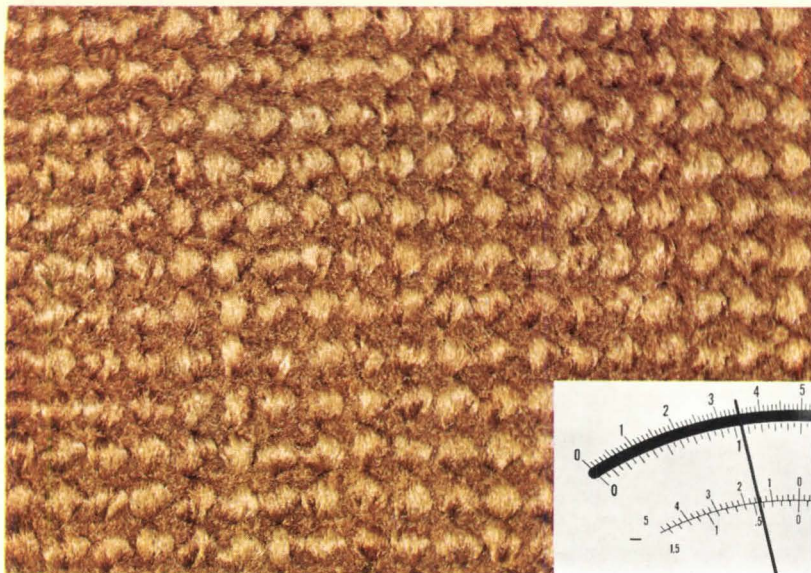
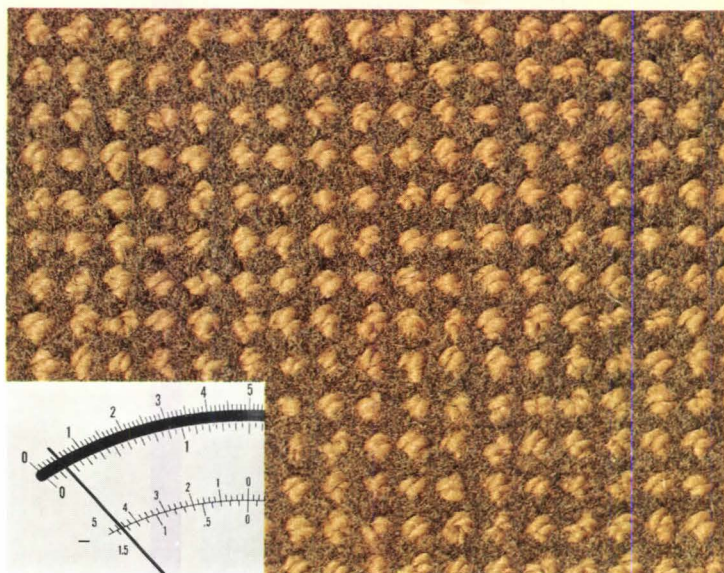


WALKER

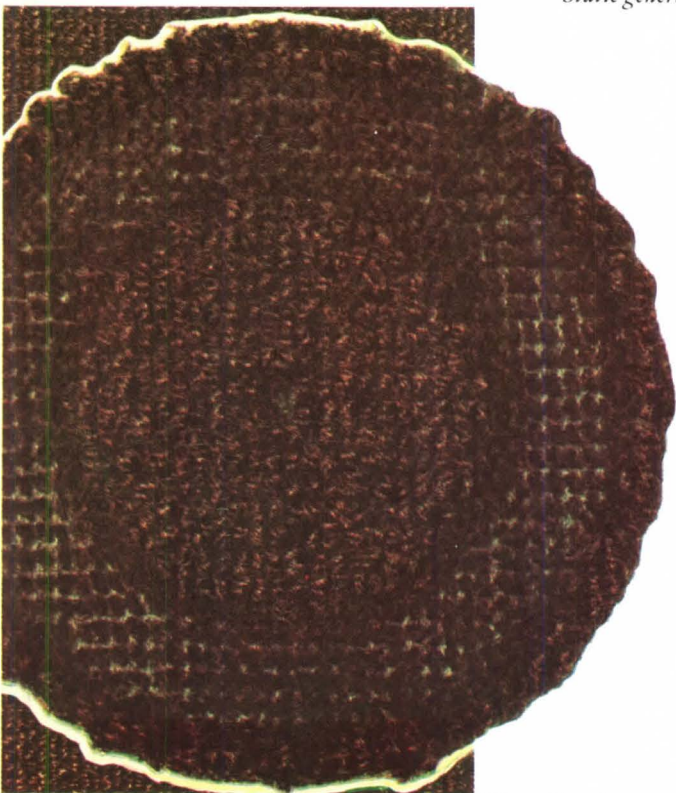




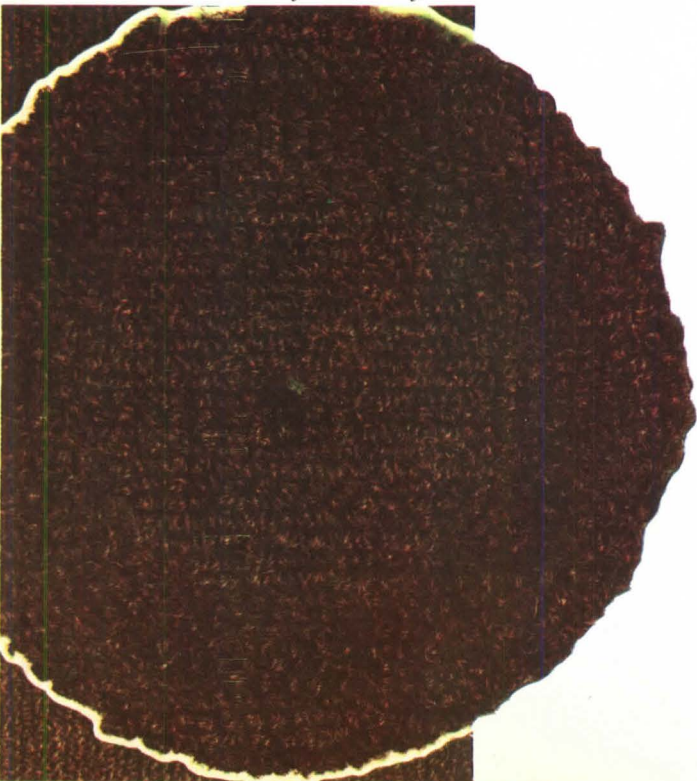
Static generated by nylon.



Static generated by Fortrel PCP.



*Acrylic after 1,800 cycles on a Taber Abrader.
Fortrel PCP after 1,800 cycles on a Taber Abrader.*



Which carpet

You're looking at photos of the actual results of three tests conducted by Certified Testing Laboratories, Inc. on carpets of Celanese Fortrel PCP[®] producer colored polyester, and commercially available carpets of similar construction in different fibers.

Fortrel PCP outperforms them all.

More Durable.

After only 1,800 cycles on a taber abrader (taber abrasion test ASTM D-1175), the carpet of acrylic fiber reached the breaking point (abraded to the backing) and registered a pile weight loss of 11.6%. The carpet of Fortrel PCP polyester didn't reach the breaking point until 22,000 cycles! And didn't lose 11.6% of its pile weight until 29,900 cycles!

Less Static.

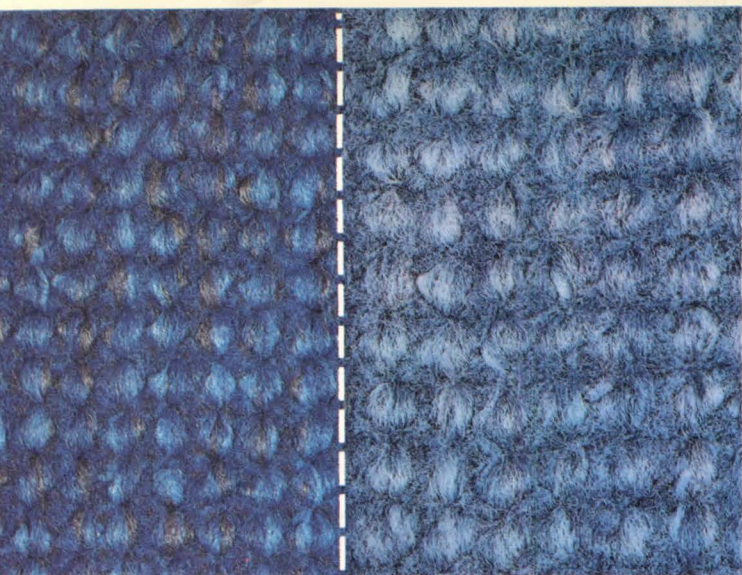
In checking static generation, the AATCC Walk Test with Neolite Soles (134-1969) was conducted.

Carpet of Fortrel PCP polyester generated a mere .5 kilovolt, well below the threshold of human sensitivity.

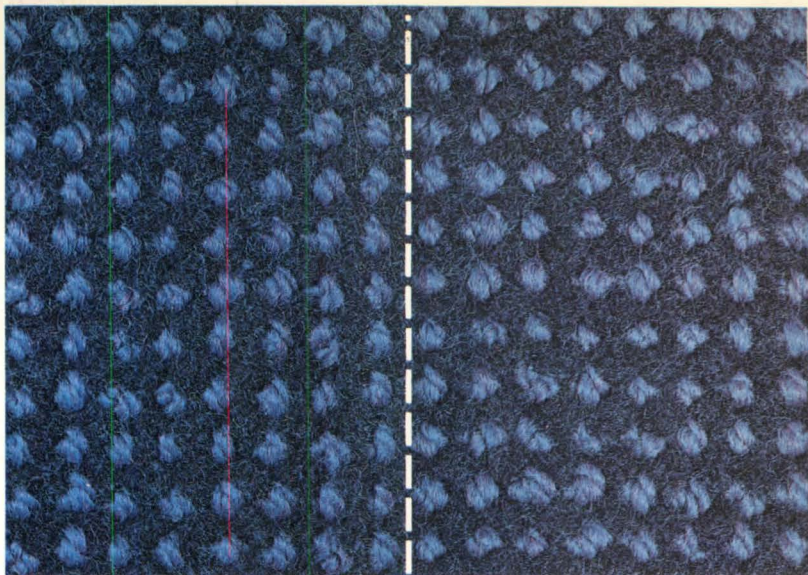
(Even below the level necessary for such delicate applications as computer rooms and hospitals.) The carpet of Antron II, even with metallic protection, generated seven times as much static—3.5 kilovolts.

No Fading.

In the AATCC Colorfastness to Light Test (Test Method 16E), the carpet of Fortrel PCP polyester showed no evidence of fading or color change after



Nylon before & after exposure to 1500 hrs. of Xenon-Arc lamps.



Fortrel PCP before & after exposure to 1500 hrs. of Xenon-Arc lamps.

do you want on your floor?

1500 hours of exposure to Xenon-Arc lamps. (That's 18 times the industry standard.) The carpet of nylon had faded substantially well before 1500 hours.

Wear Guaranteed.

These are only three of twelve exacting standards that every carpet of Fortrel PCP polyester must meet before it is awarded our five-year wear guarantee. It's the *only* wear guarantee available anywhere on contract grade polyester carpeting and it guarantees that "if the surface pile of the carpet wears more than 10% within five years from the date of initial installation, Celanese will replace the affected area with equivalent carpeting at absolutely no cost to you."

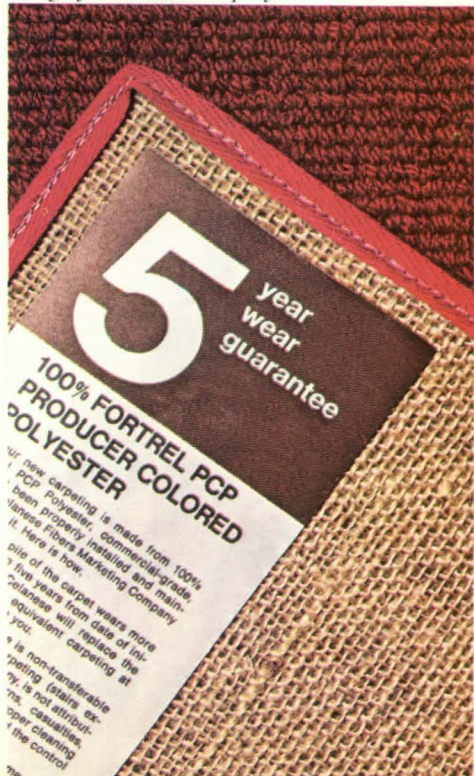
Now you can be sure which carpet you want on your floor. The one that resists static, fading, wearing, staining, soiling, and mold. And has the only five-year guarantee around.

Fortrel PCP.



The back of most carpeting.

The back of carpeting of Fortrel PCP polyester.



If your new carpeting is made from 100% Fortrel PCP polyester, commercial-grade, and has been properly installed and maintained, Celanese Fibers Marketing Company guarantees it. Here is how.

If the surface pile of the carpet wears more than 10% within five years from date of initial installation, Celanese will replace the affected area with equivalent carpeting at absolutely no cost to you.

Note that the guarantee is non-transferable and applies only to carpeting (stairs excluded) for which wear, if any, is not attributable to negligence or burns, casualties, cuts, pulls, and the use of improper cleaning methods or other causes beyond the control of Celanese.

This guarantee applies only to commercial-grade carpet as defined in Fortrel Polyester Carpet Performance FT-207.



Fortrel PCP is a trademark of Fiber Industries Inc., a subsidiary of Celanese Corporation. Celanese Fibers Marketing Company is a division of Celanese Corporation.

Your next five years are guaranteed with:
FORTREL PCP

This time do it right.

Floor Coverings Department, Celanese Fibers Marketing Co., 1211 Avenue of the Americas, New York, N.Y. 10036, (212) 764-7640.

Circle 1 on information card

Georgia-Pacific Speed Set. The joint compound that understands your problems.

Speed Set understands.

It understands the problem asbestos can cause in a joint compound—so there hasn't been a spec of asbestos in Speed Set for more than two years of actual field use.

It understands your interest in time and money. So, Speed Set lets you pick from more than just one working time—whatever suits your needs best. (That's understanding!)

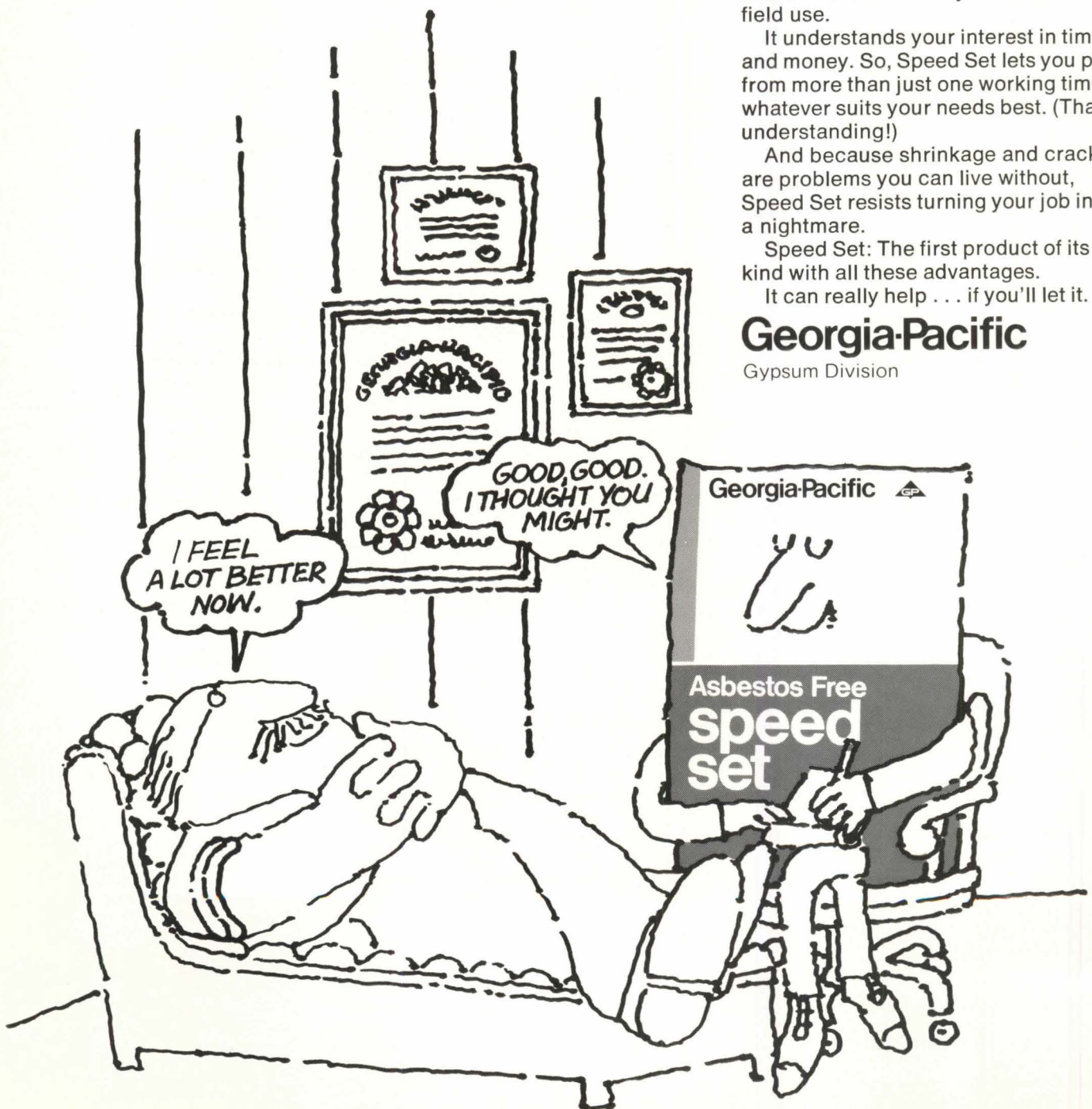
And because shrinkage and cracking are problems you can live without, Speed Set resists turning your job into a nightmare.

Speed Set: The first product of its kind with all these advantages.

It can really help . . . if you'll let it.

Georgia-Pacific

Gypsum Division



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Art in the Environment—Andrea O. Dean 33
 This special issue of the Journal considers its impact, problems and promise

The Proliferating One Percent Programs for Use of Art in Public Buildings—Andy Leon Harney 35
 Cities, counties, states and the federal government are participating

Sculpture in Public Places: A Portfolio 40
 Grand Rapids becomes a showplace and model 40
 Fabricating a soaring symbol of the space age 44
 Sculpture as focal points for New York neighborhoods 46
 Persuading developers to be patrons of public art 48
 Monuments to two towering figures of the 1960s 50

Bunshaft and Noguchi: An Uneasy But Highly Productive Architect-Artist Collaboration 52
 Two strong individuals share disagreements and accomplishments

How Nebraska Acquired a State Capitol Like No Other—Henry Russell Hitchcock and William Seale 56
 Bertram Goodhue's design turned away from the Washington, D.C., prototype

The Increasing Strength of the Project Manager—Michael R. Hough 62
 He takes all responsibility for the job and deals directly with the client.

Ethics Forum: The Debate Continues 64
 'Should not the client have the choice of relationships?'—Donald J. Stephens, FAIA
 'The standards of ethics must apply equally to all members'—Harley B. Fisk, AIA
 Major competition from firms not bound by AIA's standards—Willis Regier, AIA

Cover: Photo by Patricia Duncan of Nebraska State Capitol, Lincoln

Departments

Going On	4	Events	78
Books	66	Advertisers	88
Letters	74	Acknowledgments	88

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Signing of Energy Bill Highlights Recent Legislative Record of AIA

President Ford has signed into law the Energy Conservation and Production Act (HR12169) which authorizes the development of performance standards for new buildings and financial assistance for the retrofitting of existing buildings with energy saving features and calls for expanded state energy conservation programs. AIA has strongly supported the legislation and in a full-page advertisement in the *Washington Post* of June 23 urged citizens to join the Institute in a crusade for affirmative action by Congress and the Administration regarding the legislation (see Aug., p. 13).

AIA has assisted Congress in shaping the proposed programs under the legislation, having testified frequently before Congressional committees on the subject. AIA's Congressional liaison staff has worked closely with Congressional members and staff in a concerted effort to reach final agreement on the bill and has assisted in all the necessary redrafting, etc. Nicole Gara, director of Congressional liaison at the Institute, who has worked to expedite passage of the legislation, points out that a recent Gallup poll shows that only 2 percent of the American people "believe there really is an energy crisis. The bill will provide the citizens with reliable information on conservation opportunities, emphasizing the necessity for a high-priority effort to make the built environment energy efficient."

The thrust of AIA's testimony on the bill, says John M. McGinty, FAIA, Institute president-elect, "has been to urge Congress to view buildings as energy entities rather than dealing with their parts." He says that the legislation attacks two main obstacles in achieving energy efficiency in existing buildings: "a lack of public awareness and information about the potential savings and a natural hesitancy on the part of building owners to make conservation expenditures for what

appeared to be marginal investments." The bill, which also extends the life of the Federal Energy Administration, "will make energy conservation measures economically more attractive," McGinty says.

One of the first attempts to bring the new legislation to the attention of the American people was a program on national television on Aug. 26 when the Public Broadcasting Service on its "Robert McNeil Report" presented a panel to discuss what the newly enacted law means for consumers and for architects. Among the panelists were Carl Bradley, FAIA, chairman of the board of directors' energy committee, and Sen. Edward Kennedy (D-Mass.), a key sponsor of Title IV of the bill which would provide programs to increase energy efficiency in existing buildings.

To improve energy efficiency in existing buildings, the bill contains a \$2-billion loan guarantee program for nonresidential building owners to make improvements and a \$200-million grant program to insulate homes of low-income people. HUD is authorized to test the attractiveness of various financial incentives for residential retrofitting. Based on this two-year demonstration, HUD will make recommendations to Congress for a permanent program.

State energy conservation programs established in 1975 under the Energy Policy and Conservation Act (PL94-163) will have new elements to assist citizens with these retrofitting proposals. Systems for auditing buildings to evaluate proposed energy saving modifications will be created.

The legislation authorizes the development of energy conservation performance standards for new buildings. HUD, in consultation with federal agencies and the National Institute of Building Sciences, is mandated to develop performance

standards within three years. A compromise was reached on the controversial financial sanctions provision. Congress will now have to specifically approve use of such sanctions before any state or local government would be penalized for not adopting the federally developed minimum standards. Earlier versions of the legislation would have made the penalties automatic.

Among the other legislative proposals on which AIA has testified and which have been resolved recently are the following:

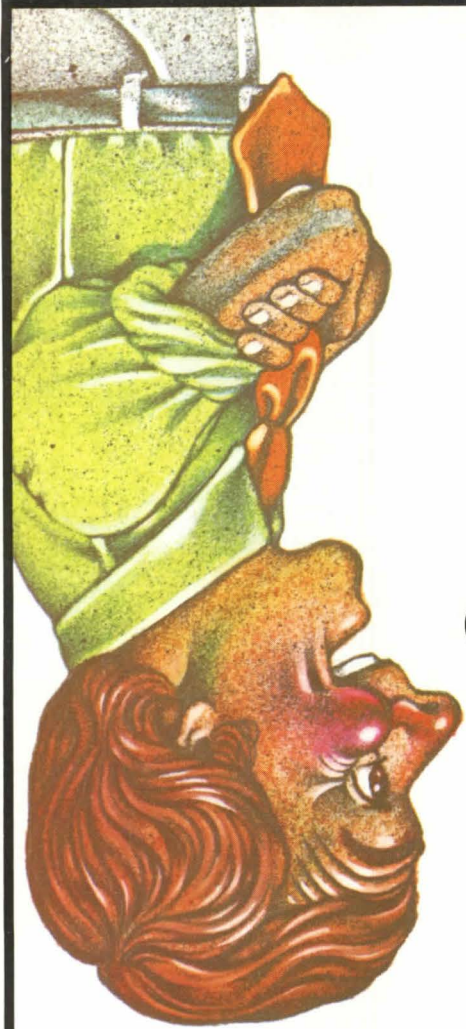
- **Public Works Employment Act (PL94-369):** AIA supported \$5 billion in federal grants for state and local public works. The conference report authorized \$2 billion for such programs and \$700 million for waste water treatment plants and \$1.25 billion in aid to cities. AIA's recommendation regarding energy conservation was not included in the final bill. The President's veto of July 6 was overridden.

- **Housing Authorization Act (PL94-375):** AIA supported funding of \$5 million for the National Institute of Building Sciences and urged "set-asides" for new construction of public housing. The legislation, signed by the President on Aug. 3, includes a \$5 million authorization for NIBS and \$4.7 billion for housing in fiscal 1977 and 1978.

- **Interior Department appropriations (PL94-373):** AIA supported \$24.4 million for historic preservation grants and funds to begin an architectural archives clearinghouse by the Historic American Buildings Survey. The legislation, signed by President Ford on July 31, provides for \$22 million for historic preservation, including \$17.5 million to states and localities for the preservation of significant structures. The proposed new HABS function was not funded.

- **Alpine Lakes Wilderness Act (PL94-357):** AIA endorsed the establishment of a wilderness and national recreation area in the state of Washington. The conference report authorized a 384,000-acre wilderness but not recreation area. The legislation was signed by the President on July 12.

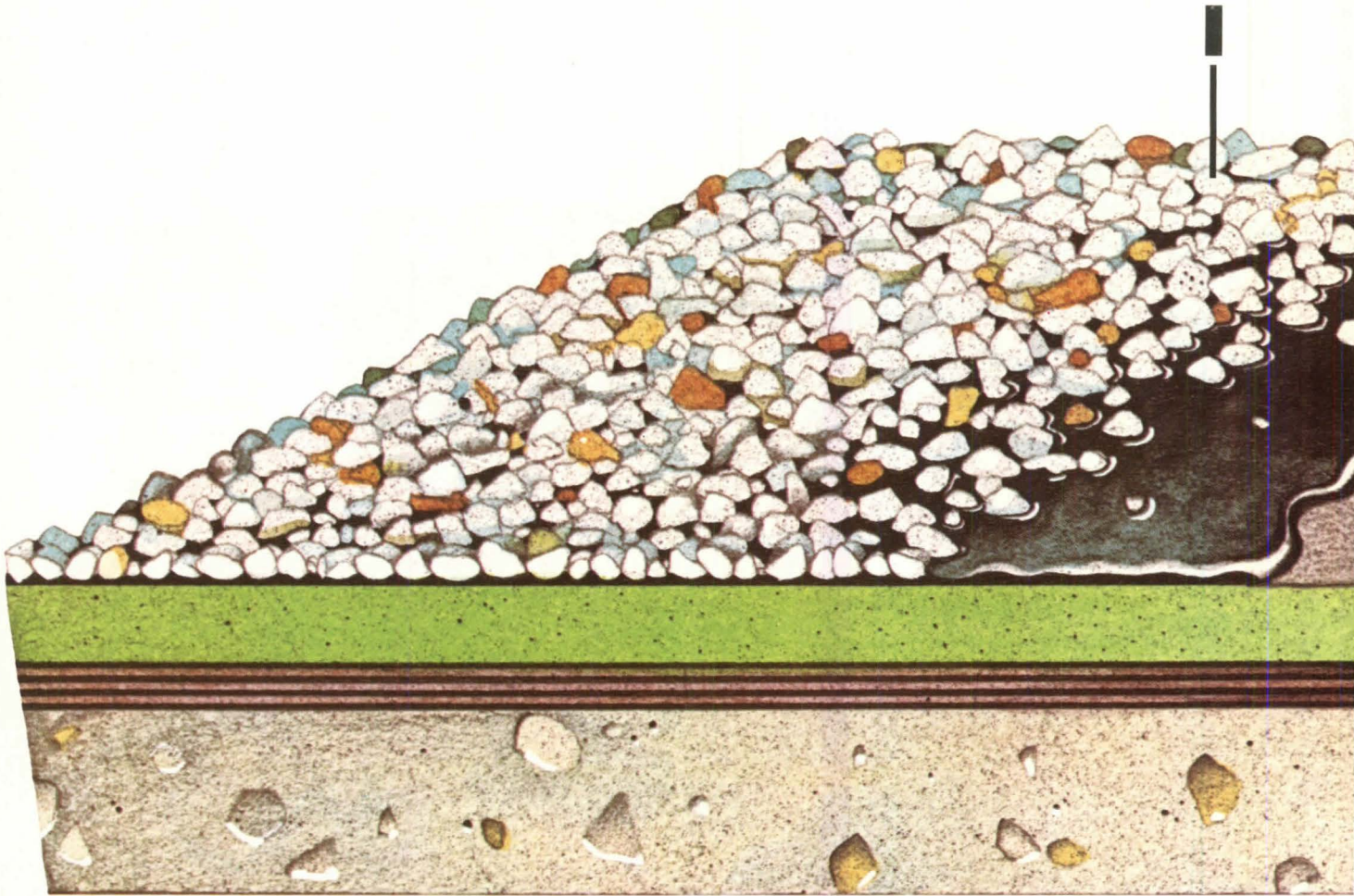
continued on page 10



CELOTEX INTRODUCES THE CONVENTIONAL UPSIDE-DOWN ROOF.

THE CELOTEX UPSIDE-DOWN ROOF

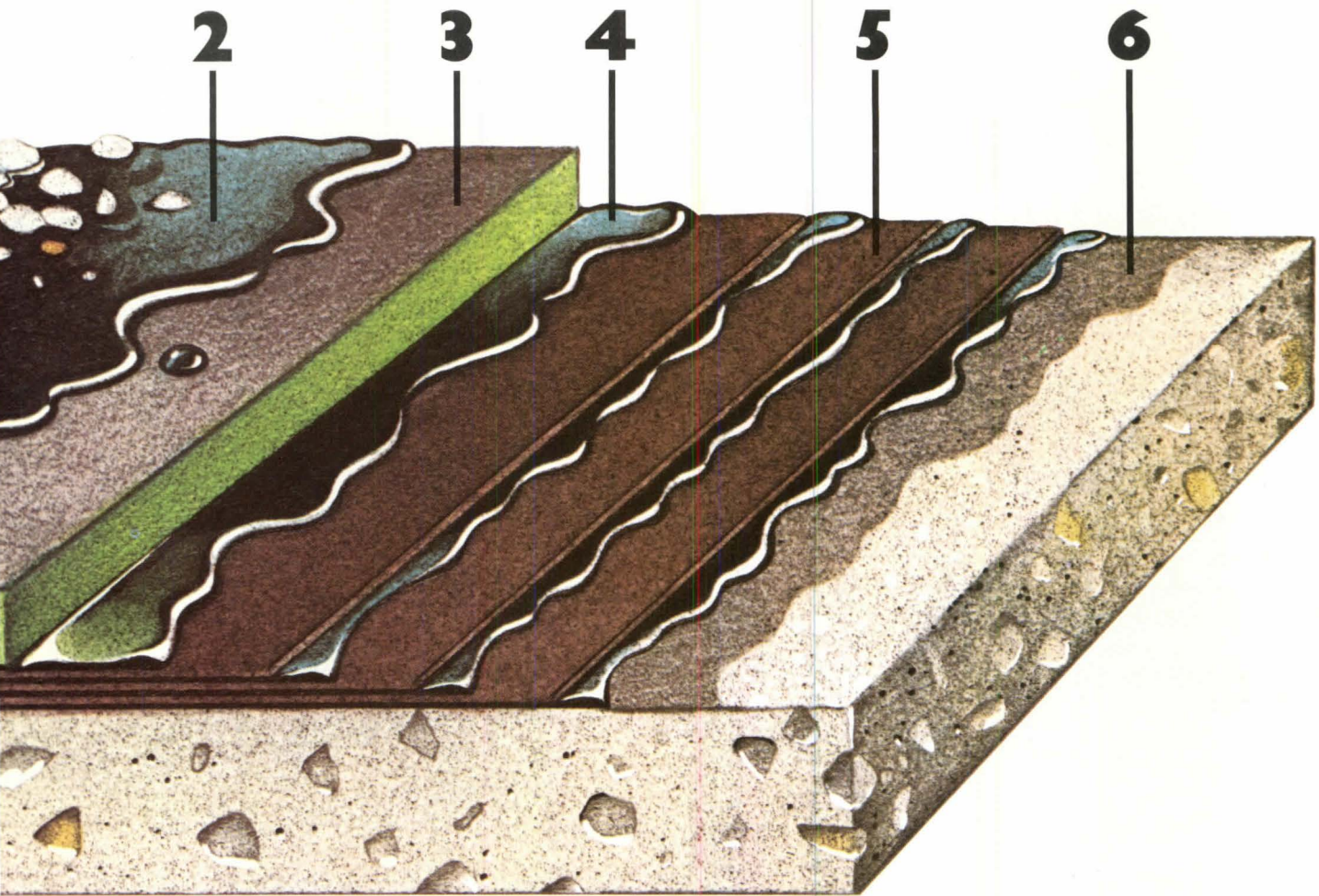
It protects the roof membrane like



- 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.
- 3** New Tempchek[®] Roof Insulation is what makes the Celotex Inverted Roof Assembly work so well. Other conventional, time-tested Celotex roofing materials are simply combined with it more efficiently. Tempchek Roof Insulation provides thermal protection, dimensional stability and resistance to moisture. It is a closed-cell urethane foam, reinforced with glass fibers and faced with asphalt-saturated roofing felt.

PUTS THE INSULATION ON TOP.

no right side up roof ever could.



- 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.
- 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** Roof deck provides structural support for roofing system. 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.

TESTED AND PROVEN IN FLORIDA'S STEAMING SUMMERS



The idea of putting the insulation on top of the roof is not new. But in practice, it requires a remarkably versatile insulation product. One able to withstand the rigors of weathering and traffic.

New Tempchek Roof Insulation is such a product.

The dimensional stability of Tempchek insulation cannot be matched by other foamed plastic insulations on the market today. Tempchek is stabilized by glass fibers much like concrete is by reinforcing rods.

Tempchek roof insulation is not damaged by hot asphalt applied at normal job temperatures. This relieves roofing mechanics of the responsibility for determining just the right time to bond the insulation without melting it.

There is no need to apply 1,200 lbs. of gravel per 100 sq. ft. on top of the insulation. Tempchek insulation, anchored by hot asphalt, provides uplift resistance of 90 lbs./sq. ft.

Being a closed-cell foam insulation, Tempchek will not absorb water. Insulating efficiency of the Celotex Inverted Roof Assembly is assured. Under

ACROSS THE COUNTRY, AND MICHIGAN'S ICY WINTERS.



normal use, Tempchek Roof Insulation will retain an average 80% of its thermal resistance (R-factor) value.

Before putting the upside-down roof on the market, Celotex tested it. And re-tested it... on jobs located across the U.S. From L'Anse, Michigan, to Houston, Texas. From St. Petersburg, Florida, to Dubuque, Iowa. Ask us about them.

Celotex offers a 10-year Inverted Roof Assembly guarantee, a specimen of which will be provided at the place of purchase or upon written request addressed to The Celotex Corporation, 1500 North Dale Mabry Highway, Tampa, Florida 33607.

Your Celotex representative has complete details about the new Inverted Roof Assembly. Or contact John Hasselbach, Commercial Roofing Department, at the above address. A 20-page catalog covering the new system is available now, and will also appear in the 1977 Sweet's Files.

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BUILDING PRODUCTS
The Celotex Corporation, Tampa, Florida

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Going On from page 4

- Federal-Aid Highway Act of 1976 (PL94-280): AIA opposed detrimental highway beautification provisions, but the compromise legislation contains loopholes disturbing to proponents of highway beautification. The legislation was signed by the President on May 5.
- Airport and Airways Development Act Amendments of 1976 (PL94-353): AIA helped clarify language regarding allowable project costs for terminals. The AIA-preferred language was included in the final bill, signed by the President on July 12.

5.4-Acre Park Saddles Downtown Seattle Freeway

The damage imposed on in-town neighborhoods by the construction of freeways can be repaired, as Seattle demonstrates in its newly opened Freeway Park which bridges eight lanes of city traffic. Designed by Lawrence Halprin & Associates, this first-of-its-kind 5.4-acre urban park is built atop Interstate 5 in the downtown. The park, eight years in the planning and construction, provides Seattle with a green network of play spaces, fountains and waterfalls, gardens and sculpture. Lawrence Halprin is quoted as saying that "the trick is to perceive the old freeway as part of the cityscape and to tame it rather than complain about it."

When Seattle, years ago, embarked on a new park development program, a linear park strip along I-5 was among the proposals. As related structures emerged, it became clear that "lost space" around the divisive roadway could become an asset in the urban landscape, and the Halprin firm was employed to design and construct the proposed freeway park.

Freeway Park now curves across I-5. On the eastern side, near residential buildings, there are a playground and five blocks of planted areas, with places to ramble at leisure. A hanging garden provides a colorful backdrop across Seneca St. Going north and east past office buildings, one sees waterfalls and man-made canyons 60 feet wide and 32 feet high. Concrete cliffs add another dimension. There are 54 underwater lighting fixtures to illuminate the fountains and supplement the overall park lighting.

Halprin says the Seattle Freeway Park "is the first project in the country on which city, state and federal agencies joined with private enterprise to convert a freeway airspace into a central city greenbelt." The firm credits "significant roles" played by two architectural firms. Naramore, Bain, Brady & Johansen of Seattle "was responsible for the design of the East Garage, coordinated the park design with the state department of high-



SEATTLE FREEWAY PARK

ways' bridge design and provided coordination and construction management assistance to the city of Seattle." The Seattle firm of Van Slyck, Callison, Nelson "designed and built the Park Place office building and garage and the West Plaza." Structural components of the park over the roadway, built by the state highway department bridge division, included the freeway "lid" and the overhanging south box garden.

Funds of about \$14 million from public sources and \$10 million from private sources were used to construct the office tower, two garages, the bridge spanning I-5 and the park. About \$3.5 million of this amount went for park features. "The costs represent a net savings to Seattle citizens," says Halprin. "Namely, the price tag to acquire a 5-acre parcel of inner city land and to demolish existing buildings in preparation for construction of a comparable park would exceed the total amount spent to date (not including garages and a private office building)."

Lawrence Halprin believes that other American cities can gain lessons from Seattle. "When we learn to recycle and utilize the many resources our cities have to offer, instead of just complaining and being victimized," he says, "then we can get on with a truly creative job of making cities great. We have made a park and a large-scale piece of sculpture for people to move in and through—a stage set for creative involvement and citizens' use."

New AIA Brochure Tells About Federal Contracting

There's no glamour these days in the federal construction marketplace: Competition is keen, with a greater number of firms vying for fewer jobs. Often as many as 60 to 100 qualified firms compete for the same job and the average contract yields a smaller fee than in the past. In brief, the marketplace has changed. The architect who would get a coveted federal contract has to be well-informed and know the rules of the game about how federal departments and agencies operate.

This is the message of a new AIA publication entitled *The Federal Marketplace: Are You Prepared?* which is the joint effort of AIA department of government affairs, various U.S. government departments and independent federal agencies. The document replaces *The First Step in A/E Contracting with the Federal Government*.

The publication outlines in detail just what process the A/E must follow to try for federal work. The major portion of the book, however, is given over to "an accurate picture of the federal marketplace," and it describes the policies and procedures of more than 30 federal agencies. Here is concrete information on each agency, giving a regional breakdown of

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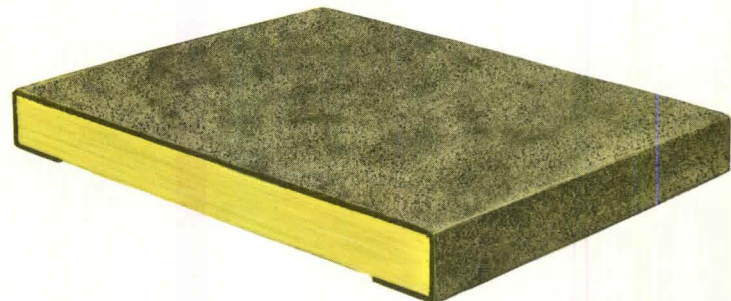
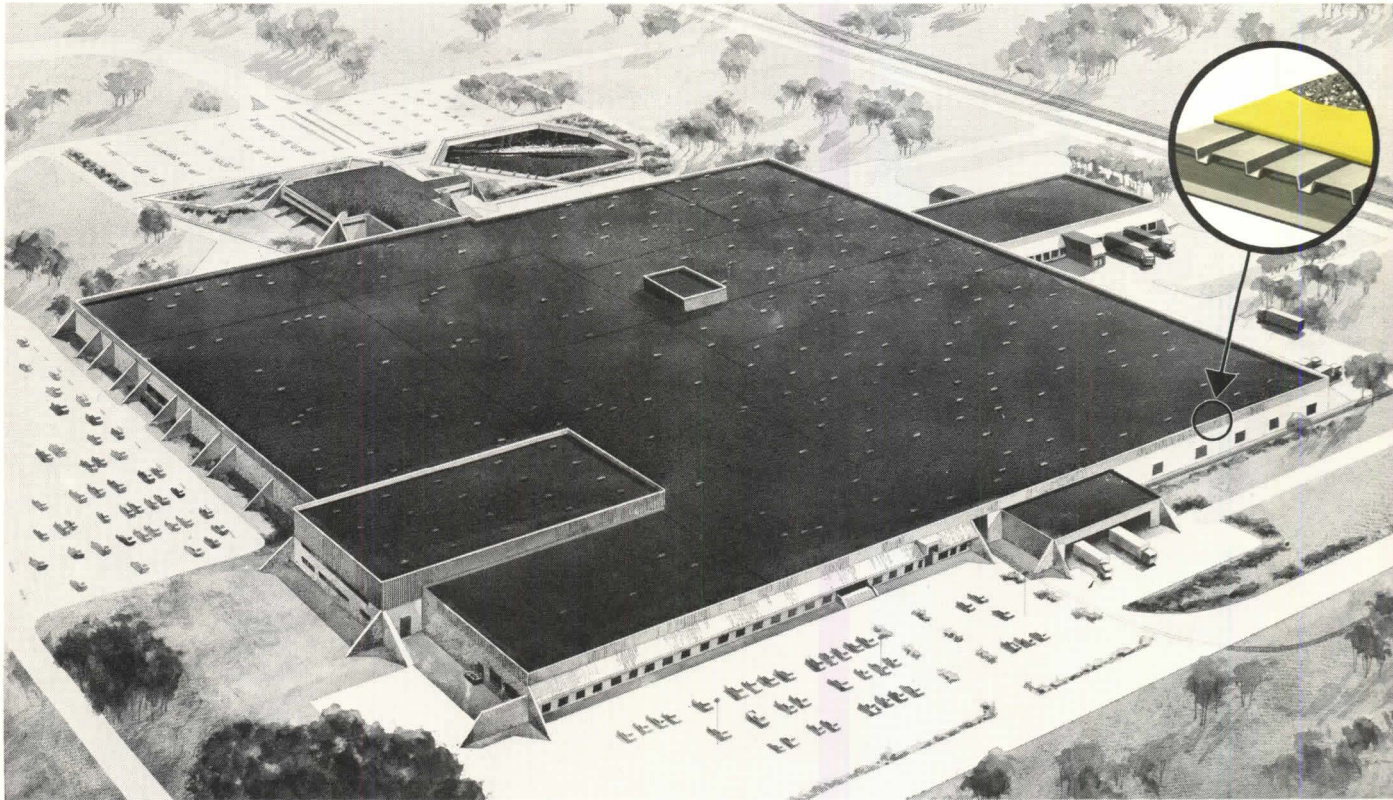
Kno

The award winning Morrison & Hannah designs have the strong but light look of tomorrow. Inventiveness puts these chairs, settees, and sofas first on the designer's lists. For details about them, may we send you our Office Seating tabloid?



Insulation is

\$1,849,996 Projected cost to heat and cool the 46-acre J.C. Penney warehouse for 20 years with only 15/16-inch Fiberglas roof insulation.



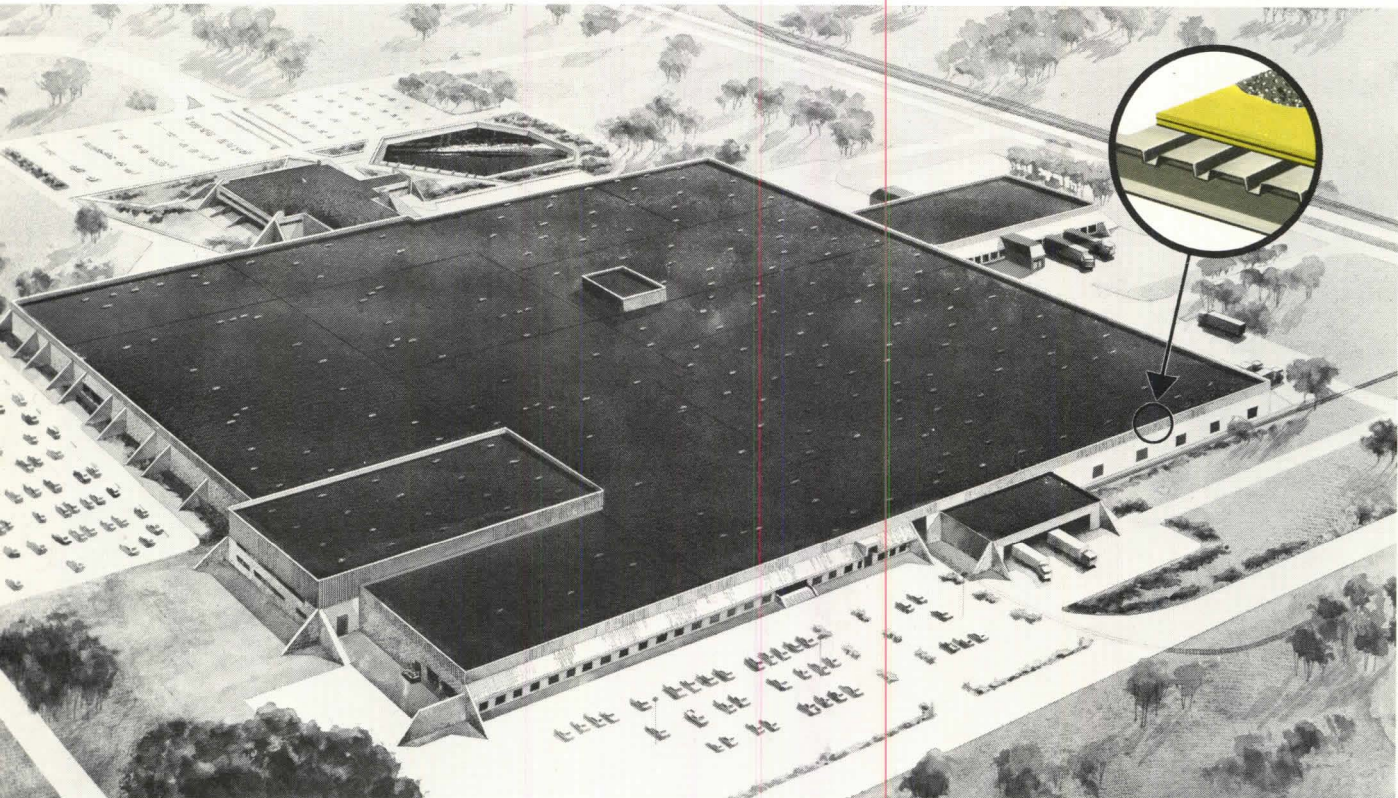
Owens-Corning Fiberglas roof insulation—the only glass fiber roof insulation on the market. Dimensionally stable. Retains thermal value. Easier and less expensive to apply than organic/mineral boards. For over 30 years, the *best* base for built-up roof decks.

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

cheaper than oil

\$877,972

Projected cost to heat and cool the 46-acre J.C. Penney warehouse for 20 years with thicker 2¼-inch Fiberglas roof insulation. (After allowing for the added cost of thicker insulation!)



A remarkable savings of \$972,024! With it, architect Paul Slusarev, Project Manager of the massive new J.C. Penney warehouse/office in Lenexa, Kansas, is helping to point the way for designers of schools, offices, stores, and other commercial buildings everywhere.

Saves money two ways

Using 2¼ inches of Fiberglas* roof insulation vs. a conventional thinner layer saves money two ways:

1. It saves on energy costs. Estimated savings per year, based on gas heating and electric cooling in Kansas City, Kansas, with a pro-

jected increase in energy costs at 7% per year and future savings discounted at 10% per year: \$64,160—or \$972,024 every 20 years.

(Due to present availability of natural gas, propane and fuel oil are used as additional fuels for heating, and as a result of using these higher-priced fuels, actual savings may vary.)

2. It saves on construction costs. The first cost of this energy-tight warehouse is actually lower than if a less efficient version had been built! Reason: the improved thermal performance of the roof permits use of less costly heating and cooling equipment. The savings are large

enough to cover the added cost of the thicker roof insulation *twice* over.

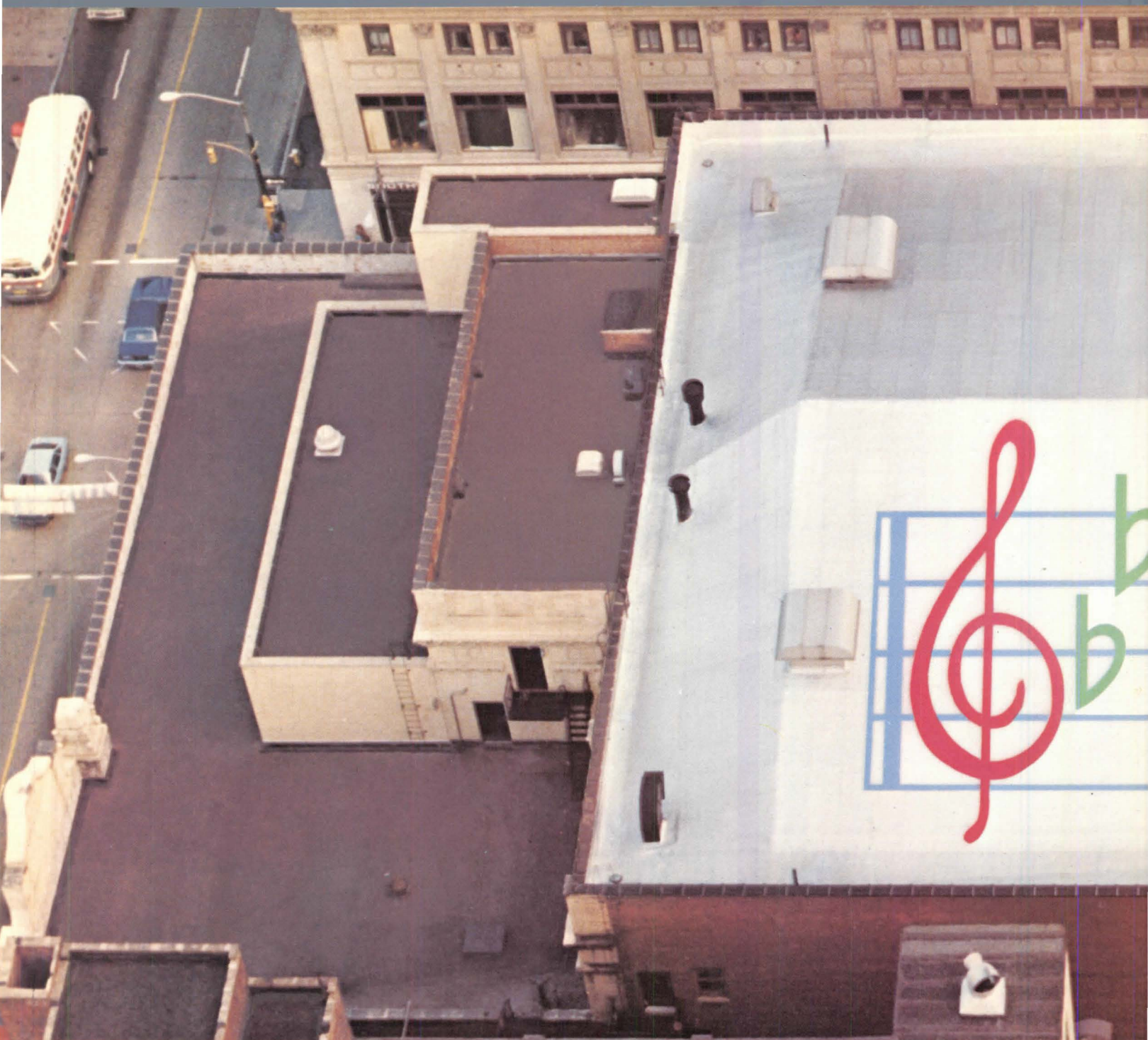
Smart for re-roofing, too

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

Find out the recommended amount of Fiberglas roof insulation to use to save *your* clients money. Call your Owens-Corning representative, or write F.I. Meeks, Owens-Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659.

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Koppers presents: KMM.™ A premier roofing material.

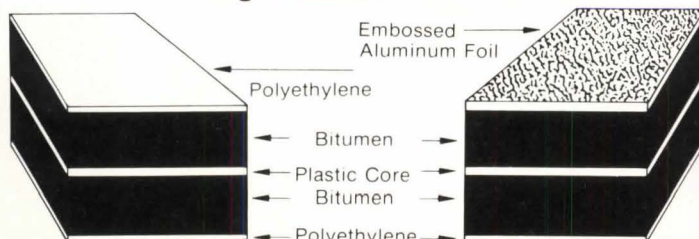
The building: famed Heinz Hall, Pittsburgh. The hall's renovated roof: Koppers Aluminum-Clad KMM.

KMM™ (Koppers Multi-purpose Membrane) is a new roofing, reroofing and waterproofing concept from Koppers. It's a factory-made material, produced in Koppers own plant under strict quality control.

Triple-belted.

Standard KMM has a tough plastic center belt

locked between two belts of bitumen. Aluminum-Clad KMM adds an additional layer of heavy, embossed aluminum sheet and is recommended for roofs too steep for an aggregate surface. It is also recommended as flashing material.



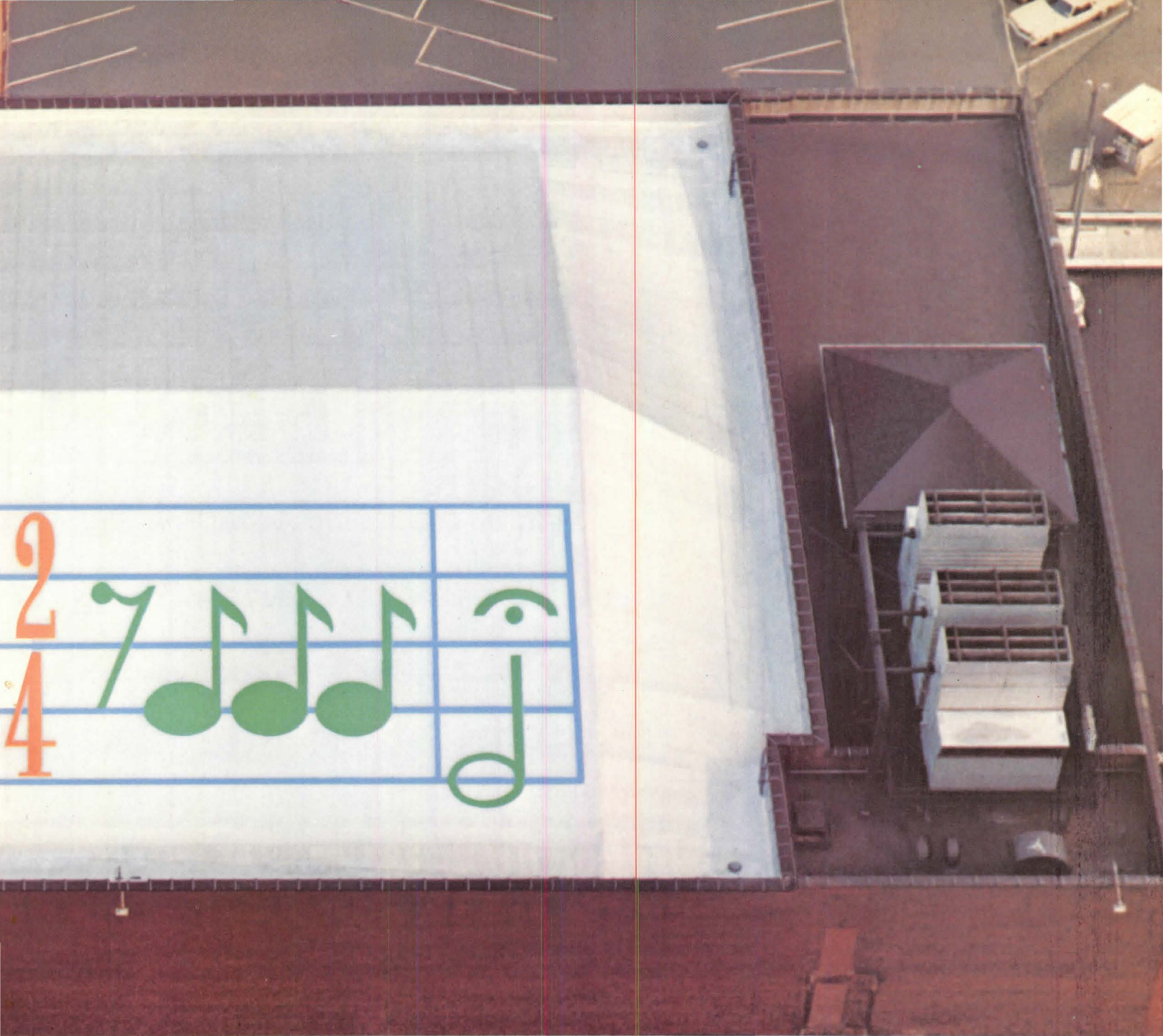
Standard KMM

Aluminum-Clad KMM

Rolls on. Irons down.

KMM is simply rolled out over the prepared subsurface. One roll alongside the other, with each roll overlapping the other by four inches.

The adjoining rolls are then fused together along the overlap, using an ordinary torch and round-nosed trowel to "iron" the softened bitumen laps together. The seal is fast and simple. Secure. (Aluminum-Clad KMM is rolled out over a coating of KMM™ Adhesive, but is sealed in the same fashion.)



Architects: Stotz, Hess, MacLachlan & Fosner; General Contractor: Mellon-Stuart Co.; Roofing Contractor: Miller-Thomas-Gyekis, Inc.

On flat roofs, either a loose gravel or bound-aggregate topping is applied directly on Standard KMM.

Koppers KMM: offered with a renewable guarantee.

The triple-belted KMM system has been used successfully in Europe 18 years. We've tested it in our Research Center for 5 years—and have field tested KMM around the country. We are convinced of its quality. Koppers quality. So convinced, that we offer KMM with a renewable 5-year guarantee—so that you can specify it with confidence.

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Going On from page 10

construction dollars; budget summary; selection, evaluation and negotiation procedures, etc. In one document the A/E has a tool that will provide precise information about the ins and outs of government agencies and the current laws which govern the procurement of A/E services.

The book is available from the AIA publications marketing department for \$7.20 to Institute members and \$9 to nonmembers. Supplements on projects, costs and locations will be reissued on a subscription basis as policies and budgets change.

Urban Transit Report Correlates Density, Use

The Regional Plan Association, a New York City-based research and planning agency that promotes the coordinated development of the New York-New Jersey-Connecticut urban region, has issued a summary report of a two-year study on "Urban Densities for Public Transportation." If the aim is to increase the use of public transportation, the report says, then what is required is an increase in the size and compactness of downtowns and an increase in residential densities, particularly those near downtowns.

It is recognized, states the report, that such an increase in urban density "flies in the face of a long-term trend," but those public policies which have favored the dispersal of urban settlements have in turn proliferated the use of the automobile and contributed to the decline in the use of public transportation.

The report points out that only 4 percent of motorized travel today is by public transportation, as compared with 14 percent 25 years ago. Nevertheless, more and better public transportation is required to conserve energy and reduce pollution; to strengthen urban centers, reducing the need for more highways, and to increase the mobility of those who for whatever reason cannot drive.

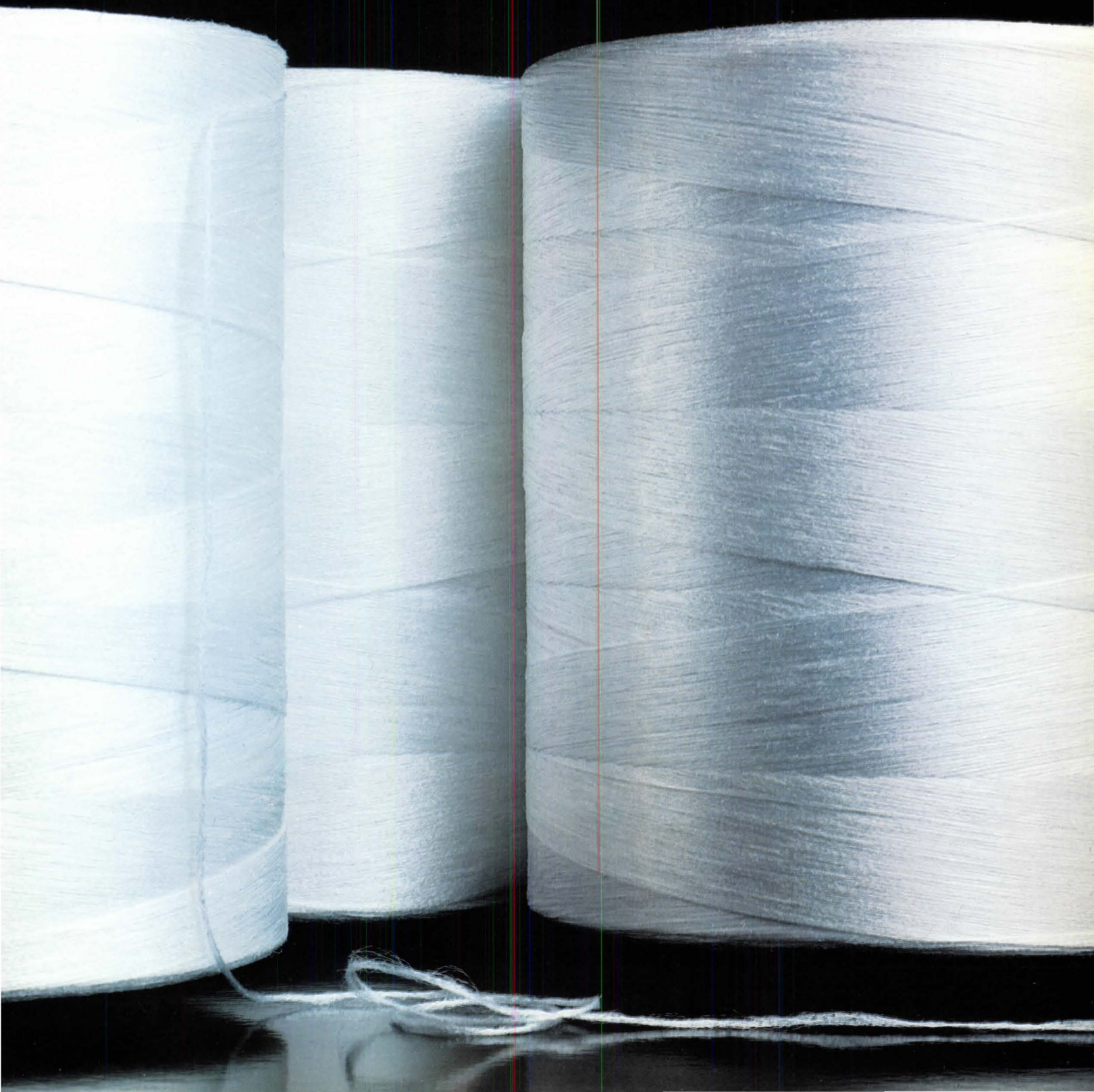
The study found that the higher the density and the larger the size of a downtown, the more there is a shift in the use of public transportation. "Downtowns of 10 million square feet of nonresidential floorspace . . . if confined within less than a square mile, begin to make moderately frequent bus service possible and to attract an appreciable proportion of trips by transit." Downtowns of 5 million square feet, however, can support only meager public transit.

The study found that, where income characteristics are the same, those neighborhoods with 15 dwellings per acre "produce about 30 percent fewer auto trips per person than those with five dwellings

continued on page 21

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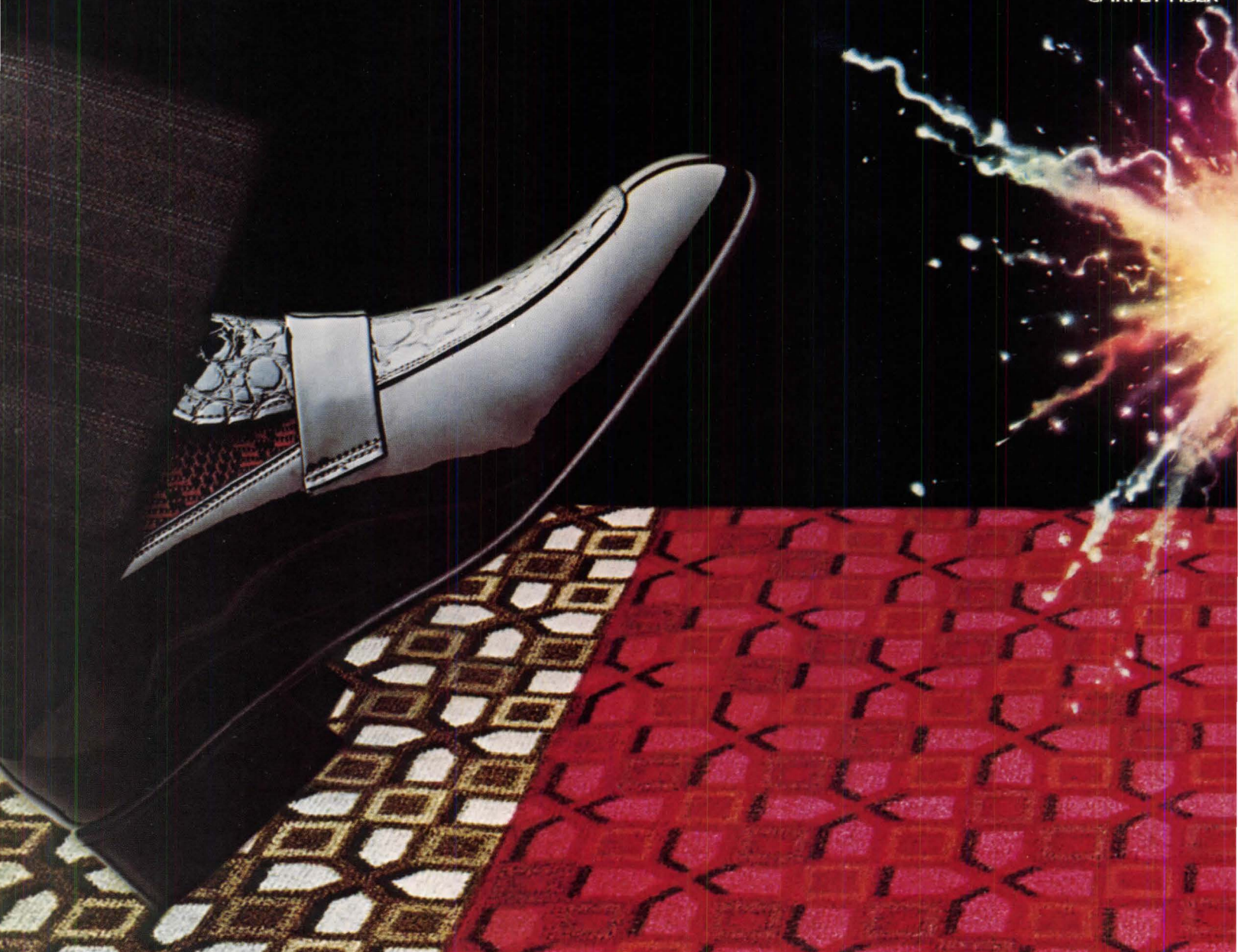


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Since appearance-retention is such an important requirement of carpeting, soil-resistance and soil-hiding are important performance features. Ultron has both these features because of its special polymer system and its cross-section design. That means the tendency of certain soil to "stick" is reduced. And soiling that does occur is actually hidden because the yarns are less transparent. When cleaning is necessary, it can be done easily and effectively. In fact, careful testing has shown that Ultron carpets have excellent restorability to their near original appearance.

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Going On from page 16
 per acre. Meanwhile, public transit use is over 100 percent greater." But even more important than residential density is proximity to a downtown of substantial size or to a transit line. "It is a fallacy to suppose," the report states, "that transit necessarily requires densities such as used to be found in the southern Bronx. In fact, residential densities in the range of seven to 15 dwellings per acre . . . can support moderately convenient service by any transit mode if there is a place to go." Use of public transit is minimal, however, at densities between one and seven dwellings per acre. In contrast, densities at more than 60 dwellings per acre will result in half the trips being made by public transit.

The report mentions some examples of land use policies that affect transit use. For example, suppose 10 million square feet are to be added to an urban area. One land use option is to have two spread clusters of 5 million square feet each for nonresidential floorspace. Another choice is to make a new downtown of 10 million square feet. If the latter option is elected, "per capita trips by transit within a three to five mile radius will be 50 to 70 percent higher than in the first case, keeping residential density the same."

Another example of land use is whether to scatter apartments or concentrate them near transit. If the apartments are clus-

tered within 2,000 feet of the station, transit use will increase by 34 percent or more. If there's a choice between enlarging the size of the downtown or raising nearby residential density, select the enlargement of the downtown, which will "increase per capita trips by transit in the vicinity of that downtown three or four times more" than by raising residential density. Public transit trips will be increased 17 times as much by increasing residential density near downtown.

The summary report, which also discusses individual modes of public transit such as dial-a-bus, express buses and rapid transit, is available for \$3 from RPA, 235 E. 45th St., New York, N.Y. 10017. The full 313-page technical report will be published in 1977 by Indiana University Press under the title *Public Transportation and Land Use Policy*.

1976 Professional Exam

The professional examination required for the registration of architects is scheduled to take place on Dec. 13 and 14. As in the past, questions on the 1976 exam will be based on the 1970 edition of AIA's document A201, the general conditions of the contract. Alan Stover, AIA, director of documents at the Institute, warns candidates that this document will not be reproduced in the test information package. Candidates, however, will be per-

mitted to bring copies of the document into the exam, but "no other outside materials will be allowed," Stover says.

The 1970 edition of A201 is being withdrawn from circulation due to publication of the 1976 edition (see Sept., p. 38). Candidates for the exam should obtain copies of the 1970 edition as soon as possible. "AIA cannot guarantee," says Stover, "that any copies of the 1970 edition will be available in December." AIA components, particularly those which sponsor seminars for candidates, are encouraged to have sufficient copies of the document on hand to meet the demand.

As a courtesy, AIA will include a copy of the 1970 edition of A201 in each order for *The Architectural Registration Handbook* (M155). The handbook is available for \$19.50 per copy from AIA's department of publications marketing. "The differences between the 1970 and 1976 editions," says Stover, "makes it critical that candidates study and use the earlier edition."

Ohio AIA and Advertising

The board of directors of the Architects Society of Ohio/AIA has approved a resolution which eventually could lift the ban on advertising for members of that society. The board voted its intent to lift

continued on page 24



Cabot's BARN BOARD STAIN

In answer to the demand for a stain that will simulate the weather-beaten appearance of old barns, Samuel Cabot Inc. has developed Cabot's #1299 Barn Board Stain. This new stain is antique gray in appearance, has a darker and more weathered look than the other grays in the Cabot line. Cabot's Barn Board Stain is a uniquely transparent stain that accents the variations and irregularities of the wood surface, producing the soft, aged look of old barns. It is particularly effective on rough-sawn lumber. This new stain has many applications . . . provides rustic atmosphere for interiors or exteriors . . . for paneling, beams, siding . . . for homes, vacation cottages, motels, restaurants.

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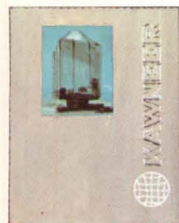
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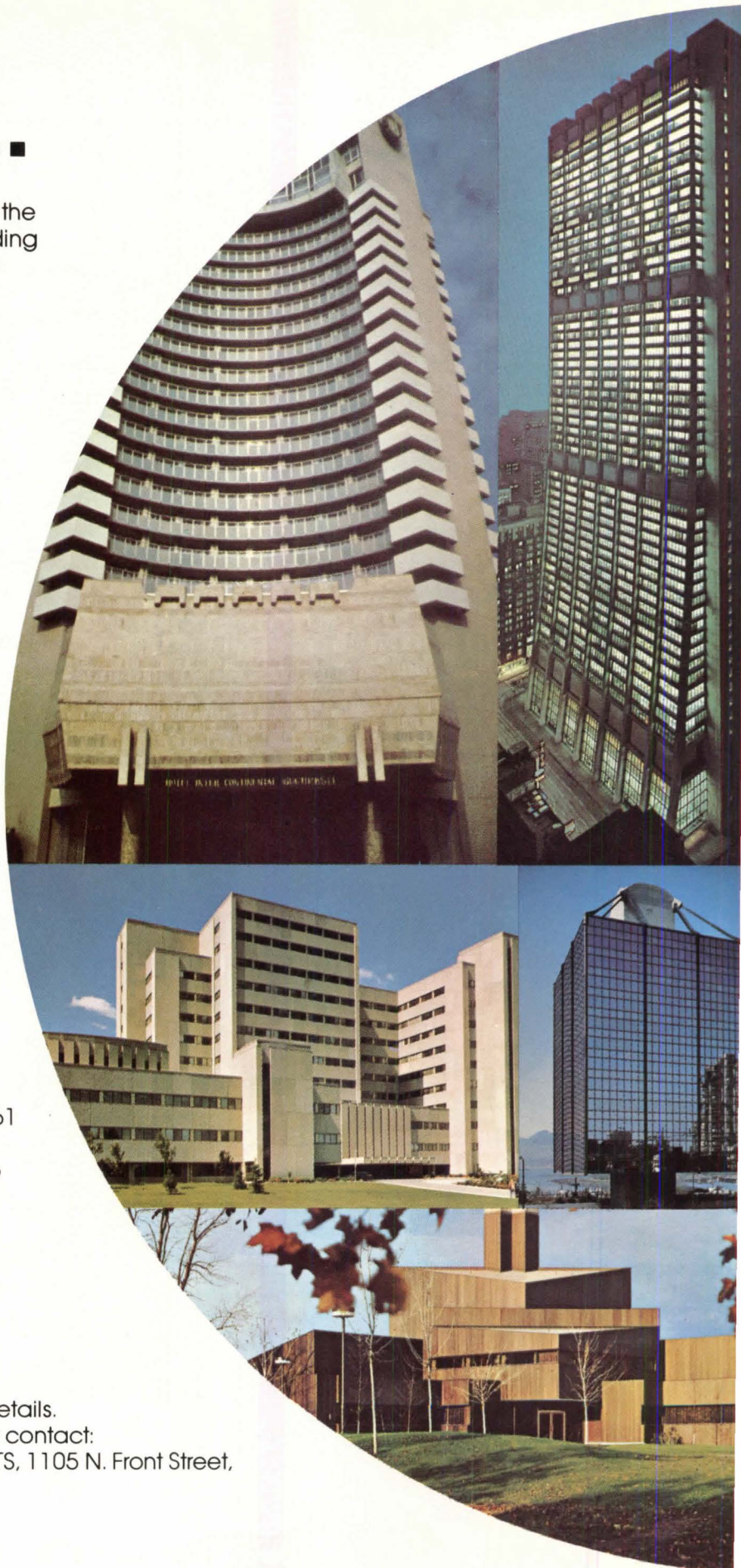
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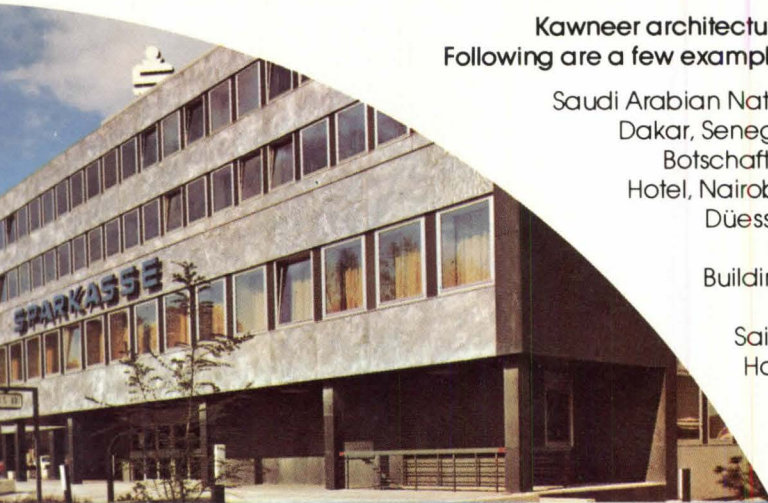


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Going On from page 21

the prohibition, but will withhold final action until AIA members nationwide have come to a decision about lifting the ban on advertising from the Institute's Standards of Ethical Practice.

Jerry Hammond, AIA, who chairs a committee established by the Ohio group to study the legality of the ban on advertising, is quoted as saying that the Architects Society of Ohio "will go our own way" if action by the national AIA "does not satisfy us." He said that the action in passing the resolution by the Ohio board did not come from "duress, scrutiny or examination," but that the intent to lift the ban was in the "general public interest."

Four Religious Structures Recognized for Excellence

The 1976 architectural exhibit of projects designed for and sponsored by the religious community was displayed recently during the annual convention in Boston of the National Interfaith Conference on Religion and Architecture. The 43 entries were described by the jury as "a broad diversity of design—all competent work." The jury found it impossible "to single out any one outstanding work among the entries," and four projects were cited equally for merit awards.

The award winners are:

- St. Paschal Baylon Roman Catholic Church, Highland Heights, Ohio (architect: Richard Fleischman, AIA).
- St. Matthew Lutheran Church, Moorestown, N.J. (architects: Hassinger, Schwam & White).
- New Melleray Abbey, Dubuque, Iowa (architect: Willoughby Marshall, AIA).
- St. Peter's Church, New York City (architects: Hugh Stubbins & Associates).

Nine other submissions were selected by the jury for inclusion in the Guild for Religious Architecture's traveling exhibit. The traveling exhibit, made up of award-winning projects selected each year at the NICRA's annual conference, is available to interested groups without charge, except for transportation.

For further information, write: Guild for Religious Architecture, 1777 Church St. N.W., Washington, D.C. 20036.

AIA Building Undergoes Energy-Saving Analysis

A task force is studying the Institute's Washington, D.C., headquarters building with the goal of reducing energy consumption by a full 60 percent. This venture grew out of an AIA Research Corporation project, funded by the Federal

Energy Administration, which recently brought together the AIA board of directors' energy committee, national AIA officers, key staff members and the headquarters building's original architect and engineer for a two-day session to tentatively examine opportunities for redesign and other ways of reducing the energy consumption of the building.

The session was intended as an exercise only, and the energy committee recommended that a more thorough analysis be made by a task force and reported to the Institute. The task force is headed by Herbert E. Duncan Jr., FAIA, of Kansas City, Mo. Serving with Duncan are Robert E. Burley, AIA, and David L. Perkins, FAIA.

The task force will examine potential energy savings in both the Institute's seven-story office building and the adjacent historic Octagon, which is owned by the AIA Foundation and operated as a museum. Says Duncan, "We're going to be looking at all the possibilities—changes in the operation and management of the building, architectural redesign to make the building more responsive to prevailing climatic conditions, modifications of the building's mechanical system."

He adds that "this effort can help dramatize the significant potential for energy savings in existing buildings." *Duncan continued on page 28*

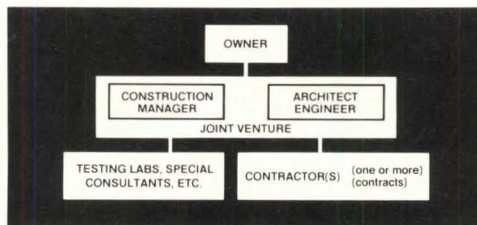
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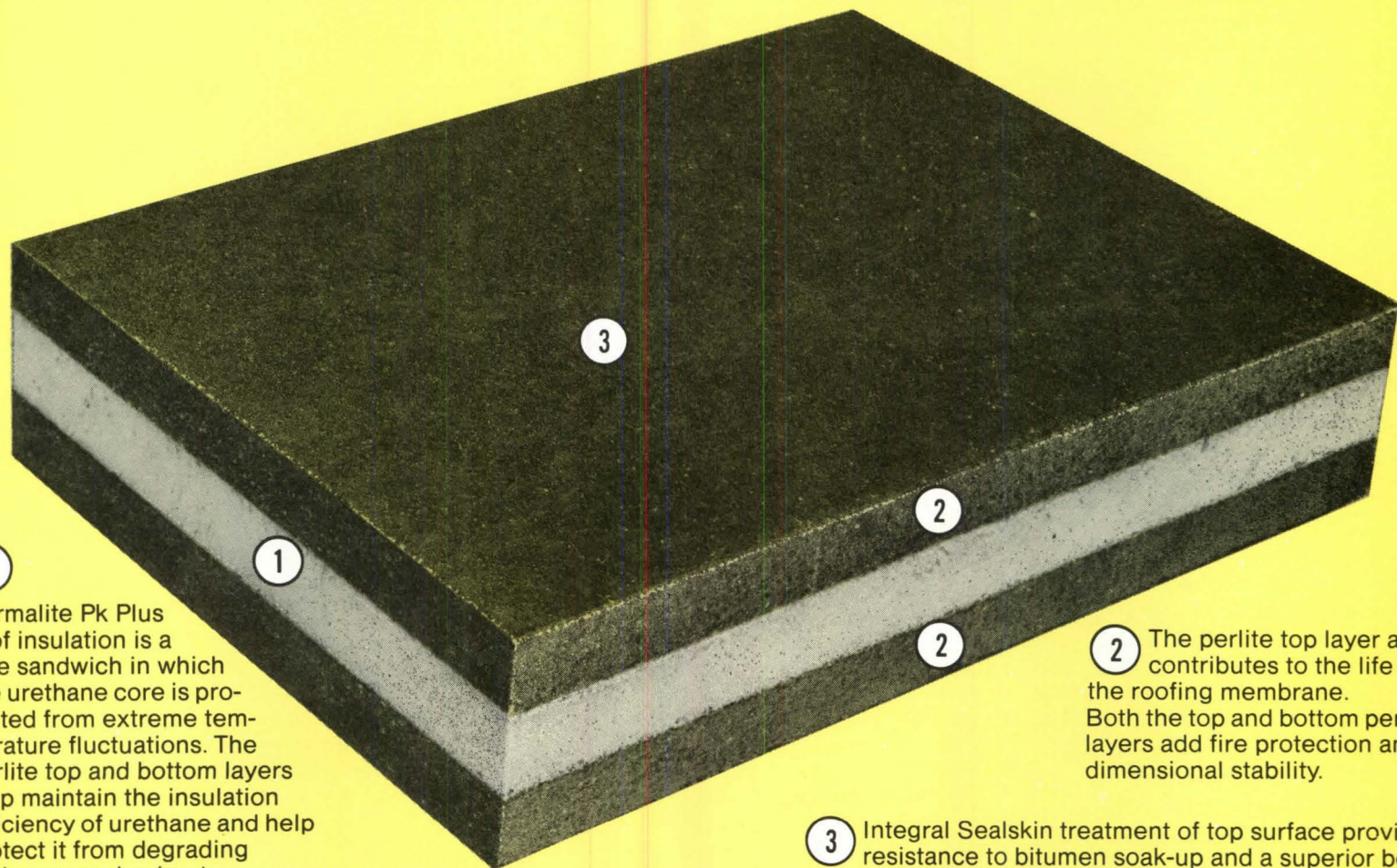
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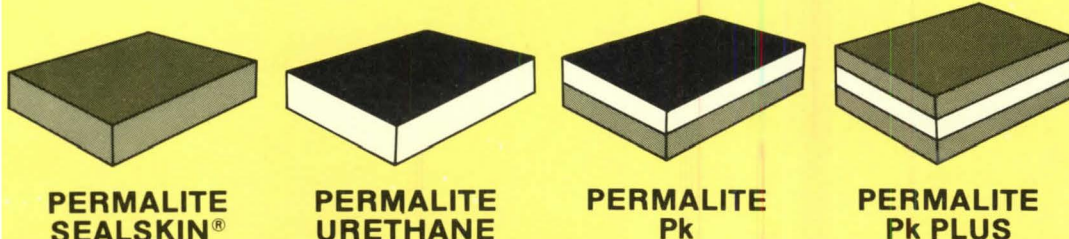
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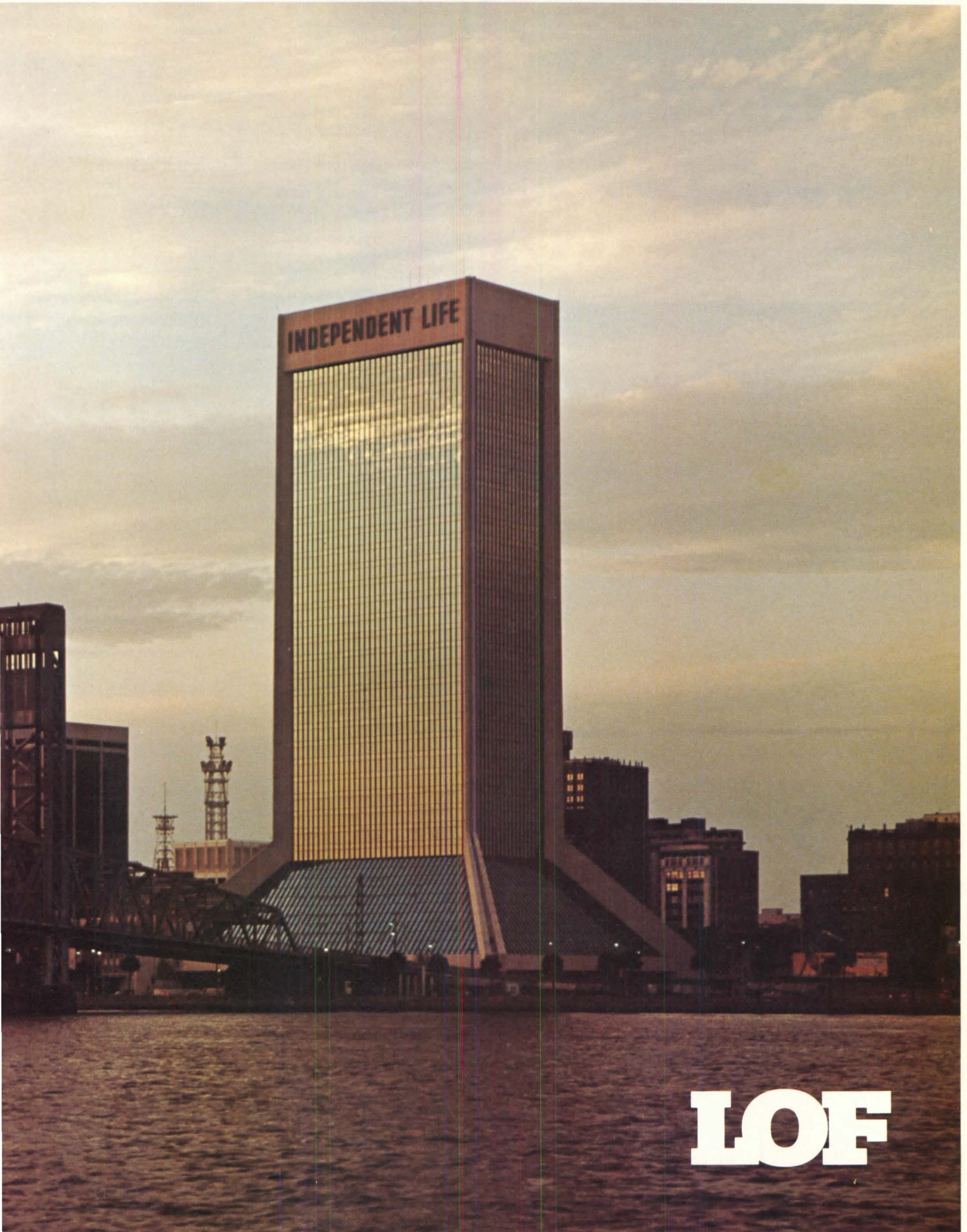
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INDEPENDENT LIFE

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Going On from page 24

can anticipate that his task force will act in an administrative capacity only, and that the Institute "will call upon consultants with expertise in specific areas to carry out the project."

Architects and Astrology

If a family wants a son or daughter to grow up to be an architect, the chances are increased if the parents aim for the birth to take place in the astrological months of Capricorn (Dec. 22-Jan. 20), Gemini (May 23-June 21) or Cancer (June 22-July 21). By contrast, the child born during February or March appears to be at the bottom of the scale among those who would choose a career in architecture.

At least this is the theory of Edmund Van Deusen, science writer and former associate editor of *Fortune*, set forth in a recently published book entitled *Astrogenetics* (Doubleday, 1976, \$7.95).

"Each of us is the product of the cosmic environment that marked our season of birth," Van Deusen says.

Van Deusen tested his theory as applied to various professions, including architecture, by studying a number of professional "who's whos" and noting the birthdates. By surveying 5,000 individuals "randomly selected from the *American Architects Directory*," he used this data and that from other professional directories to support his theory that "seasonal changes in the mother's body chemistry have the effect of producing babies with predictable personality characteris-

tics—depending on their season of conception and birth." This has nothing to do with stars and planets, he says.

He admits his theories are highly speculative, but "the survey shows, without question, that something is happening to affect our lives that is directly related to our season of birth."

Van Deusen lists famous people born under the different signs, but no architects are noted as "classical" Capricorns. The names listed are: Richard Nixon, J. Edgar Hoover and Mao Tse-tung.

Journalism, we might add, is an unattractive profession for Capricorns.

Mixed Use, Reuse Urged For Federal Buildings

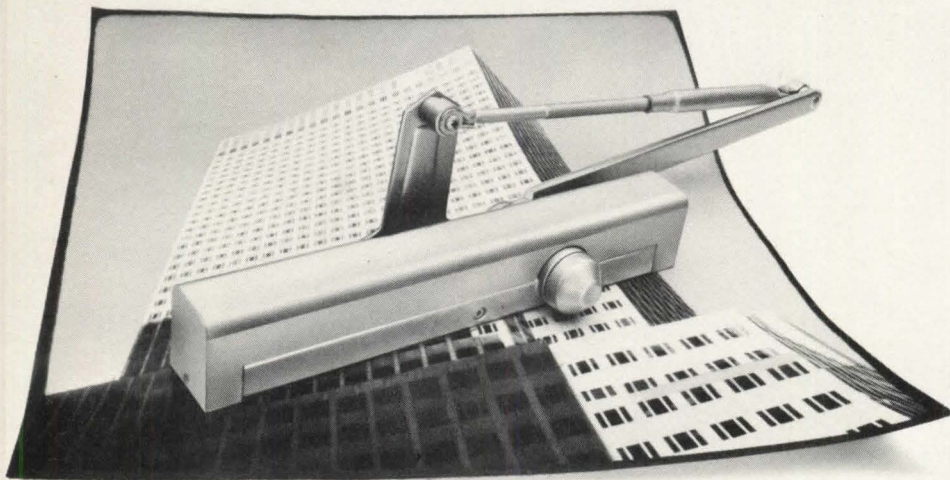
AIA recently expressed "enthusiastic support" for legislation (HR15134) to amend the Public Buildings Act of 1959. In testimony before a House subcommittee on public buildings and grounds, Donald B. Myer, AIA, chairman of the Institute's committee on historic resources and assistant secretary of the U.S. Commission of Fine Arts, said that Title I of the proposed legislation, which promotes historic preservation through the adaptive and mixed use of existing federal buildings, would result in both "better design" and "cultural continuity."

Title I, said Myer, would help solve government space needs and at the same time help preserve the nation's architectural heritage. "Just as the mix of old and new creates a visual enrichment," he testified, "the mix of uses lends an air of amenity and liveliness for pedestrians and employees which is frequently endangered in urban areas and missing from government projects."

Provisions of the legislation also "offer an opportunity for conservation of energy resources," Myer said. The use of building materials already installed in existing buildings "produces an obvious savings in materials, manufacturing and construction energy," he said. "Many buildings of stone and brick masonry constructed generations ago are more durable and of considerably better quality than that which we can afford to build today. Buildings which represent a less extravagant technological age, with reasonable proportion of windows to solid walls, have demonstrated their economic soundness in terms of heating and cooling costs," Myer said.

Title II of the proposed legislation would strengthen the provisions of the Architectural Barriers Act of 1968. AIA for years has sought to make public buildings accessible to the handicapped, Myer said, citing AIA policy which affirms the right of all citizens, regardless of physical disability, to enjoy full use of the man-made environment.

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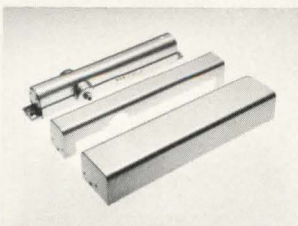
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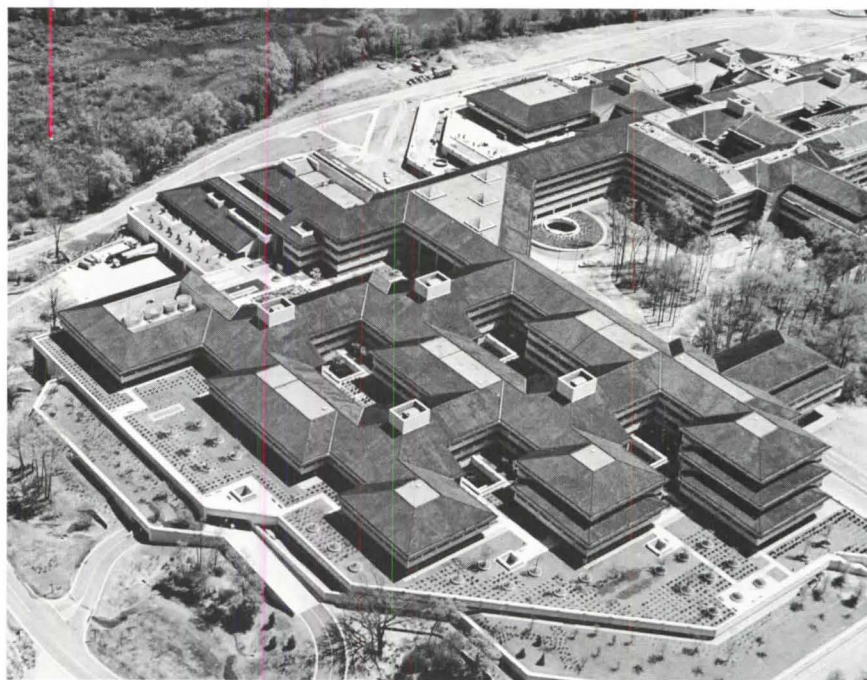
AT&T Uses “Suppressed” Architecture And Computer-Controlled HVAC to Gently Fit Huge New Office Building Into a Tranquil Suburban Setting

Although enclosing more square feet than most office skyscrapers, this campus-style structure at its highest point rises only 48 feet above grade.

Basking Ridge, N.J. Riders along suburban roads have long grown accustomed to the sight of a type of building that keeps popping up in populous areas. This is the “speculative” office building, one that the builder erects in advance of any tenant commitments. They are almost of a common mold: squarish in shape, sheathed in dark glass and aluminum, enclosing about 100,000 square feet of rentable office space, and with their five or six stories looming tall and conspicuous above a large expanse of parking lot. With the coming upturn in the economy, many more of these buildings will rise no less obtrusively along the country’s highways and byways.

But not in Basking Ridge! This is an area containing a mix of estates, farms and large homes in a rural environment of exceptional beauty. The people here treasure their countryside and guard it zealously through meticulously structured zoning regulations. Commercial development is almost unknown. Yet resting snugly in the midst of all of this is a vast horizontal office structure with more internal space than New York’s Empire State Building, one of the world’s most visible structures.

Zip Factor. The brand new Basking Ridge building of American Telephone & Telegraph Company encloses 2.7 million square feet of office and garage space. Yet the structure at its highest point rises only 48 feet above grade level. Set on a rolling campus-like tract, it will eventually accommodate 3400 AT&T administrative personnel. The complex is heated and cooled by an energy-conserving electric HVAC system with heat recovery capability and sophisticated computer control.



Gently sloping roofs of terra-cottatile help mask immensity of AT&T's new office complex.

The new facility supplements AT&T national headquarters at 195 Broadway in the Wall Street area of New York City. In the postwar growth years, administrative departments had spilled out from the original building into leased quarters dispersed throughout the financial district. In 1969, finally, the company decided to bring scattered departments back under one roof and began looking for a suitable site.

In the search, AT&T explored many alternatives before electing to locate where travel time would be shortened for as many employees as possible. A computer scan of zip codes in employee addresses pinpointed this region of New Jersey as the center of density of employee population.

Timely Entry. In an unusual move, AT&T called its architects, The Kling Partnership, into the planning process before land was actually purchased. “The AT&T building became the largest design project ever undertaken by us”, says Vincent G. Kling, founder and managing partner of the architec-

tural firm. “But it also proved to be the one we worked hardest to suppress. Our early entry into the project helped us immeasurably in fulfilling both the client’s and the community’s wishes.

“The community wanted the economic benefits that a large new office complex could bring to the area, but not at the expense of disturbing its tranquil, unspoiled environment. And the client wanted to provide the best possible conditions for its employees in a structure that would live in harmony with its surroundings. These goals are separate but not incompatible, and achieving them was made a bit easier because we were able to participate fully from the start.”

Science and Trees. This early participation enabled the architects to lend their scientific expertise in the evaluation of potential sites. Available tracts were rated on the basis of complex criteria involving soil compaction, topographical profiles, flood plains, arterial logistics and the like. But, when the choice had narrowed to three sites that quali-

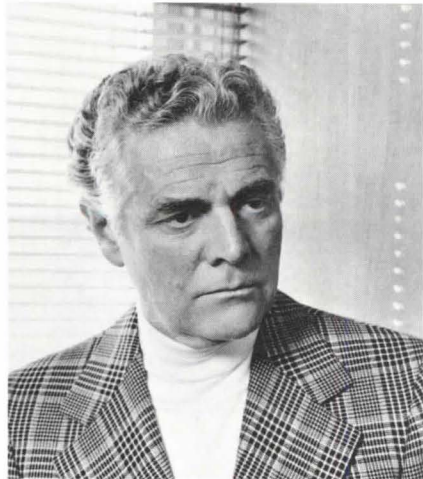
Energy-conserving electric HVAC system has features for recovering and storing heat that would otherwise be wasted.

fied equally on technical grounds, it was two clusters of 40-year old oak trees that tipped the balance.

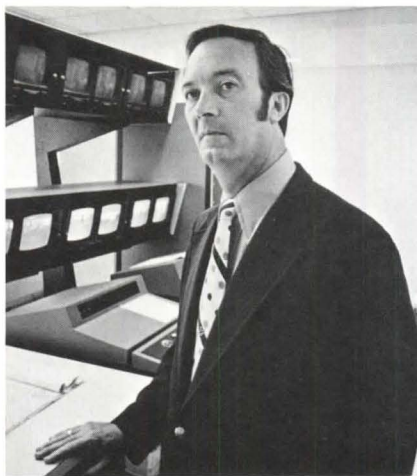
The trees stand on 150 acres of rolling meadowland traversed by a small stream which finds its way to the Passaic River on the opposite side of the property. The architects have used the major grove, carefully preserved in the center of the site, as the entrance focus for their design. Around this focus, the low-rise office and "commons" elements, two to four stories in height, rest on landscaped terraces.

An ecological requirement was that the Passaic, which is a source of drinking water, be protected. To safeguard its purity during construction work, a settling pond was excavated in the brook's path to function as a catch basin for silt and debris. The pond functioned so effectively that regular clarity tests of downstream water indicated its quality was better than before work began. Following this utilitarian beginning, the six-acre pond has proved to be an attractive addition to the natural landscape and has been retained as a permanent feature.

Passing Glance. The building itself bears little resemblance to a conventional office structure. To the observer glimpsing it through the trees from the road or approaching it along the entrance drive, it has the residential character of the surrounding community. A series of three parallel office elements



Architect Vincent G. Kling won the biggest design assignment of his professional lifetime but then had to play it down.



AT&T facilities control supervisor Louis W. Coscia checks bank of TV screens linked to cameras at each entrance to garage.

of two, three, and four stories step back from the water's edge. Their pitched roofs create shadows and overhangs, facades are fragmented to break up what might have been long, monotonous perspectives and the materials are natural and crafted.

Alternating bands of precast concrete panels and bronze anodized aluminum frames with double solar-tinted glazing comprise the exterior skin of the steel-frame structure. The precast panels are lightly sandblasted to expose the aggregate in warm tones of tan and gray. To lend a pleasing contrast, spandrel and soffit panels have received heavier sandblasting. The gently sloping, overhanging roofs are covered with dark red-brown terra-cotta tile.

To provide maximum exposure to outside views for those working within, the complex has been designed as a group of office elements clustered around interior courtyards and connected by service cores and corridors forming the "street system" of the building. The periphery of the office wings yields vistas of open courts, planted terraces, wooded areas, ponds.

Introspection. "On the subject of outside views", says architect Kling, "this is one place where a person looking out his window will see other parts of his building and other people working in a common effort. We feel strongly that this helps the employee identify better with his work and the company purpose. In a conventional office building, an occupant looks out on other buildings, other people that are totally unrelated to himself."

The triangular central core or "commons" serves as the crossroads of the complex. Included in the commons space are a two-story high reception lobby with a dramatic, towering foun-

tain display. Here also are lounges, barber and beauty shops, a 30,000-volume technical library, a broadcast-sized TV studio and data processing center.

A large central conference facility occupies the third level of the commons. This consists of five separate rooms, with tiered seating for from 30 to 60 persons, circling a common audio-visual laboratory for rear-view projection and closed-circuit television.

Dining facilities include a 650-seat cafeteria, 350-seat grill, four executive dining rooms seating 70 and a series of conference/dining rooms seating a total of 200. A wide semicircular staircase serves as the entrance to the cafeteria and adjoining lounge. Two log-burning fireplaces are focal points of the lounge and dining areas.

Nearby the dining area is a spacious variety store with an extensive assortment of toiletries, clothing, sundries, etc. The company has provided this convenience to make it unnecessary for employees to make quick lunchtime auto trips for incidental shopping.

Unseen Sea. The single element that most disturbs environmentalists about commercial development of suburban acreage is, unquestionably, the parking lot: that deadly sea of asphalt surrounding the usual shopping center or office building. Possibly, therefore, AT&T's most important move in insuring the environmental acceptance of its facility was to provide indoor parking space for 3000 cars. All during the working day there is not one parked auto to be seen at AT&T Basking Ridge.

The 1.4 million square feet of garage space is on two levels directly beneath the building and the surrounding terraces. Ceiling height in the garage area is nine feet, rather than the customary seven feet, to avoid giving employees



Engineer Del Birr sees in an electric boiler an excellent means for avoiding unnecessary correspondence with passersby.



One of the sculptured courtyards that penetrate terraces to introduce natural light and air into garage areas.

and visitors a closed-in feeling.

Offices are served directly by banks of elevators from the parking levels. The elevator banks are adjacent to courtyards which penetrate from the terraces above, introducing natural light and landscaping to the garage. Each employee is assigned a parking space near the elevators most convenient to his office. He drives to that space through one of the seven garage entrances leading from the access road.

Each entranceway is barred by a lift-arm that is linked to the same electronic computer that controls all of the building's operations, including the HVAC system. When an employee stops at the gate he inserts a coded card into a reader. Only if he is at his assigned entranceway will the gate lift.

"The system is almost foolproof", says Louis W. Coscia, AT&T facilities control supervisor. "Should an employee lose his card, he will be issued a new one coded for his assigned gate. But the computer will forever reject the card he lost, so it is worthless to an unauthorized finder attempting to use it."

HVAC System. Ceilings throughout the building are made up of identical 5-by 5-foot modules of a new type. Each factory-assembled module contains acoustical surface material, a fluorescent fixture, inlet for conditioned air, and perimeter slots for return air. The HVAC system supplying these modules is a forced-air variable-volume system

divided into peripheral and central zones served by adjoining core mechanical rooms. The space above the ceiling forms the return air plenum.

The temperature in each office is regulated by modulating the flow of cool air into the area. This is done by adjusting the position of dampers in the ceiling modules. Dampers may be open, shut, or anywhere in between as required by the thermostat for the area.

Four centrifugal chillers are located in the basement mechanical room. Two of these are used for cooling only. The

second pair are equipped with double-bundle condensers and capable of supplying hot and chilled water simultaneously. In the heating season, these machines operate as heat pumps, recovering heat from interior spaces that require constant cooling and transferring it to perimeter convectors.

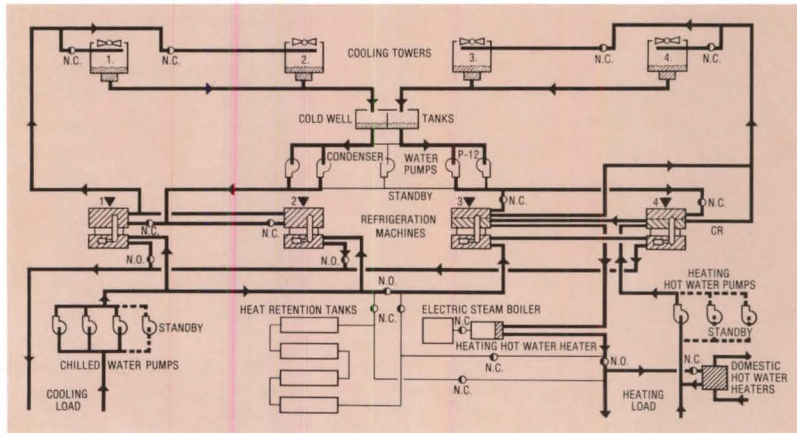
Boiler PR. When the building is occupied, lights on, and office equipment functioning, sufficient heat is available for recovery to supply heating requirements in all but the coldest weather. In the first year of operation, supple-

OPERATION OF HVAC SYSTEM

The all-electric central plant uses double-bundle chillers (Nos. 3 and 4) for one-third of the 4800 ton capacity, cooling towers for summer heat rejection a 6000-kw high-voltage electrode boiler for supplemental heating and 60,000 gallons of hot water storage capacity. The system is also used to preheat domestic water.

In the basic heat recovery cycle, return water from the air handling units is chilled in the heat recovery machines with the condenser heat being removed by the heating bundle and pumped out to perimeter convectors. A perfect balance between heating and cooling occurs only at the break-even temperature. As the cooling load increases and hot water temperature rises above the setpoint of the master controller, a portion of it is diverted into four storage tanks and the remainder mixed with cold water from the tanks. This continues until the tanks are loaded. Then they are shut off and economizer cycles on a portion of the air handling units are used to reduce the cooling load to the point where it balances the building heating requirement.

When the outside temperature rises to the point where it is no longer possible to use the economizer cycles, the condenser water is diverted to the cooling towers and the two-speed tower fans operated to balance the building load.



Returning to the basic heat recovery cycle, as the temperature falls below the break-even temperature, the cooling load cannot sustain the building heating requirement. Then the storage tanks are opened to the chilled water system and sufficient hot water is drawn from them to balance the heating demand. During nights and weekends when the building is shut down, the temperature in the tanks drops to the point where it is necessary to supplement the tanks by turning on the boiler. Eventually the tanks will become depleted and the chilled water system is shut down, leaving the boiler to carry the heating load.

Capability is built into the central plant operating cycles to use the boiler to charge the storage tanks. This could be used in the future for off-peak power consumption.

At night when the lights and air handling equipment are shut off, the building is allowed to cool to 65F. To warm it up prior to morning occupancy, the boiler is turned on along with the heat recovery chillers and a second hot water pump to meet the increased load in the air handling units.

Air for the office areas is supplied by a two-fan variable-volume system. One fan serves perimeter spaces and the other serves interior spaces. A thermostat in each office responds to the space load and varies the air supply into the space. Return air from the space passes through the lights into the ceiling plenum, removing about 25 percent of the heat from the lights, thereby reducing the air quantities needed to cool the offices. The return air is mixed with outside air, then passed through the cooling coil and through the fans for distribution into the space. The in-line fans respond to duct pressures, varying the pitch of the blades as the VAV terminals reduce flow. This results in a reduction in fan horsepower and energy consumption.

To aid morning warm-up the fans are started with the outside air dampers and cooling coil valve closed. Air flow through the cooling coil is reduced to 50 percent and a bypass damper and heating coil valve opened. The cold air returning from the building is mixed with warm air passed through the bypass heater to supply moderate temperature air to the VAV units. This aids the lights in warming up the building.



Display fountain in visitors' lobby aids humidity control in heating season.

mentary heat was not called for until temperatures dropped below 5F.

The source of supplementary heat for the system is a 6000-kw electric boiler in which water is flashed into steam by an arc struck between two electrodes. The entire heat output of the boiler is transferred to the hot water main through a steam-to-water heat exchanger measuring only 48 inches in length. Electrodes operate at 12,470 volts which is the primary voltage of the utility feeders. Use of this high primary voltage avoids the need for a step-down transformer with a consequent savings in first cost and elimination of the energy losses inherent in such transformers.

"The boiler performs a public relations function also", says AT&T engineer Del Birr. "In older systems of this type, the building lighting was often kept on when the building was unoccupied to heat the building at night. This was done to avoid the cost of installing a boiler. But if we did that here at Basking Ridge, we'd be constantly answering protests of passersby who believed we were wasting energy. So we have made a very conscious effort to minimize after-hours lighting—even the so-called 'stumble lighting' needed by our night watchmen."

Computer Control. The mechanical, lighting and security systems are managed by the H-316 computer, a powerful Honeywell data processor programmed specifically for control of building operations. The machine continuously monitors and regulates conditions at over 500 data points in the HVAC system. Only when these conditions are maintained consistently at their optimum levels can the most efficient use of energy be achieved.

The computer determines, for example, the exact number and configuration of chillers, pumps, fans, cooling towers, etc. required to satisfy the building's demand for cooling at any given moment in a summer day. The most efficient operation of the HVAC system at that moment depends on literally hundreds of variable conditions existing within the system itself (condenser water temperature, air pressure in the ducts, etc.); within the building (such as number of occupants and the business machines in use); and, finally, outdoors (temperature, humidity, etc.). Optimizing this complex mix could be done only by computer.

The HVAC system incorporates an economizer feature which at certain times permits the use of outside air for conditioning the building's environment, thereby reducing the cooling load on the central plant. The computer includes a program known as enthalpy control that refines the economizer process for added energy savings.

The Canadian Vote. AT&T is an important building because it demonstrates to what heights architecture and engineering can rise in easing man's ecological impact. Such environmental excellence is costly to be sure (over \$100 million in this case). But the knowledge that the appropriate technology exists should encourage both the developer and the environmentalist.

DESIGN SUMMARY

GENERAL DESCRIPTION:

Area: 2,700,000 sq ft
 Number of floors: four
 Types of spaces: private and general offices, conference rooms, TV studio, computer rooms, dining rooms, cafeteria, kitchen, lounges, library, lobby, garage, mechanical rooms, storage

CONSTRUCTION DETAILS:

Glass: double solar bronze
 Exterior walls: 4" precast concrete panels, fiberglass insulation, gypsum board; U-factor: 0.2
 Roof and ceiling: clay tile, fiberglass insulation, concrete deck, suspended acoustical tile ceiling; U-factor: 0.18
 Floors: concrete slab

ENVIRONMENTAL DESIGN CONDITIONS:

Heating:
 Heat loss Btuh: 21,000,000
 Normal degree days: 4600
 Ventilation requirements: 300,000 cfm
 Design conditions: 5F outdoors; 75F, 30% rh indoors

Cooling:
 Heat gain Btuh: 52,500,000
 Ventilation requirements: 300,000 cfm
 Design conditions: 95F dbt, 78F wbt outdoors; 75F, 50% rh indoors

LIGHTING:

Levels in footcandles: 30-100
 Levels in watts/sq ft: 2-4
 Type: fluorescent, incandescent, mercury vapor

CONNECTED LOADS:

Refrigeration (4800 tons)	4,114 kw
Heating	9,258 kw
HVAC Accessories	8,144 kw
Lighting	6,641 kw
Water Heating	480 kw
Cooking	1,628 kw
Elevators	880 kw
General and Misc.	2,703 kw
TOTAL	33,848 kw

PERSONNEL:

Owner: American Telephone & Telegraph Company, Inc.
 Architects: The Kling Partnership
 Consulting Engineers: Kling/Lindquist
 Construction Manager: Frank Briscoe, Inc.
 Electrical Contractors: Nordling Dean Elec. Co.; Beach Elec. Co.
 Mechanical Contractors: Limbach Co.; Arace-McBride Joint Venture; John E. Joyce, Inc.
 Utility: Public Service Electric & Gas Co.

The summary verdict on this building remains to be written as the ecological professionals continue their evaluation of it. In the meantime, however, Kling has had approving votes from a number of knowledgeable sources—not the least of which were two broods of newly hatched Canada geese contentedly circling the settling pond early this spring.

ENERGY MANAGEMENT PROGRAM

Conservation & Energy Management Division
EDISON ELECTRIC INSTITUTE
 90 Park Avenue, New York, N.Y. 10016

Art in the Environment

This month, we are taking a look at outdoor art in public places, some of the new ways it is being used and how its recent proliferation holds both promise and problems for architects and artists.

The value ascribed to public art by our society has appreciated in recent years, partly as a reaction to the unrelenting functionalism that held sway in the early decades of this century. Many of the buildings and whole city downtowns which architects designed under the influence of a radically puritanic, antihistorical tradition are now being decried for lacking soul and spirit and are themselves becoming period pieces. More humanistic and inquiring attitudes have replaced yesterday's single-minded focus on efficiency and technology. One reflection of this changed viewpoint is legislation allowing government—federal and local—to put aside small percentages of building costs for art.

The main opposition to art in public places stems from the fact that it costs taxpayers' money. Then, too, many people feel public art is not really public at all, since the majority of people doesn't understand it. There is, we are told, an unbridgeable gap between "the people" and the artist, the artist being "alienated" and out of touch with the mainstream of society. As a result, it is claimed, his work no longer inspires and instructs as it did in former times; it mainly mystifies.

But artists today show clear signs of taking "the people" very seriously. And they must. For by choosing to enlarge the scale of their works and place them in public parks, in front of buildings, on busy streets, artists have made passersby—and not just culture seekers—the judges of their work.

Even when their meaning remains unclear to many, public artworks often come to assume a very special role in the life of the community. Philadelphia's Oldenburg sculpture, Chicago's Picasso, Grand Rapids' Calder—to mention just a few—serve as focal points of attention and activity. They also impart to many who live or work near them a sense of connectedness with something distinctive and worthwhile. In several cases when the time came to remove outdoor sculpture, or the intent was voiced, the community united to prevent it.

In this issue, we look first at current efforts by government to underwrite and encourage public art. Next come several shorter essays that consider some of the things that happen when outdoor artworks are installed in public places. How have the spaces been affected? The community? The story of the long-standing and well-known professional relationship between Gordon Bunshaft, FAIA, and sculptor Isamu Noguchi is outlined mainly because it highlights many of the issues, problems and satisfactions of collaboration between architect and artist. Finally, we offer the story of an earlier collaboration, that of Bertram Goodhue and Lee Lawrie on the Nebraska state capitol, which also touches on the evolution of symbols in American art and architecture.

Andrea O. Dean



The Proliferating One Percent Programs for the Use Of Art in Public Buildings

Andy Leon Harney

Almost without notice, the movement in support of public programs to allocate approximately 1 percent of construction costs for art in public architecture has mushroomed in the past five years.

From the first program, instigated by Philadelphia in 1959, to a national effort under the auspices of the General Services Administration (GSA), the 1 percent movement has come a long way—at least 15 cities, four counties and six states have undertaken such programs and there are more in the works.

For all of the idea's popularity, the 1 percent proponents are still searching for the ideal legislation and process to unite art and architecture in public buildings. Each piece of legislation adds a new wrinkle of its own. State legislation, local ordinances and administrative policies authorize allocation of from .375 percent (GSA) to 2 percent (San Francisco) of construction costs for public buildings to acquire artworks to place on, in or outside structures. Beyond that capsule description are endless variations in search of an ideal solution.

There are active statewide 1 percent programs in Alaska, Hawaii, Illinois, Oregon, Texas and Washington. Particularly noteworthy are the programs in San Francisco, Philadelphia (where the program is organized and operated by the redevelopment authority), Baltimore, Seattle, Tulsa and Dade County, Fla.

The leader in the 1 percent movement is the GSA, the nation's landlord. In the past four years, GSA has poured \$1.1 million into works of art commissioned for new federal structures throughout the country. Until last July, GSA allowed an amount not to exceed .5 percent of construction costs. The amount has been reduced recently to .375 percent.

Each GSA program begins with a proposal by the architect to GSA for inclusion of art in or near the building and suggestions regarding the nature of that art. Thus, the GSA policy is applied at the architect's request, which encour-

ages a sympathetic treatment of both art and architecture. GSA's allocation for art is determined only after the design of the building is complete, approved and put out for bids.

To select an artist, GSA asks the National Endowment for the Arts to appoint a nominating committee of "distinguished art experts"—university professors, art critics, artists, museum officials and patrons—to propose three to five suitable artists. The architect can participate in the process of selection, but is not required to do so. The group reviews GSA's files of potential artists; panelists can also bring suggestions of their own.

Often the art experts are local people and they may suggest area artists. Representatives of NEA and GSA are also on the panel. The group visits the site to get a sense of the structure.

Once a decision has been made, the group's recommendations are passed on to the GSA fine arts design review panel consisting of the agency's commissioner of the public buildings service, the assistant commissioner for construction management and the counsellor for fine arts and historic preservation.

'Ad Astra,' by Richard Lippold (left and pps. 44, 45), Washington, D.C.; a John Rietta work in Roanoke, Va. (right), and Calder's 'Flamingo' in Chicago.



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This panel makes final recommendations to the administrator of GSA who then selects the artist and contracts independently with the artist.

The GSA program has produced public artworks by Mark DiSuvero, Milton Glaser, Dimitri Hadzi, Tony Smith, George Rickey, Isamu Noguchi, John Rietta, Richard Hunt, Beverly Pepper and Claes Oldenburg, among others.

Public response to the GSA program has been generally favorable, although there have been controversies such as a recent uproar over New York City artist George Sugarman's sculpture for Baltimore's new federal courthouse. One of the court's judges disliked the piece. He went so far as to call it a safety hazard that "could well be used to secrete bombs or other explosive objects."

While the judge's comment may seem facetious or exaggerated, it does raise important issues: Who should select the artist and approve the artwork? What should be the relationships between the artist, architect and community?

The GSA selection process at best may include two or three local arts professionals, but the building's user—the real client—has little input. As a result of the Baltimore furor, GSA claims to have amended its procedure to include community representatives and users.

GSA's reliance on panelists appointed by the National Endowment for the Arts results in giving authority for decisions about large sums of public funds for art to a few people. Many of the same people (at least 50 percent) who make selection for NEA's "works of art in pub-

Among the issues: community participation and coordination between architect and artist.

lic places" (category I) program also make decisions about the selection and placement of works by artists for GSA buildings.

The community is usually not represented on the selection panel, because of fear that the public would not select works of sufficient sophistication and enduring quality. As one city administrator of a 1 percent program said, "If they (the public) had their way, we'd have nothing but cowboys on horseback."

In Seattle and in other Washington cities and counties, the procedure for selection relies heavily on the arts community through the local arts commission (often the impetus for the legislation to begin with), but there is a provision for community involvement on juries that make the final selection. In Baltimore and Philadelphia, the architect selects or recommends the artist. In Tulsa, the architect has first opportunity to select the artist but may turn over the selection process to the arts commission. In Hawaii, where the state has an active program, the comptroller of the state and the state arts commission select the artist. In leaving the decision to architects alone, there is a risk of limiting public art to works that are largely architectonic. Bold, solid, geometric forms may be easier for an architect to understand, but not necessarily for the public. Dependence on this type

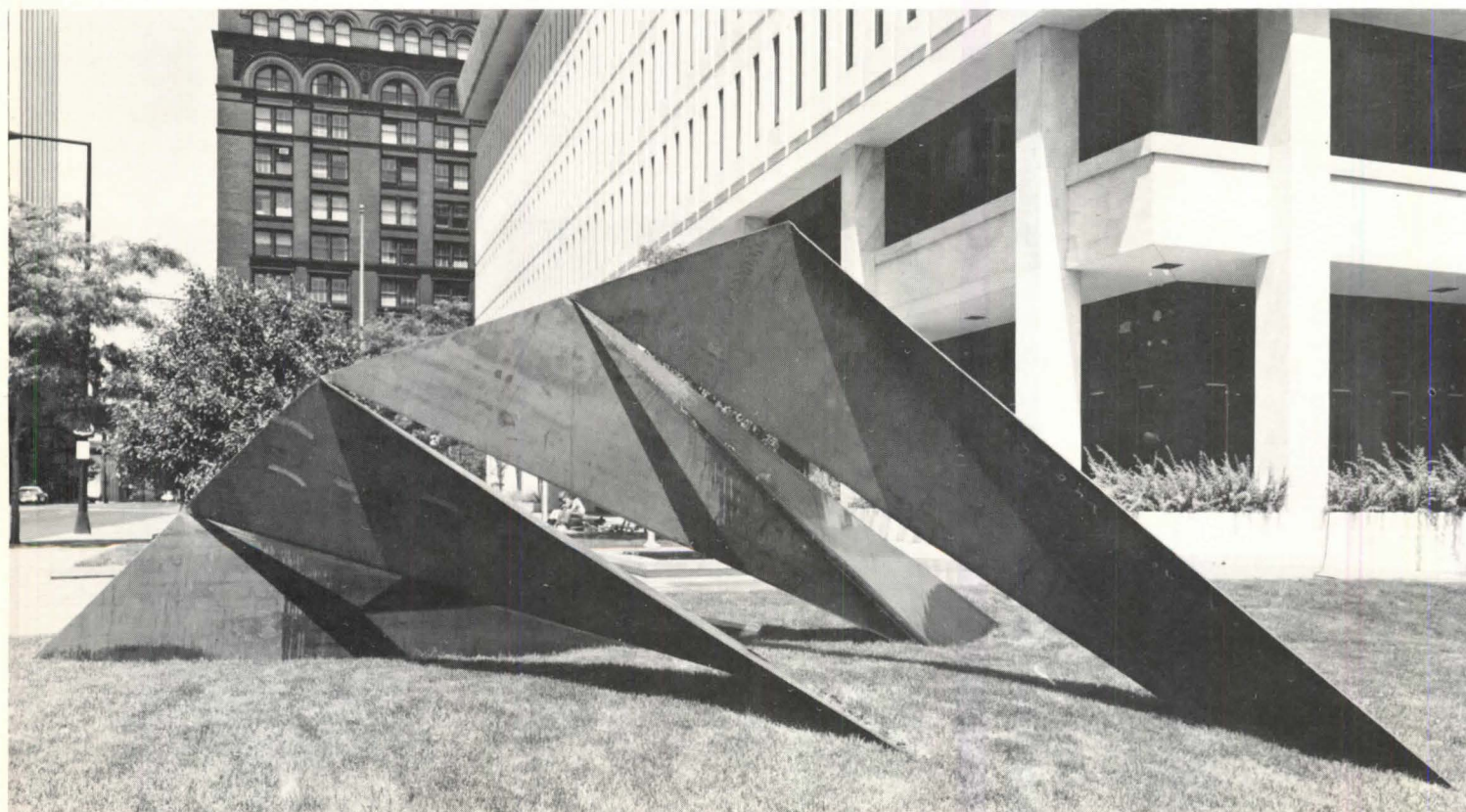
of art limits the range of potential expressions.

One suggestion to get the public more involved in the selection process is to have representatives of the community select the site for the art, a decision which may well rob the architect of the opportunity to work closely with the artist and possibly destroy the overall architectural design concept.

Opening up the selection process to the public risks the possibility of power politics affecting decisions about art. The objections in Baltimore to the GSA Sugarman design came from an influential person. But influence also can have positive effects. In the same city, for example, an active 1 percent program continues because of support by Mayor Donald Shafer, one of the original sponsors of the city's 1 percent legislation.

Regardless of who is responsible for the final selection of the artist, it is crucial that the art relate to the building design. The constant problem faced by artists and architects is that by the time the artist becomes involved, the entire building has been designed, since the 1 percent figure can only be arrived at after the initial design has been let out for bids. As a result, some buildings serve merely as backdrops or frames. But other artworks offer contrasts in shape and form which strengthen both the art and the architecture.

The overall intent of a program may determine the relationship of the art to the building. An amendment to the Seattle program ordinance, for instance, requires the arts commission to develop a





Charles Ginnever sculpture, St. Paul, Minn. (left); Charles Searles mural, Philadelphia (above); Louise Nevelson sculpture, Philadelphia (below); George Sugarman sculpture, Baltimore (bottom), and Robert Maki sculpture, Eugene, Ore. (right).

citywide arts plan to better coordinate selection and placement.

Because of a lack of coordination between artist and architect, the artist may create what amounts to a small, nonfunctional piece of architecture which does not relate well to the building. An extreme example is George Segal's "The Restaurant" for the federal office building in Buffalo, where the artist erected his own building facade to frame his sculpture. Those who favor a genuine integration of art and architecture feel that the 1 percent programs would work better if the artist participated in design phases of the project.

In Seattle, where the ordinance allocates 1 percent for art to all municipal department capital improvements, the city is attempting the first known collaboration between artist and architect in which an artist is involved in the conceptual stage of the structure.

Richard Hobbs, AIA, of the Seattle architectural firm of Hobbs Fukui Associates was concerned that despite the city's extensive 1 percent program, the art it generated did not relate to the architectural process. When his firm was awarded a contract to design a \$5 million electrical power substation (a selection based on the firm's previous work rather than a specific design proposal), Hobbs suggested that the artist be brought into the planning process.

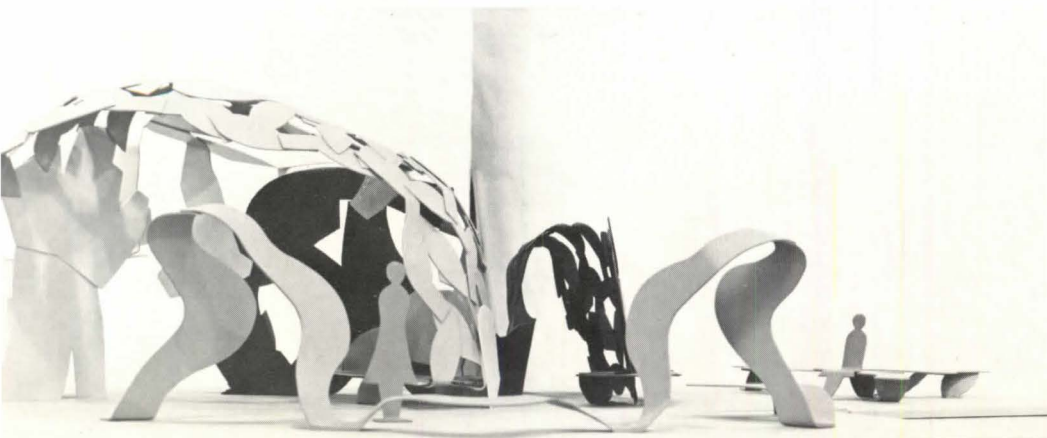
Seattle's arts commission has an art in public places committee that names juries to select artists for individual projects. A jury reviews slides from a register of local and regional artists maintained for this purpose at the University of Washington.

The jury for the substation, which included the architect and the staff architect of the city light department, studied the work of 90 artists and selected nine to be interviewed. Three were finalists: a conceptual artist, a printmaker and a painter. The decision was made to use all three as consultant members of the design team, with no firm commitment to use any one of the artists' work in the facility. A total of \$50,000 was allocated for art in the final project.

Citizens were present at presentations made by the architects and the city light department. The substation for a suburban neighborhood was to be an exception to the standard anonymous block-long structures of this type.

Because the concept of artist-architect collaboration in the design process was new, an effort was made to set up procedures which could be used in future projects. This particular collaboration raised several issues common to many 1 percent programs.

For instance, in the selection process, the Seattle jury consciously avoided artists whose work is architectonic and



sought artists uninhibited by architectural forms whose ideas would add a dimension to the design process. (In making this decision, the architects also avoided art which might compete with their structure.)

Lack of inhibition by artists proved to be one of the fundamental problems in the initial artist-architect relationship. "Our whole approach to the problem was so different," says Hobbs. "We had a hard time just pinning the artists down and making them adhere to a strict timetable."

The design team, headed by the architect, found it was first necessary to acquaint the artists with the basic intent of the structure. From there, the architects and engineers spent a great deal of time educating the artists to both their jargon and to some of the techniques of construction that they took for granted.

"They wanted to get out and pour concrete into forms to see what it could do and we just didn't have time to do that," says Hobbs.

The divergence of perspectives produced a creative tension which influenced the final design. A "soft wall" (concrete-

textured panel) will serve as a backdrop for artworks. The electrical equipment will be color-coded and areas will be set aside for sculpture. But two suggestions proposed by the artists were vetoed. They wanted to talk with members of the community to get local feedback, and they wanted the work of a sculptor who incorporated electrical equipment into his artwork. Both proposals were opposed by representatives of the city light department.

In all, Hobbs feels that the effort was successful. If he were to attempt such a collaboration in the future, he says, he would more clearly define the artists' tasks and timetables for completing those tasks. The final determination regarding the artworks to go with the soft wall has been left until the building's completion simply because, "everytime we talked about it, the artists came up with another solution," says Hobbs. "We finally decided to wait until the wall was built before we decided."

Does Hobbs recommend such collaborations? "It's a complex thing. It has been difficult to get a handle on it. Both parties want to get together to improve

The architect as orchestrator and the artist as something more than a subcontractor.

the thing and we have been fairly open about our frustrations. I think it can work, and I think that the creative thinking of the artists was genuinely beneficial to the whole effort. It's key, however, to make sure that the artist's role is well defined."

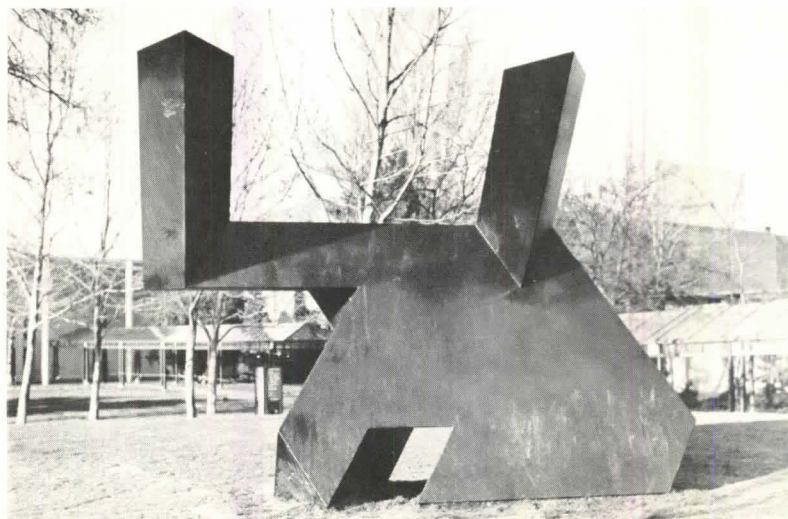
Those involved in making the 1 percent program a reality are divided as to whether arts professionals should share with nonprofessionals the task of selecting an artist. But architects, artists and program administrators are generally in agreement regarding the need to bring the artist into the design process early on.

The Seattle collaboration made the architect an orchestrator. The artist had certain responsibilities to the architect and to the city. There is a need to more clearly define those responsibilities.

Seattle provides a unique contract between artist and city which takes the artist out of the category of subcontractor on a par with plumbers and electricians and clearly defines his relationship with the city. If the city decides to sell a piece previously acquired through the 1 percent program, it agrees to pay the artist 15 percent of the appreciated value of the work. Also, the artist is notified if a work is relocated, and the city promises to properly maintain and protect it—giving the artist first opportunity to perform any necessary repairs. Finally, the artist reserves all rights to copy or reproduce



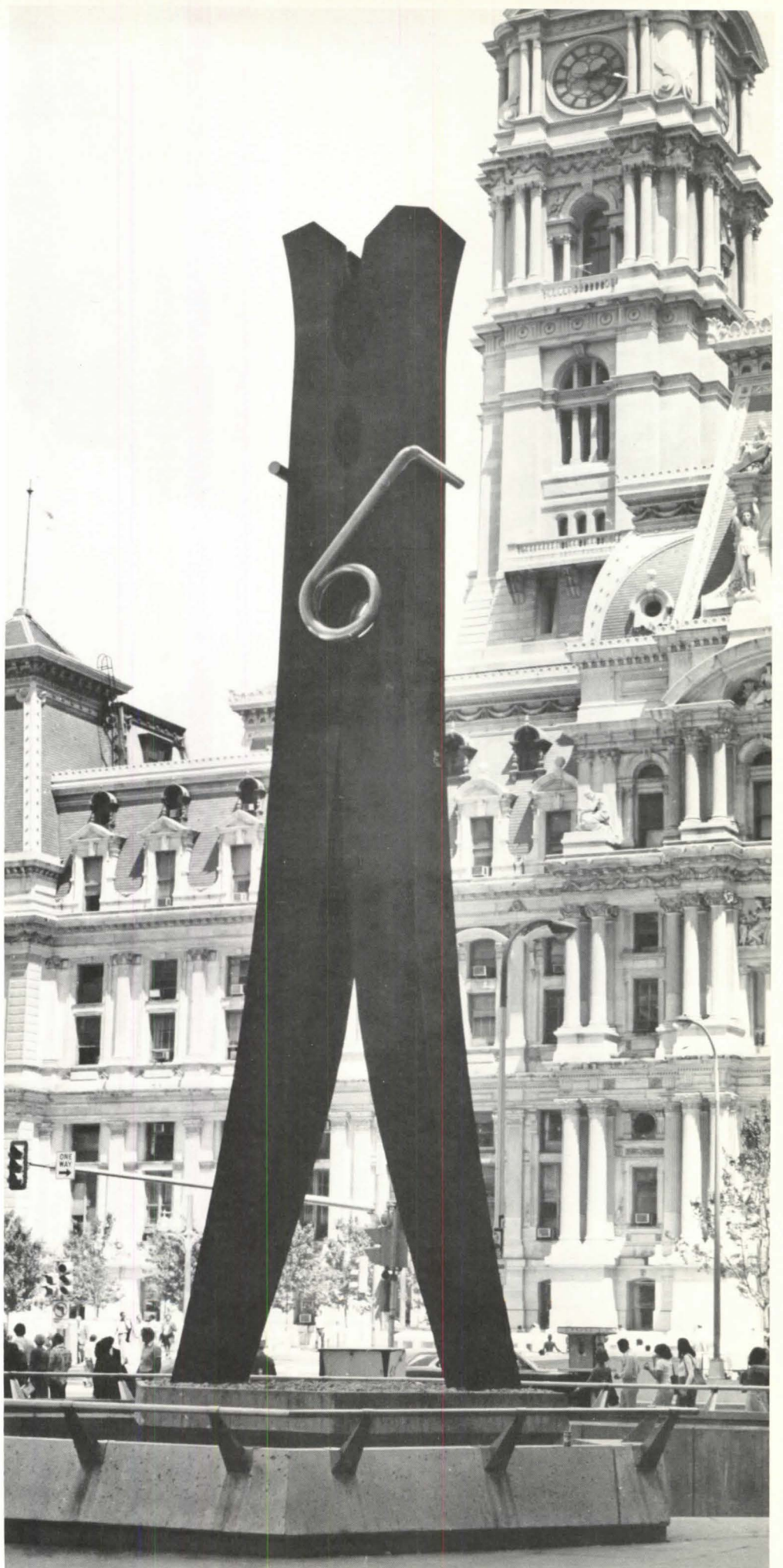
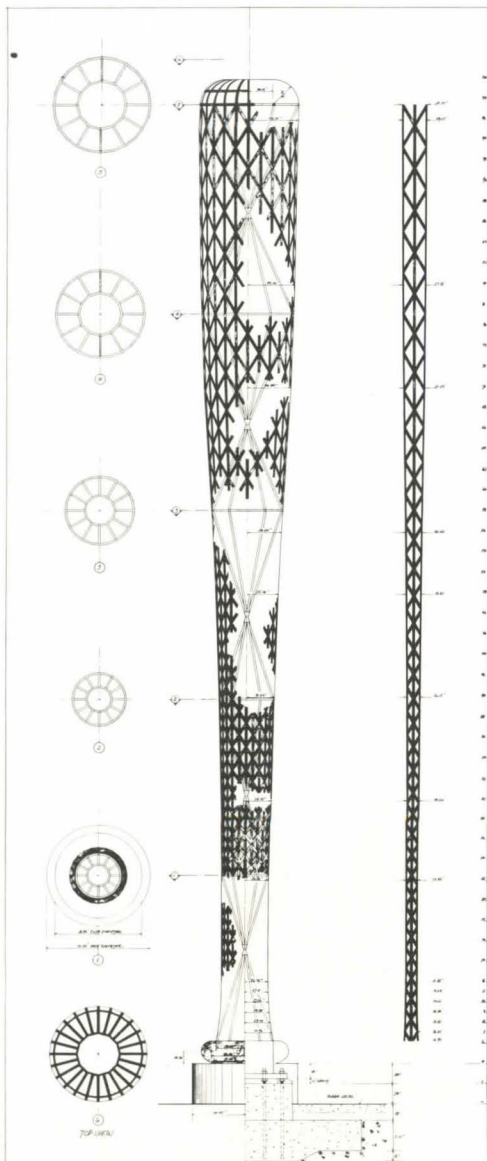
Lee Kelly, 'Untitled,' Seattle (far left); Bernard Dubuffet sculpture, Philadelphia (left); George Segal, 'The Restaurant,' Buffalo (bottom left), and Tony Smith's 'Moses,' Seattle (below). Claes Oldenburg's 'Clothespin,' (far right) which has recently been installed near Philadelphia City Hall, and his design for 'Batcolumn,' Chicago.



the work and to borrow it for not more than 60 days once every five years for exhibition purposes.

A Baltimore solution for compensating the architect for his time is to date the only schedule of payments recognizing the additional time and creative energies required to make art fit well in the overall design concept. The city's schedule of fees compensates the architects at \$25 per hour for additional expenditure of time and expertise. For estimated construction costs below \$1.5 million, a maximum of \$1,200 can be paid the architect; for construction costs of \$1.5 million to \$5 million, \$1,500, and for estimated construction costs of \$5 million and over, \$3,000.

Artworks cannot redeem poorly designed buildings and no architectural setting can improve an ill-conceived artwork. But well chosen art can enhance mediocre public architecture and give it human scale. Ideally, artworks that are carefully executed and sited enhance good architecture in interplays of form, color and line. The 1 percent movement is evolving toward an optimum framework for this to happen. □





Grand Rapids Becomes a Showplace of the Use Of Sculpture in Public Spaces

Andrea O. Dean

It began with a casual suggestion. During a visit to Grand Rapids, Mich., in the spring of 1967, Henry Geldzahler, the first director of the visual arts program of the National Endowment for the Arts, pointed out to his hostess that the open plaza at the city's government center would make an excellent site for a major piece of outdoor sculpture. The area was the focal point of major downtown renewal efforts. Why not, asked Geldzahler, apply to NEA for a matching grant to help acquire a suitable artwork?

Two years later, an enormous Alexander Calder sculpture, 55 feet long, 43 feet high and red in color—some likened it to a giant flower, others to an antediluvian beast—was installed in the plaza.

Grand Rapids thus became the first community to take advantage of NEA's grant program for public art. As such it can be seen as something of a proving

ground and a good place to observe some of the effects that the introduction of a large-scale work of advanced art can have on a small sized American city and its neighboring communities.

"La Vitesse," as the Grand Rapids Calder is named, has been translated as "the great swiftness" or the "grand rapids." But to townspeople it is simply "the Calder," and few are unfamiliar with it (though some have been heard to ask which artist did the Calder). President Ford is widely quoted as having said, "At the time I didn't know what a Calder was . . . but I can assure the members [of Congress] that Calder in the center of a city in an urban redevelopment area has really helped to regenerate a city."

The Calder plays host to an annual arts festival and weekly summer concerts, and has become a tourist attraction as well as the town symbol—Grand Rapids'

coat of arms, if you will. Its contour provides the logo that appears on official city letterhead and publications, on street signs and city trucks.

Not everyone appreciates it as a work of "art," but few fail to appreciate its value to the city. Some typical comments: "People have pride in it, because they say, 'it's ours.' You don't see kids damaging it." "It's Grand Rapids now. Everyone associates us with it."

For Grand Rapids the Calder plays a role quite similar to that of more traditional civic monuments in times past. The role of patron has shifted, however, from a single, always powerful individual to organizations, both public and private, that have temporarily united to support art. The \$45,000 NEA grant for the Calder was matched by contributions more than three times as great, collected from private citizens, private local foundations and commercial and industrial firms of Grand Rapids.

The process that led to the installation of the Calder has in broad outline been duplicated by all NEA-sponsored public arts works projects throughout the country. NEA requires that a community take the initiative in making a request for a grant and then is represented on the selection panel. Brian O'Doherty of NEA stresses the aim of "encouraging local communities to think in terms of public

art, to debate its merits and to prepare themselves for the work."

It has been argued that the so-called community that involves itself in the decision to acquire a work of art and in its selection is usually the art community which does not speak for the majority. But from where else is a suggestion or request for a public artwork likely to come? And who else but the art community is likely to possess the expertise needed to discriminate between first- and second-rate works of art? The importance of choosing wisely is underscored by museum director Fred Myers (who came to Grand Rapids after the Calder). He observes that "mediocre works of art have not had the catalytic effect of the Calder. So much has come because the Calder is a superior work of art, a magisterial yet happy thing, dominating its space in a way art seldom gets a chance to do."

Before and just after the installation of the Calder, people took sides—for and against. There was no middle ground, according to Christian Sonneveldt, who was mayor at the time. A survey of 78 citizens made by a local high school group just after the dedication showed that a little over half approved of the stabile.

Surely time has won over some of the naysayers, but a substantial number of the people one meets in the local shops and streets still lack enthusiasm, or even claim to hate it. This is mainly because they believe that local tax monies were used (they were not) and could have been used for "better purposes." One hears, for instance, that "the city government could have done a lot more with the money than stick that thing in front of city hall. It's a nice resting place for pigeons, but doesn't do a thing for the city." Another person says, "It's a tremendous expense when the city claims it's so hard up. I've heard more complaints that it was a useless expense. I could have

It started with a Calder that has become the city's symbol as well as its centerpiece.

made it a lot cheaper." Some people are also under the illusion that it cost much more than it did.

There are complaints also on esthetic grounds: "It looks like a piece of junk a ship left behind." "You may want to hear just nice things, but I think it's crazy; it's not pretty." "I would rather have seen a fountain, something soothing; it's tiring and I don't like it." "Would I miss it? Sure, after Christ cured the lepers, they were probably missed for a while, too."

Perhaps, as David Osborne, the editor of the *Grand Rapids Press*, puts it, "If you were to try to remove it, it would be like a

stranger trying to step between a man and his wife when they're feuding. It's become a matter of 'my country right or wrong.' Some people are proud of the Calder without realizing it." The fact that the sculpture is free of graffiti is one indication that he's probably right.

It would be inaccurate to infer a direct cause and effect relationship between the existence of the Calder and the subsequent placement of other large outdoor sculpture in Grand Rapids. But the Calder certainly helped prepare the way, or "painlessly increased people's interest without making them self-conscious about having 'culture,'" as editor Osborne says. Since its installation, museum attendance has gone up, according to director Fred Myers, and museum programs have increased in scope and number as a result of popular demand.

Also responsible for the proliferation of large-scale vanguard art in Grand Rapids have been the very same forces that made possible the coming of the Calder in the first place.

Again and again one hears Grand Rapids spoken of as a "manageable" city. "It's small enough so that you can get to know the city planner, the art museum director, whomever. You can call a meeting and get people together in half an hour," according to a member of the museum's women's committee, which has initiated and organized most of Grand Rapids' art projects. She has lived in larger American cities and thus has a basis for comparison.

A direct descendant of the Calder stabile is the "Calder on the Roof," a reproduction of a design made by the artist for a rooftop overlooking Calder plaza (as Vandenberg Plaza has come to be called). The "Calder for the Blind," also on the plaza, is a small version of the original stabile, which can be "seen" by hand. It was donated by the local philanthropic Keeler Foundation, which helped pay for the big Calder and has supported other local cultural projects.

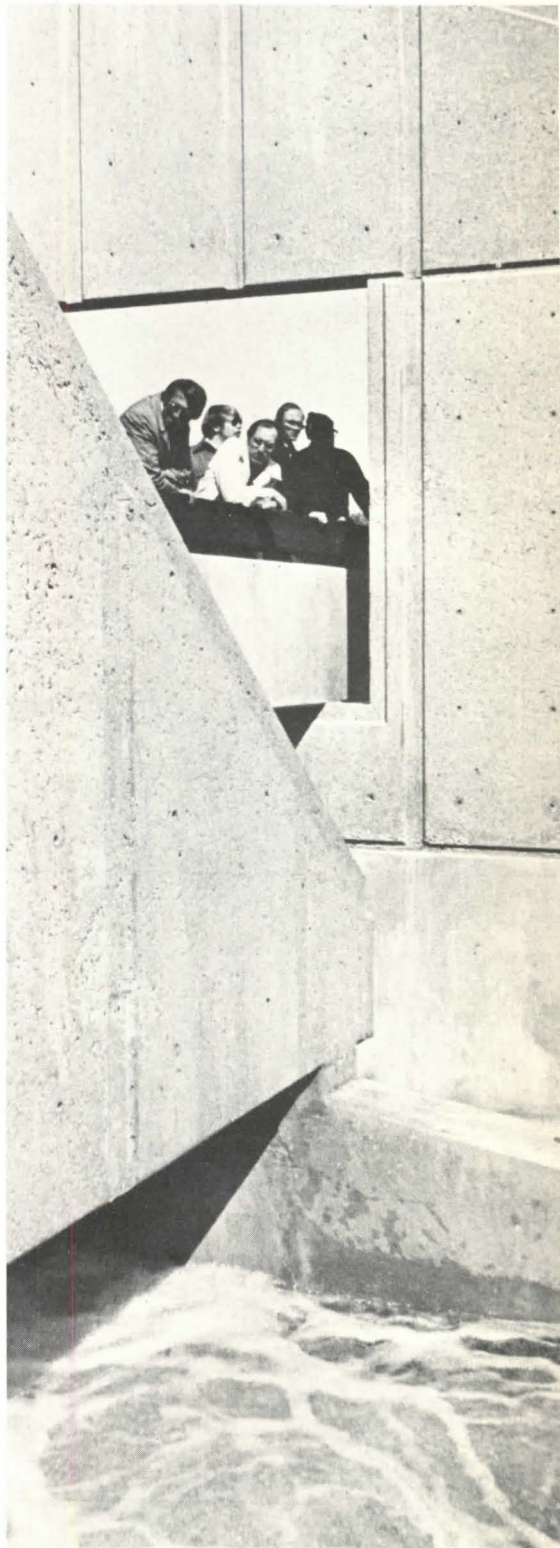
The Calder stabile had a less direct effect in generating two other major outdoor art projects in Grand Rapids. One is the "Grand River Sculpture," by Joe Kinnebrew, a local artist in his early 30s. It is known simply as "the fish ladder," for that's what it is, a ladder that allows the local Coho and Chinook salmon to return upstream in the Grand River every year to spawn. It is topped by a platform for people to walk on and watch the salmon leap over the rapids.

A most functional sculpture, the fish ladder consists of a prefabricated mortar platform bolted to the top of the concrete, box-shaped fish ladder. The parks department's original plan for the ladder was a Disneyesque affair, according to Kinnebrew, who had to fight city hall and

Washington for his design. "I've never been into artworks as social statements, yet there I was involved with politics and all these terrible people," recalls Kinnebrew. Why? "Because too many of us think we're just being dragged along, willing victims." A local firm came up with the money to match a grant awarded by NEA, which finally made the project possible. The president of Associated Truck Lines "wanted a dream," according to Kinnebrew, and the fish ladder was it.

Not everyone regards the construction

The Grand Rapids Calder (left); the 'Fish Ladder,' by Joe Kinnebrew (below).



'It's time that artists were more involved with the planning and rebuilding of cities.'

as sculpture; many view it as architecture. And "That's cool," says the sculptor. Kinnebrew worked with a local architectural firm and, contrary to usual practice, the artist hired the architect.

In 1973, while Kinnebrew's fish ladder was still in process, a remarkable exhibit was on view for six months in Grand Rapids. Fourteen of the nation's best-known sculptors of large-scale constructions were invited to design and have constructed (free of charge) large outdoor artworks, which would become the property of the artists after the exhibit. They were also allowed to choose the downtown site for the projects. Only one artist turned down the offer.

The women's committee of the museum organized the exhibit. NEA awarded the museum a grant to help mount it, and local and state contributions brought the total available monies to \$50,000. The city cooperated in granting the museum permission to use public land.

Of the 13 participating sculptors, 12 visited and some worked on their projects in Grand Rapids. Seven of the artworks were fabricated in the city and the rest were shipped to the city free of charge by local trucking firms. During their visits, the artists lived in the homes of members of the women's committee. The women believe the sculptors were at first skepti-

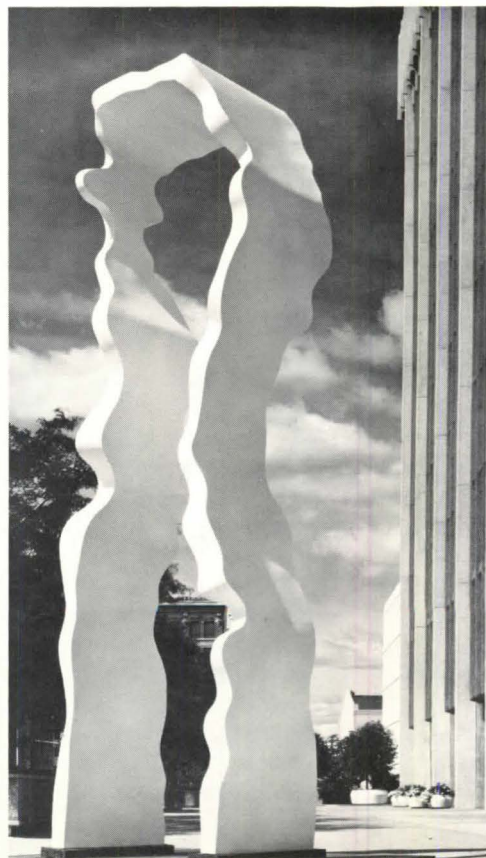
cal, if not suspicious, of this venture in the country's heartland, but were won over before they left.

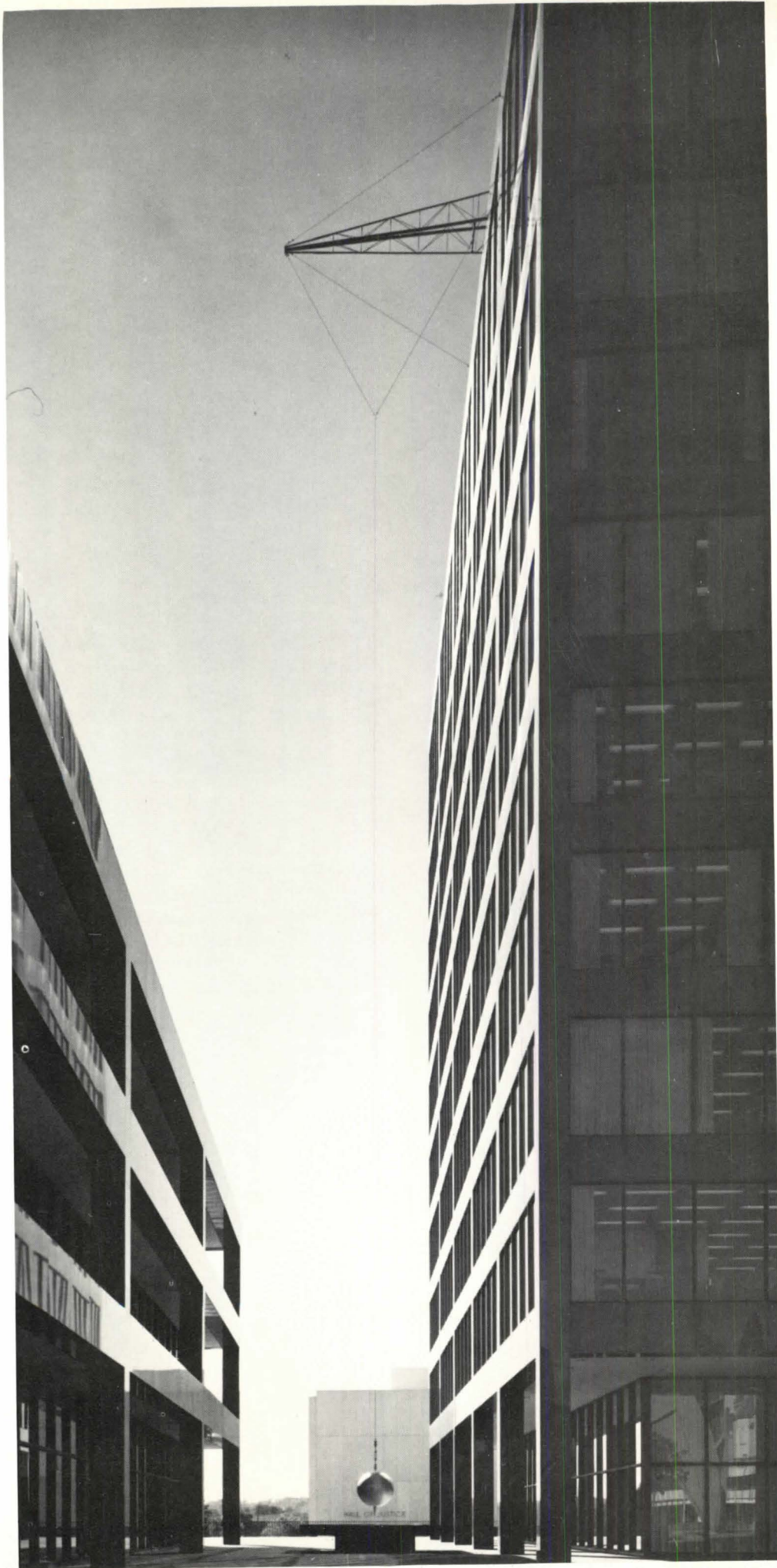
Public reaction to this exhibit, called "Sculpture off the Pedestal," was mixed, but for the most part there was little of the type of shock often associated with avant-garde art, because of the town's long exposure to the Calder. In fact, say townspeople, many used the Calder as a standard of measurement, or point of reference, for judging the newer pieces. A story has it that one Grand Rapids waitress told another, "I don't like all the strange new stuff they've got up." Answered the other, "Me neither, it's an insult to our Calder."

Four works by artists who exhibited in "Sculpture off the Pedestal" were sold for sites in the area. A Clement Meadmore shown in the exhibit is now in a Grand Rapids shopping center; a Dale Eldred was purchased for nearby Grand Valley State College; a Steven Urry was bought with help from NEA and placed in front of the Muskegon, Mich., city hall, and a Mark di Suvero will shortly be constructed (funded by the General Services Administration) and placed on Vandenberg Plaza, near the Calder, in front of the new federal building.

Mark Di Suvero, 'Are the Years What?' (below left); Steven Urry, 'Arch' (below right); Robert Murray, 'Windhover' (right). On the facing page is Dale Eldred's untitled sculpture, a suspended 500-pound sphere with pointer, which draws geometric patterns in a sandbox.

The story of the Muskegon acquisition reiterates on a smaller scale the Grand Rapids experience in acquiring the Calder stabile. The City of Muskegon hesitated to authorize money for purchase because times were hard and "there was not enough money for leaf raking," according to W. R. Cronenwett, a Muskegonite who became enthusiastic about the Urry at the Grand Rapids exhibit and urged its purchase for his home city. A Muskegon physician donated the needed money and had the sculpture erected, in part as a memorial to his late wife. It was made very clear from the start that no local taxes were being used to purchase the sculpture, which has prevented some of the public resistance experienced in Grand Rapids with the Calder. For the port city of Muskegon, the Steven Urry "Arch"





has become a civic symbol much as has Calder's "Grand Vitesse" for Grand Rapids.

The work of one "Sculpture off the Pedestal" artist, Robert Morris, was not constructed until spring 1974. It is regarded as the most avant-garde work of art on this scale built in this country, and was, once again, funded in part by an NEA grant. It is an earthwork, that is the product of molding and shaping the very landscape itself, rather than superposing an object on the landscape.

Morris's earthwork is a giant "X" built in asphalt into the slope of a hill on the fringes of downtown Grand Rapids, overlooking a ballplaying field. The sculptor's intention was to achieve the artistic ordering of a whole hillside, while at the same time halting erosion. The "X" provides a drainage system and a path for kids to ride their bikes down to the playing field without tearing up the hillside. It is also a meeting place and a viewing platform from which people watch the games.

Because it is on city property, the Morris project had to proceed according to city rules, by competitive bidding and acceptance by the city commission. While it was in process, the artist said of his work, "People will use it to walk upon. They will be involved in it. It will be an outdoor art experience people will stumble into." Today, people use it but seem little aware of it as a work of art.

Robert Morris also said, "I think it's time artists were more involved with planning and, for the most part, rebuilding of cities." The fact that artists have become successfully involved in such planning and rebuilding in Grand Rapids is one important accomplishment of this city's experiment with public works of art.



Fabricating a Soaring Symbol of the Space Age

Sculptor Richard Lippold specified the color gold to "represent man's thrust from earth into space" for his "Ad Astra," a work commissioned by the Smithsonian Institution for the Mall entrance of the new National Air and Space Museum in Washington, D.C.

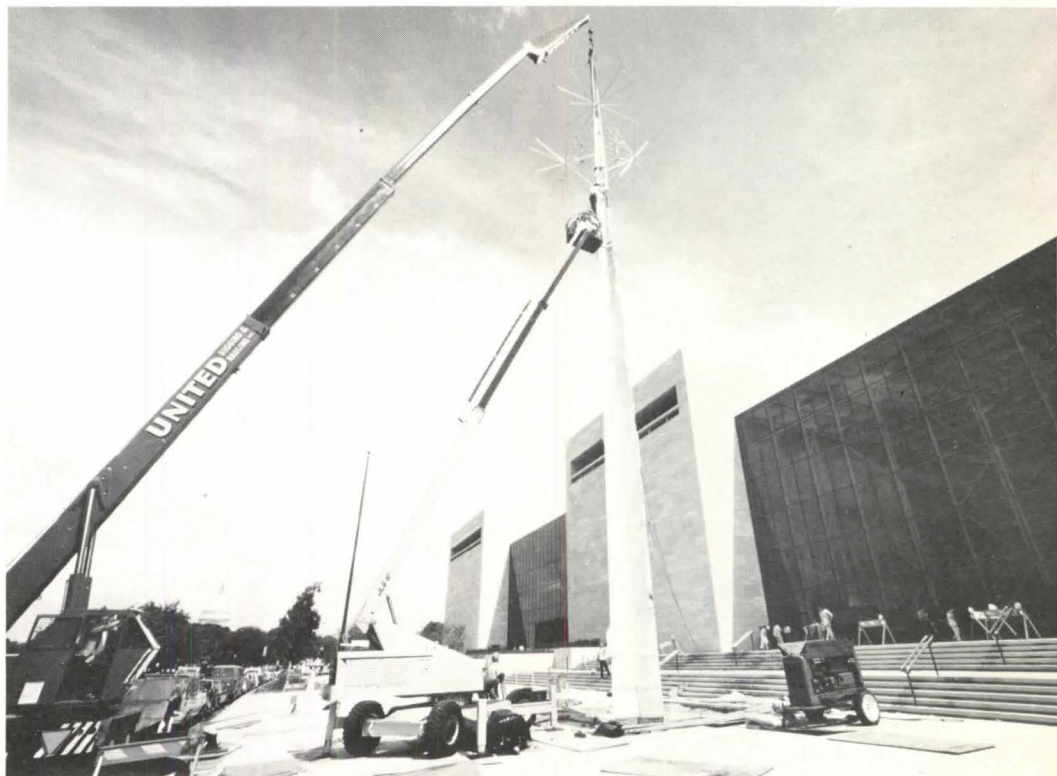
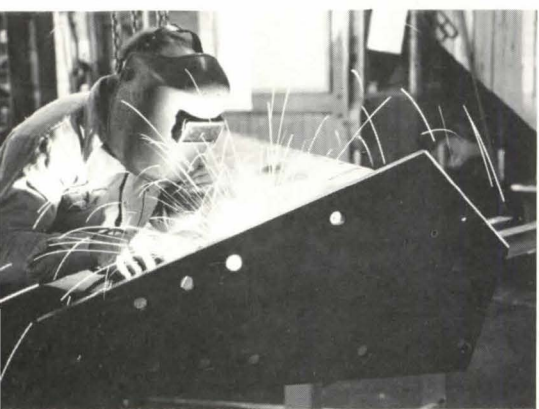
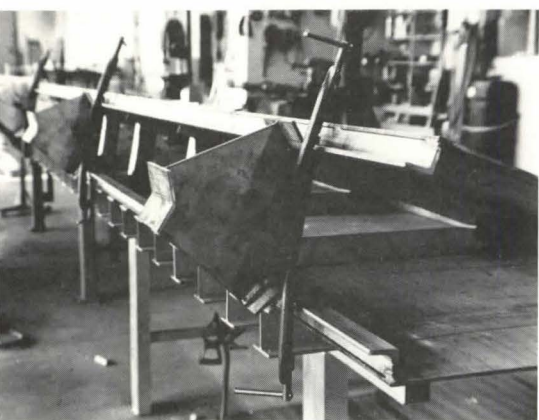
He envisioned a spire that, in a bird's-eye view from straight above, would reveal "Ad Astra" as a three-pointed star. From the ground, one sees points of polished natural stainless framing core sections colored a deep gold. The eye is led up to and beyond a series of three starbursts of mirror-polished stainless tubing.

The supplier, International Nickel Co., imported 425 square feet of gold-colored stainless in 4x8-foot sheets from a manufacturer in New South Wales, Australia. The sheets were formed to the contours of the sculpture's frame and made to interlock with each other and the natural finish stainless on a custom-made, highly polished die coated with a special lubricant. At two-foot intervals along the joints between the gold and natural stainless, the sheathing was spot-welded to the inner structure.

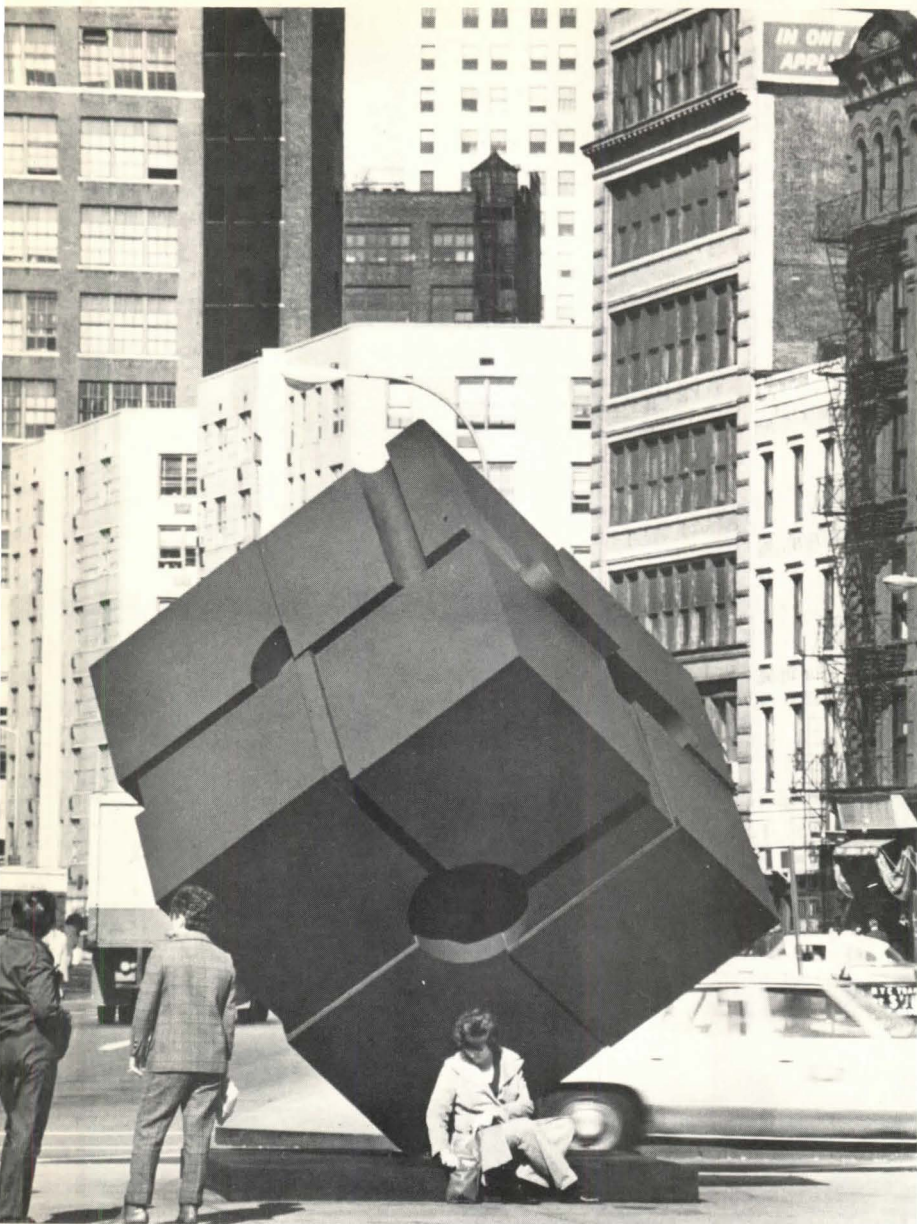
The interior framework consists of plates of varying thickness, graduated from one-eighth inch at the top to one-fourth inch at the base, welded to internal stiffeners. The frame was welded to a three-piece, 573-pound base cut from 1¼-inch plate. This base plate was then fastened to a six-foot thick, reinforced concrete foundation by 36 bolts four feet long by an inch in diameter.

"Ad Astra" was completed in early June at Butler, N.J., and shipped in sections to the museum. During a 72-hour period, the sections were erected and joined and the joint areas were sheathed. At 100 feet in height, it is the tallest sculpture in Washington.

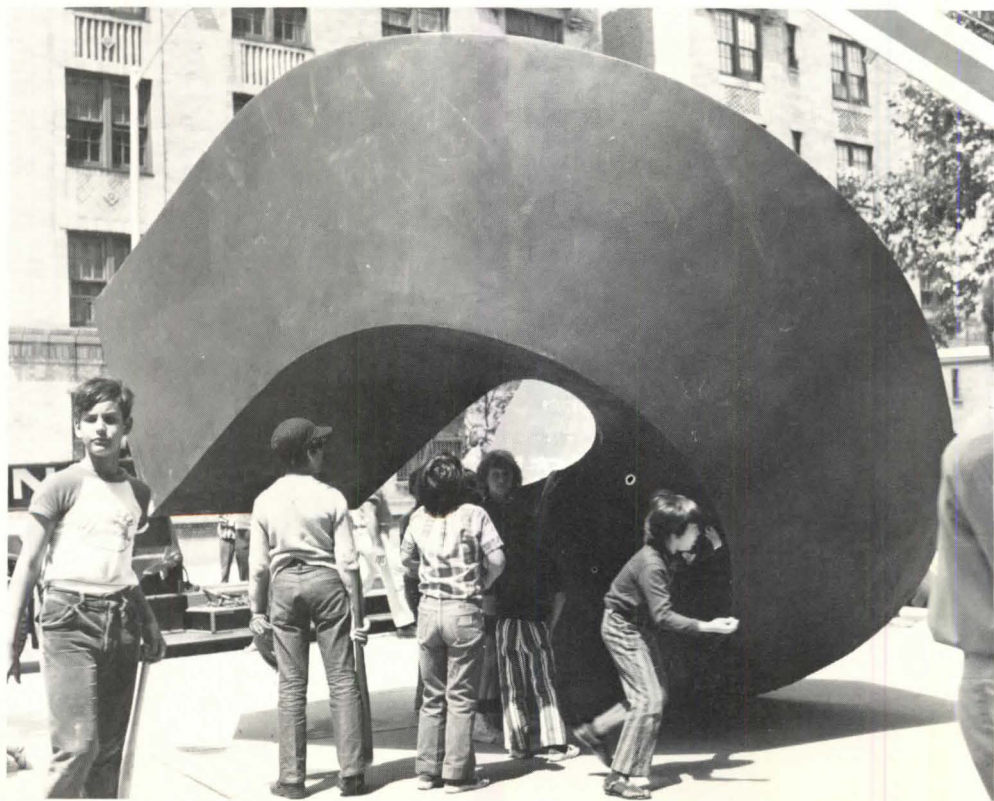


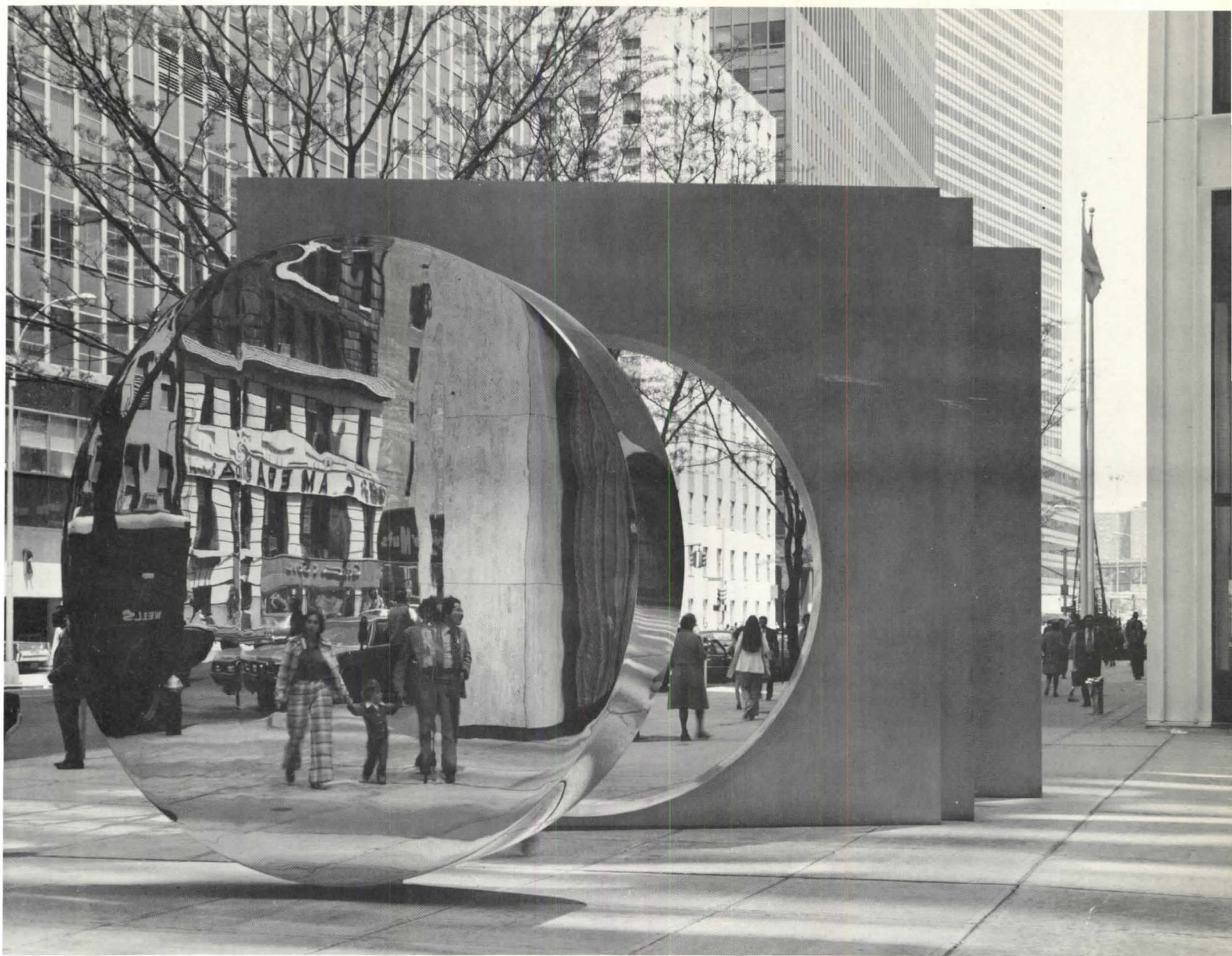


The assembly of 'Ad Astra' begins with the welding of triangular braces to one of three points to form the inner structure (top). Then center braces are attached to the first assembled point. Welder's sparks fly as a section of base plate is attached to a point of the sculpture. Next, one-third of a lower section is complete. Now the parts are joined to form a three-pointed star. The sculpture is near completion (bottom) before final assembly (above) at the site in Washington, D.C.



In New York City, Tony Rosenthal's 'Alamo,' at Astor Place (above); Ernest Trova's stainless steel sculpture at 90th & Amsterdam Avenue (above right); Clement Meadmore's 'Swing,' at 158th & Riverdale (right), and Y. Y. Yang's memorial to the ocean liner Queen Elizabeth, at 88 Pine Street (facing page).





Sculptural Focal Points for New York Neighborhoods

Tony Rosenthal's black painted cube, "Alamo," is poised on the middle of a traffic island amid undistinguished city buildings in the East Village of New York City. Installed there nine years ago as a part of a city parks department exhibit, which temporarily placed environmental art all over Manhattan, the sculpture was warmly welcomed and is widely used by people in the neighborhood. It is a meeting place, an eating place and a resting place. People lean against it, take shelter in its shadow, even bed down by it for the night in sleeping bags.

When the time came for its removal, local people, including Cooper Union art students and members of various ethnic groups, launched a protest. Not long afterward an anonymous benefactor purchased the art and gave it to the community.

Clement Meadmore's "Swing" was placed at 156th Street and Riverside Drive as part of a demonstration program conducted by the New York Municipal Arts Society. The community, predominantly middle class, tightly knit and with a larger than usual share of artists and other unorthodox types, was given an opportunity to choose a work of outdoor sculpture for the neighborhood from a list of 12 scale models by well-known artists. These had been selected by the Municipal Arts Council. The community chose "Swing," which received so much attention and use by kids—who sit, slide and play games on it—that it began to literally wear down. The artist has repaired it out of his own pocket.

Also much used by children for play is Ernest Trova's 12-foot stainless steel sculpture at 90th Street and Amsterdam Avenue in New York City. Kreisler Borg Florman Construction Co. of Scarsdale, N.Y., purchased and installed it for its

Heywood Tower middle-income apartment project as part of the firm's program to place artworks at its building projects. The program began with the commissioning of three black artists to create artworks for sites in Harlem. Staff members of the Museum of Modern Art and the Whitney Museum helped to make the selections.

The metal memorial to the ocean-going liner Queen Elizabeth by Y. Y. Yang in front of 88 Pine Street provides a focal point for a different type of New York neighborhood—the financial section with its anonymous, nondescript spec buildings. Y. Y. Yang's construction consists of two pieces of abstract sculpture and a dedicatory plaque. Dominating the group is a 14,000-pound L shaped piece, two feet long, 16 feet high and 2½ feet in diameter. Behind the matte-finished L is a mirror finish stainless steel disc which is 12 feet in diameter and 2½ feet thick.

Persuading Developers to Be Patrons of Public Art

Thomas W. Ventulett III, AIA, has found that placing art in public places is a financial plus as well as an esthetic one. "If I tell the developers I need \$100,000 for art, they say, 'Are you kidding?' So I say, 'Put 15 cents a square foot in there and we'll work that out of the building somewhere. You'll appreciate it in the long run.' And that's been the case."

Ventulett, director of design for Thompson, Ventulett & Stainback, Inc., Atlanta, likes to tell about Charlotte, N.C., where the installation of a work by the Italian artist Arnaldo Pomodoro of Milan has been a popular success and good business. The Charlotte urban redevelopment authority required that Ventulett's client, the developer of a downtown city block, dedicate a portion of the land as public property.

"We could pave it, landscape it, even build a basement underneath it (which we did) as long as we left it for public use," he says.

The architects envisioned the 100-foot-square corner as the main entranceway to the site, accented with a major piece of sculpture. The owner and developer agreed. "They had thought in terms of 10 cents a square foot," says Ventulett, "but fortunately we were able to convince them that if they could buy a piece of art by an internationally known artist, not only would the work appreciate significantly, but they would be the first private developers in the Southeast to make such a notable purchase."

Pomodoro's work had been escalating in value at close to 20 percent a year, Ventulett says. "We proposed that they buy Pomodoro's 'Grande Disco' and over a brief period of time the bank's investment would increase in value, allowing them to consider giving it to the city. Two things would happen: They would be the great philanthropists of the city, and



derive obvious tax benefits from the gift. Whether they will do this or not, I don't know. But that's the basis upon which they purchased it."

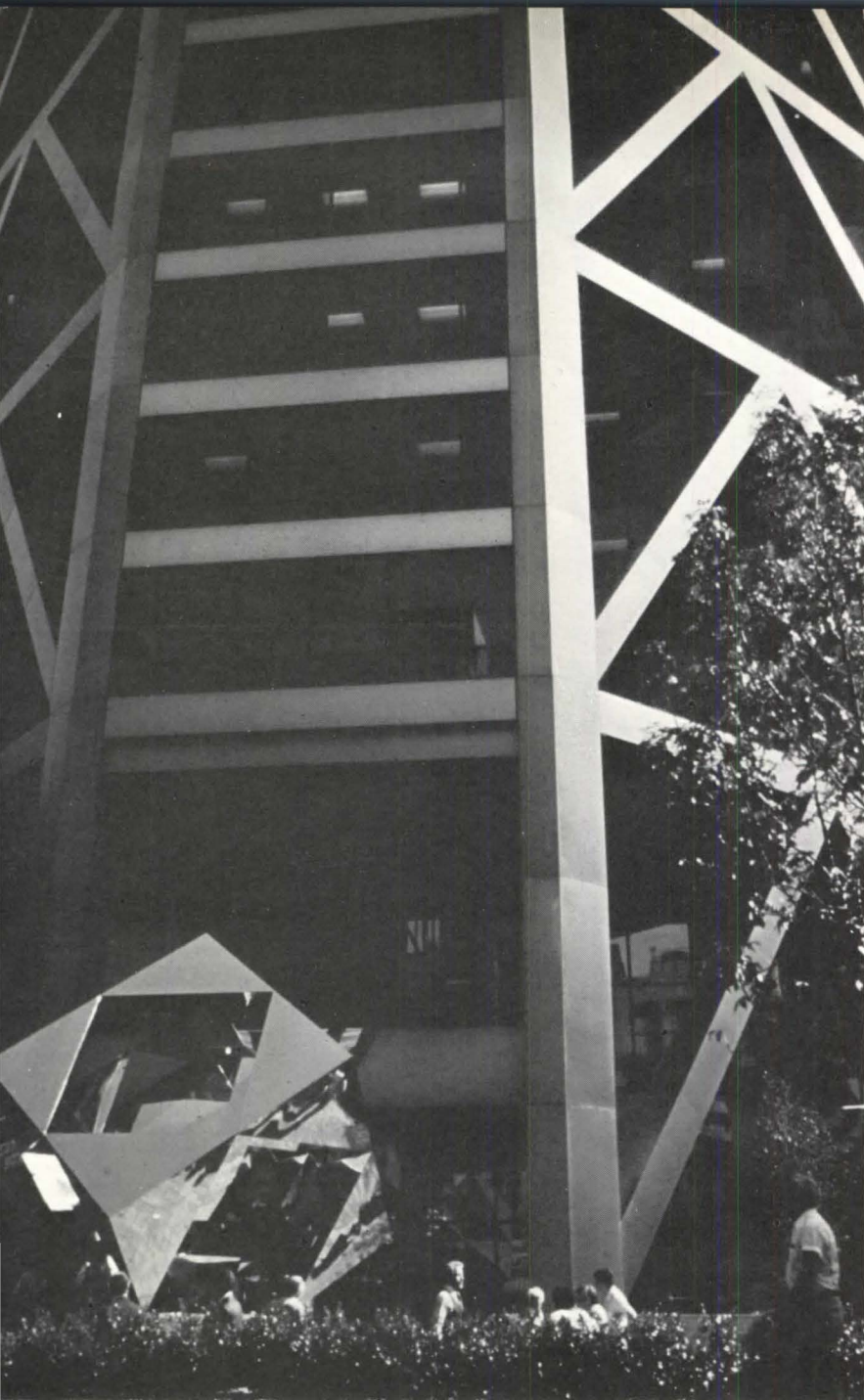
Ventulett thinks the Pomodoro has been a significant contribution to the city as well as enhancing the reputation of the North Carolina National Bank, co-owner of the building, with Carter & Associates, the developer. "It was a time when many banks around the country were struggling, and when they put in the 'Grande Disco,' everyone took the attitude, well, at least this bank seems to be doing very well."

Like any evangelist, Ventulett is proud to claim a convert—his developer-client in Charlotte. "It surfaced a dormant interest and he has really turned into an art enthusiast."

In the case of Omni International in Atlanta, Thompson, Ventulett & Stainback's client Maurice Alpert already had a strong appreciation for art. Alpert had

budgeted close to 25 cents a square foot, nearly half a million dollars, for art in the 5½ acre downtown multiuse structure. It contains offices, shops, a hotel, an indoor amusement park, movie theaters, restaurants and an ice rink, all focused around a great 14-story space.

But the bottom fell out of the real estate development market during construction of Omni International, and the artwork budget was forcibly pinched. "One of the major pieces was cut at the last minute," Ventulett says, "but not before a considerable amount had been contracted." Alpert already had purchased two "light towers" by Boyd Mefferd (without first consulting the architects) and commissioned two works by Rockne Krebs: a laser sculpture for the atrium space and a "sun sculpture" that consists of hundreds of mathematically placed prisms attached to clear panes of the skylight to project spectral color patterns on the walls and floors of the great space.



Additionally, the hotel's rooms and lobby are a virtual art gallery with works by Larry Rivers, Gene Davis, Ed Ross, Genevieve Arnold, Kaara and Bruce Hafley, among others.

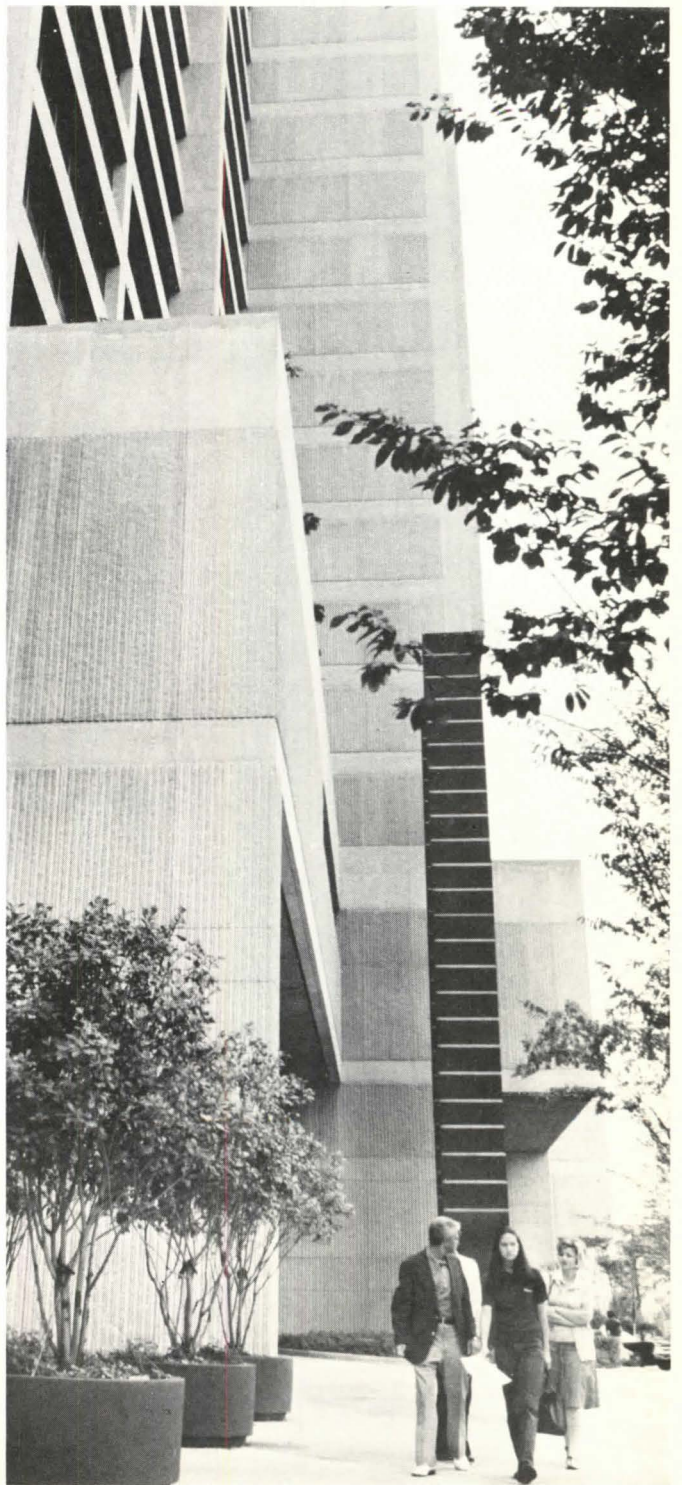
Another project by the Atlanta firm is the mercantile tower in St. Louis, for which two artworks were purchased. One of them is a multifaceted, polished cube by Saunders Schultz and William Severson. The sculpture, "Synergism," reflects the geometry of the building.

"People don't quite understand what the building is all about, but they really get excited about the sculpture," Ventulett says.

"It has a personal scale which invites them to walk up to and around it and gaze at their own images reflected in the surfaces. It is like a breath of fresh air in downtown St. Louis."

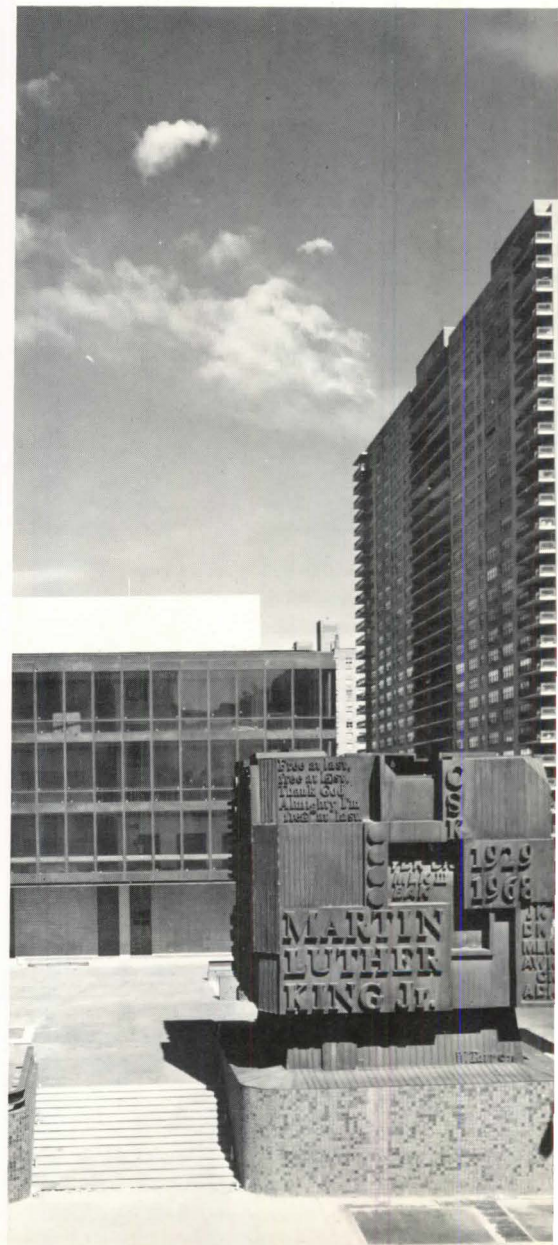
"Synergism" and another artwork for the mercantile tower were purchased for only around 12 cents a square foot.

'Grande Disco' (opposite) pivots 360 degrees like a coin on edge at the North Carolina National Bank, Charlotte. 'Synergism' (above) relates geometrically to the Mercantile National Bank, St. Louis. 'Light towers' (right) nestle in a corner near the hotel entrance to Omni International, Atlanta.





The Martin Luther King Memorial, New York City, by William Tarr (this page); the Lyndon Baines Johnson Memorial in Washington, D.C. by landscape architect Meade Palmer, sculptor Harold Vogel and the Mills Petticord Partnership of architects and engineers (facing page).



Monuments to Two Towering Figures of the 1960s

Among the many tributes after the 1968 assassination of Dr. Martin Luther King Jr. was the renaming of New York City's West Shore High School for him. The school building was still under construction at the time, and architects Frost Associates and sculptor William Tarr agreed that the most appropriate outdoor artwork for the school would be a memorial to the fallen civil rights leader.

At the architects' suggestion, Tarr designed the memorial around a cube-shaped concrete structure that serves both to anchor the weathering steel panels of the sculpture and to house the fresh air intake and exhaust shafts. The cube shape (26 feet to a side) evolved, however, not from ventilation requirements, but because it was considered most suitable for the building and plaza.

On the cube are bas-relief initials of the names of King's family and associates, important dates and excerpts from his speeches.

In its massiveness, the sculpture serves as a counterpoint to the transparent quality of the building's glass and weathering steel facade. The use of weathering steel on both the memorial and the building ties the two elements together and relates the set-back building to the street line, according to the architects.

The 15-acre Lyndon Baines Johnson Memorial in Washington, D.C., has as its focal point a 19-foot (45-ton) megalith, a rough-hewn piece of granite from the former President's home state. Surrounding it on a flagstone plaza are four large granite tablets with quotations from his

speeches on conservation, education, civil rights and the Presidency. The monument and tablets rest in a grove of white pines in the landscaped Lady Bird Johnson Park at the side of George Washington Memorial Parkway. The grouping can be viewed from the parkway and is accessible by footpaths.

The designer of the project, Washington landscape architect Meade Palmer, was assisted by sculptor Harold Vogel and the Mills Petticord Partnership of architects and engineers.



Bunshaft and Noguchi: An Uneasy But Highly Productive Architect-Artist Collaboration

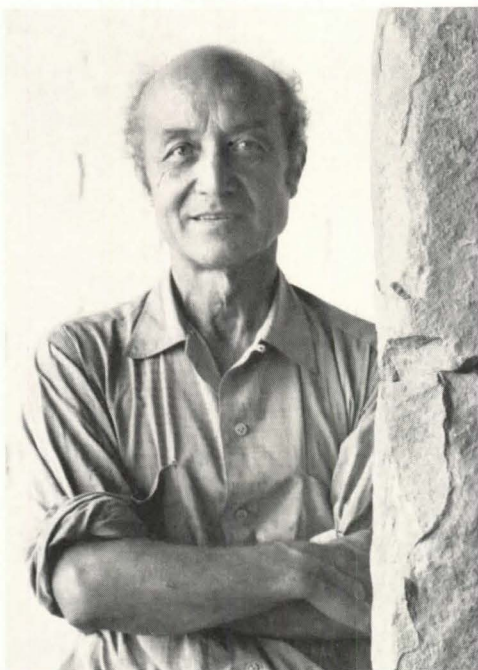
Among recent professional relationships between a sculptor and architect the most famed perhaps is that of Isamu Noguchi and Gordon Bunshaft. Bunshaft, the senior partner of Skidmore Owings & Merrill, speaks of Noguchi as one of the country's three greatest contemporary sculptors (with David Smith and Alexander Calder), and pays him the additional compliment of being "the only artist who truly understands architecture." For his part, Noguchi credits Bunshaft with a singularly discriminating eye and a determination which has "squeezed out whatever was in me."

The fact is that for different reasons Noguchi and Bunshaft have bitter feelings about collaboration between architects and artists, and both go so far as to deny it even exists. Says Bunshaft, "Collaboration is the wrong word. Very few artists know much about architecture; the only exception would be Noguchi. He knows it all, and probably thinks he can be an architect."

Noguchi talks of architects as "egotistic, wanting to hog the whole thing. They are afraid of something that might ruin their building, and I think they're justified from experience, because sculpture has usually been slapped onto a building for no good reason at all. I have treated it as a test of my competence to contribute something in spite of so-called collaboration, which is so one-sided." He doesn't exclude Bunshaft from his criticism.

At 72, Noguchi has the energy and whimsical spirit of a much younger man. His compact and muscular body is usually in motion and even when still reveals a restless intensity. Bunshaft attributes Noguchi's restiveness to a sense of being without firm roots, having at best a double allegiance. Noguchi spent his early childhood in Japan, his father's native land, and came to America, his mother's country, at the age of 13 to receive a Western education.

In his autobiography, published in 1968, he wrote: "With my double nationality and double upbringing, where was my home? Where my affections? Where my identity?" Today, he calls himself a "man who belongs to the whole world or to no part of the world."



Noguchi's Japanese upbringing is evident in his deep reverence for nature. He still regards the Japanese garden, for instance, as a profound sculptural expression, and his first recollection of guilt was stealing a rock for a garden he created for himself as a child.

If Noguchi's work carries the mark of traditional Japanese art, it also shows strong Western influences, especially of the Constructivists and Brancusi, with

whom he apprenticed in Paris. Unlike most contemporary artists, Noguchi has not limited himself to a single, stylistic mode of expression. Both his approach and the objects he produces are characterized by a delicate balancing of forces. In his mature work, "he has achieved unitary integrity characteristic of the Japanese garden by using classical Western motifs, the circle, the cube and the pyramid," wrote art critic Dore Ashton.

Sculpture has virtually been Noguchi's entire life and principal source of comfort; there was a short-lived marriage, no children. He feels compelled to work usually seven days a week and comments that "the laziness of people is beyond me."

Gordon Bunshaft gives the impression of being in possession of a more settled soul than his sculptor friend. Now in his 60s, he is, above all, direct in manner and outspoken. Like Noguchi he has pursued design activities in *single-minded fashion*.

Bunshaft was born of Russian Jewish immigrants in Buffalo, hardly a promising background for architecture at a time when it tended to be a vocation for WASP gentlemen. As a child, often sick and home in bed, he recalls building "these little houses," and very early decided to go to the Massachusetts Institute of Technology and become an architect. He joined the young Skidmore firm in 1937, and was designated chief designer in part by default, because "to get a client you had to be an old club man, especially in those days," according to Bunshaft.

His interest in art began over 30 years ago and has grown to the point where he now puts virtually all the money he earns into art. "I don't like the word, 'collector,'" he says. "That's too fancy, but it's kind of a disease. First you buy one or two things, and then you buy more and more, and stuff it wherever you can." The first object he bought was a Bernard Dubuffet watercolor. Other of his favorites are Ferdinand Leger and Stuart Davis, artists with direct and forceful styles.

"I feel that every human being ought to learn to use his eyes to see much as he uses his mouth to eat," says Bunshaft. As he sees it, architects will encourage the use of art as part of their buildings only

if they have an interest and knowledge of art. He speaks angrily about the average architect's ignorance of painting and sculpture. "I think every architect should have a complete working knowledge of the current and historical visual arts, not to use art himself in his architecture, but to do better architecture, to have a greater reservoir to draw from."

The architectural schools are at fault here, he says, teaching "a lot about such things as the social aspects of a Navajo Indian, which is very irrelevant to architecture. I think social welfare workers are wonderful but they shouldn't be called architects."

In his approach to architecture, Bunshaft is basically traditional, regarding architecture as being above all an artistic undertaking. "If it isn't, there's about 3,000 years of architecture down the drain."

On the subject of public artworks, Bunshaft and Noguchi are largely in agreement. They express themselves very differently, however. Says Noguchi, "The usefulness of things has not been con-

Sculptor Isamu Noguchi (facing page, top) and Gordon Bunshaft, FAIA, (facing page, bottom). Works by Noguchi with SOM include a fountain for the John Hancock Insurance Company Building, New Orleans (right); 'Cube' for the Marine Midland Building, 140 Broadway, New York City (far right), and plaza and rock garden for Chase Manhattan Plaza in New York City (below).



sidered particularly relevant to whether it's art or not. I have a contrary opinion." This is one of the reasons why Noguchi's work has included designing theater sets for Martha Graham, playgrounds for children, sculpture gardens for museums and furniture of all sorts.

Bunshaft brushes aside all this "relevance" talk: "They say this art is supposed to be for the people. I don't think that's unusual. What the hell has art always been for?" He thinks it matters greatly to people to have good public art available. "It's like teaching someone the ABCs. Pretty soon they're curious and want to know a little more. It stimulates life, creating a living museum. Public art no longer plays the dramatic, religious roles that it did in early times. Today, art has no function but to enhance life, which is maybe healthier."

A look at some of the projects on which Noguchi and Bunshaft have collaborated reveals some of the more specific issues and ingredients involved in joint work.

The sculpture for the Connecticut General Insurance Co. headquarters in Bloomfield, Conn., illustrates Bunshaft's contention that "the hardest thing in the world to guess is how big or small a

Working with architects, Noguchi has learned to be 'open to change and chance.'

thing should be in a space. The only way to do it is to make very large models or full-sized mockups." Noguchi was commissioned to do a sculpture for the terrace of this building complex. The way Bunshaft tells it: "At the time Noguchi was monkeying around with a quarry in Connecticut and was very excited about doing work cut right in the quarry; he was fascinated with the idea of doing handwork. But before he decided how big to make it, we built some dummies out of plywood, 12, 14, 16 feet high—something like that—and put them on the terrace. The first thing we found was that it was the wrong place. Talk about judgment! And then, I think while we were standing around there, the owner said, 'Why don't we put it out there on that hill?' So we got a truck and rushed them out, and that's how it happened. Very scientific."

Noguchi wrote about the incident, "I do not deny that the result seems to have justified the dispute, which teaches me never to be tied to preconceptions, to be open to change and chance to the end."

At the Beinecke Rare Book Library, Yale University, Noguchi was given free rein to design a sculpture garden. "We didn't talk about what it should be, but had he come up with something lousy, I would have told him so," says Bunshaft.

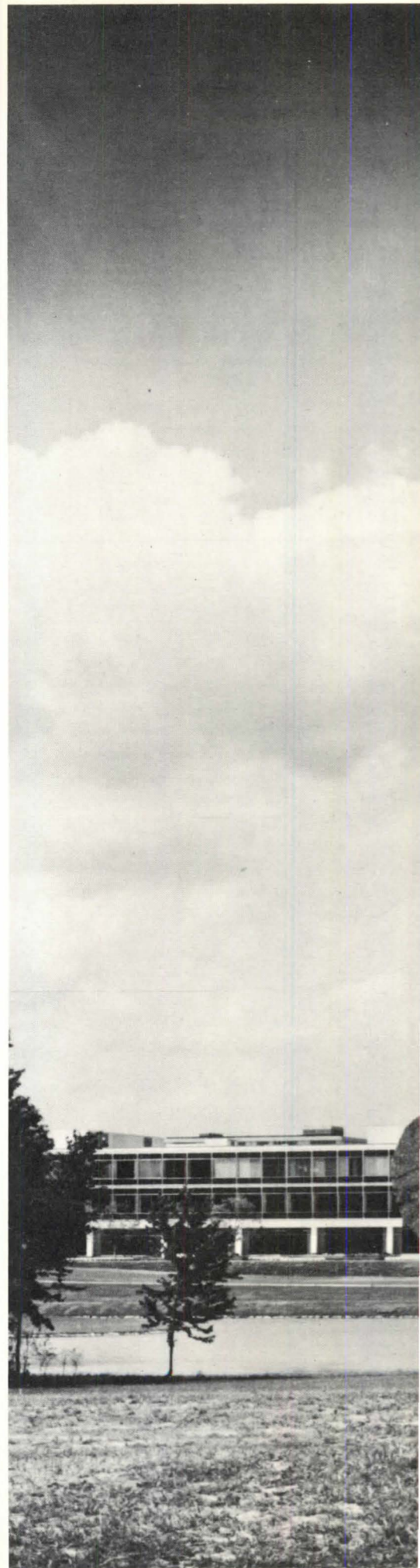
"He came up with this marble concept, and I thought it was very beautiful, except for the round, doughnut element, which was a little soft. Noguchi made several studies for it, and I really didn't like any of them. Noguchi was annoyed at first but tried some more, and he eventually came up with what we have now, which is marvelous."

Noguchi's big red cube with a hole in it seems precariously balanced on one point in front of 140 Broadway in New York City. In concept it began as a Stonehenge-type arrangement of rock, much too expensive for the client. "So," Bunshaft recounts, "I talked to Noguchi, we bulled, and I said, 'God, maybe we ought to have some bright abstract metal forms. So, he went away and came back with little cut-out metal things and plunked them around, about five or six bright red ones. But they were all 10, 12 feet high and looked like nothing. But, he had one little cube and put it on end. I turned to one of our people and said, 'Make that cube 16x16 feet.' It looked marvelous in scale." Noguchi completed the design, SOM's engineers carried out the technical work. Bunshaft considers this the closest and perhaps best possible form of collaboration he has had.

In his autobiography, Noguchi wrote: "I am grateful for the opportunity to do significant public works, and look upon them as challenges to sculpture rather than as jobs. Indeed it is far better financially to stick to individual sculptures. A free sculpture has a market value which as a monument it has not. Seldom reviewed as art, the considerable time it takes removes the artist from the current of art and rising reputations. In neither the dedication of the Beinecke Rare Book Library nor of the Chase Manhattan Plaza was my name mentioned, although the goldfish in the latter were."

Noguchi has also worked with Kenzo Tange in Japan, and the gardens for Marcel Breuer's Unesco building in Paris were designed by him. He worked for years with Lou Kahn on a playground which was never built, and did a study for a major memorial in Washington, D.C., which was never used. About the last project, Noguchi recounts, "I went to Washington three times, initially to discuss the terms of the contract. I asked only for collaborative credit, with compensation deferred until the work was accepted and completed. After obtaining a verbal agreement I went a second and third time to work on the design, only to find that the architect no longer felt free to share any credit. It was not anonymity that I minded, but the loss of control that went with it—a difficulty that one often meets with architects." *A.O.D.*

Sculpture garden for Connecticut General Insurance Co., Bloomfield, Conn.







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How Nebraska Acquired a State Capitol Like No Other

Henry-Russell Hitchcock and William Seale

The storm of democracy that swept British America in the 18th century gave birth to a new sort of symbolism in monumental architecture. Skyscrapers and state capitols are America's unique contributions to monumental architecture. The skyscraper is a product of function and structure; the state capitol owes its special character to symbolism. To most Americans today architectural symbolism means church design—the steeple and the pointed Gothic arch.

Yet far more significant to the U.S. are earlier, classically inspired architectural features, first built by colonial legislatures long before the opening guns of the Revolution. Their creators were assemblymen who saw in the dramatic possibilities of architecture a means of expressing the spirit of liberty. The vision was an accurate one: Certain architectural features developed into symbols for the young nation, eventually taking on an abstract authority in the architecture of state capitols. Since the second decade of the 19th century, these symbols have dominated every legislative building erected in the U.S. Their story through two centuries of American building is a chronicle more continuous than any other, even that of church and private house.

Like the colonies themselves, the symbols were born separately, then united as a stable young nation emerged. The acceptance of the symbols was the first

Mr. Hitchcock, educator and architectural historian, is author of many books, including *Architecture: Nineteenth and Twentieth Centuries* and *Modern Architecture, Romanticism and Reintegration*. **Mr. Seale**, also an author and critic, has many books to his credit, among them *Texas in Our Time: The Lone Star State in the Twentieth Century* and *The Tasteful Interlude: American Interiors Through the Camera's Eye, 1860-1917*. This article is excerpted from *Temples of Democracy: The State Capitols of the USA*, by Henry-Russell Hitchcock and William Seale, published by Harcourt Brace Jovanovich, Inc. © 1976 by Henry-Russell Hitchcock and William Seale.

major event in American architecture. Through 200 years of American history, the authority of the symbols can be seen in every capitol. Yet in the beginning they seemed quite incidental an element in American architecture as the colonial assemblies then seemed to the future of government in the world.

Ever since the Civil War, Americans have been captivated by the national Capitol. The promising ante-bellum innovations in state capitols were forgotten; and New York's postwar effort to reinterpret the capitol symbols was aborted, essentially by the Civil War generation's deep feeling for the mighty dome at Washington—a dome reborn on a huge scale, just as it was passing into history. Had Thomas Ustick Walter taken his cue from the advanced designs then being executed at Nashville and Columbus, the dome would probably have never been revived, and thus would not have stood out so boldly in the story of symbols.

In the Gilded Age, businessmen-architects had set themselves to improving and modernizing the national model. Readily accepting the arrangement of dome, rotunda, wings and portico, together with the new giant scale, they used the Washington model as a point of departure for their imagination. Their successors, those true believers of the American renaissance, also sought to make improvements on the original. But at the same time they accepted the American capitol form: Lacking the historical facts, architects were without the conviction to inspire them to devise alternatives. They applied new inventions in engineering and materials without hesitation; design, however, lingered in a vacuum.

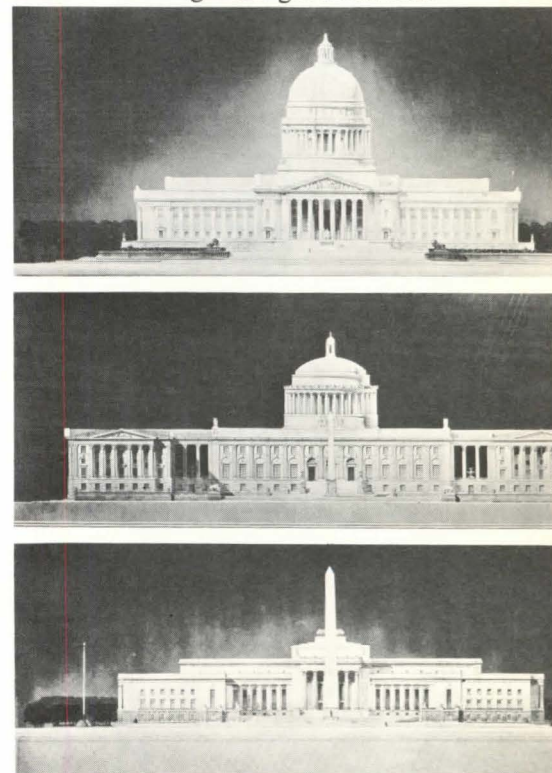
Painting and sculpture were more flexible, and soon became more interesting to the layman than architecture. The American fascination with its own past increased with the years; the great success of such muralists as Edwin A. Abbey and Edwin H. Blashfield was due less to their art than their illustrations of American history.

In capitols, the real presence of American history was expressed in murals and statues created to inspire and, as in Roman

Catholic church art, to instruct the faithful in the story of its past. Art was no longer merely interior decoration.

American historical art emerged as a major element in capitol design just as the vigor of the real American renaissance was declining. While muralists experimented with symbols and style, architects continued to produce much the same sort of buildings, now rather predictable. The states bought increasing numbers of murals and statues; in many regions local art owed its fluorescence to state patronage. Not since the demand for statues of George Washington before the Civil War and of Lincoln portraits after had the states patronized artists in this way. Figural art was taking the upper hand over classical architecture, for in affirming the belief that renaissance classicism was the only perfect manner of public edifice, monumental architecture became boring.

The requiem for American renaissance capitols was sung at Charleston, W. Va., in 1922, when that state commissioned a Cass Gilbert capitol from the master himself. It had been Gilbert's own better judgment to avoid the job entirely, but his son Cass Jr., home from the army, was excited by the challenge of following in his father's footsteps. Completed in 1932, largely from the younger Cass Gilbert's designs and under his supervision, the West Virginia structure presented to the winding Kanawah River the familiar massing of the capitols of the American renaissance. West Virginians got from Cass



The Nebraska competition finalists recorded the movement away from imitation of the national capitol. From top, John Russell Pope; McKim, Mead & White; Paul Cret. Left, the winning Goodhue design as built.



Among the competition entries 'Goodhue's tall, towered scheme stood out.'

Gilbert exactly the capitol they wanted. It was the very last of the American renaissance capitols, built many years after the epoch was over.

Long before the West Virginia capitol was finished, the architectural symbols of American democracy had cast off their heavy renaissance cloak and begun to try new costumes. The first monument of the new era of capitol building sprang up on the agricultural plains of Nebraska, in the heart of Populism. But the project was conceived in a well-known New York architectural office. Dissatisfaction with the old capitol had become serious in 1914. Because of the war and bad crops, however, the establishment of the capitol commission was delayed until early in the winter of 1919.

By the following June, the prominent

Omaha architect Thomas R. Kimball, national president of The American Institute of Architects, had been appointed adviser to the commission, and a national competition was announced.

The terms of the competition were an artist's dream. There were no directives as to design, plan or materials. The commissioners added, in the language of the American renaissance, their hope for "an inspiring monument worthy of the state for which it stands; a thing of beauty so conceived and fashioned as to properly record and exploit our civilization, aspirations and patriotism, past, present and future; intelligently designed, durably and conscientiously built, and of worthy materials; and all beautifully and fittingly set, surrounded, embellished and adequately furnished . . . without friction, scandal, extravagance or waste."

A preliminary competition was held in 1919 for the selection of three Nebraska architects who would then participate in the national invitational competition. Inquiries were sent then to 32 firms in New

York, Boston, Philadelphia, Washington, D.C., San Francisco, Chicago, Minneapolis, Toledo and St. Louis. All were large firms, but only five of them had ever been involved with capitols before.

The competition was won in the summer of 1920 by Bertram G. Goodhue of New York. His was a tall, towered scheme that stood out in contrast to the rest. Others had proposed towers, but Goodhue's was unmistakably different.

The design had something of the softness of the free adobe forms of the Southwest, with the precision of Goodhue's Gothic stone as well. The capitol's base was a huge two-storied square nearly 450 feet to a side, a composition of unadorned vertical and horizontal planes—as if a few large, timeworn stones had been fitted together. In the center of the square, and flanked by four open courts of equal size, a buttressed tower rose 350 feet to form a platform for a 70-foot octagonal lantern. The lantern's sides were pierced by square-columned loggias, and its roof was a hemispherical dome under a skin



The capitol overlooking Nebraska's flatlands (left); a hallway (above) with windows on an interior courtyard (right), and mosaics in the rotunda floor (top right).

of golden tiles. Transcending the building beneath it, the lantern addressed itself to the plains, as lanterns and steeples had done from above the trees surrounding colonial villages.

Goodhue's model was probably modern European—Lars Sonck's Kallio church tower of 1910 in Helsinki. To anyone familiar with contemporary architecture in Germany and Scandinavia, the Nebraska capitol was not a totally surprising design. What was unexpected was its

The design was 'not totally surprising' but its acceptance by the state was.

acceptance by an American public building commission. In this case, the commission may have approved the recommendation of the judges the more readily because Kimball kept such a close watch over the events that summer.

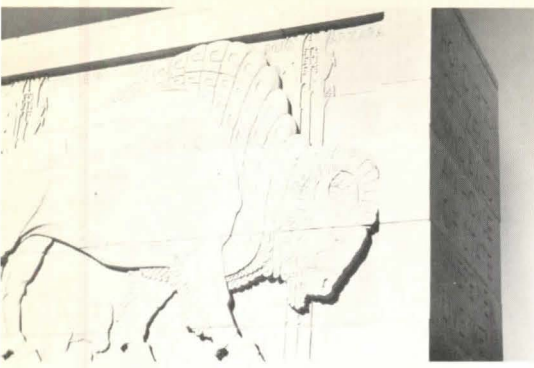
Kimball warned the highly excitable

Goodhue about the danger of too much publicity, urging him to remain silent until the November gubernatorial election was over. The winning competitor would have been wise to listen: Kimball knew the commissioners well and realized that the idealistic Goodhue would have his difficulties with them. Goodhue was not a patient man when it came to his work. During July and August 1920, he sketched and improved.

For the well-trained Bertram Goodhue, professional rewards had been abundant. Apprenticed to James Renwick for six years, he understandably inherited his master's affection for historical revivals in architecture. Goodhue's formal schooling was a fleeting experience at Russell's Collegiate and Commercial Institute in New Haven; he left prematurely because he preferred being at home in Pomfret, where his mother, an amateur painter, encouraged his artistic interests. Goodhue remained serious about himself as an artist throughout his career. Even when his architecture was at its most daring, it al-

ways stayed within the context of a historical revival. The theme was usually Gothic, somewhat freely adapted, as seen in the numerous churches he designed with Ralph Adams Cram in the Midwest, California and the New York area.

Goodhue is largely responsible for the popularity of Spanish revival in California, which soon rivaled its reign in Florida. The architect's fascination with Spanish architecture took him to the adobe country of Santa Fe and Taos, N.M., which were already winter meccas for the muralists. During this period of his life, he turned to the Byzantine in designing his scheme for St. Bartholomew's Church in New York, incorporating the neo-Romanesque portal of the old church as originally designed and executed by Augustus St. Gaudens and Stanford White. The vestry of St. Bartholomew's dampened the extremes of his Byzantine enthusiasm, but recollections of this interest lingered with Goodhue four years later when he was designing his capitol for Nebraska. He had said that it was his dream to design a building de-



Animal and human figures in bas-relief and mosaics (above), and the capitol's heroic north portal with bronze doors.

quested something unusual. Goodhue substituted a great arch and pronounced it a "distinguished achievement . . . quite different from anything of the sort that has ever been done before but it is honest, very straight-forward in expressing the interior." The arch also made space for more stone carving, a feature which Goodhue's newest Finnish model—the portal of Eliel Saarinen's Helsinki station—also shared.

The commission then decided that it was legally mandatory to put all artwork out for bids, even that of Goodhue's favorite sculptor, Lee Lawrie. Disregarding all advice, Goodhue wrote a stinging letter to the commissioners, declaring that they were about to insult the American art world. He was particularly angry at the treatment of "my collaborator" Lawrie, saying "the idea of putting this on a competitive basis, precisely as you do plumbers, is preposterous. Is it proposed, may I ask, to let the mural painting, etc., on the same basis? . . . How am I to get competitive bids on the same work, which it must not be forgotten was designed almost wholly by him?"

Meanwhile, Goodhue's New York office was running almost full-time on the Nebraska capitol job. Not only were there hundreds of sheets of working drawings to provide, but the commission continually made minor changes. They eventually decided not to raze the old capitol all at once. At last, on April 15, 1922, ground was broken, and the first phase of the capitol construction began. The expected construction time was two years for each of four phases, which were to be treated as four completely separate projects.

Goodhue began at once on his art program. He demanded, and secured, the job of sculptor for Lee Lawrie—"the only man in my opinion that understands the relation between sculpture and architecture." A small invitation competition was

The state commission said that artwork had to be put out for competitive bids.

held for the artwork. But he could not decide upon a muralist. "Of course," he wrote, "it is idle to hope to find a mural painter as sympathetic as is the sculptor with what we are trying to do." He asked Augustus Vincent Tack to do some sketches. The sketches for the governor's reception room were shown in January 1924, and Goodhue wrote: "I ought not to brag, but Tack is a good man, and I am inclined to agree with him in thinking that when, and if, finished as now proposed, this room will be one of the finest in America."

Phase I was nearing completion that

winter. One could walk through some of the rooms, none of them so plain as the flat exterior surfaces. Just enough of the building was visible to give an idea of what its presence might ultimately mean in Lincoln. The block seemed gigantic, dwarfing by its weight the sprawling old capitol. It also seemed too simple to some of the legislators, and Goodhue now admitted that the cost might exceed the limit of \$5 million. A politician questioned the architect's \$25,000 per year retainer, and the political pot began to boil.

A long life was not Bertram Goodhue's destiny. He died of a heart attack in New York on April 23, 1924. Close friends and family agreed that the political insults he had to endure over the capitol had contributed to his death. In June a contract was signed to continue the work with a reorganized firm, Bertram Grosvenor Goodhue Associates, consisting of F. L. S. Sayers, Hardie Phillip and O. H. Murray. Construction was finished in 1932, at almost exactly the same time as Cass Gilbert's West Virginia capitol.

Seen across the broad Nebraska plains, Goodhue's solitary tower had just the effect he wanted, until the intrusion of dull highrise construction in the 1960s. The sun blazes on the gold dome and on Lawrie's finial, the male figure of the sower, which serves as a lightning rod. Climatic conditions dramatically change the pinkish surface of Indiana limestone sliced by incised outlines of windows and simple projections, accentuated in light and shadow.

Most of the capitol's base sinks into the Lincoln cityscape—monotonous rows of commercial structures along barren and windy streets that are mostly devoid of trees. The capitol has always seemed too big for the town, but Goodhue believed the city's objective ought to be growth worthy of his great monument. If the capitol, particularly at its base, seems very heavy and crowded by the town, the contrast would be even greater had the design been classical. Exterior decoration was restrained almost in excess of reaction. Restricted to the four entrances, where the ends of the wings projected from the central tower, such concentrated ornament drew attention away from the plain smoothness of the rest of the low exterior.

In the plan the capitol of Nebraska is a Greek cross which is set within an outer square of offices, leaving four open courts. The ecclesiastical aura of the interiors is the most obvious ever created in one of democracy's temples. The nave-like space along the central axis is sunlit from lunettes high above the side aisles. Gustavino vaults spring from colonnades of imported green marble screening the aisles from the nave. Mosaics of the most colorful kind are sprinkled over the vaults like Indian jewelry. Executed by Hildreth M.

pending entirely upon form and color and texture, with no applied decoration.

During the summer of 1920 when he was in California, Goodhue made several changes in his project, including the addition to the main tower of four carved buffalo heads as *tourelles* around the base of the lantern. He was offended when the commission rejected the changes unanimously, but they preferred the design of the building as first proposed. No doubt thanks to Kimball's expert propaganda through the state AIA, the main topic in Nebraska by Christmas 1920 was the new capitol.

The fact that this capitol was to be different increased its popularity. It would be the special treasure of Nebraska, and Nebraska swelled with pride. Perspective sketches of the courts, the rotunda and the facades of the proposed capitol appeared in various national magazines. Storms broke out, however, behind the closed doors of the commission's meeting room.

In spite of Goodhue's wrath, the commission got the changes it demanded. The direction of the principal entrance was changed to face north, thereby introducing those cold shadows Goodhue had wanted to avoid. Instead of the somewhat classical columned treatment of the entrance in the original project, the commission re-

Meiere with glazed Gustavino tiles, these mosaics were also used to line the dome at the north, or main, entrance, and the one in the rotunda.

It was always Goodhue's intention that the building be decorated like a cathedral over a period of several years. The work went on here for 40 years, generally following the original concept. H.B. Alexander, a professor of philosophy at the University of Nebraska, was engaged by Goodhue to write inscriptions for the building. The cheeks of the main steps proclaim: "Honour to Citizens Who Build An House of State Where Men Live Well" and "Honour to Pioneers Who Broke the Sod's That Men to Come Might Live." Similar inscriptions are found in all the

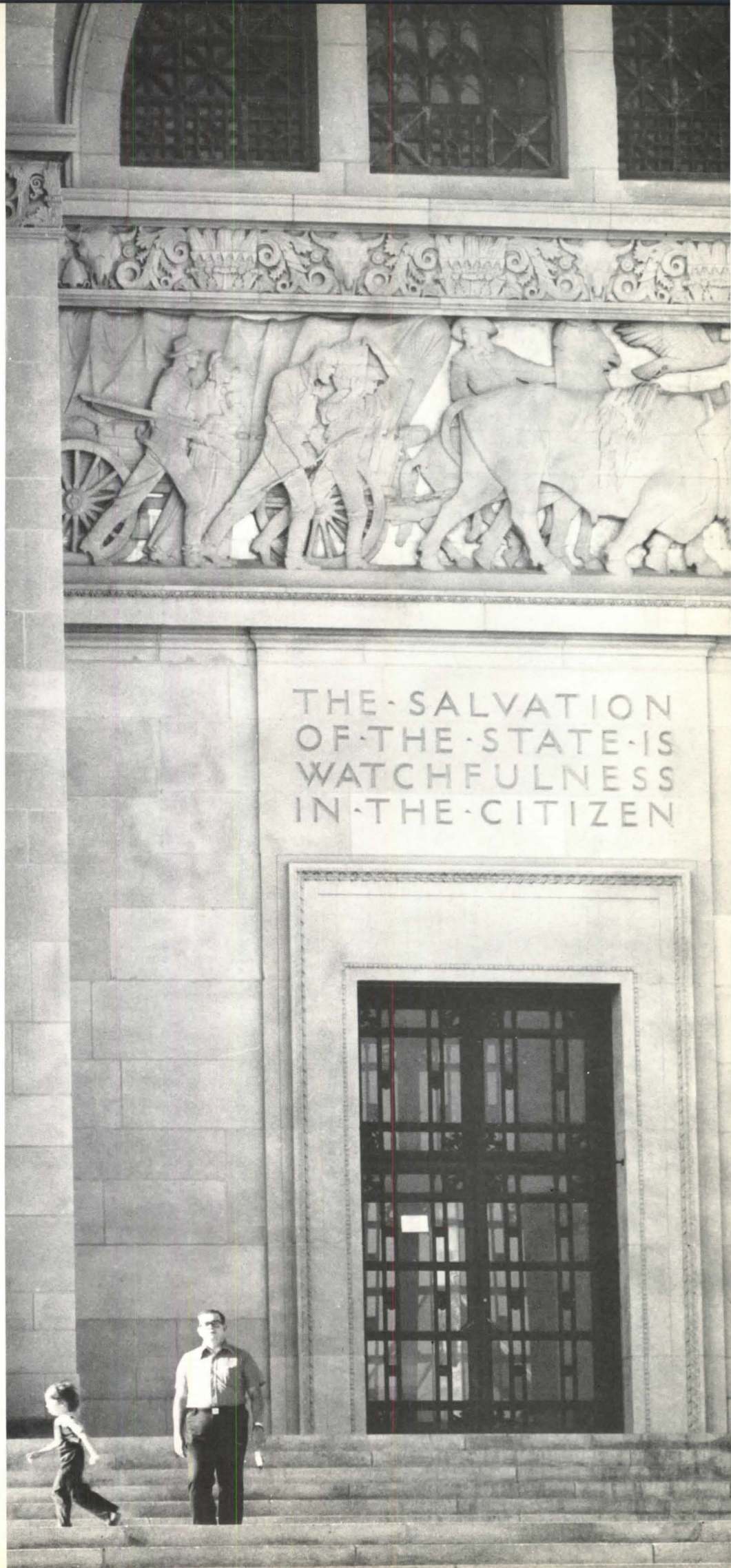
Goodhue wanted decoration to be done over time, and it went on for 40 years.

public areas among the illustrative murals, mosaics and friezes. The ceremonial interiors are more Byzantine than original. Spiced by brilliant chrome yellows, reds, blues and greens and the abundance of gold leaf, with predominantly black and white mosaic floors, these spaces have a contrived sort of grandeur which, like that of a stage set, soon becomes tedious.

Goodhue did not consider the Nebraska capitol a place for quiet contemplation; in nearly full-time consultation with Lee Lawrie, he designed a building which he felt was first a work of great architecture and second, of practical and functional purpose. Nebraskans, however, became enthusiastic over the building as a collection of historical artwork. When the idea took hold, Goodhue was so deluged with letters suggesting native symbols from Indian lore for the capitol that he wrote: "The building might as well be a tepee and have done with it."

There is no way of knowing how different the capitol would have been had Goodhue guided it through the long years to completion. Shortly before his death, the commission had been afraid he would resign because of the political assaults. Politics distressed him, and the outspokenness of which he liked to boast only complicated his troubles. Still, the capitol was the high point of his career, and considering the man, it is unlikely he would have left the job unfinished.

The Nebraska capitol was universally acclaimed as a complete break with the past. It was, more accurately, a departure from academicism, while academic capitols were still rising in other states. It was by no means a rejection of the common past of the state capitols. Nebraska's capitol had ancestors in almost every state-house ever built, and the symbols were all present. □



The Increasing Strength Of the Project Manager

Michael R. Hough

The success of an architectural firm depends on satisfying the client and completing the project within the fee budget. And in the past few years, satisfying the client has come to mean expert management of the entire development process, not merely producing an acceptable design. Good management includes meeting the needs of both the client and ultimate user, controlling the total (or life cycle) cost of the facility and making sure the facility is occupied within a specified time period.

According to a study by Case & Co., a third of all projects lose money, and are therefore unsuccessful from the point of view of either the client or firm. In most cases the reason for failure is a lack of management control over the entire process.

To help ensure that projects are successfully completed, many architectural firms have gone to a project manager. The project manager is responsible for pulling together a team of individuals to complete the project and is given total control of the entire project.

Most firms do not avail themselves of project managers. Many try to use a principal to do the job, usually calling him "principal in charge." This is all right if the firm has only up to eight or 10 people per principal (the classic "span of control" for design firms). But if the number is larger, a principal cannot (and should not) remain too close to such day to day details of a project as thoroughly instructing a junior designer on the team, checking on the progress of the ecologist-consultant and billing the project at the proper time. But these are exactly the tasks a project manager must do to ensure proper control.

Other firms use a combination of the principal in charge and a "weak" project manager. Here the principal in charge is Mr. Outside, who deals with the client, and the weak project manager is Mr. Inside, who is in charge of producing the

Mr. Hough is editor of *PSMJ* (*Professional Services Management Journal*), the management newsletter for architects, engineers and planners, published in Newton, N.J.

work. This is a poor arrangement because no single individual has total responsibility for the project. The principal in charge has neither the time nor inclination to fully control the entire process; the weak project manager has neither the broad grasp nor the authority to ensure successful completion of the project.

An increasing number of architectural firms is developing a "strong" project manager. He is a competent, experienced professional who usually has not yet reached the level of senior management. He has total responsibility and authority for a project, from the first sales presentation on, and has an ongoing relationship with the client.

Among the several benefits of using a strong project manager, the most important is that a single individual is responsible for all aspects of the project, including such key concerns as meeting a regulatory agency deadline or billing reimbursable expenses. When more than one individual has responsibility for the project, in reality no one is in charge.

The strong project manager frees partners and principals for more important tasks, such as making high-level contact with present and potential clients and directing overall management of the firm.

The strong project manager functions as a 'self-contained minifirm.'

With a strong project manager, the firm does not have to bend the truth by telling the client that the principal in charge will act as project manager. Also having the strong project manager at the presentation can be a marketing advantage, since more and more clients (particularly the federal government) are choosing architects based on the project manager who will *really* run the project.

Another advantage of having a strong project manager is that it allows the larger firm to provide the client with the very personalized service which is the hallmark of the small firm. Finally, it allows more

individuals in the firm to develop management skills, and these will be useful in filling branch manager and higher positions.

One reason more firms do not have this type of service is that they do not have (or feel they do not have) qualified project managers. Another obstacle is the organizational structure of the firm, which often prevents the project manager from exerting the necessary authority required to do the job right. Typically there is a number of functional or discipline departments (such as programming, design and structural engineering) where all project work is done. The department heads will sometimes oppose having a strong project manager, feeling they would be "cut out" if all work is done by the project team under the strong project manager's direction.

The strong project manager is actually a self-contained minifirm because he handles every aspect of the project, typically: making the written and oral presentation of the firm's technical qualifications to do the project; preparing and organizing the execution of the project; handling client contact; monitoring project progress; reviewing and following up on billing and collection, and maintaining periodic contact with the client and project after completion of construction.

In more detail, the strong project manager's functions include:

Marketing: No one is more qualified to discuss the firm's technical qualifications than the project manager who will direct the work. Most clients want to hear how their problem will be handled; this demands a believable "hands on" type who actually works on the same type of project every day.

Another natural marketing responsibility of the strong project manager is being alert to follow-on work with the same client or with other clients in the area.

Proposal and fee estimate: For most projects the architectural firm is now required to submit a proposal including a detailed statement of scope of services and proposed compensation. The strong project manager writes the proposed scope of services and estimates the fee for the same reasons he makes the technical presentation. If he has done the same type of project before (and this should be a criterion for selecting him), he knows what tasks the project requires and how long these will take.

The strong project manager does not make the final decision on the fee; this is a prerogative of top management. However, he does recommend a proposed fee, possibly in the form of an unpriced man-hour estimate. He then participates in contract negotiations with the client so that he is aware of what has been agreed to during this period.

Planning and organization: This is normally a duty of a project manager; but

with his prior exposure to similar projects, the strong project manager is better able to plan the many requirements of the job. He must have access to *all* the information he needs (such as salary information for potential team members), and the planning should be done in coordination with other projects which may also require the time of key staff members.

Directing the project: The strong project manager must have control over everyone charging time to the project, including the head of the firm, since he is responsible for completing the work on time and within the budgeted fee. The department or discipline head is, however, responsible for quality control on the relevant portion of the project.

The strong project manager's control over the project takes the form of coaching rather than dictating. Also, since he is not an expert in all disciplines, the strong project manager does not determine the technical details of the project, but should know enough to understand the scope of his team members' work. As an analogy, the architect will not know all about the mechanical system, but he must be satisfied that it will meet the requirements of the project.

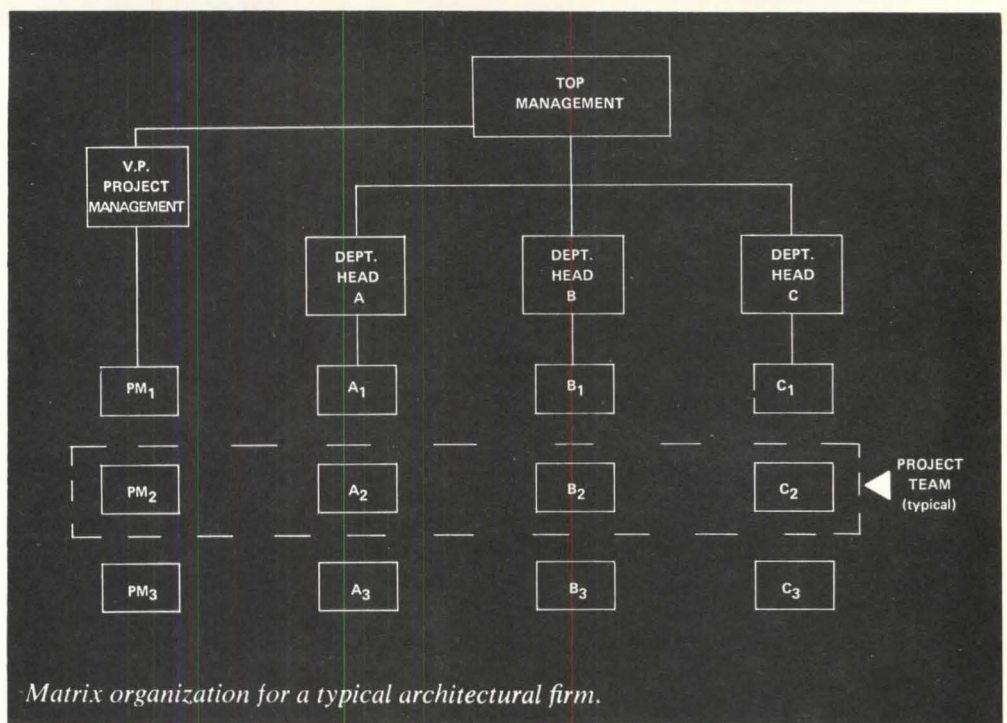
Client contact: A primary task of the strong project manager is to do all he can to satisfy the client. The two are in constant communication and the strong project manager should try to anticipate (rather than react to) stated and implied demands of the client, such as the need to complete a project by election day or to relate a budget estimate to return on investment.

The firm should have a second level of contact with the client's organization, probably a principal or partner. This contact would be on a regular monthly basis except in case of an immediate problem that cannot be resolved by the strong project manager.

Project progress: Every firm should have a project control system that periodically compares fee expended with work completed. The strong project manager supplies project completion data. He then has primary responsibility for monitoring his own projects, and for making necessary management decisions should progress fall behind schedule, such as replacing members of the team or reducing the number of alternate schemes being studied.

Billing and collection: The strong project manager is closest to the project and hence the one best situated to know when and for how much to bill the client. A billing clerk should actually prepare the bill; the strong project manager reviews it before it is sent.

Also, the strong project manager is aware of the collection status of each bill on his projects. He is not the one to "dun" the client, but his personal working rela-



tionship with the client can often help release an overdue payment.

Continuing contact: Most architectural firms miss an excellent marketing opportunity by not regularly checking back with past clients. A responsibility of the strong project manager is to make regular calls on such clients, to see how the facility is operating and what further services the client may need.

Several steps must be taken to move a firm toward having a strong project manager service. First, the firm must have qualified people. Too often principals will hire young, inexperienced architects for the sake of having inexpensive drafting labor. To develop strong project management, the criterion must be potential ability to manage. Also, the firm must pay well (\$22,000 and up) and have an atmosphere that will attract and retain a high caliber of professionals.

The firm must have an organized program to develop managerial skills in present and potential project managers. The best training is on the job, where young architects are gradually exposed to all facets of the strong project manager's job. There should also be an assistant project manager, who either helps on a large project or handles small projects alone.

More experienced project managers should conduct in-house seminars covering marketing, financial control of the project, management of professionals and, most important, client relations. Also, project managers should be encouraged to attend local university courses and short seminars to improve their management skills.

The matrix form of organization is a way to use the strong project manager in combination with the department organization. Projects are the responsibility of

project managers who report to a vice president for project management (or operations). The technical work is done by professionals who report to a department head.

One drawback of this form of organization is that the architect working on a project has two masters—the project man-

Delineating the roles of project managers and department heads.

ager and chief of design. Also, there is a fuzzy line separating the responsibilities of the project manager and department head.

These problems can be overcome if the two potential protagonists make a point of respecting each other's contribution to the firm. The project manager's true role is the successful completion of projects, and this leads to financial success for the firm. Thus, the project manager is responsible for completing the project on time and within a budgeted fee, satisfying the client and exerting day to day control of the project staff. The department head's true contribution, on the other hand, is to maintain the firm's excellent reputation in the market. He is responsible for quality control for his function or discipline, firm-wide training in his specialties and assignment and utilization of his professional staff.

The marketplace is demanding that architects tightly manage the entire process of developing a facility. At the same time, architectural firms must be well managed to survive. Both of these goals can be achieved through the proper use of the strong project manager organization. □

Ethics Forum

Editor's note: *We continue the discussion of the proposed changes in AIA's Standards of Ethical Practice with the thoughts of three members. Again, we invite all members to use the Journal as a forum for the ethics debate.*

'Should not the client have the choice of relationships?'

Donald J. Stephens, FAIA

Our present ethics seem to require an exclusively agency relationship with our clients as being in the best interests of both clients and the general public. Although this is important, and provision for it should be included in any revisions of our ethical standards, I cannot support the current restriction that architects can be members of AIA only so long as their activities are limited to agency relationships with clients.

Further, the insistence on exclusively agency relationships has neither prevented abuses nor has consistently been in our clients' best interests. We all know of many cases where a client received poor advice as a result of an architect's limited grasp of (and maybe even lack of concern for) marketplace economics and construction costs, with the familiar resulting problems relative to project advancement. It appears this kind of lack of concern for the clients' interests flourishes more easily under the agency type relationships than under purely business arrangements.

Our present ethics appear to be based on the theory that nonagency relationships create conflict of interest situations. It does not matter whether the conflict of interest *actually* exists or that it results in conditions not in the client's best interests, but the fact it *could* exist because of the lack of an agency relationship. A corollary would then seem to be that such conflicts of interest could not (or would not) exist in agency relationships. Hah! I hazard a guess that there have been far too numerous occasions when architects have not always had the best interests of their clients in mind in trying to work within client-imposed inadequate compensation.

Mr. Stephens, a member of AIA's board of directors, is a principal in the Albany-based firm of Donald J. Stephens Associates. **Mr. Fisk** is a principal in the firm of Fisk, Rinehart, Keltch, Meyer, Inc., in Fort Mitchell, Ky., and Cincinnati, and is a director of the Institute. **Mr. Regier**, a member of AIA's committee on architecture for commerce and industry, practices in Omaha.

I consider that a form of conflict of interest in agency relationships.

Nor does a nonagency relationship mandate nonprofessional dealings between architect and client. Problems related to conflicts of interest may arise more frequently than under agency relationships, but it appears there certainly would be trade offs that could provide more overall benefits to the client than an exclusively agency relationship—and that's where we come to the full disclosure issue.

Should not the client have the choice of relationship, based on the architect's full disclosure of potential conflicts of interest and the client's perception of his own best interests? Could not AIA accommodate the choice without the architect's being in violation of the Institute's ethics?

All else flows from the resolution of this sticky wicket.

'The standards of ethics must apply equally to all members.'

Harley B. Fisk, AIA

AIA has grown from 7,000 elite practitioners in 1950 to 25,500 registered architects who have various commitments, specialities, interests and attitudes. Today, we are taking steps to include associates within the national membership who will have privileges approaching those of corporate members. We are on the threshold of wooing, embracing or at least conducting a dialogue toward a common cause with the entire spectrum of design professionals. AIA's Standards of Ethical Practice must realistically address this movement.

I certainly believe that a group of professionals should establish an ethical code and welcome to its membership only those who are willing to subscribe to these standards. I do believe, however, that the older and more narrow view that all architects are *private practitioners* in professional practice is no longer applicable.

Without restating all the debate at board meetings and at the AIA convention in Philadelphia, I support the proposal to remove the mandatory ban on advertising, sketches and general public awareness.

I should like to support the AIA position of rebuilding the world. To do so, I must speak the language of the world. The standards of ethics which I have set for myself, I hope, will not be compromised. The standards of ethics set by the Institute must apply equally to all members of AIA—those in professional practice as principals of firms and those employed by firms, governments, industry, colleges and special interest associations. It is unfortunate that the voting member-

ship of the Institute comprises 10 times the number of sole proprietors whose practice they would limit.

In my support of the proposed revisions, I say they are not weak, but strong. They are not unenforceable, but require a higher level of integrity in their enforcement. They are not perfect, but they are aimed in the right direction.

Major competition from firms not bound by AIA's standards.

Willis Regier, AIA

John M. McGinty, FAIA, Institute president-elect, says in the lead article of the "Ethics Forum" in the August issue, "Architects are expanding their roles. The only question is whether they will be a part of The American Institute of Architects." This statement is one of the vital issues at stake in the proposed changes in AIA's Standards of Ethical Practice.

I am an architect in private practice who is concerned about the need for the apparently developing stiffening of moral and ethical character on the part of the profession. As a two-year and current member of AIA's committee on architecture for commerce and industry and a member of the committee which spearheaded the movement for the Philadelphia convention to consider the necessity for a change in the code of ethics, I hope I am qualified to speak on the subject.

It has been observed that my architectural colleagues are quite like all other persons. Unless one is personally affected by any issue, it is no issue for that person. That is the major reason why taxation, bureaucracy and moral and ethical behavior have slipped to a point of irresponsibility and are so urgently in need of an overhaul. That is also the reason why those of us who are affected also rise to speak up for a change in the code of ethics.

Specifically, I find that my major competition comes from architectural offices not represented by membership in AIA. These offices do not operate within the constraints of the Institute's code of ethics. Thus, advertisements for their services appear regularly in the trade journals, industry directories and publications such as the *Wall Street Journal*.

Firms offering design-build services almost universally represent builders first and design services as an adjunct. Those which have architects at all on their staffs place the architects in captivity (an old, old story), but nonetheless, we practicing professionals must face this fact of life.

In the August issue (p. 32), John F. Hartray, AIA, says, "... none of us

continued on page 88

America's oldest building for higher learning has a lesson in it for us.

The Christopher Wren Building of the College of William and Mary. America's oldest academic building in continuous use. And a testament to the permanence, the practicality and the beauty of brick in architecture.

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To celebrate the nation's bicentennial, BIA has produced a timely film—*Th. Jefferson: Man from Monticello*, a look at Jefferson the architect, the planner. Write us to arrange a special presentation.

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Architecture and Utopia: Design and Capitalist Development. Manfredo Tafuri. Cambridge, Mass.: MIT Press, 1976. 184 pp. \$9.95.

What is architecture? Is it merely a dichotomy between functional problem-solving and pure form games, or does it refer to something deeper in human and cultural experience? I believe that it refers to deeper things but, alas, until very recently there has been little discussion at that level.

Ideology is one issue now being explored in architectural theory. If architecture manifests our view of reality in built form, then architecture must have an attitude toward that reality. Such an attitude can be referred to as an ideology. Manfredo Tafuri, who holds the chair of architectural history at the University of Venice, has summarized ideology over the past 200 years in this slim book. Although it is extremely difficult to read and is filled with jargon and abstractions, it raises issues which are important and which, unfortunately, are not being raised by those who might write more clearly.

Tafuri is a neo-Marxist and assumes that the "means of production" is the primary determinant of reality and that the industrial revolution (or the rise of capitalism) has, therefore, been the primary problem to which architecture has addressed itself over the past 200 years. In the face of the industrial revolution, the efforts of some European architects, artists and ideologists has been to destroy the symbols of outdated Baroque European culture. This effort culminated in Dada art, which was the complete rejection of all values and meaning. At that point, according to Tafuri, ideology was over, and architecture today can no longer reflect any meaning, but rather, should become the play of pure forms.

There are several problems with Tafuri's analysis, the first of which is the limits inherent in a Marxist analysis. There is more to consciousness than can be seen through Marx (and Freud, who is often thrown in in such analyses, although not by Tafuri). In fact, both Marx and Freud can now be seen as being limited by a 19th century fascination with casual science. Human action is seen as "caused"

rather than "intended." In this casual view the mythological richness of human being is all but lost.

The second problem with Tafuri's analysis is that it is essentially negative, that is, he sees architecture and ideology since 1750 reacting *against* an outdated European culture. He does not see what it is reacting *toward*. Finally, and perhaps most important, this is a European book. European architects have been dealing with the problems of how to clean the slate to start a new architecture. Thus the extreme antisymbolism, antiornament and anti-Beaux-Arts position of the Bauhaus and other European moderns.

That is a European problem, however. America began the modern age with a clean slate. When Gropius and Mies came to this country, they brought a solution to a problem we did not have. Today, we see another European invasion—this time in the form of structuralism, semiology and now neo-Marxism. These "isms" are again, I fear, responding to problems we do not have, and we are about to experience another unnecessary solution.

I believe that Tafuri's analysis is valid but too limited. It is encouraging to see architectural theory now actually being discussed. How productive that discussion is going to be is another question. *John Lobell, Associate Professor of Architecture, Pratt Institute*

Efficient Electricity Use: A Practical Handbook for an Energy Constrained World. Craig B. Smith, editor. New York: Pergamon Press, 1976. 960 pp. \$45 hardbound, \$20 paperbound.

This weighty tome has resulted from 18 months of research conducted by the Applied Nucleonics Co. of Los Angeles for the Electric Power Research Institute. EPRI is funded by U.S. electric utilities to manage the research and development of new electric technologies.

There are four major parts to the book which is directed to both technical and lay readers: energy-related problems in today's world of constraints; major energy-using sectors of the economy; efficiency from the perspective of equipment and process designers, and efficiency from the perspective of systems planners.

Throughout the book are more than 50 detailed case studies whose purpose is to show that both economic and environmental benefits can result from energy-saving techniques. For example, there is a case study on life-cycle costs involved in the selection of a residential airconditioning unit; another demonstrates the economic, environmental and energy costs of urban sprawl; another shows how pre-Columbian cliff dwellings were designed for efficient energy use.

The authors conclude that this country could reduce the amount of energy consumed by 10 percent if currently available techniques, some requiring only modest capital expenditure, were put into practice. They urge a general understanding of current and proposed legislation by both larger energy users and smaller businesses and the general public.

The New Downtowns: Rebuilding Business Districts. Louis G. Redstone, FAIA. New York: McGraw-Hill, 1976. 330 pp. \$22.95. (Available for \$20.65 from AIA's department of publications marketing.)

If you are looking for examples of central city urban design, you will find them in Redstone's new book. The most outstanding aspect of this collection of ideas on central city architectural and urban design projects is the numerous illustrations. Scores of development plans and photographs of completed projects are included. The book covers virtually all of the concepts used in revitalizing central cities today. Although some of the examples are not fully developed and some are out of date, the sheer fact that so many projects have been collected in one volume makes this publication unique.

Various approaches to initiating central business renewal, basic elements of CBD redevelopment, 47 case studies in the U.S., nine case studies in foreign countries, planned major projects and the preservation and restoration of historic buildings are all discussed. Most of the work has been published in more detail elsewhere, but the collection of this information into one volume is impressive. *Michael B. Barker, AIP, Administrator, AIA Department of Environment and Design*

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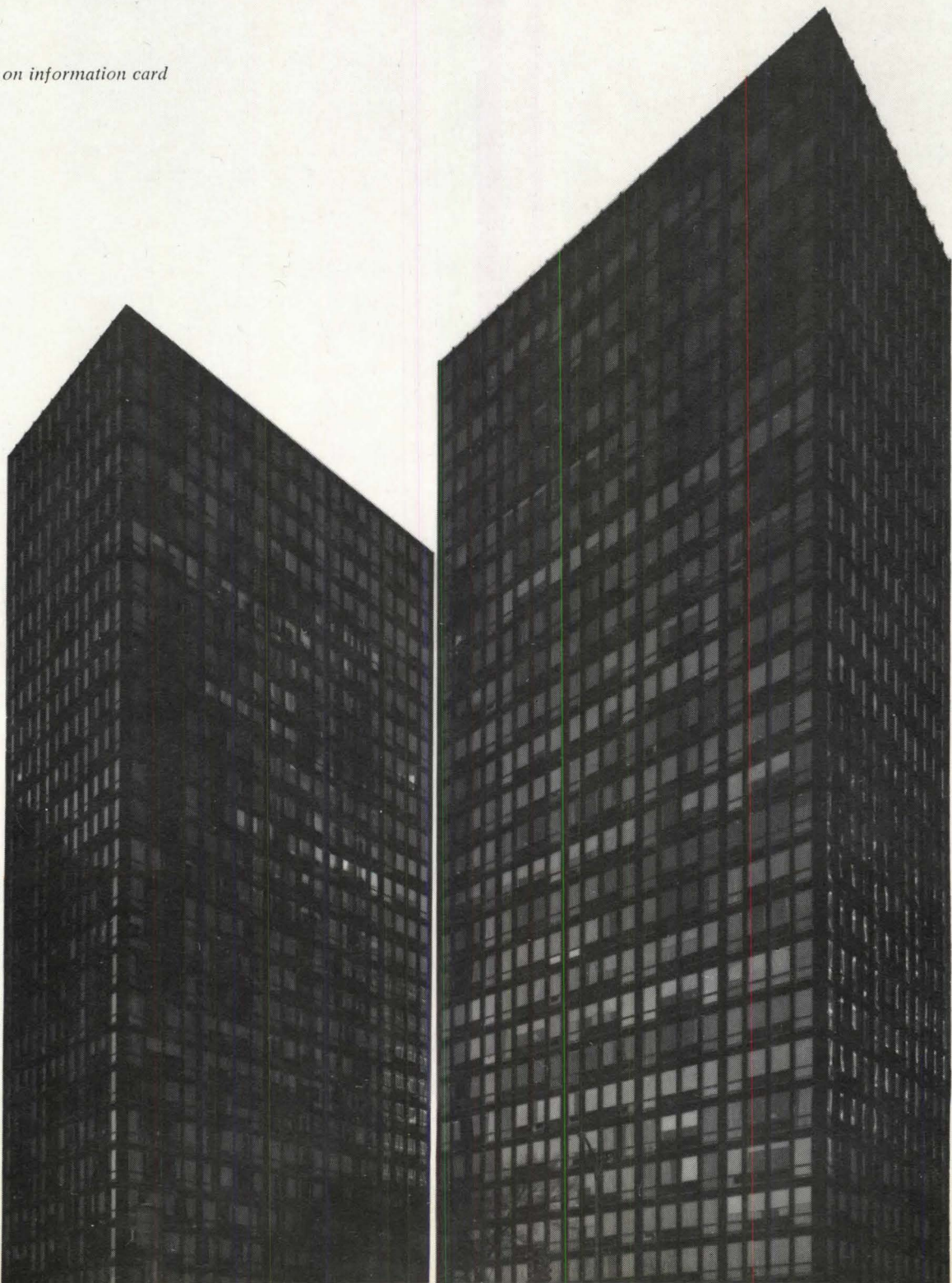
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Client: Virginia Department of Highways & Transportation; *Owner:* Town of Grundy, Va.; *Designers:* Higgs & Higgs, Inc., Vienna, Va.; *Consultant Architect:* James W. Ritter, Springfield, Va.; *Contractor:* Wiley N. Jackson Company, Roanoke, Va.; *Fabricator:* Structural Steel Company, Inc., Roanoke, Va.; Structural steel furnished by Bethlehem Steel Corporation.

The depth of the mountainside excavation, which greatly influenced the cost of the project, dictated the need for a long (240 ft), narrow (63 ft) structure.

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A state road-widening project through Grundy, Va., eliminated many of the town's Main Street parking spaces. And because of the area's steep terrain, no alternative off-street parking sites were available.

Solution: build a three-level, 144-car parking structure into the side of a mountain to replace the spaces eliminated by the construction.

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Sales Engineering service valuable. "Bethlehem Sales Engineering personnel were very helpful in furnishing us with technical publications and advice," reports Mr. Gerry E. Higgs, president, Higgs & Higgs, Inc., designers of the structure. "Two slide presentations, featuring steel-framed parking structures and the use of Weathering Steel in construction, were given to our engineering staff. It was also on the advice of Bethlehem's Sales Engineer that we considered Weathering Steel for the interior, as well as the exterior framing of the structure."

Why Weathering Steel? The designers decided on ASTM A588 Weathering Steel for both the exterior and interior framing for two reasons: (1) it provides a very rustic appearance which, when fully matured, will blend well with the surroundings of this rural coal mining community; and (2) its low maintenance cost will minimize future financial burdens on the town.

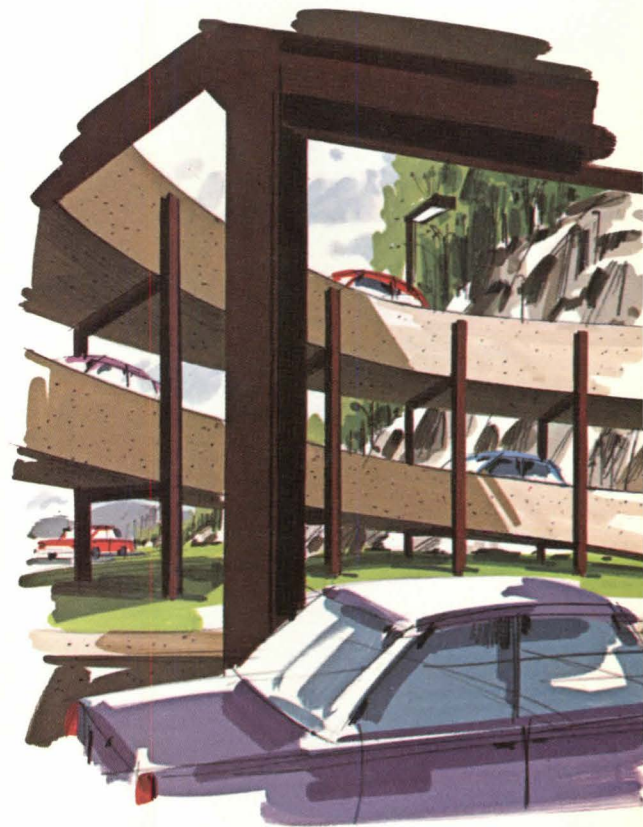
Several special design details are employed to minimize staining during the weathering process. Open slots are placed in the concrete slabs around all columns to avoid runoff from the columns onto the slabs. At grade level, gravel pockets surround all the column bases.

Architectural considerations. A low-profile parking structure was desired in order to avoid overpowering the neighboring one- and two-story buildings. The design features an open structure with exposed steel framing, partially faced with sand-blasted precast panels.

A set of ramps at the south end provides entrance and exit to the parking levels. One of the ramps also serves as the entrance and exit right-of-way for the property on the mountainside above the parking garage. The system of circular and straight ramps allows one-way traffic to be maintained on all parking levels. Stair towers, located at each end of the structure, control pedestrian flow.

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A circular ramp at the north end permits traffic flow from the level below to the one above.

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Slide presentations, as well as numerous Bethlehem publications and design aids, provided valuable assistance to Higgs & Higgs, the project's designer.



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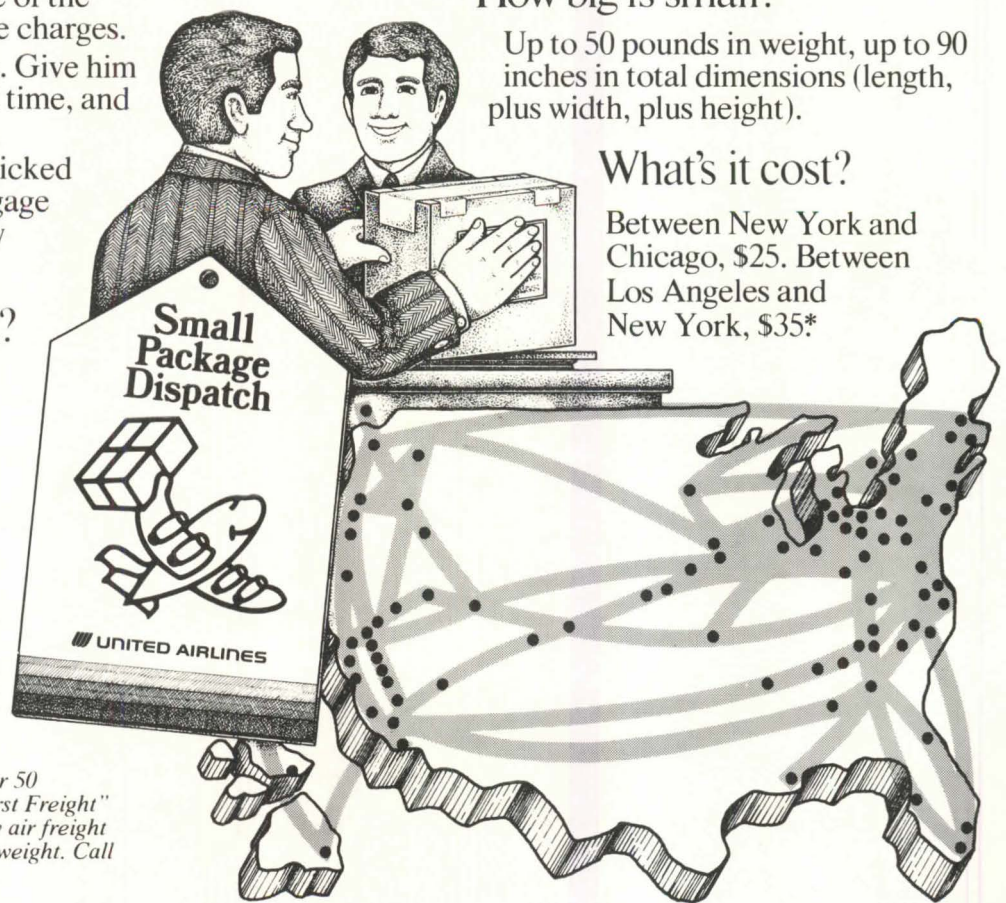
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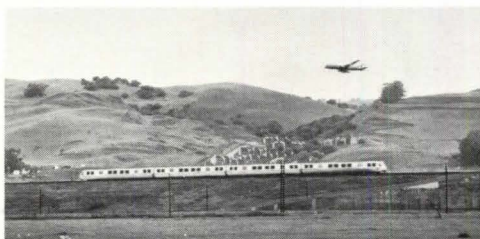
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LETTERS

Great Pyramids at Giza: Reproduction of the photograph I supplied for my article in the May issue on how the Great Pyramids at Giza were erected failed to bring out the detail on which my contention rests. I have obtained a better print (shown below) of the detail, which is so critical as proof of the pyramid erection procedure.

Also, I would like to stress that the title given the article, namely "How They Built the Pyramids," was an unfortunate selection because the proven sequence applies only to the Great Pyramids at Giza. Most other pyramids were built of small stones which could be worked by hand, in which cases the casing stones were often placed last.

My discovery constitutes the only hard proof extant of how the Great Pyramid was erected. Hence, the correction is urgent.

Olaf Tellefson
Everett, Wash.



'Credit Where Credit Is Due': The July issue was a highlight. I couldn't agree more with those respondents to the poll on America's great architecture who gave the lion's share to Mr. Jefferson's grounds of the University of Virginia. But I fail to understand the nomination of a building whose windows constantly pop out and which, for a time, was denied an occupancy permit.

In the article entitled "The Black Architectural Experience in America," Leila Sellers is quoted as saying that "the white artisan was virtually eliminated by 1790," to which I take exception. I have no quarrel with the fact that there were slave artisans; there had to be to maintain the city and plantation buildings, etc., but to say the white artisans were "virtually eliminated" is sheer nonsense.

Milby Burton in *Charleston Furniture, 1700-1825* lists a total of 80 cabinetmakers in 1686-1790 and 60 in 1790-1810. And in his *South Carolina Silversmiths, 1690-1860*, he lists 78 smiths in 1700-1790 and 72 in 1790-1812, these in the city of Charleston alone. One Charles Watts advertised in the *New York Diary* of Jan. 28, 1797, for 8 to 15 journeymen cabinet and chair makers to go to Charleston. During one seven-year period, one Thomas Elfe Sr. in his shop produced 1,502 pieces of furniture with the help of

continued on page 78

Nikolaus Pevsner



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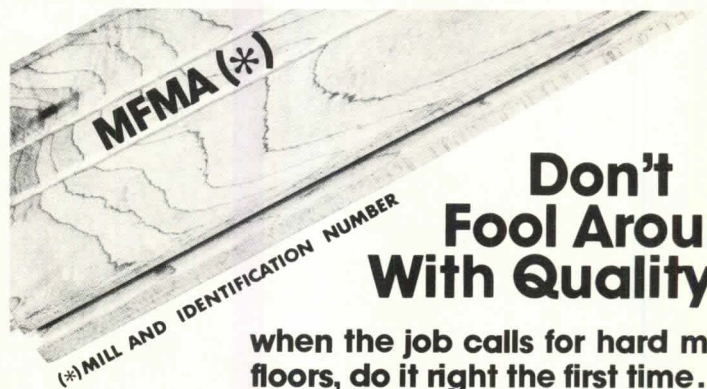
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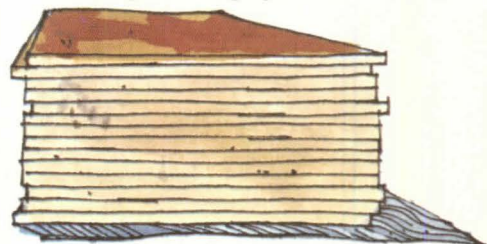


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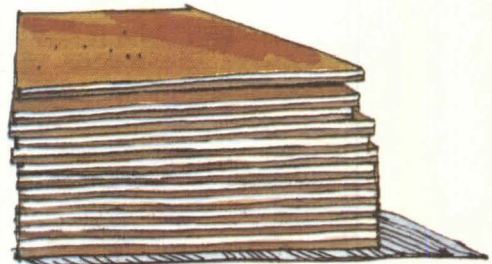


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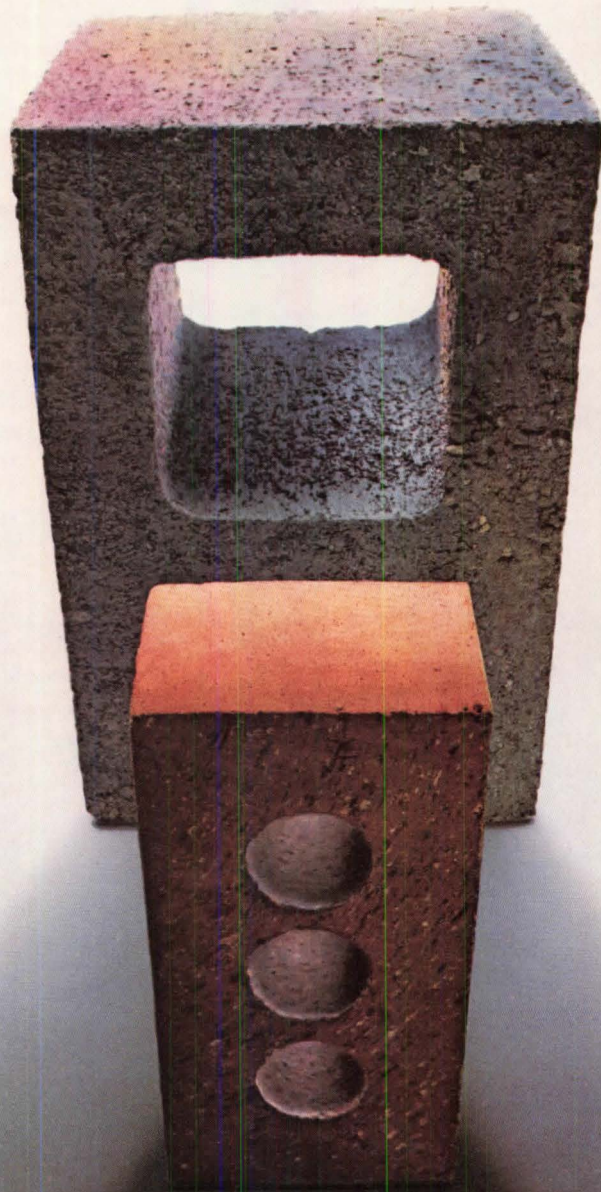
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Letters from page 74

10 slaves, 5 sawyers and 5 cabinetmakers.

Richard Walsh in *Charleston's Sons of Liberty* makes an eloquent summary of the part played by the artisans of the city during the years 1763-1789. In 1770, the artisans, because of their number and influence, held equal representation with merchants and planters on the joint Revolutionary committee. The census of 1790, out of 1,933 heads of families listed, noted that 429 were master mechanics. "The white artisan virtually eliminated," indeed! Newspaper advertisements of the period well support the number of artisans in the area.

So let us give credit where credit is due, both white and black, and not accept one historian's color elimination without double-checking the facts.

Charles N. Bayless, AIA
Charleston, S.C.

Mr. Jefferson: It was a great pleasure to note the special recognition given to Jefferson's University of Virginia in the excellent 200-year review of American architectural achievement in the July issue.

It was a keen disappointment to me, however, that the photographs selected were partial views of the rotunda, rather than the great central mall itself. It was this mall, shaped by that "perfect grouping of related buildings" (in Charles Blessing's words) that was Jefferson's brilliant and original achievement, and not the tradi-

tional detailing of the monumental building that terminated one end of it.

Paul Willen, AIA
New York City

It was particularly significant that Thomas Jefferson was selected as the most appropriate subject for a special bicentennial exhibition at the National Gallery of Art and that Jefferson's work as architect of the University of Virginia was often mentioned in the July issue as among the 20 most significant buildings in the nation. Mr. Jefferson's best-known work, the Declaration of Independence, is now being joined by his architectural achievements as we take a look at our past.

Leslie N. Boney Jr., FAIA
Wilmington, N.C.

Outdoor Spaces: I read the July issue which featured a compilation of significant architectural works by distinguished architects, authors and critics with some pleasure, some concern and a great deal of interest.

It was a pleasant surprise to see that the San Xavier del Bac mission was mentioned by G. E. Kidder Smith. As San Xavier is very important to this region historically as well as architecturally, I was gratified and proud as a Tucsonian that it was included.

I feel the need to comment upon Wolf Von Eckardt's description of Central Park as the space surrounding architectural

monuments. In many instances of outdoor space, the enclosed area is more meaningful, more exciting and more carefully designed than the structures which enclose it. Central Park, Ghirardelli Square, the grand fountains of Lawrence Halprin in Portland, Ore., and the work of M. Paul Friedberg are just a few examples where the surrounding architecture serves as a foil and backdrop to the action and spatial qualities of the landscape. It would be difficult, however, to describe those buildings as simply negative space or leftover elements.

The interrelationships between designed exterior and interior spaces should have been stressed in Von Eckardt's comments rather than simply relegating the outdoors to a leftover vacuum.

Michael Byrne
Landscape Architect
Tucson, Ariz.

EVENTS

Nov. 2-3: Seminar on Construction Management for Smaller Projects, University of Wisconsin, Madison, Wis.

Nov. 3-5: Texas Society of Architects annual meeting, Dallas.

Nov. 7-9: Conference on Planning and Design of State Court Programs and Facilities, University of Illinois, Urbana/Champaign.

continued on page 82

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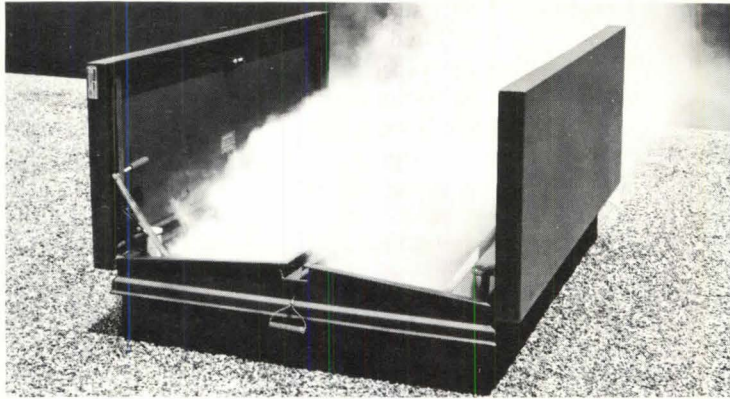
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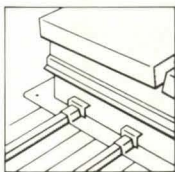


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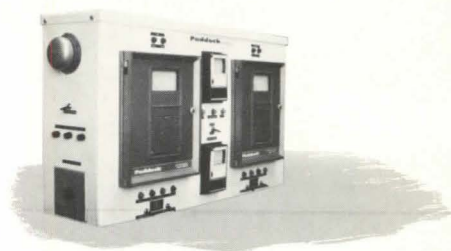
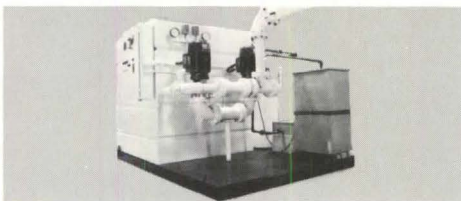
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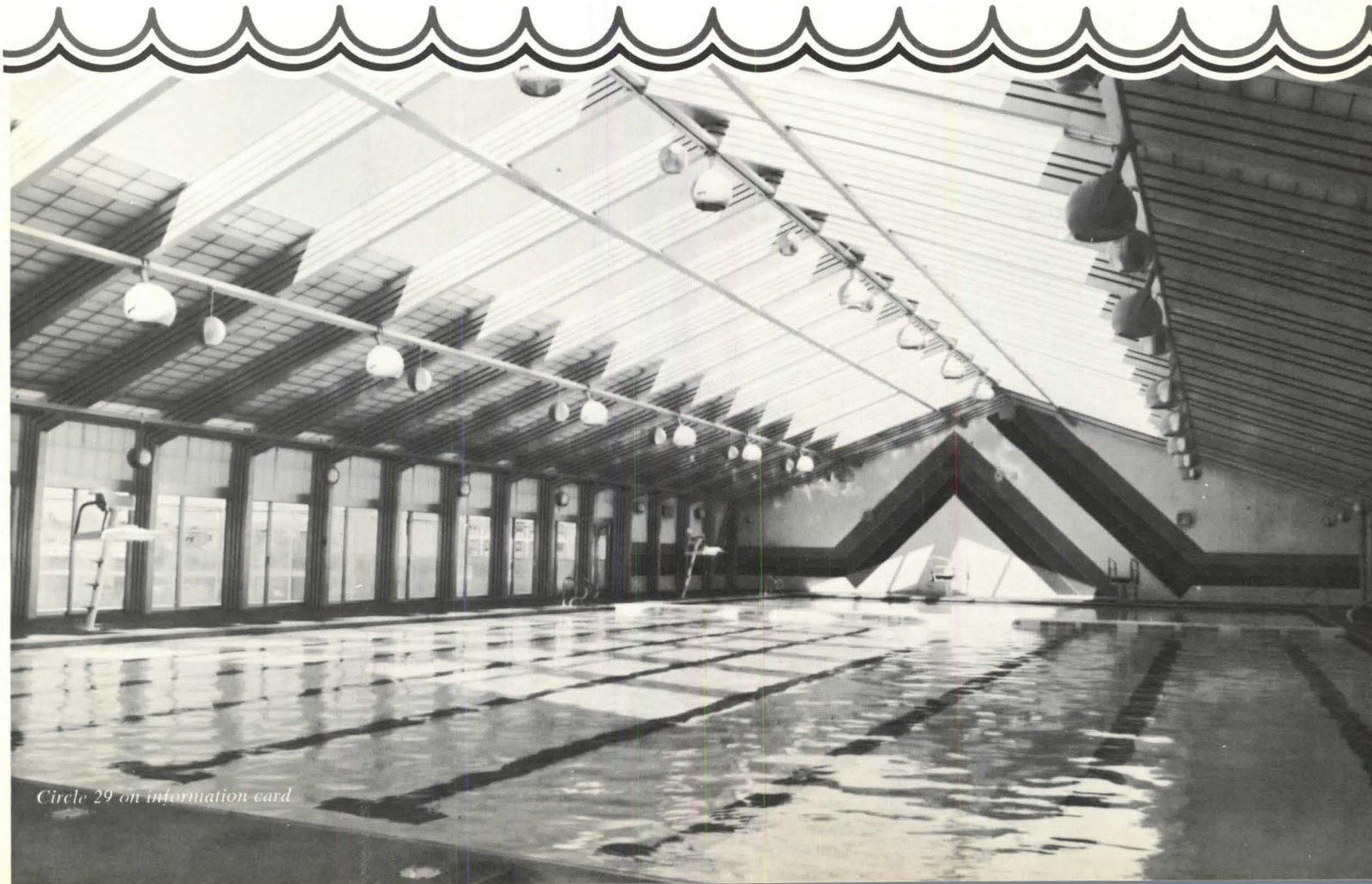
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Events from page 78

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Nov. 9-10: Seminar on Construction Management, Chicago O'Hare/Kennedy Holiday Inn, Chicago. Contact: *Construction Management World*, Box 1, Westerville, Ohio 43081.

Nov. 12: Applications deadline, Work Experience Internship Program for 13 weeks next spring. Contact: Intern Program Officer, Mail Stop 557, National Endowment for the Arts, Washington, D.C. 20506.

Nov. 13-15: Kentucky Society of Architects annual meeting, Holiday Inn Midtown, Louisville.

Nov. 14-19: Architectural exhibition, annual meeting of the Radiological Society of North America, Inc., McCormick Place, Chicago.

Nov. 14-19: International Symposium on Industrial Wastes and Environment, Parque Central, Caracas, Venezuela. Contact: Richard Abbou, 115 rue de la Pompe, F 75116, Paris, France.

Nov. 15: Entries deadline, CRS awards program. Contact: Concrete Reinforcing Steel Institute, 180 N. LaSalle St., Room 2111-D, Chicago, Ill. 60601.

Nov. 16-25: International Building and Construction Exhibition, National Exhibition Centre, Birmingham, England. Contact: Interbuild, 11 Manchester Square,

London W1M 5AB, England.

Nov. 17-19: Building & Construction Exposition and Conference, McCormick Place, Chicago. Contact: Charles Snitow Organization, 331 Madison Ave., New York, N.Y. 10017.

Nov. 18-19: Hawaii Society/AIA annual convention, Ala Moana Hotel, Honolulu.

Nov. 18-19: Historic Preservation Workshop, Louisville, Ky. Contact: National Trust for Historic Preservation, 740 Jackson Place N.W., Washington, D.C. 20006.

Nov. 19: Seminar on Current Problems in Architectural Practice: Codes and Standards, Iowa State University, Ames, Iowa.

Dec. 1: Entries deadline, plywood awards. Contact: American Plywood Association, 1119 A St., Tacoma, Wash. 98401.

Dec. 1: Applications deadline, scholarship competition for four years of undergraduate study in construction and/or civil engineering degree programs. Contact: Associated General Contractors of America, 1957 E St. N.W., Washington, D.C. 20006.

Dec. 1-2: Construction Research Council annual meeting, Chicago O'Hare/Kennedy Holiday Inn, Chicago. Contact: CRC, 1000 Vermont Ave. N.W., Washington, D.C. 20005.

Dec. 5-7: Airport Design and Construction Conference, MGM Grand Hotel, Las Vegas. Contact: Bruce Schafer, AIA Headquarters.

June 5-9, 1977: AIA annual convention, San Diego.

Deaths

John E. Bertini, Houston
George J. Cavalieri, Bronx, N.Y.
Albert L. Christensen, Salt Lake City
Robert W. Cline, Harlingen, Tex.
Clinton H. Cowgill, FAIA, La Jolla, Calif.
Paul Deno, Tumacori, Ariz.
Donn Hougen, Wisconsin Rapids, Wis.
John R. McClurd, Shelby, N.C.
James A. Murphey, Chico, Calif.

James Ira Campbell, FAIA: A partner in the Baltimore/Towson, Md., firm of Nes, Campbell & Partners, Mr. Campbell was a specialist in the design of hospital facilities. His designs include the Union Memorial Hospital, St. Joseph Hospital and the South Baltimore General Hospital, as well as renovation of many other health facilities in the Baltimore area. Mr. Campbell, who died on Aug. 12 at the age of 72, was president of the Baltimore chapter/AIA in 1969. In 1963-67, he served as a member of AIA's committee on hospital architecture. He also was a member of the first Architectural Review Board of Baltimore County, president of the Baltimore Building Congress and Exchange and a charter member of the Construction Specifications Institute. After graduation from Rice University, he was associated with architectural firms in Houston and New York City before going to Baltimore in 1941.

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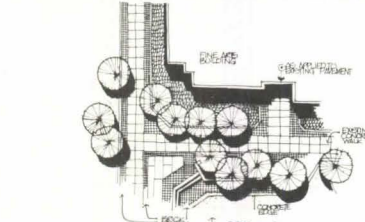
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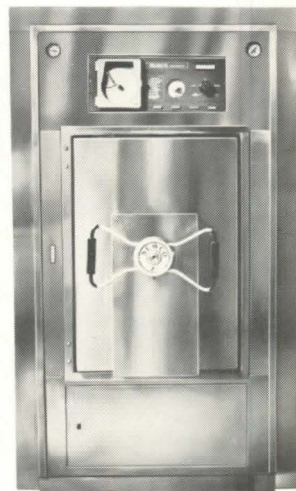
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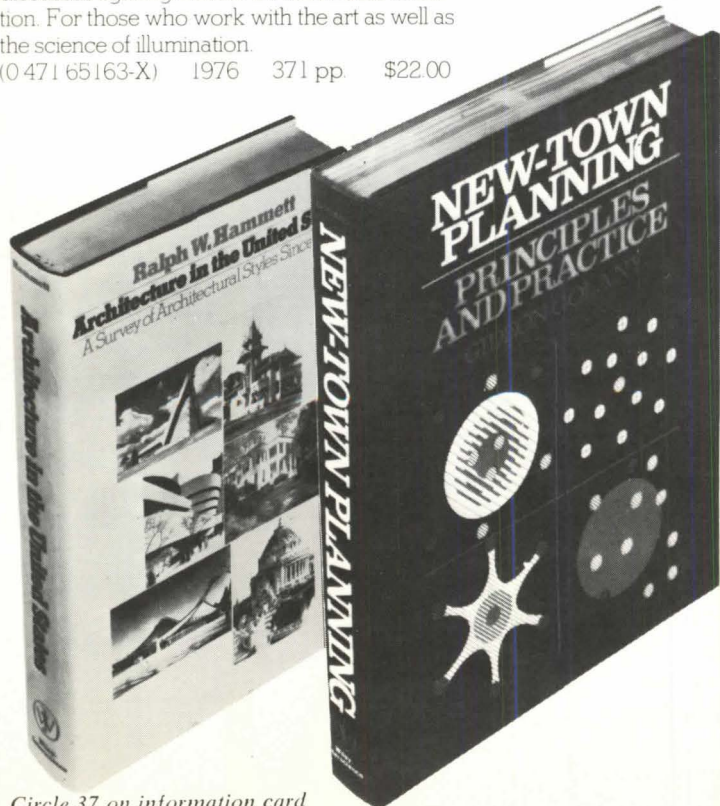
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Newslines

Ellis/Naeyaert Associates, Inc., of Warren, Mich., has been awarded the Engineering Society of Detroit's annual building design and construction recognition award for its design of Michigan Bell's 4A Switching Center in Saginaw, Mich.

"**The Kansas City Coloring Book**" is the title of a joint effort by Dean Graves, AIA, and his wife Ginny. Aimed at an adult audience, it provides the reader with a tour of 30 historic places in Kansas City, giving an insight into the city's architectural heritage through drawings by Graves and text by his wife. The booklet may be ordered for \$3.95, plus 50 cents for postage and handling, from Discovery Stuff, 5328 W. 67th St., Shawnee Mission, Kan. 66208.

J. Harold Box, FAIA, Institute board member, has been appointed dean of the school of architecture, University of Texas at Austin. He has served since 1971 as dean of the school of architecture and environmental design, University of Texas at Arlington.

New Commission of Fine Arts appointments made by President Ford include two AIA fellows—Victorine duPont Homsey of Wilmington, Del., and Frederick Doveton Nichols of Charlottesville, Va. Eli S. Jacobs, a New York City investment banker, was also appointed by the President. Reappointed were landscape architect Edward D. Stone Jr., of Fort Lauderdale, Fla., and J. Carter Brown, Hon. AIA, director of the National Gallery of Art in Washington, D.C.

Employment opportunities: A consulting architect with experience is wanted by the North Carolina State University at Raleigh. Responsibilities would include programming, review of plans and specs, graphics, urban design and campus planning. Contact: E. F. Harris Jr., Director, Facilities Planning Division, N.C. State University, Raleigh, N.C. 27607. Also a position is open at the University of Manitoba, Winnipeg, Canada, as head of the department of architecture. Contact: Dean of Architecture, University of Manitoba, Winnipeg, Canada R3T 2N2.

H. H. Richardson's Union Railroad Station in New London, Conn., was reopened recently. A 13-year preservation battle was waged by the Union Railroad Station Trust, Inc., to save the structure. Its efforts resulted in a recent citation of excellence presented by the Society for the Preservation of New England Antiquities. Anderson Notter Associates of Boston, designer and developer of the project, gave the old station a facelift. The structure

now contains office facilities and a restaurant, while continuing to function as an Amtrak terminal.

Two solar-powered retail facilities, said to be the first of their kind in the U.S., are planned for Air Force bases in Kirtland, N.M., and Randolph, Tex. The stores are the design of the Colorado Springs firm of Clifford S. Nakata Associates, with support from the Albuquerque, N.M., engineering firm of Bridgers & Paxton. Army Colonel John L. Moffat of the Army and Air Force Exchange Service says the sun will provide 97 percent of heating and 64 percent of cooling needs for the Randolph shopping center, while the main retail store at Kirtland is being designed to provide 99 percent of heating and 85 percent of cooling needs from solar energy. Construction will begin in November.

The New York chapter/AIA has selected John T. Plaxico of Auburn, Ala., as recipient of the 1976 Le Brun traveling fellowship. Since his graduation in 1974 from Auburn University, Plaxico has been employed by the Huntsville, Ala., firm of Northington-Smith-Kranert. The chapter also awarded the 1976 Arnold W. Brunner scholarship to editorial researcher and writer Jean Ferriss Leich of Ruston, La., to prepare a book of renderings by her late father, Hugh Ferriss, who was a freelance architectural delineator from 1915 to his death in 1962.

Lawrence A. Enersen, FAIA, partner in the Lincoln, Neb., firm of Clark & Enersen, Hamersky, Schlaebitz, Burroughs & Thomsen, has been named a fellow of the American Society of Landscape Architects.

America's public buildings erected in 1785-1850 will be visually documented by the Dunlap Society under a \$188,100 grant from the National Endowment for the Humanities. Courthouses, legislative buildings, prisons, etc., will be shown on microfiche cards to be used in courses on the history of American architecture. The Dunlap Society was formed in 1974 out of a concern for the neglect of studies in American art and lack of research and teaching materials.

Innovative solutions for criminal justice facilities and programs are the focus of a new publication series called *Transfer*. The series, issued by the National Clearinghouse for Criminal Justice Planning and Architecture, will be sent free of charge to those requesting the publications. Write: Olga B. Wise, Publications Coordinator, NCCJPA, University of Urbana/Champaign, 505 E. Green, Suite 200, Champaign, Ill. 61820. □

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Ethics Forum from page 64

would want a new client who was stupid enough to make advertising the basis of selection." At face value that is true. What bothers me is the fact that the advertising architect, because of his advertisements, already has been sought out and subsequently retained by a client as a result of that advertisement and follow-up conferences leading to retention. This process has saved that client the time he might otherwise have taken to ferret out those architectural firms which do not advertise.

I agree with Jerome M. Cooper, FAIA, chairman of the commission on Institute and component affairs for 1977 (Aug., p. 34), who said that we should "send the entire question of ethics back to the board for a fresh start." This is no easily resolved issue, and I welcome the interest of the entire AIA membership in working toward a resolution acceptable to the membership as it is affected in today's society. □

American Gas Association	87
<i>J. Walter Thompson Co.</i>	
Bethlehem Steel Corp.	68-69
<i>Van Brunt & Co.</i>	
Bigelow-Sanford, Inc.	71
<i>D'Arcy-McManus & Masius</i>	
Bilco Co., The	79
<i>Ben Mochan Associates, Inc.</i>	
Brick Institute of America	65
<i>Henry J. Kaufman & Associates</i>	
Bruning Div. of Addressograph Multigraph Corp.	75
<i>Campbell-Mithun, Inc.</i>	
Cabot, Samuel, Inc.	21
<i>Donald W. Gardner Adv., Inc.</i>	
Celanese Fibers Marketing Co.	Cover 2 and p. 1
<i>Doyle, Dane, Bernbach, Inc.</i>	
Celotex Corp., The	5, 6, 7, 8, 9
<i>Mike Sloan, Inc. Advertising</i>	
Dade County, Florida	84
Eaton Security Products & Systems....	28
<i>Creamer FSR Advertising</i>	
Edison Electric Institute....	29, 30, 31, 32
<i>Charles E. Root, Inc.</i>	
Follansbee Steel Corp.	80
<i>Group Marketing & Communications</i>	
Georgia-Pacific Corp.	2
<i>McCann-Erickson, Inc.</i>	
Grefco	25
<i>Boylhart, Lovett & Dean, Inc.</i>	
Haws Drinking Faucet Co.	84
<i>Pacific Advertising Staff (PAS)</i>	
Heery Associates,	24
<i>James Moore Public Relations</i>	
Inryco, Inc.	Cover 3
<i>Melrose Advertising Associates</i>	
International Masonry Institute	77
<i>Henry J. Kaufman & Associates</i>	
Johns-Manville Bldg. Systems Div.	76
<i>Broyles, Allebaugh & Davis</i>	
Kawneer Architectural Products....	22-23
<i>Garrison, Jasper, Rose & Co.</i>	
Knoll International, Inc.	11
<i>William McDade, Inc.</i>	
Koppers Co., Inc.	14-15
<i>Marsteller, Inc.</i>	
LOF	26-27
<i>Campbell-Ewald Co.</i>	
Maple Flooring Mfgs. Assoc.	74
<i>The Biddle Advertising Co.</i>	
MFG Concrete Forms, Inc.	16
<i>2M Advertising Agency</i>	

Monsanto Co.	17, 18, 19, 20
<i>Advertising & Promotion Services</i>	
National Sanitation Foundation	83
<i>The Connelly Co. Advertising</i>	
National Terrazzo	86
<i>Harris D. McKinney, Inc.</i>	
Olympic Stain	Cover 4
<i>Craft, Smith</i>	
Owens-Corning Fiberglas Corp.	12-13
<i>Ogilvy & Mather, Inc.</i>	
Paddock of California	81
<i>Halpin Williams & Associates</i>	
PDA Publishers	82
PPG Industries	73
<i>Ketchum, MacLeod & Grove, Inc.</i>	
Princeton University Press	74
<i>Franklin Spier, Inc.</i>	
Shand, Morahan & Co.	67
<i>Hakanson & Associates</i>	
United Airlines	70
<i>Leo Burnett, USA</i>	
Turner, Lt.	72
<i>Harold J. Seisel Co., Inc.</i>	
University of California, Berkeley	82 & 84
University of Petroleum & Minerals....	78
<i>Saudi Arabian Educational Mission</i>	
Vernitron Medical Products, Inc.	84
<i>Alden Advertising Agency</i>	
Wiley, John E. & Sons, Inc.	85
<i>605 Advertising Group</i>	
Woodcraft Supply Corp.	78
<i>Myers Associates</i>	

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