of service facilities, be out of sight. Only "people structures" should be exceptions to this rule, and these should blend well into the zoo environment. Here are additional suggestions for architects:

- Never surround animals with visitors. Animals should be seen against natural backgrounds, not against visitor traffic.
- It is poor showmanship to create double loaded routes—exhibits on both sides.
- Create blind spots between exhibits and widen visitor space into adjacent viewing alcoves for those who want to linger.
- Don't hesitate to take visitors through single large exhibits either in the center or to one side of visitor routes. It provides a welcome change of pace as well as audience participation.
- Where feasible, keep exhibit skylights out of visitor vision.
- Visitor walkway artificial lighting should be darker than exhibit lighting to focus attention on animals.
- In rugged outdoor areas, use natural hillsides as habitat backgrounds; in flat land, use earth berms to raise these backgrounds above eye level.
- Sometimes earth berms can be less costly than excavation in creating moated areas.
- Surface parking areas can be readily concealed by earth berms which can also divide them into a series of intercommunicating segments which are reasonable in size.
- Don't forget that these suggestions apply indoors and out, in every zoo.

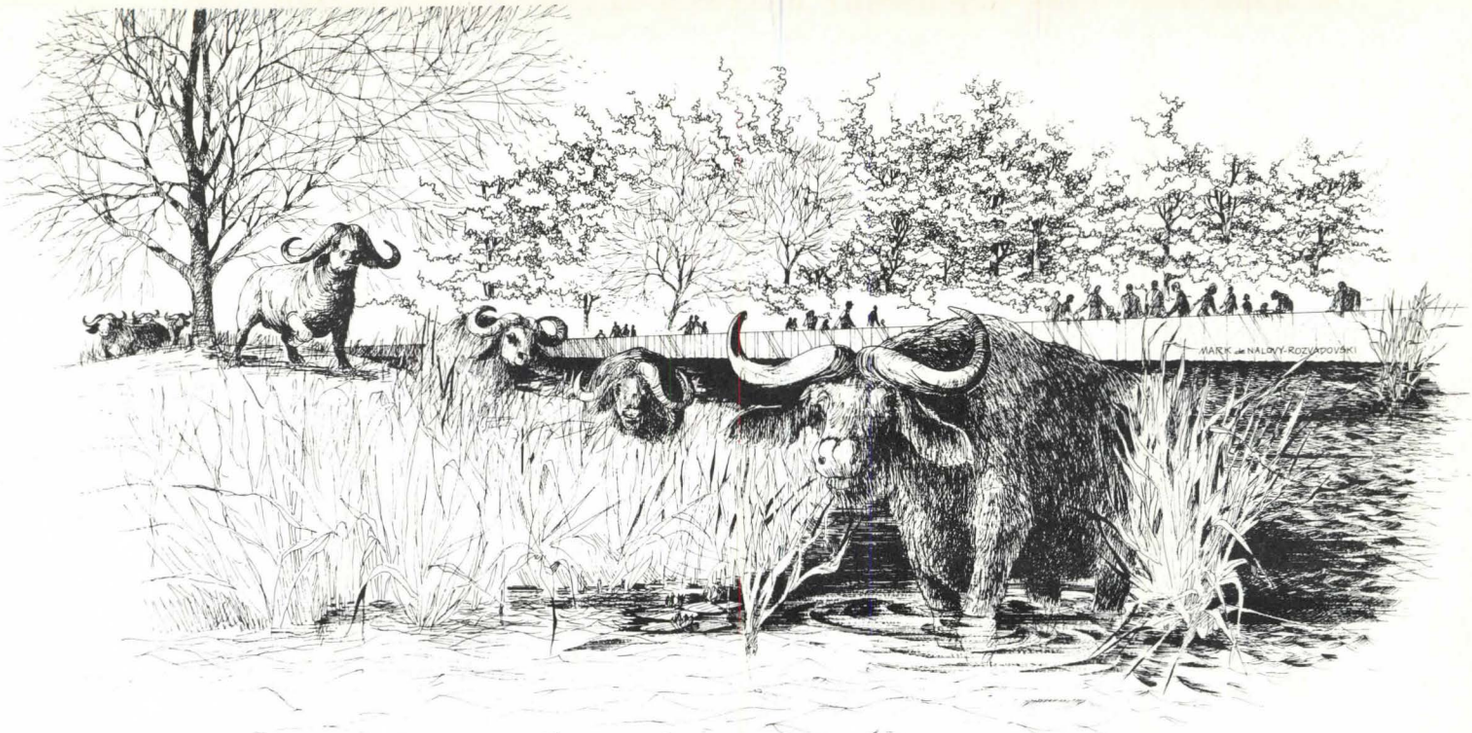
Parks are the lungs of city anatomy; beyond that, zoological parks are places for man to become refreshed by nature and perhaps to learn some of its secrets. Within a completely developed environment where man-made things are muted and nature dominates, all of us have the opportunity to painlessly acquire knowlege of what remains of our planet's wildlife, to escape from the city's asphalt jungle and to explore the green boundaries of nature's world.

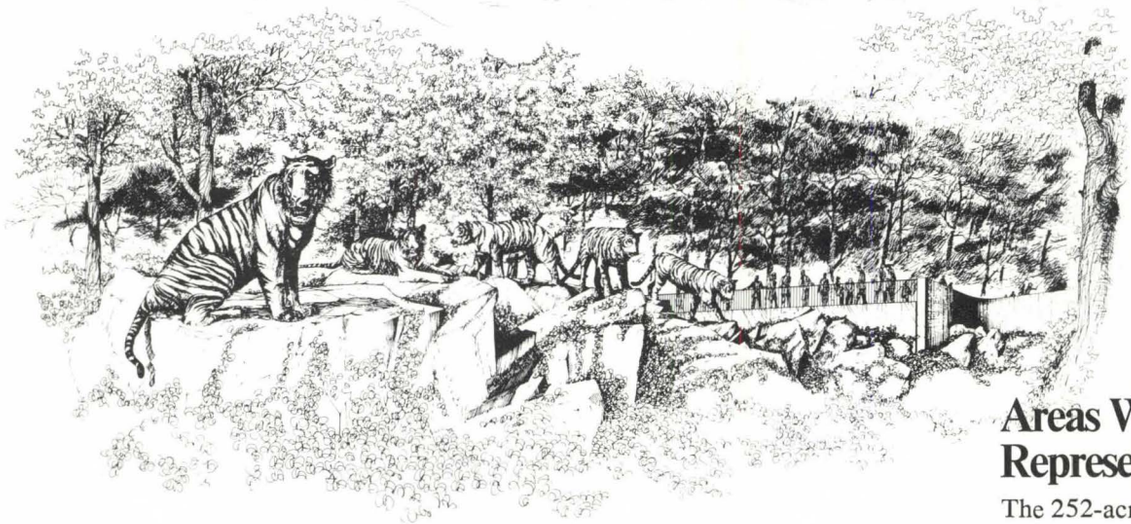


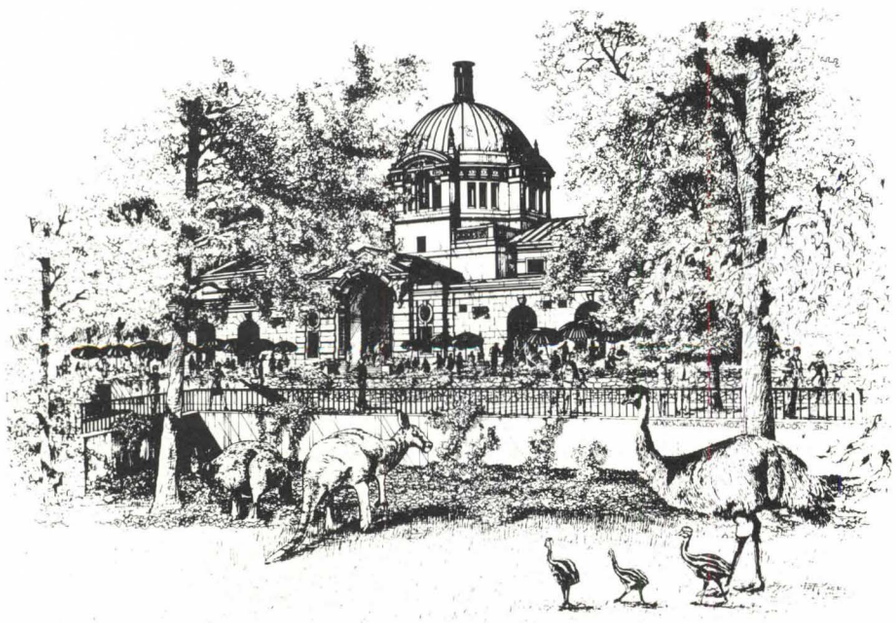
Winning Design Places Buildings Along a Spine

"A major zoo in a large city" was the subject of the 1975 Lloyd Warren fellowship competition (the 62nd Paris prize in architecture of the National Institute for Architectural Education). On a site consisting of 360 acres of lakes and parklands, the competitors were asked to design a habitat based on organizing the animal world into environmental interpretations of five great zoogeographic regions of the globe.

The first-prize winner, Michael Manfredi of the University of Notre Dame, created a strong linear spine cutting the site diagonally in half. The various buildings are placed along the spine and a network of footpaths branch out for auxiliary circulation into and through the five areas. This spine with its automated monorail transportation system is integrated with the various elements along the way. The buildings' reflective glass mirrors their surroundings. Visitor parking is located adjacent to the site.





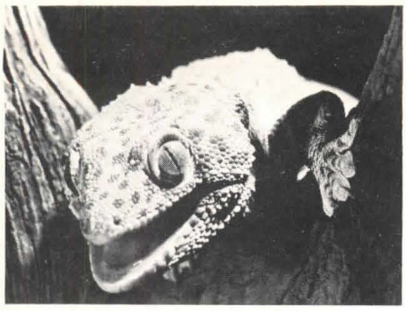


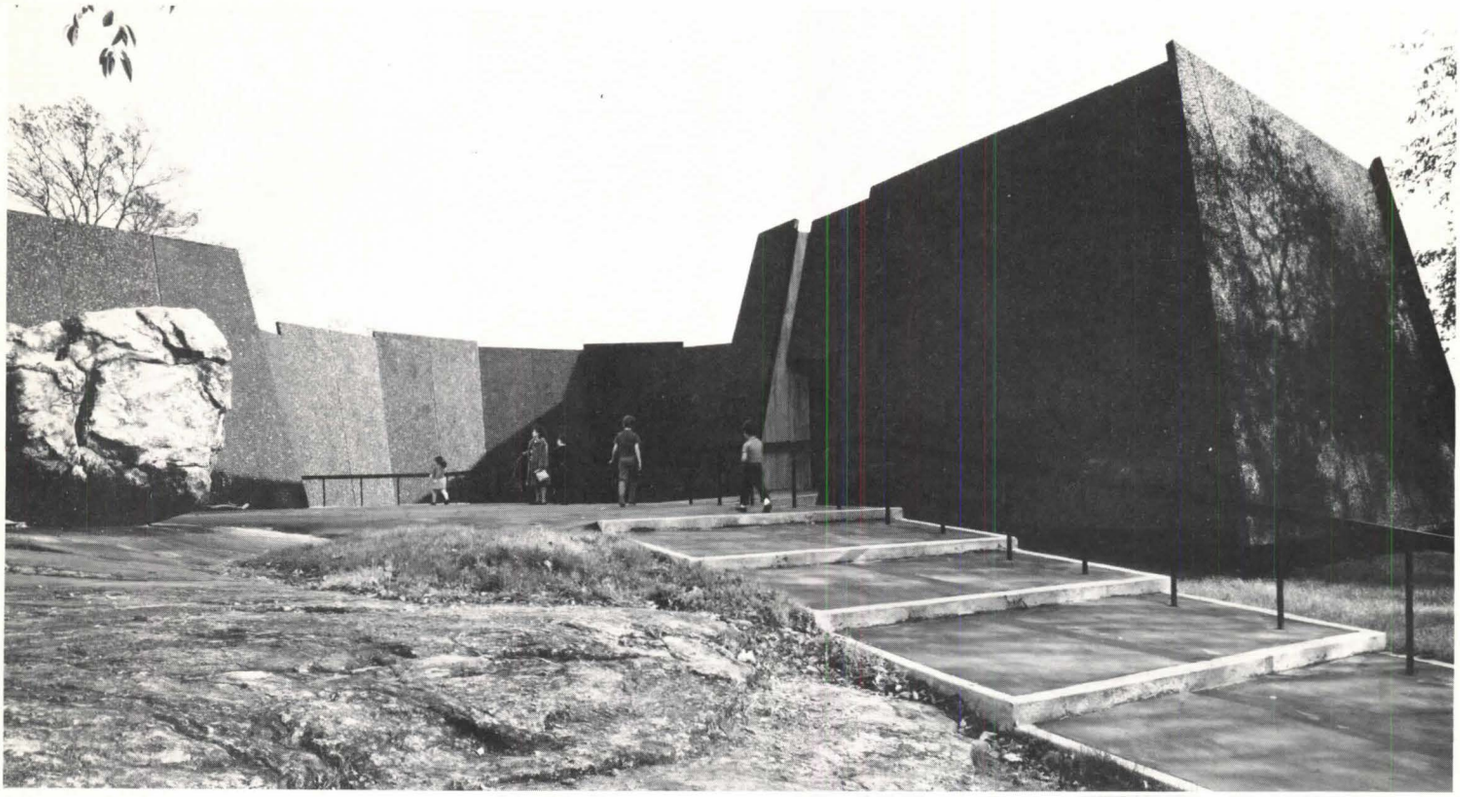
Areas Within Bronx Zoo Represent World Regions

The 252-acre Bronx Zoo is arranged into areas representing the five zoogeographic regions of the world. It opened on Nov. 8, 1899, and had nearly 100,000 visitors before the end of the year. In 1970, 2.5 million people, including 338,000 school children, entered its gates; by 1980, its annual attendance is estimated to be 7 million.

The zoo's two principal sections are located on either side of the Bronx River, which has been dammed to create artificial lakes. In 1970, a comprehensive development plan placed an outdoor amphitheater and an outdoor-indoor restaurant adjacent to a parking area on the south bank, and devoted the remaining southern 40 acres to the development of one of the five zoogeographic regions. With the exception of an orientation building, this area is scheduled for completion this year. Its animals are housed in indoor and outdoor habitats. A monorail has been substituted for the plan's pedestrian pathways.

For eventual development of the northern area, I suggest a perimeter monorail similar to that of the south.

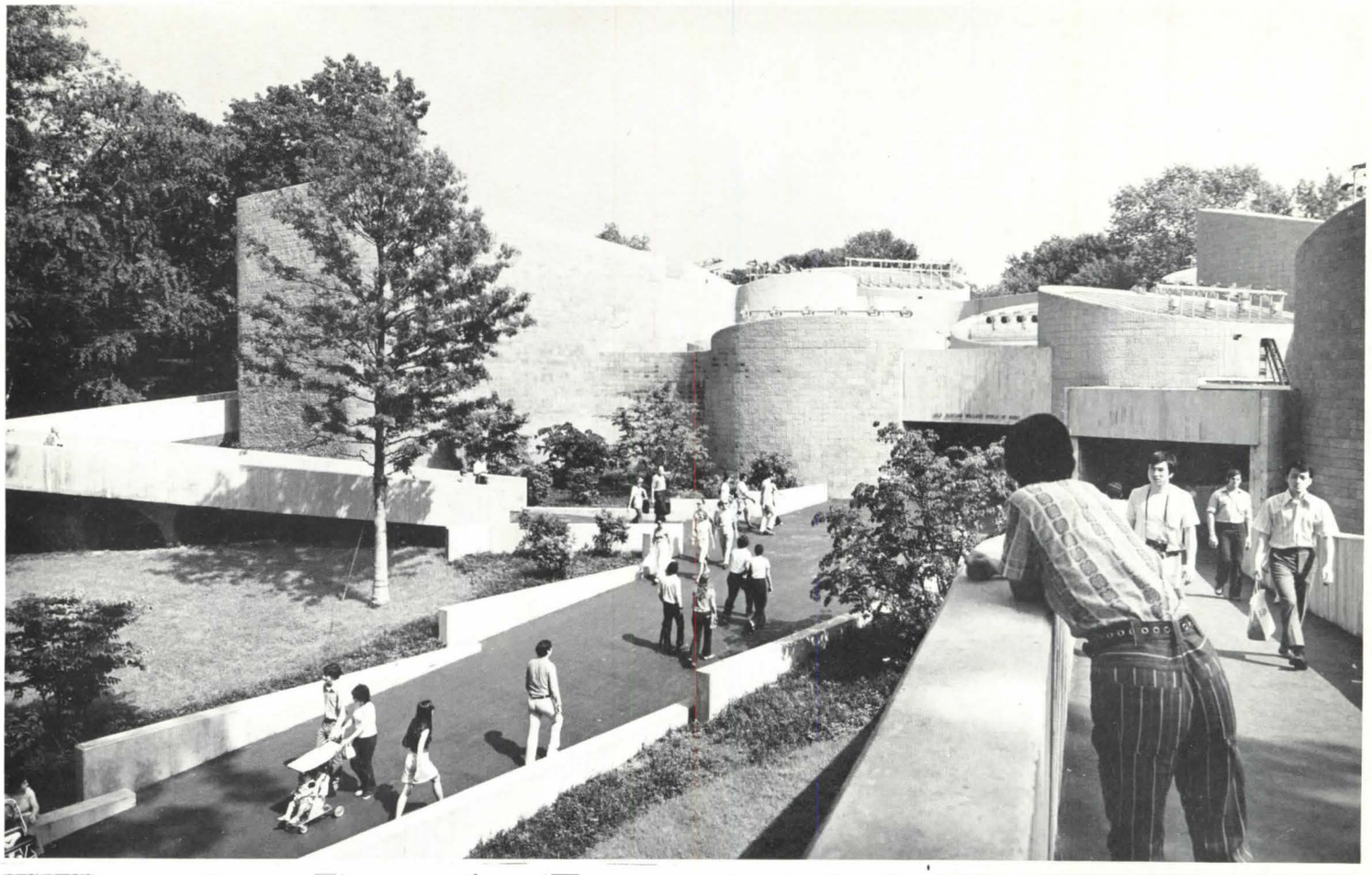


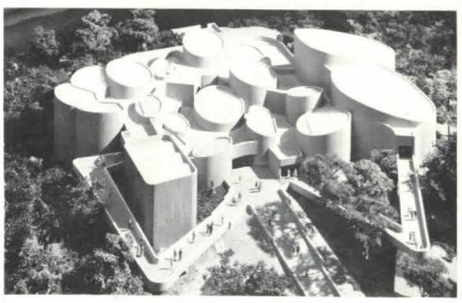


Creatures of the Night In Horseshoe Structure

The World of Darkness, home of nocturnal animals at the Bronx Zoo, is the result of years of zoological research followed by many consultations with my architectural firm and exhibit design consultant Jerry Johnson. A spectacular rock outcrop in a decentralized position was chosen as the site to help disperse burgeoning crowds. Circulation is one-way through the horseshoe-shaped building. Exhibits are divided into three halls; visitors enter the building through a light baffle as a gradual introduction to the darkened halls.

The first hall contains a forest floor with creatures slipping around great stumps and trees. Around a corner is a display of arboreal mammals, birds and reptiles. The second hall contains such flying animals as owls, flying squirrels and bats. The final hall is devoted to animals of the underground and reveals also their burrows, crevices and caves.





Climates Made to Order In Sophisticated Aviary

This $4-million cluster of circular towers, walkways, curving galleries and flying buttress ramps has been called the most sophisticated display of its kind in the world. Designed by the same team as the World of Darkness, it contains 500 birds of 200 species in a controlled climatological environment.

The Lila Acheson Wallace World of Birds is situated on a knoll in the Bronx Zoo. Skylights catch the sun and floodlights above the glass supplement natural light. Inside, the birds live in jungles, swamps, rain forests, mountaintops, deserts, underground and in hollow trees. There are no barriers between the birds and the corridors for visitors. Additionally, there are areas for egg displays, movies about birds and a kitchen where visitors can watch the birds' food being prepared. □

Survey Yields Data on Firms' Financial Operations

G. Neil Harper

The acquisition of meaningful statistics on the financial operating characteristics of the architectural profession has frequently been a difficult, if not impossible, task. One of the principal reasons for this difficulty has been the lack of common terminology and procedures in dealing with such items as employee benefits, overhead, consultant costs, reimbursables, billings and profitability.

The need for accurate statistics on such matters increases as the profession moves toward compensation negotiation and management based on the costs of doing business. Increased competition for commissions, plus inflationary pressures on the costs of providing architectural services, make it mandatory that the practicing professional know what his historical costs and critical operating statistics are, and how in general these compare with the overall ranges and averages in the profession as a whole.

During the last several years, an increasing number of firms has been developing job cost histories and tracking their accounting operations with the AIA computer-based financial management system (CFMS). Currently, 35 to 40 firms, ranging in size from offices of five or 10 employees to offices of more than 100 employees, are using CFMS to provide for their accounting needs on a systematic basis, using a common AIA supplied program. Use of this common program has encouraged modern and systematic reporting, and has offered the possibility of developing highly reliable job costs and statistics for the individual firm, and thereby more reliable indices for the profession as a whole.

In October 1975, a detailed survey was made of approximately a dozen of the more advanced users of the AIA/CFMS. The results were closely monitored, and the returns were developed into averages, plus high and low figures indicating the range of variation. The material here presented, of course, is from a very limited number of firms, widely scattered geographically and varied as to nature of practice, and the average, high and low figures shown are intended merely to indicate the general ranges and are not to be employed for any other purpose.

Many of the results, presented in bar chart form in the accompanying figures, are self-explanatory. Figure 1 shows, for example, that the ratio of technical personnel (including principals) to nontechnical is currently running about four to one, and that there is about one principal for each 10 employees in a firm.

Prevailing pay scales for various classes of employees are shown in Table 1, with high and low figures showing the ranges about the average. The averages are plotted in Figure 2.

Out-of-pocket costs (excluding cost of employee time for personal, sick, holiday and vacation) for employee benefits, as a percentage of total payroll expenses, are shown in Table 2, with ranges, and the averages are plotted in Figure 3.

It should be noted here and throughout that totals for individual firms will not in general equal the total of individual overall benefits because the high, low and

Dr. Harper is a principal in Harper & Shuman, Inc., Cambridge, Mass. The firm is administrator of the AIA computer-based financial management system on which this article is based.

Table 1

	Average	High	Low
Office messenger	3.33	6.00	2.25
Secretaries and clerical	4.61	6.30	3.50
Bookkeeping	6.26	8.87	4.15
Draftsmen	5.92	7.30	5.00
Architects/engineers	8.38	10.00	6.50
Project managers	10.30	13.50	7.12
Principals	16.62	29.55	8.00

Typical hourly rates of pay for various staff job classifications

Table 2

	Average	High	Low
FICA	4.44	5.85	3.27
Federal unemployment	.30	.84	.10
State unemployment	.60	1.26	.10
Workmen's compensation	.24	.50	.08
Medical insurance	1.80	4.00	.70
Life insurance	1.00	2.90	.01
Disability insurance	.85	1.26	.20
Other insurance	—	—	—
Pension programs	4.61	4.95	1.21
Professional dues	.50	1.10	.10
Education and seminars	.58	1.00	.01
Other	—	—	—
Totals for individual firms	13.80 pct.	18.80	10.90

Typical benefits factor as a percentage of total office salaries

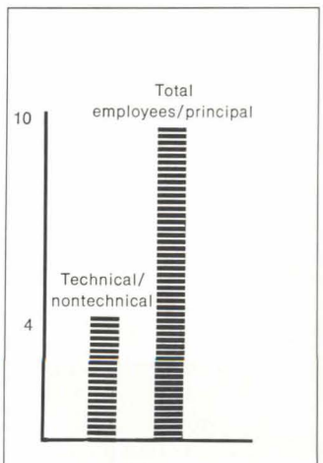


Figure 1 Personnel ratios

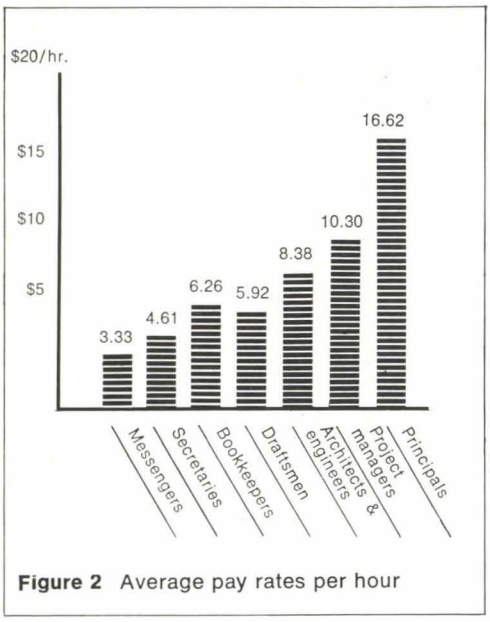


Figure 2 Average pay rates per hour

Table 3

	Average	High	Low
Holidays	2.69	3.46	2.00
Vacation	4.34	6.50	3.00
Sick leave	1.81	2.30	1.00
Personal	1.55	2.70	.10
Totals for individual firms	9.89 pct.	12.90	7.30

Analysis of salaries for indirect time as a percentage of total office salaries

Table 4

	Average	High	Low
1. Predesign 2. Site analysis 3. Schematics	14	20	9
4. Design development	19	32	11
5. Construction documents	44	59	32
6. Bidding/negotiation 7. Constr. contr. admin. 8. Postconstruction	25	40	18
9. Supplemental services			

Typical ratios of labor costs for various phases of service, as a percentage of total direct labor cost

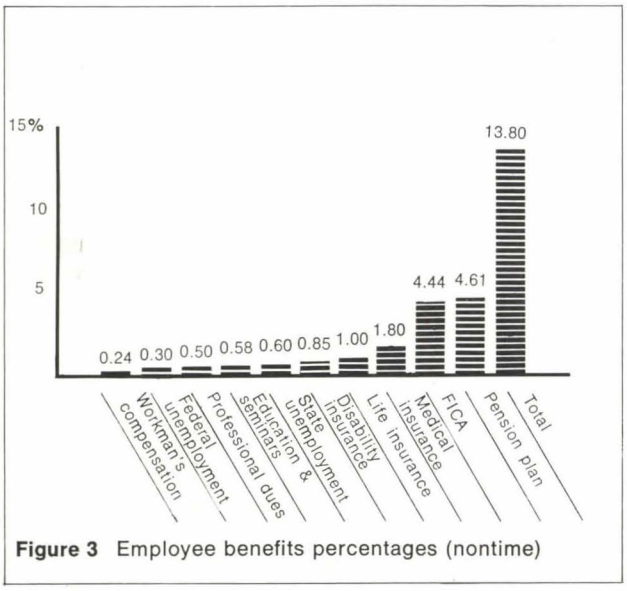


Figure 3 Employee benefits percentages (nontime)

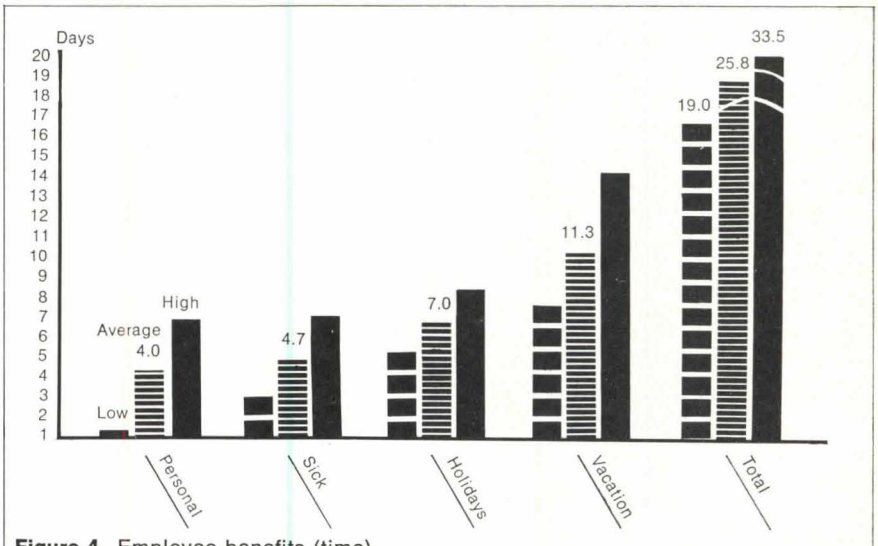


Figure 4 Employee benefits (time)

average figures for individual benefits derive from different firms, and are never simultaneously recorded in any single firm. What is generally of interest is the range on an individual statistic, such as medical insurance, plus a feeling for the range and average benefits offered in a typical firm, as shown in the "totals for individual firms" line. Table 3 gives the cost of the time-related employee benefits (personal time off, sick time, holidays and vacations) as a percentage of total payroll cost.

Figure 4 has plotted the averages for this time, expressed in days per year. Note that the average employee is not available for project work nearly 26 days a year—some 10 percent of available annual time.

When the results of Table 2 and Table 3 are totaled, and the base salary cost added, one obtains the direct personnel

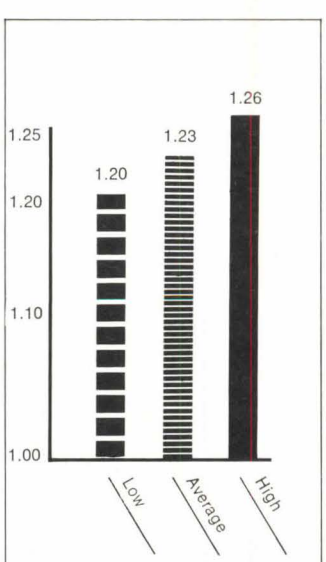


Figure 5
Direct personnel expense

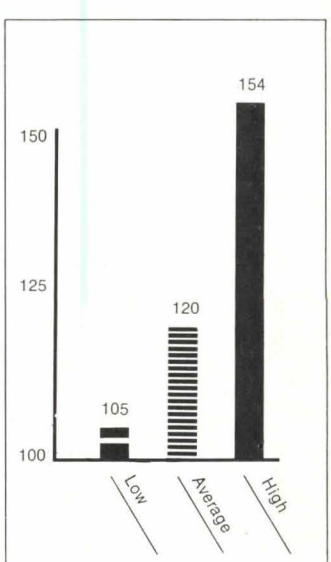


Figure 6
Indirect expense (overhead)

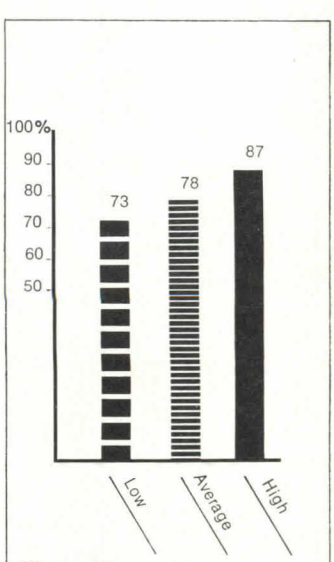


Figure 7
Chargeable time ratio (technical)

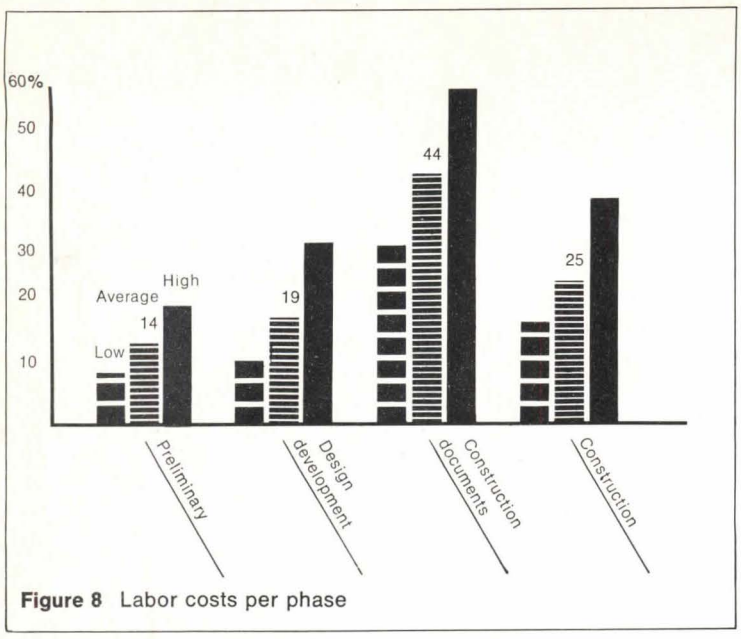


Figure 8 Labor costs per phase

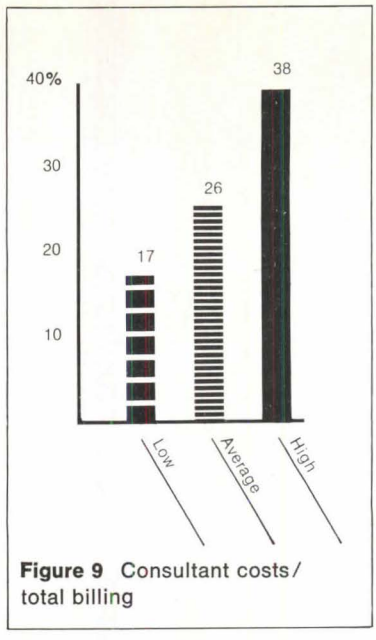


Figure 9 Consultant costs/total billing

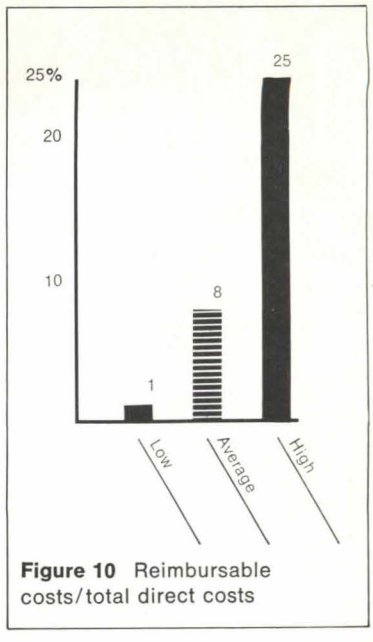


Figure 10 Reimbursable costs/total direct costs

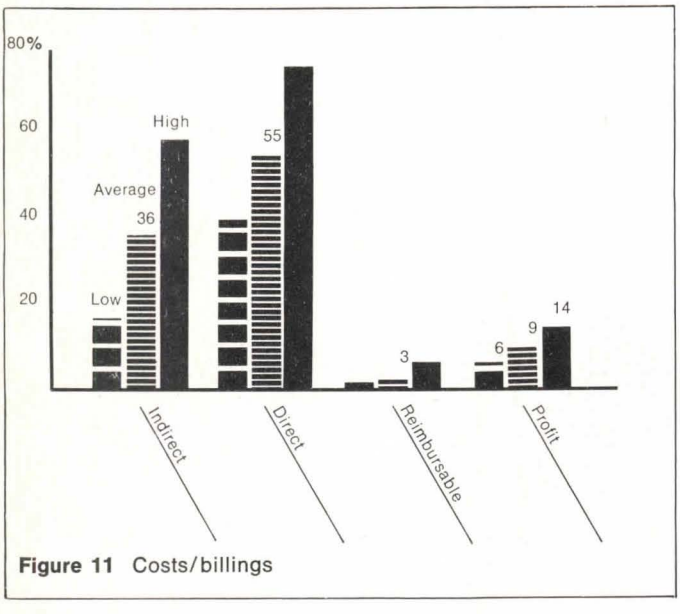


Figure 11 Costs/billings

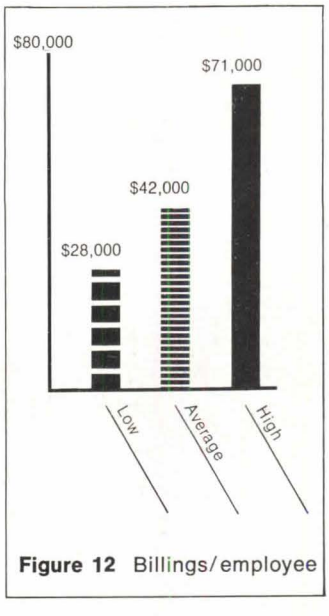


Figure 12 Billings/employee

expense (DPE) rates, plotted in Figure 5. Although there are large variations in individual components of employee benefits (Tables 2 and 3), the range for the overall DPE (Figure 5) is quite small. This indicates that overall benefits are similar from firm to firm—if a firm has high insurance benefits, it may have low pension program benefits, etc.

The gross overhead ratios shown in Figure 6 are computed by dividing *total* firm overhead by *direct* salary expense. The ranges and averages agree with commonly reported figures, and agree with intuitive feelings on current overhead ratios.

The chargable time ratio shown in Figure 7 is obtained by dividing the number of hours actually charged to jobs by technical staff by total technical staff time available. Experience has shown that when this ratio falls much below 75 percent, a firm will have difficulty maintaining its profitability. An alternate expression of this observation is based on the ratio of project hours charged by *all* staff (including clerical, management, etc.) to total staff hours. When this ratio falls below 63 to 65 percent, profitability becomes difficult to maintain.

In collecting the data on labor costs per phase of work shown in Figure 8, an attempt was made to solicit data according to the new set of phases outlined in the AIA Compensation Management Guidelines, as shown in Table 4.

Unfortunately, reporting according to this phase breakdown is not yet common enough to derive meaningful statistics. The phases of Table 4 were grouped Phases 1-3 into preliminaries, and Phases 6-9 into construction supervision to produce Figure 8.

The results shown in Figure 9 on consultant costs as a percentage of total billing may vary between firms with and without in-house engineering. The lower ratios obviously apply for firms which have some or all engineering disciplines in-house. The higher ratios apply for straight architectural firms, especially for those accustomed to heavy use of engineering and other specialized consultants.

A useful statistic, especially from the client's point of view, is what reimbursable costs to expect. Figure 10 addresses this question, on the basis of a percentage of overall direct costs. It appears that reimbursables average about 8 percent of the direct costs of projects.

The split of total billings into indirect expense, direct expense, reimbursables, and profit (or loss) is shown in Figure 11. The reporting firms averaged about 9 percent profit on total billings.

A final figure of some interest is the average billings (after subtracting reimbursable and consultant billing) per employee. If the average of $42,000 billing per employee is compared to the 2.50 multiplier based on the rule of thumb of $1 for direct salaries, $1 for overhead and 50 cents for contingency and profit, the rule seems to hold up reasonably well, based on an average annual architectural engineering salary of around $17,000 a year ($8.38 an hour, from Figure 2). This type of cross-checking of long-used rules of thumb increases the confidence in both the current figures and the rules. Obviously, however, modern practice is considerably more complicated and leaves less margin for error than the practice of earlier days which gave rise to the older rules.

Many of the statistics presented here could doubtless be improved in overall quality, and new items of interest added. As CFMS users become more familiar with these statistics, and as more users become more familiar with these statistics, and as more users begin to contribute to the overall professional averages, it is hoped that common reporting practice will become a reality, and that annual surveys of this sort will become effective tools for better overall management and performance in the profession. □

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BOOKS

Theatres, Spaces, Environments: Eighteen Projects. Brooks McNamara, Jerry Rojo and Richard Schechner. New York: Drama Book Specialists, 1975. 181 pp. $22.50.

The 18 environmental theater projects presented in this well illustrated and entertainingly written book—ranging from multipurpose settings capable of accommodating any play to specific arrangements tailored to the requirements of a particular production—all demonstrate a consistent effort to deal directly with all of the space in which the theatrical event occurs. This includes spectator as well as performance spaces and the relationships between them.

Each project is amply illustrated with plans, sketches and performance photographs accompanied by transcribed conversations among the authors detailing in very practical terms the rationale behind their production approach. Schechner and McNamara were associated with *The Drama Review,* which in the 1960s articulated the aims and achievements of the radical theater in America, and Rojo is perhaps its most representative designer; hence, this book must be considered a definitive statement on the environmental theater movement.

The idea of environmental performance, as practiced in the '60s and to a certain extent today, was nudged into being by the phenomenon of the "happening" that burst upon the art scene in the late '50s. With roots in Dada, Surrealism and the Bauhaus, and strongly influenced by action painting, collage and the artistic implications of the found environment, it embodied the concept of an artwork that could completely surround a viewer and absorb him into its fabric.

This, of course, ran counter to the mainstream of conventional theater architecture and performance. Traditionally, at least in Western cultures, the unity of performance is preserved by isolating it more or less from the spectators so that each member of an audience might perceive and comprehend it as a totality rather than becoming part of it and thereby losing perspective on it.

The environmental theater, as practiced by the authors of this book, does not require the individual spectator to observe all facets of the theatrical experience as it occurs. Rather, the spectator's involvement is with a variety of random sensations within a distinctive environment. Under such circumstances, only the main themes of the event need be, or indeed can be grasped.

The major criticism of such an approach is that theater should concern itself with significant content as well as form. The environmentalists, conversely,

deny the need for specific meaning, bombarding the spectator with multiple stimuli which are, perhaps, more felt than understood.

A glance at the performance photographs accompanying the text makes this clear. In nearly every case, the spectator is as prominent as the performer in the physical setting, and often it is difficult to distinguish between them. The characteristic wooden platforms, scaffolds, ramps and steps, arranged according to the spatial requirements of the productions illustrated, are as available to the spectator as to the performer.

In the environmental theater, the world of the spectator and the performer are almost identical. All production considerations are solved in terms of actual time, space and materials, with little regard to illusion, pretense or imitation. There is literally no back stage or front of the house. The basic structures of raw lumber, rope and unpolished metal are presented without disguise, making their own statement.

Ideally, the environmental theater designer works extensionally with little reliance on preconceived notions. He works according to the functional imperatives of modern architecture as developed between World Wars I and II. In the conversions of existing spaces, such as the Performing Garage, as carefully documented in the book, the designer creates a complex architecture in microcosm—an exercise in pure form related to the human scale but untouched by the need for practical backup services. Whether this is theater architecture or even theater is a moot question.

But the book does present us with food for thought and an excuse for reflecting once again on the basic, old-fashioned, now all too frequently overlooked assumption of form evolving spontaneously from function. For these reasons and because the environmental theater movement seems at this point to have run its course, this book may be of even greater interest to architects than to theater practitioners. In any case, it deserves our close attention. *Martin Bloom, AIA*

Rome: The Biography of Her Architecture from Bernini to Thorvaldsen. Christian Elling. Boulder, Colo.: Westview Press, 1975. 586 pp., plus 220 plates. $65.

Don't expect this to be a high-priced travel guide to the architecture of Rome, although parts of it may very well so serve. Expect instead a scholarly, monumental volume recreating the sights, sounds and smells of 18th century Rome, with emphasis on architectural cosmetics.

Serious students of architectural history will identify references not to be found in other sources depicting this period of late Baroque and Rococo. For example, over a third of Rome's 500 churches either built or refaced during a century of frenzied building activity are discussed by Elling. The text concentrates on an erudite, sometimes overwhelming, analysis of ecclesiastical facades, not reaching into the plethora of artworks inside.

Coupled with the very long chapter on churches is a comparatively shorter one

continued on page 54

"Triangles" – a multi-faceted Steuben Crystal sculpture

Announcing the 1976 winners of the Owens-Corning Energy Conservation Awards

Winner, Institutional category

Allen and Miller, Architects, Santa Ana, California, for the Fremont Elementary School, Santa Ana, California

Winner, Special category

Stephen B. Jacobs & Associates, New York, N.Y., for the Printing House, a former loft building in New York City

Winner, Governmental category

Kansas Architects and Planners Associated, Lawrence, Kansas, for the Federal Office Building, Topeka, Kansas

Honorable Mention, Governmental category

Unthank Seder Poticha Architects, Eugene, Oregon, and Marquess Engineering Company, Springfield, Oregon, for the Lane County Public Service Building, Eugene, Oregon

Honorable Mention, Commercial category

Taylor and Collum, Architects, Atlanta, Georgia, for the Shenandoah Solar Community Center, Shenandoah, Georgia

Honorable Mention, Institutional category

Arthur Cotton Moore/Associates Architects, Washington, D.C., for the Science Classroom at Madeira School, Greenway, Va.

The 1976 Energy Conservation Awards Jury

This year's winners were selected by:

John Street, chief architect, John Portman Associates, Atlanta, Ga.

William C. Louie, vice-president, Smith Hinchman and Grylls, Detroit, Mich.

Charles Schaffner, senior vice-president, Syska & Hennessy, Inc., N.Y.C.

Nathanial Curtis, partner, Curtis & Davis Architects and Planners, New Orleans, La.

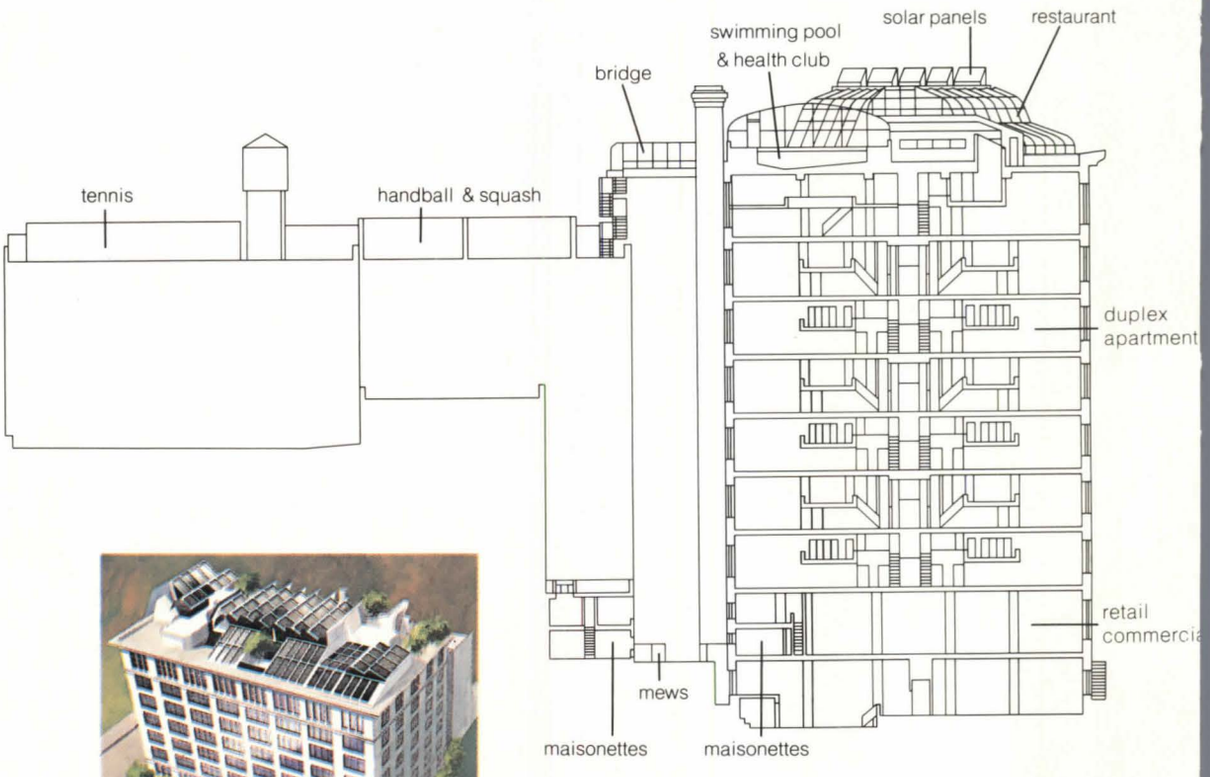
C. Herbert Wheeler, professor of Architectural Engineering, Pennsylvania State University, University Park, Pa.

Samuel Hack, director of facilities and construction management, U.S. Energy Research and Development Administration, Washington, D.C.

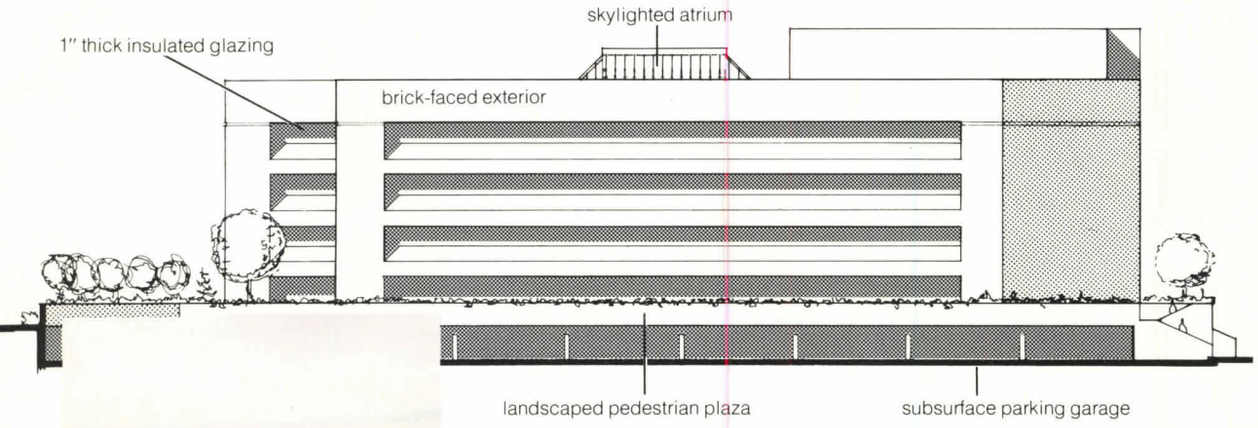
For a look at three of the winning designs, turn the page.

Three winning designs, and why they won

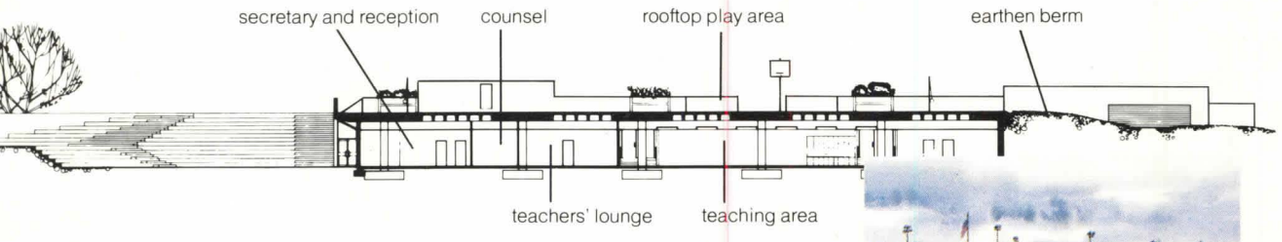
These buildings won top honors in the Owens-Corning Energy Conservation Awards Program for 1976. Look them over. They show how new and not-so-new thinking can produce outstanding energy-saving designs. For more information about all the 1976 winners, write to K.S. Meeks, Owens-Corning Fiberglas Corporation, Fiberglas Tower, Toledo, Ohio 43659.

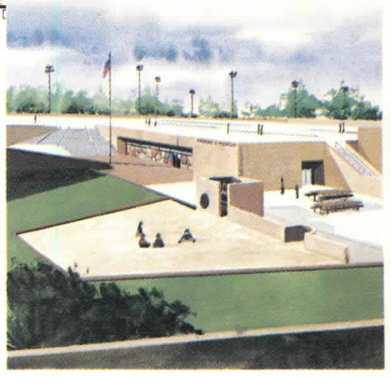


Printing House, New York City. Recycles an obsolete industrial building to create unique urban style housing. A vertical heat pump provides heating and cooling. Solar panels provide energy for domestic hot water. All insulation standards are upgraded. All windows are ⅝-inch insulating glass.



Federal Office Building, Topeka, Kansas. Uses mass plus heavy insulation in walls and roof to create an energy-conserving envelope. Open, skylighted interior atrium allows minimum exterior glazing. Windows comprise only 17% of exterior wall area. Glazing is recessed or shaded to reduce heat gain in summer. Lighting is 2.3 watts/sq. ft. Estimated saving on heating costs: $2,600/year.





Fremont Elementary School, Santa Ana, California. *Poured-in-place* concrete construction stores heat in the structure, causes a lag in heat transfer to occupied spaces. Subsurface design and earthen berms reduce heat gain and loss through walls. Total cooling load is cut 20%, electrical consumption is cut by 42.5 kw/hr for annual savings of $2,142.

Books from page 50
on convents and monasteries. As may be expected, the papal influence also extended to most other structures of the period. Palaces, country houses and public buildings are well covered as individual pieces of architecture. The contribution of all types of buildings, from antiquity to the selected period, is woven into the superb discussion of the squares and streets of the city.

The reader may wonder about the book's subtitle. The story opens on the death in 1680 of the famous sculptor, architect and painter, Giovanni Lorenzo Bernini. It closes on the arrival in 1797 of Bertel Thorvaldsen, a Danish sculptor who worked in Rome for a good part of his productive life. Thus, Bernini's influence is felt all through the story, while Thorvaldsen is only a name in a time frame; he obviously does not appear in Elling's work.

Readers lacking a basic familiarity with the city have their work cut out for them. The excellent 1748 maps by Giambattista Nolli, reproduced in the end matter, are frequently referenced. Comparison with modern city maps is a virtual must for orientation.

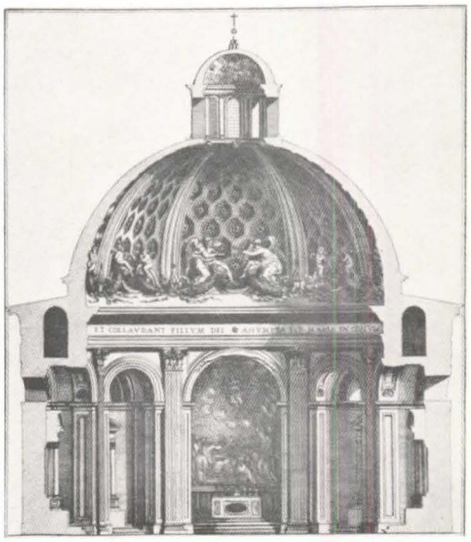
First published in Danish in 1950, awarded in 1972 the Amalienborg prize (the most prestigious Danish award for cultural achievements), the book has recently been translated into English. Apparently, the frequently melodic, almost poetic, turn of a phrase so common throughout Elling's work lost little in translation. Here is a random sample: "The great Roman play of colours, so engaging in its tranquil glow, has tones of an almost symbolic character, rust and dust, ash and straw. But also gold and silver—old, precious, dull gold; smooth, worn silver." The text itself is an art form to be savored.

Elling frequently comments on the interrelationships of street patterns and architecture, in which character is determined by the substance of the structures as they relate to the geometry of the streets and squares. Take, for example, the Via del Corso, or simply, Il Corso. Named for the horse races which took place there in the Middle Ages, it was the Via Lata of ancient Rome, the place of the triumphal marches entering the northern gate straight to the heart of the city. Its character was fixed in the 18th century when many princely palaces and churches were built along it.

The tangle of most of the streets in the old city was the result of picking one's way around ancient ruins, Elling points out, while efforts by a series of Renaissance popes to straighten a few culminated in some sense of order realized in the Baroque period. With the Corso forming the spine, other straight streets fanning out from the northern gate were plotted. Bold strokes were drawn on the plan of the hinterlands, resulting in additional straight streets over hill and dale. Pointed up by numerous squares, the pattern of a few major straight streets set the framework for the development of Baroque Rome.

Compared with today's slick and contrasty photographs, those used to illustrate the book (copiously) first seem a bit pale. But as the reader becomes immersed in the subject, the presentations assume greater validity. The softness of the light and the black and white interpretation of the muted colors become more apparent. And the best part is that the author successfully creates the illusion of a bygone era. In the main, the invasion of the automobile is not reported. The illustrations are peopled by clerics and local characters, including donkey carts.

Every effort has been made to carry the reader back to the 18th century, to experience Rome as it was then. Although



the major subject is the stuck-on treatment of the late Baroque and Rococo peculiar to the papal city (like it or not), it is this period which sealed Rome's reputation as a work of art. Today's intrusions can't completely spoil the effect.

Passages describing the smells of 18th century Rome are precious, sometimes hilarious. The people are painted in word pictures, as is their mode of life. And the sounds of the streets of that era are brought back to life by the author's well-chosen descriptions. Not the least of these sounds is the music of the famous fountains fed by the clear, cold mountain water brought in by the ancient Roman aquaducts.

Chiristian Elling, a learned and articulate art historian, with the ability to bring architecture alive in words, died just before the English translation was published. His work lives on. His overall perception should be a joy to those who wish to explore the subject in depth. *Elizabeth and Robert Class*

Kicked a Building Lately? Ada Louise Huxtable. New York: Quadrangle/The New York Times Book Co., 1976, 304 pp. $12.50.

She describes herself as having spent a lifetime trying to grasp the life and art of the city, "a grim, demanding world of constant crisis and catastrophe." It is, nonetheless, a subject Ada Louise Huxtable approaches with optimism and a sense of humor, even when writing during one of the bleakest periods of recent architectural history.

For she rejoices that "we are discovering a kind of social, cultural and esthetic consciousness unparalleled in history. People have learned to see and feel the city, and technology and esthetics have become political issues. . . . My obsessions are now shared and my co-conspirators are everywhere."

These essays range broadly, commenting as they do not only on the architecture of cities, but on political, economic and human factors that endow each municipality with a characteristic flavor and essence.

The author knows and loves best the city of New York, for it was her childhood home and has continued as base of operations during her professional life. Mrs. Huxtable is now the only woman member of the editorial board of the *New York Times,* was, in 1970, the first winner of the Pulitzer prize for distinguished criticism, is an honorary member of AIA and holds more than a dozen honorary degrees.

Of New York City she writes that "close to failure and facing depression-level stringencies and deprivations, [it] has never seemed richer. Layers of ground-in soil and vintage litter dim its luster, but New York is like impoverished aristocracy—shabbily elegant to the end." It faces catastrophe with class, which is also how Mrs. Huxtable writes about it and everything else.

"Everything else" includes, among other things, Philadelphia ("the bizarre and the beautiful"); Atlanta ("instant city"); Houston ("power, motion and sheer energy"). It includes also Salem, Mass, New Orleans, London, Alvar Aalto, Antonio Gaudi, Louis Kahn, Marcel Breuer, the skyscraper style, the past, the future and, of course, many buildings Mrs. Huxtable has kicked. One such is the Kennedy Center, of which she says, "Albert Speer would have approved."

In fact, she is especially fond of kicking Washington, D.C., buildings. For the city specializes in "the big, the bland and the banal" and "uses marble like cotton wool," she writes.

As the publishers aptly put it, "Open this book anywhere and in no time you will come on a phrase with an idea that will snap your mind alive." □

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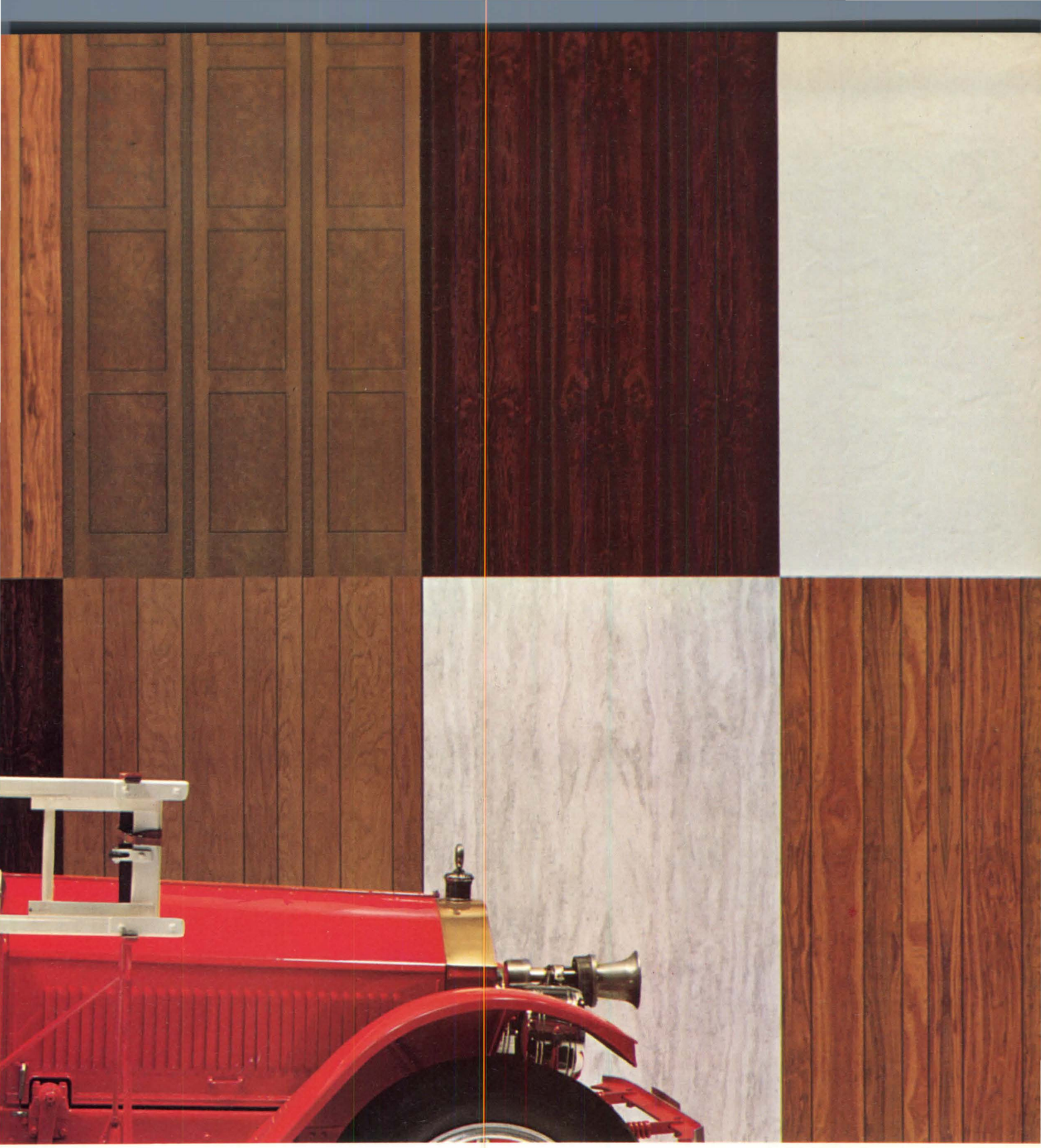

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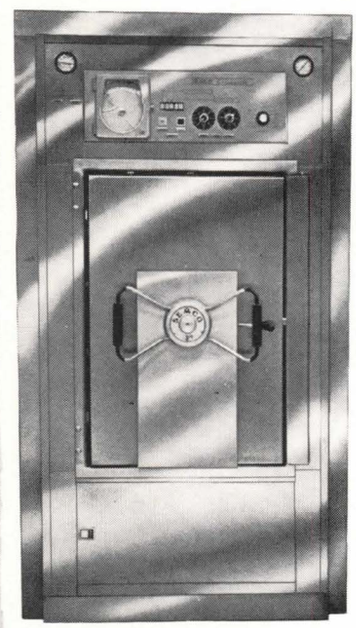

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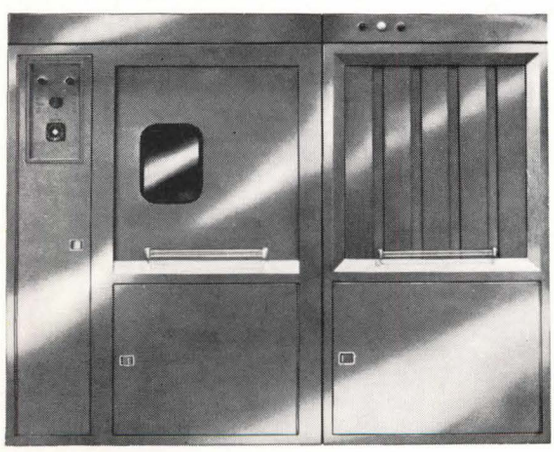

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Going On from page 10
lishing services, publications marketing, publications fulfillment, the convention, the library and the print shop.

Other group executives who report directly to the executive vice president, William L. Slayton, Hon. AIA, are Nancy Truscott, assistant secretary/legal counsel, and William G. Wolverton, Hon. AIA, assistant treasurer/controller.

Design Awards Stress Harmony in Environment

The Chief of Engineers' distinguished design awards program and the Naval Facilities Engineering Command's program for distinguished architectural achievement have a common aim: to provide design professionals with an added incentive to economically design quality projects that harmonize with the environment. Both programs use impartial juries to decide the winning entries.

The Chief of Engineers' program, initiated in 1965, recognizes excellence in design of recently completed Corps projects in three categories: architecture, engineering and landscape architecture. Jurors for the 11th design awards program in the architectural category were Louis de Moll, FAIA, then president of the Institute; O'Neil Ford, FAIA, San Antonio, Tex., and R. Randall Vosbeck, AIA, Alexandria, Va.

The only honor award in this year's program went to a new postal facility located in the outskirts of San Juan, Puerto Rico, which serves the east portion of Rio Piedras County. Designed by Jorge del Rio, AIA, of Rio Piedras, Puerto Rico, the jury praised the "clean, crisp design," calling it "an excellent, simple and functional plan." Most important, said the jury, the postal facility "complements" and "makes an important contribution to the environment."

Awards of merit went to:

- Petracha Hall, Fort Gordon, Ga. (architects: LBC&W, Inc., Columbia, S.C.). "The design," said the jury, "provides a contemporary, human solution to the problem of military bachelor housing. The buildings show good scale, creating a very pleasant living environment."
- Coquille River Lighthouse, Bandon, Ore. (architects: Portland Engineer District). The lighthouse, built in 1896 and vandalized over the years, was restored with the state of Oregon sharing the cost. The jury called "the careful restoration of this beautifully sited lighthouse . . . an act of real significance and sensitivity," signaling the preservation of dozens of other lighthouses in this country (below).

Projects awarded honorable mention were:

- German Military Representative Air Terminal, Dulles International Airport, Loudoun County, Va. (architects: Abbott Merkt of New York City).
- Visitor Center, Libby Dam-Lake Koocanusa Project, Kootenai River, Mont. (architects: Thiry Architects, Inc., Seattle)
- Renovation Building #5, Buffalo District's new office building, Buffalo (architects: Cannon Partnership, Grand Island, N.Y.).
- Restoration of a historic hospital, Fort Mifflin, Philadelphia (architects: Philadelphia Engineer District).
- Hale Koa Hotel, Armed Forces Recreation Center, Fort DeRussy, Waikiki, Honolulu (architects: Belt, Lemmon & Lo, Honolulu).

Jurors for the fifth biennial awards program of the Naval Facilities Engineering Command, which is cosponsored by AIA, were: William L. Ensign, FAIA, Washington, D.C.; Ed Grafton, AIA, Coral Gables, Fla., and Ann Bahr, architectural student, Raleigh, N.C.

Recipients of first honor awards were Dahlgren Hall, U.S. Naval Academy, Annapolis, Md. (architects: Ellerbe Associates, Inc., Washington, D.C.); the Navy and Marine Corps Reserve Training Center, North Basin, Portland, Ore. (architects: Campbell/Yost/Grube, Portland, Ore.), and the Bachelor Enlisted Quarters, Submarine Support Facility, Point Loma, Calif. (architects: Delawie, Macy & Henderson, San Diego).

Dahlgren Hall, used as an indoor drill field for about 80 years, has been transformed into an entertainment and dining facility. The jury called the recycling "an excellent example of new life for old structures. . . . Even though modern elements are added, such as the lower dining facility, they do not conflict with the basic integrity of the existing building. They actually add a new element, surprise, to the total concept."

The Navy and Marine Corps Reserve Training Center was commended by the jury for its use of materials and "low energy requirements." The jury found the design "reminiscent of a ship" to be "an interesting architectural expression." The light steel structure eliminates the need for pilings and minimizes settlements which might occur because of the low load-bearing capabilities of the site (left).

The new Bachelor Enlisted Quarters on a restricted site at Point Loma, Calif., is the first stage of a multistory residential complex. The jury commended the "feeling of lightness and good human scale." The stairways, elevators and exterior spaces are "well executed, providing as much open space as possible, and preserving most of the pine trees."

Awards of merit went to:

- Vice Presidential Residence, U.S. Naval Observatory, Washington, D.C. (Richard A. Baxter, manager of architectural branch, Ken Murray, interior designer).
- Naval Undersea Center, Fort Rosecrans, San Diego (architects: Sanders & Thomas/Frank L. Hope, San Diego).
- Engineering Building P-003, Naval Underwater Systems Center, New London, Conn. (architects: DEW Architects, Hartford).
- Rickover Hall/Engineering Studies Complex, U.S. Naval Academy, Annapolis, Md. (architects: John Carl Warnecke, FAIA, and George M. Ewing Co., Washington, D.C.).
- Dispensary/Headquarters Area, Camp Pendleton, Oceanside, Calif. (architects: Delawie, Macy & Henderson, San Diego).

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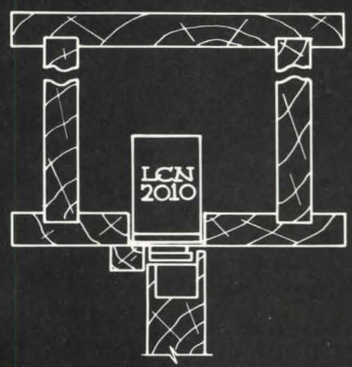

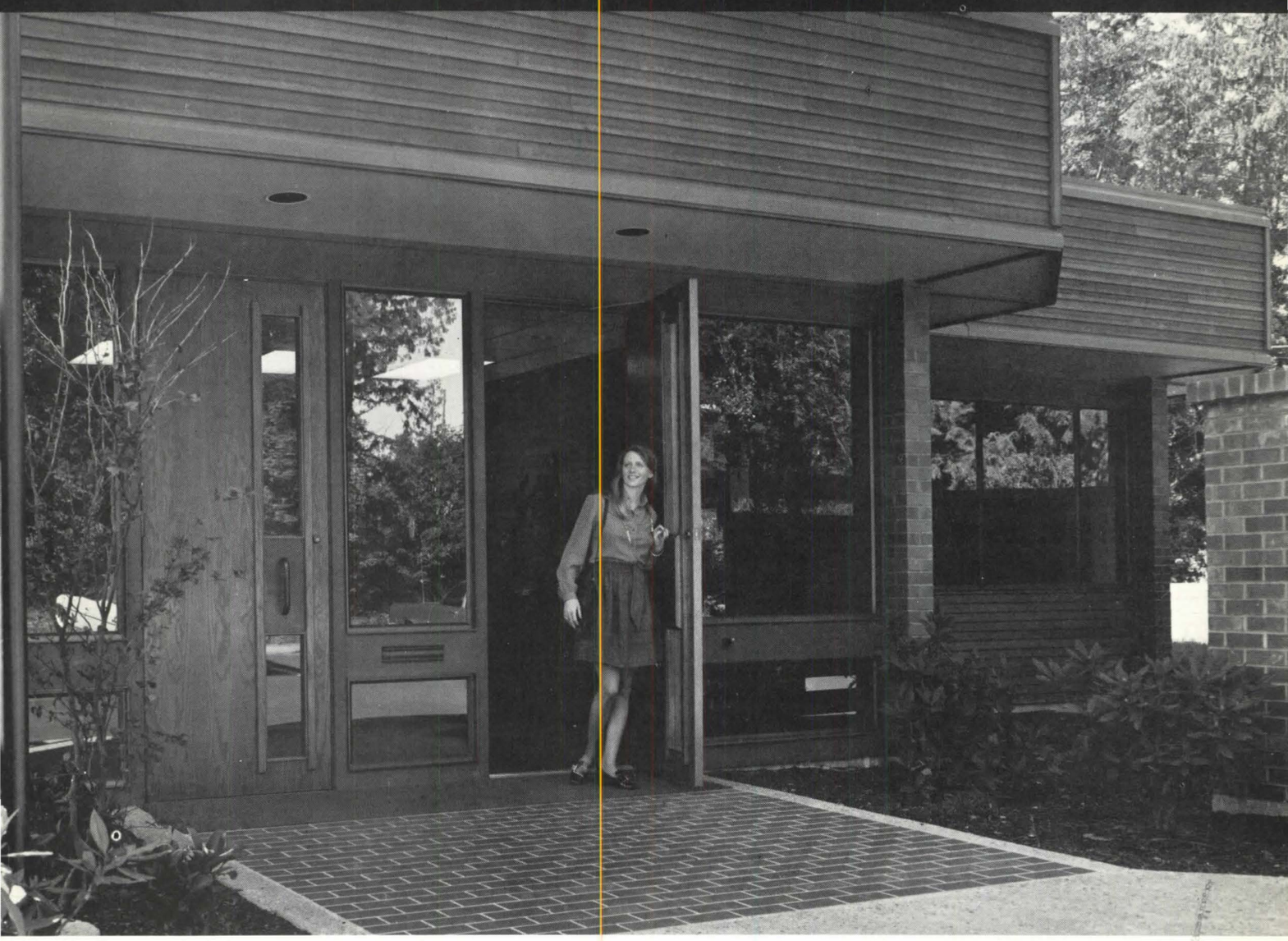

Office Building for Jones Associates, Inc., Bellevue, Wa.
Ridenour, Cochran & Lewis, Architects, Bellevue, Wa.

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Going On from page 60

- U.S. Naval Hospital, Camp Pendleton, Oceanside, Calif. (architects: William L. Pereira Associates, Corona del Mar, Calif.).
- Enlisted Men's Dining Facility, U.S. Naval Air Station, Jacksonville, Fla. (architects: McDonald & Gustafson, Jacksonville, Fla.)
- Bachelor Officer Quarters & Mess, Makalapa Crater, Naval Station, Pearl Harbor, Hawaii (architects: Hogan, Chapman, Cobeen, Weitz & Associates, Inc., Honolulu).
- Golf Clubhouse, Naval Air Station, Pensacola, Fla. (architects: The Bullock Associates, Pensacola, Fla.).

Buildings, Bridges Cited By the Concrete Institute

Twelve buildings and seven bridges have been cited as winners of the 1976 Prestressed Concrete Institute's awards program. Two juries (for buildings and miscellaneous structures and for bridges) praised the winning entries "for their achievements in esthetic expression, function and economy."

The jury for buildings was chaired by Louis de Moll, FAIA, then president of the Institute. Other members of the jury were H. E. Bovay Jr., president of the National Society of Professional Engineers; Arthur J. Fox Jr., president of the American Society of Civil Engineers; Fred

T. Hollingsworth, president of the Royal Architectural Institute of Canada, and John Macsai, AIA, president of John Macsai & Associates Architects Inc.

This year's winners in the buildings and miscellaneous structures category are:

- United Services Automobile Association office complex, San Antonio, Tex. (architect/structural engineer: Benham-Blair & Affiliates, Inc., Oklahoma City).
- Citizens Bank Center, Richardson, Tex. (architect: Omniplan Architects Harrell & Hamilton, Dallas).
- Alaska Airlines Headquarters Building, Seattle (architect: Kirk, Wallace, McKinley & Associates, Seattle).
- Washington State University Stadium, north stands, Pullman (architect: Naramore Bain Brady & Johanson, Seattle).
- South Oklahoma City Junior College, Oklahoma City (architect: Jones-Hester-Bates-Riek-Baumeister, Inc., Oklahoma City).
- Marine Research Library, Scripps Institution of Oceanography, La Jolla, Calif. (architect: Liebhardt, Weston & Goldman, La Jolla, Calif.).
- Hotel Toronto, Toronto (architects: joint venture—Neish Owen Rowland & Roy, Toronto; Reno Negrin & Associates, Vancouver).
- Home Federal Savings & Loan Association, Marion, Ohio (architect/structural engineer: Burris, Lockwood & Tangeman, Marion, Ohio).
- Center for Creative Studies, College of Arts and Design, Detroit (architect: William Kessler & Associates, Inc., Detroit).
- San Diego State University parking structure, San Diego (architects: joint venture-Delawie, Macy & Henderson; Paderewski-Dean & Associates, San Diego).
- Floating terminal for liquid petroleum gas (structural engineer: ABAM Engineers, Inc., Tacoma, Wash.).
- Canadian National Tower, Toronto (architects: joint venture—John Andrews International; Roger Dutoit & Webb Zerafa Menkes Housden Partnership, Toronto, left).

Six Buildings Honored For Energy Conservation

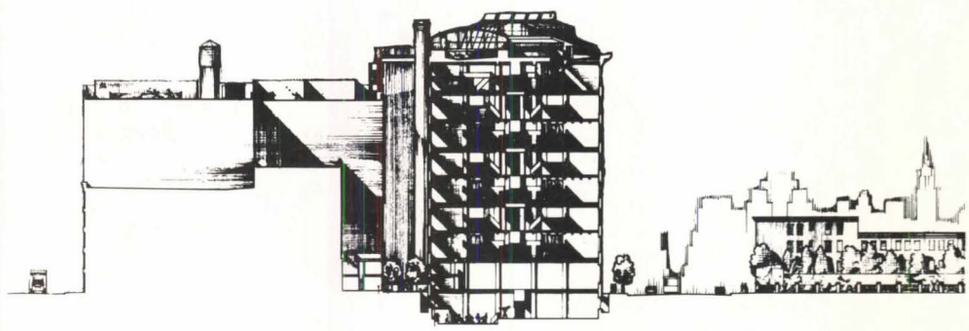
The six buildings which have received Owens-Corning Fiberglas Corp. energy conservation design awards for 1976 prove "that conservation not only works, but that it can be accomplished with available, 'off-the-shelf' technology," said the firm's President William W. Boeschenstein.

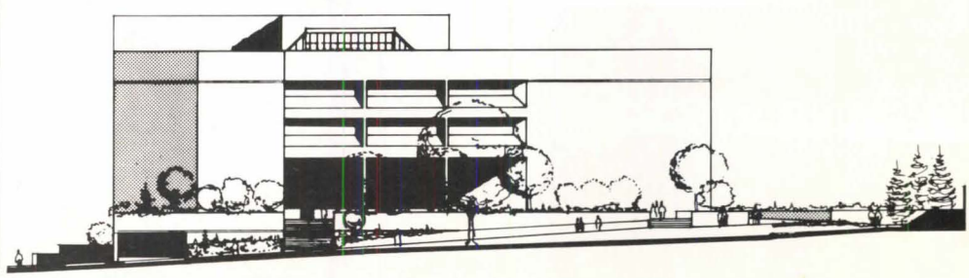
The awards program honors projects which combine design excellence with "significant energy conservation features and/or systems." This year's jury consisted of Nathaniel C. Curtis Jr., FAIA, partner in the firm of Curtis & Davis; Samuel L. Hack, director of facilities and construction management, Energy Research and Development Administration; William C. Louie, vice president and director of research and development, environmental engineering, Smith, Hinchman & Grylls; Charles E. Schaffner, senior vice president, Syska & Hennessy; John Street, chief architect, John Portman & Associates, and C. Herbert Wheeler, FAIA, professor of architectural engineering, Pennsylvania State University.

An award in the program's "special" category went to Stephen B. Jacobs & Associates, a New York City-based architectural and planning firm, and Mountbatten Equities, a development firm, for the recycling of Printing House, a former Manhattan loft building, due for completion in July. The 231,805-square-foot structure is being converted for new commercial and residential uses. The jury unanimously praised the project as a "very good example of recycling an existing urban building and using it to maximize energy conservation" (below).

The "difficult design constraints" of re-

continued on page 69





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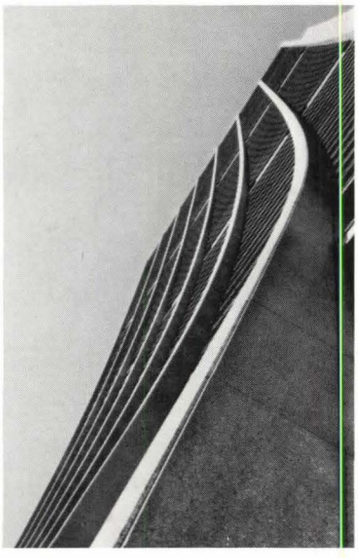

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*Engineering News-Record, May 20, 1976

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Pahlavi National Library Project Tehran, Iran

GOVERNMENT OF IRAN ANNOUNCES INTERNATIONAL ARCHITECTURAL COMPETITION FOR DESIGN OF NATIONAL LIBRARY

An Important International Architectural competition for the design of a 100,-000 square meter national library building to be constructed in Tehran, has been announced by the Government of Iran. Conducted under the rules of the International Union of Architects, this will be a single-stage competition, open to any registered architect, to any architect entitled to practice architecture in his own country, or to any team led by such an architect. Two-hundred thousand dollars in prizes will be distributed as follows:

$50,000—FIRST PRIZE
$25,000—SECOND PRIZE
$25,000—THIRD PRIZE
$10,000—EACH, FOR NEXT TEN DESIGNS SELECTED BY THE JURY

The first prize winner will receive a commission to design the project.

By decree of His Imperial Majesty, the Shahanshah of Iran, the proposed new library has been officially designated The Pahlavi National Library.

The new library will be prominently located in Shahestan Pahlavi, the future city center of Tehran, now in an advanced stage of planning.

The Pahlavi National Library, planned by a group of national and international experts and consultants as a model national library, is expected to be one of the most advanced national libraries in the world. The planning which has gone into the preparation of the building program, together with the importance of the site in the Shahestan Pahlavi, combine to make this an architectural competition of outstanding importance and significance.

Architects who meet the qualifications outlined above may register for the competition and request the competition documents by forwarding a registration fee of $70.00 (U.S.) together with a certificate attesting that they are registered architects, or are entitled to practice architecture in their own country.

The registration fee may be paid as follows:

1. **By check drawn to the order of the Pahlavi National Library Project, International Architectural Competition, or**
2. **By bank transfer to: Account No. 1126, Pahlavi National Library Project, International Architectural Competition, Bank Melli Iran, Aryamehr Square Branch, Tehran, Iran.**

The check, or a copy of the bank transfer slip, should be sent with the registration request to the Pahlavi National Library Project, Committee for the International Architectural Competition, Aryamehr Square, 9 Bisotun Avenue, Tehran, Iran.

The registration period extends from January 22 to April 19, 1977. Program documents will be mailed to registrants between April 4 and May 1, 1977. Deadline for receipt of all entries is January 20, 1978. The program for the competition will be available in both Persian and English. All entries must be in English.

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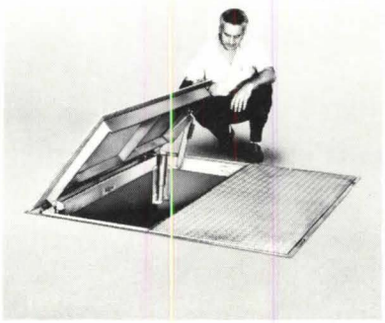

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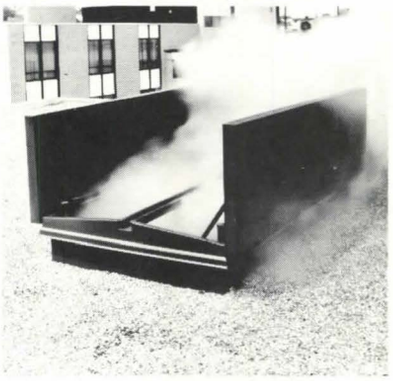

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Dues and membership from page 34
pliance with the Institute's bylaws and standards of ethical practice.

- Associate members' dues should be minimized to encourage participation.
- Eligibility for professional affiliates should be expanded to include professionals in government, education, research and journalism since these fields will be excluded from the AIA associate category.
- Persons employed in ancilliary professions, e.g. designers, may be considered for membership at the chapter level and would be termed professional affiliates.
- Application for emeritus status should be handled by components rather than individuals in order to add a measure of dignity to the procedure. Dues should continue to be fully remitted to emeritus members.
- An AIA member should be eligible for the nonresident category if absent from the country at least 18 consecutive months.
- The current category of student associate should be changed to student affiliate and membership qualification should include students in secondary schools, technical schools, community colleges, nondegree colleges, in addition to architectural schools.
- State organizations should be allowed to confer honorary membership in their organizations, and such status should be independent of national and chapter honorary memberships.
- Institute bylaws should be amended to sanction honorary memberships in chapters (honorary memberships are now conferred by some chapters) and such status should be independent of national and state honorary memberships.
- Honorary members of state organizations and chapters should, when using the honorary designation, specify the source of the honorary status; "honorary AIA" should be reserved to those honored by the national organization.

Those working on the projects were as follows: for the dues report, in addition to task force chairman Schwing; H. Kennard Bussard, AIA; David M. Bowen, AIA; Robert A. Fielden, AIA; William R. Jarratt, FAIA, and William G. Wolverton, Hon. AIA (Institute controller). For the membership report, task force chairman Gerald L. Clark, AIA; Ehrman B. Mitchell Jr., FAIA; Ward W. Deems, FAIA; John L. Carlson; Douglas T. Whitneybell; Ric Alfaro; Dorothy Spence, and Robert A. Harris, AIA (Institute staff). Consultants to the membership task force were a Philadelphia chapter committee chaired by Charles Hough, AIA, and the late Searle H. Storch, AIA, emeritus.

Grassroots will meet Jan. 13-15 at the Frontier Hotel, Las Vegas; Jan. 17-19 at the Hyatt Regency Hotel, Houston, and Jan. 24-26 at the Washington Hilton Hotel, Washington, D.C. The annual convention will be June 5-9 in San Diego. □

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cycling an existing industrial building to create a "unique kind of housing," said the jury, made the project a "real challenge." A key role in energy conservation is played by the building's massive roof area of 20,000 square feet which accommodates a solar system made up of 300 panels set at a 45-degree angle. The roof, which provides views of the city skyline, is the site of a restaurant and health club.

An existing 9,000-gallon tank, once used for a sprinkler system, now stores hot water. A pump circulates water through the solar panels and through a heat exchanger installed in the tank. In the solar panel fluid and in the storage tank are thermostatic bulbs which indicate the capability of the solar panels to heat water. When climatic conditions prevent heat transfer, the water's circulation will cease. The backup system is activated when another thermostatic bulb in the storage tank so indicates. A similar indicator determines the temperature of domestic hot water. Each apartment—all are duplexes—has individual control over heating and cooling.

In the "governmental" category, Kansas Architects & Planners Associated of Lawrence, Kan. (a joint venture of Kivett & Myers, Platt Associates, Woods & Starr and Peters, Williams & Kubota) won top honors for the design of a General Services Administration project, the federal office building in Topeka, Kan. The building is scheduled for completion in March.

"This project," said the jury, "is almost twice as energy-efficient" as structures being built according to "the current standard." The designers "used architecture to achieve conservation ends, not just engineering solutions," the jury said in commending the project's demonstration that "a high degree of energy conservation and esthetics can be achieved with the use of basic, existing, readily available technology" (bottom, page 62).

The walls are of eight-inch concrete block, with two-inch polyurethane insulation; four-inch brick is used on the facade. Windows are recessed five feet on the southern wall where insulated shaded glass is used. Similar overhead and lateral shading is on the building's east and west facade, where minimum use is made of glass. Glass is eliminated entirely on the northern exposure.

The heating system, composed of ducted fan coil units above a suspended ceiling on each of the structure's four floors, has no boilers, fuel tanks or fuel piping. A heating unit redistributes heat from the building's core to the perimeter. Airconditioning is provided by a fan system and a central chilled water refrigeration plant, with refrigeration consisting of two centrifugal chillers, a water-cooled tower on the roof and pumps.

Lighting fixtures, which pass about half their generated heat into the plenum area, serve to reduce the size of the airconditioning system. Also, "task lighting" results in decreased wattage. Computerized control of all equipment is also an energy-saving feature in the all-electric, 176,942-square-foot building.

Runner-up in the governmental category were the firms of Unthank, Seder Poticha of Eugene, Ore., and Marquess Engineering Co. of Springfield, Ore., for the design of the Lane County public service building in Eugene. The jury praised the manner in which the low, three-level structure blends with nearby county buildings and the designers' use of "basic principles and materials" to achieve energy conservation.

The building's roof is designed as a combination plaza area and pond. The plaza has a concrete slab with internal copper piping. Water running through the coils is regulated at 100 degrees F, and in winter offsets heat loss by 83 percent.

The pond has energy-saving features which reduce solar gain in summer by 76 percent and heat loss in winter by 37 percent. Water heated to 100 degrees F comes into the pond and is agitated in winter to prevent freezing.

Energy consumption is reduced by the

continued on page 70

Going On from page 69

storage capacity of a 200,000-gallon tank which provides cooling when required and also stores internal energy. This storage capacity permits more chilled operation at night when demand levels and utility rates are lower and also absorbs peak loads on the mechanical system. Light fixtures expel their heat into air passing through the ceiling plenum.

Landscaping also plays a role in energy conservation. Deciduous vines, planted in roof overhangs, form a sunscreen for window areas in summer. Plantings on the roof are not only esthetically pleasing, but provide additional insulation.

The design of the Fremont Elementary School in Santa Ana, Calif., won the firm of Allen & Miller of Santa Ana top honors in the "institutional" category. The designers faced the problem of building a school on a 2.8-acre site that would conform to state earthquake regulations as well as to neighborhood scale. The jury commended the designers for the manner in which use was made of a "very limited site." The 46,600-square-foot structure was recessed into the ground and the roof area was made a playground (right).

Cooling requirements and heat transfer are reduced by placing nonairconditioned areas, such as toilets, storage and equipment rooms, on the building's perimeter. "Transfer is also reduced," the jury said, "because the structure is submerged into the ground."

The building, constructed of poured-in-place concrete, has one-third of its exterior wall area protected with earthen berm, making heat gain or loss negligible. The roof is laminated with a coal-tar pitch waterproofing system and is covered by insulation and a three-inch slab of concrete.

The building's orientation is such that only the north and west walls are exposed. When heat transfer reaches its high point, after school hours, the cooling load is lower. Cooling requirements are reduced by about 34 tons, and electrical consumption by 42.5 kw per hour, realizing a saving yearly of about $2,142.

Airconditioning is circulated through the structure by four multizone units, with each system having direct fire heating section and direct expansion cooling coils. Air can be transferred directly to rooms at low velocities by means of a spiral duct system. The school's "simple design helped reduce the total cooling load by 20 percent," the jury said, resulting in an initial cost saving of $27,200 as compared to a conventional school's rooftop system.

Arthur Cotton Moore/Associates of Washington, D.C., won an honorable mention in the institutional category for its design of a 10,000-square-foot science classroom building at the Maderia School in Greenway, Va. "This is a building

whose design seemed to evolve directly from a conservation standpoint in that the solar system was an integral part of the building itself," said the jury. "It seems to be a celebration of energy conservation."

Located in a sparsely wooded part of the school's campus, chosen partly to eliminate the need to cut down more trees, the building connects the old school campus with a new one now being formed. The 4,600-square-foot solar collector determined the structure's form, as well as its mechanical system. The collector, made of aluminum and equipped with tubes through which oil passes, has a 26-degree angle, creating, said the jury, a "strong visual impact at the collector's high point."

The oil transfers heat to a 10,000-gallon water tank. The heated water passes through hot water heating coils to provide heat to the building via the air duct system. Enough heat is accumulated by the solar collector for two or three days. If needed, the storage tank is kept at operating temperatures by a boiler in an existing building. Heat transfer is also minimized by an overhang on the building's south side and by minimum use of glass. Because the school classroom is not used in summer, no airconditioning is necessary.

Honorable mention was given in the "commercial" category to the Atlanta firm of Taylor & Collum for the design of the Shenandoah solar community center in Shenandoah, Ga. The 54,000-square-foot multipurpose center contains an ice rink, gymnasium, exhibition space, meeting rooms and offices. The jury said the building is "probably one of the most complete solar projects there is, in terms of supporting the functions of the building."

One-third of the cooling and 95 percent of the heating, as well as domestic hot water, are supported by the solar system. Also, the heating of an outdoor pool and the resurfacing of the ice rink are done by solar energy.

The designers decided to place the structure underground to help absorb the internal heat load and to provide natural insulation against the outside solar loads. Heating and cooling loads are also reduced by the building's square shape, reducing the perimeter area.

The roof is covered with polished aluminum which reflects heat toward collectors and reduces heat gain. To integrate the solar system with the roof design, which required long spans for the ice rink and gymnasium, deep trusses were used. The chords of each truss are set at the angle of 45 and 36 degrees of the solar panels and reflectors. Each of the 63 panels is double-glazed. Except at the entrances, the only glass in the building is one-inch tempered glass on the north wall which is unaffected by heat gain in the daytime. Artificial lighting in the building is reduced to a minimum during the day because of the skylights formed by the trusses and chords.

Award Nominations

Nominations are requested for the second annual award for excellence in architectural education. Sponsored jointly by AIA and the Association of Collegiate Schools of Architecture, the program honors persons who have taught for at least a decade, making his or her primary contribution to architectural education in North America.

Nomination forms for faculty and students at ACSA member schools, members of AIA and members of the Royal Architectural Institute of Canada are available from and should be returned to the director of education programs at Institute headquarters. Nominations, presented on appropriate forms, are due by Feb. 10; additional letters of support are encouraged. Jean Labatut was cited in 1976.

Deaths

C. William Abbott, Claremont, Calif.
Plas Andrew Alligood Jr., Miami
Frank A. Amodio, Red Bank, N.J.
Joseph W. Bailey, Greenwich, Conn.
Thomas E. Berger, Champaign, Ill.
Donald R. Catching, Sacramento, Calif.
Laurens P. Cotter, Cincinnati
J. Walter Farmer, Rossmore Walnut Creek, Calif.
John F. Garrison Jr., Houston
Fred T. Loeffler, Pittsburgh
Harley J. McKee, FAIA, Syracuse
Frederic H. Porter, FAIA, Cheyenne, Wyo.
Jon A. Renner, Miami □

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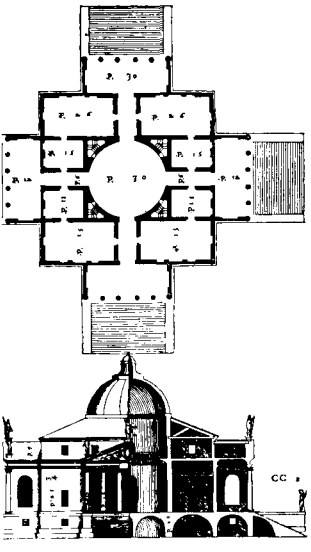

Studies in Italian Renaissance Architecture
by Wolfgang Lotz
Introduction by James S. Ackerman

Wolfgang Lotz acquired his training as a scholar in his native Germany, and he has been for a number of years Director of the Hertziana Library in Rome, a major research center in the field of Italian art. All but two of the nine essays in this volume originally appeared in German or Italian and are now available for the first time in English.

The essays are illuminated by 130 illustrations, many of them plans and perspective and elevation drawings executed during the period.
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The Mathematics of the Ideal Villa and Other Essays
by Colin Rowe

Charles Jencks wrote in *Modern Movements in Architecture* (1973): "... when Colin Rowe published his article 'The Mathematics of the Ideal Villa' in 1947, those who had been following the emergent Neo-Platonism, that is, those close to the Warburg [Institute], were not surprised. Here was New Palladianism fully born right from the top of Corbusier's head."

In addition to this influential essay, the book contains eight others on architecture, classical and modern.
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ADVERTISERS

The gap between knowledge and documentation had to be closed.

And building designers and others had to be provided with a way to easily use the new proof.

Not easy tasks. But critical ones in an era when the energy performance of buildings is a matter of the highest priority.

For thousands of years people have *known* that buildings with masonry walls were more easily kept warm in winter and remained cooler in the summer. The reason was obvious: masonry walls both stored and slowed down the passage of heat, making interior climates more stable. A simple, observable fact. But no longer sufficient.

Designers and owners needed to know *how much better* masonry conserved energy than did competitive materials and systems. And they needed a simple way to calculate the differential.

Only then could masonry's superior thermal performance be reliably taken into account in meeting energy conservation goals and requirements. Only then could heating-cooling equipment be more accurately sized to save money on both initial and operating costs.

Disdaining "claims" without documentation, the masonry industry began a broad research project to quantify the relationship of the mass or weight of masonry walls to the transmission of energy. The masonry industry engaged a highly qualified firm of consulting engineers (Hankins & Anderson, Inc.) to conduct the study. Ten different walls ranging in weight or mass from four pounds (19.5kg/m^2) to 116 pounds (567.5kg/m^2) per square foot were specified for analysis in 10 widely varying climatic conditions. And in eight solar orientations.

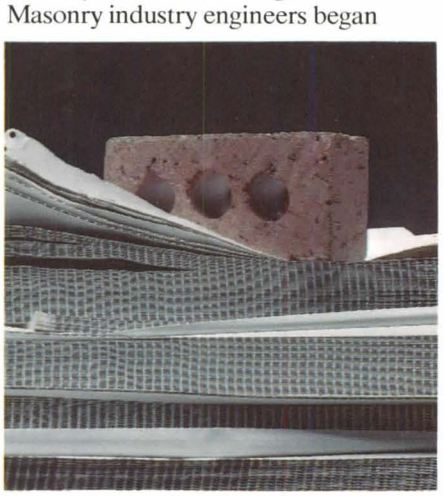
Researchers used a special computer program built around the "response factor" method adopted by the National Bureau of Standards Load Program along with other computer programs. They analyzed U.S. Weather Bureau data and considered the effects of many variables, including the weight of walls, on thermal performance.

Results of the computer analysis showed:

- Traditional "U" value measurements of the thermal performance of walls are inadequate. They are based on the incorrect assumption that energy transmission occurs in a "steady state". Contrarily, the process is dynamic and varies greatly in relation to many factors, one being the weight of walls.
- Steady-state "U" value measurements therefore may often result in the oversizing of heating equipment for buildings with masonry walls (and the undersizing of such equipment for buildings with lightweight walls).
- The difference between steady-state and dynamic measurements can be accounted for by the use of a *correction factor*—the "M" factor—in making heat gain and loss calculations.

The consulting engineers' report and data consisted of 460,800 numbers on 1,200 pages of computer print-out. Important as this proof of the superior thermal performance of masonry walls was, it was not enough.

The task of developing a tool for the easy use of the findings remained. Masonry industry engineers began studying and correlating the data to provide a simple *correction factor* for dynamic analysis.



The result: An easy-to-use "M" factor graph or curve.

Only two numbers are required in order to use the graph: the number of "degree days" in the locale (obtainable from the U.S. Weather Bureau) and the weight per square foot of the wall. The graph can then indicate the appropriate "M" factor modifier, or correction factor, to be applied to steady-state "U" value measurements. A more accurate measurement of the dynamic thermal performance of walls results.

The graph shows that in all cases, masonry walls perform better than lighter weight walls with the same "U" value rating. The heavier the wall, the greater the differential.

Results of the masonry industry study and the "M" factor graph have been submitted to the Conference of American Building Officials (CABO). And CABO has agreed that the effect of mass should be considered in making heat gain/loss calculations.

The "M" factor study findings are contained in a new Masonry Industry Committee publication, *Mass, Masonry, Energy.* With the findings are graphs and charts, and an explanation of how to use them. An all-in-one booklet—everything you need to know in order to take advantage of the superior thermal performance of masonry walls.

We're proud of the new proof that masonry walls save more energy than walls of competitive materials with the same "U" values.

We're proud of the fact that the masonry industry decided to produce this proof, rather than simply make a claim.

But our pride isn't important to you. What matters to you is that we've made it possible to design, build and operate buildings that will save energy and money.

We've got the proof. Just write for it at the address below:

BEFORE WE COULD CLAIM THAT MASONRY CONSERVES MORE ENERGY THAN ANY OTHER BUILDING MATERIAL, WE HAD TO PROVE IT.

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Modular service walls by Halsey Taylor.

Functional accents of stainless steel for Dallas Federal Savings.

This 12-module Halsey Taylor service wall creates a focal point for the south wall, first floor, of the Dallas Federal Savings & Loan Association Tower.

The Dallas Federal corporate offices, which occupy the concourse and first two floors, contain six Halsey Taylor service wall units. All of the units are stainless steel. Two incorporate 12 modules each and four are composed of nine modules each. Functional modules consist of drinking fountain and cooler, a fire hose cabinet and a clock panel. Remaining panels are decorative.

"Our Halsey Taylor units are beautiful as well as functional," states Mr. Earnest Brownlee, Property Manager and Vice President, "and the stainless steel complements the chrome trim used throughout the building interior."

The Halsey Taylor Service Wall System conserves space, reduces the number of isolated wall cutouts normally required, and makes the location of critical building facilities easy to remember.

The wide selection of functional and decorative panels permits broad design flexibility. In addition to stainless steel and PATINA bronze-tone stainless, eight Polychrome colors are available. Functional modules include drinking fountains, clocks, directory boards, fire hose and extinguisher cabinets, fire alarm pulls, telephones, ash trays, waste receptacles, and loudspeaker grilles. All modules are standardized and any number may be included in a single station—depending on the amount of wall space at your disposal.

For complete details, specifications and a modular wall system design kit, write to Halsey Taylor Division, King-Seeley Thermos Company, Freeport, IL 61032.

Dallas Federal Savings & Loan Association Tower:

Architect: Mark E. Miller, Dallas, Texas
Interior Architect: Steven O. Nall, Dallas
Mechanical Engineer: Herman Blum Consulting Engineers, Dallas
Mechanical Contractor: Allied Mechanical Contractors, Dallas

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