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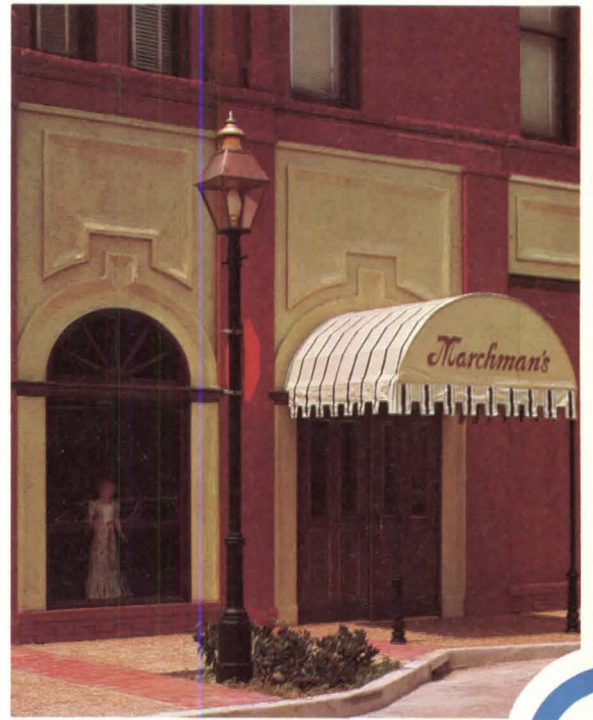
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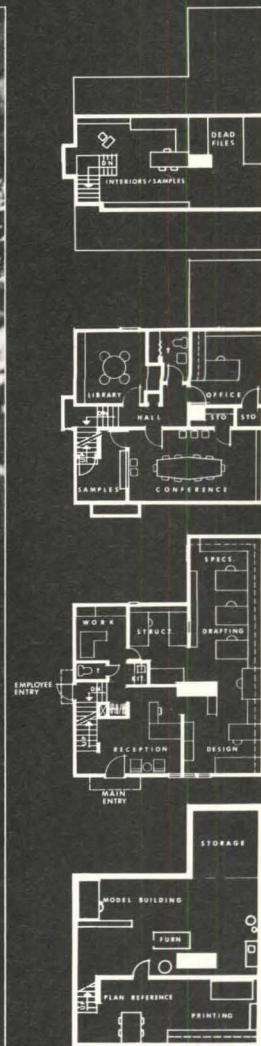
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A Summary of Recent AIA Testimony on National Legislation

AIA representatives in recent months have testified before Congress and made recommendations about legislation which, in the view of Institute leadership, will affect the welfare of both the profession and the nation. Some of these endeavors have met with varying degrees of success; others have suffered varying degrees of defeat. The final outcome of much of the legislation awaits action by Congress after it reconvenes this month.

- **Building Energy Conservation Standards Act of 1975:** AIA's testimony opposed mandatory energy conservation standards and supported federally developed and promulgated performance standards with voluntary state adoption. Action: AIA recommendations included in House committee-approved bill.
- **Energy Conservation in Buildings Demonstration Act of 1975:** AIA testimony supported a demonstration program of retrofitting selected public buildings for energy conservation. Action: pending.
- **Energy Conservation and Conversion Act of 1975:** AIA recommends tax incentives for energy-efficient design and retrofitting of new and existing buildings. Action: pending.
- **Emergency Housing Act of 1975/Building Energy Conservation Standards:** AIA testimony supported emergency housing provisions and opposed inclusion of prescriptive energy standards. Action: The Emergency Homeowners' Relief Act, which became Public Law 94-50 when signed by President Ford on July 2, does not include energy standards.
- **State and Local Public Works Program:** AIA testimony supported a \$5 billion federal grants program for state and local public works. Its suggestion concerning consideration of energy conservation was not included in the bill. Action: conference pending.
- **Common Situs Picketing:** AIA opposes this legislation, which would legalize secondary boycotts at construction sites. Action: passed by the House; Senate

action scheduled for this month.

- **Public Buildings Cooperative Use Act of 1975:** This bill, which among other things requires adaptive, multiuse of public buildings and the preservation of public buildings of historic and architectural significance where feasible, was supported by AIA testimony. AIA proposed that it be amended to require applicants for funds under the program to give due consideration to the achievement of energy efficiency in the planning and design of buildings and facilities. Action: AIA proposed amendments were included in the Senate committee-approved bill.
- **Land Use and Resources Conservation Act:** According to AIA testimony, this legislation would have "alleviated many problems related to national growth and development." Opponents said that the bill would have provided unwarranted federal intrusion into state and local decision making. Action: The House committee defeated a motion to report the bill for consideration by the full House. It is doubtful when another land use bill will be introduced.
- **Alpine Lakes National Recreation Area:** AIA testimony supported the creation of the Alpine Lakes Wilderness and National Recreation Area in Washington State. Action: pending.
- **Master Plan for Capitol Hill:** AIA supported the inclusion of \$350,000 in the budget of the Architect of the Capitol for the preparation of a master plan for Capitol Hill in Washington, D.C. Action: signed by the President on July 25.
- **Department of Housing and Urban Development Appropriations:** In support of full funding for housing and community development, AIA recommended \$5 million for the National Institute of Building Sciences and \$150 million for Section 701 planning. Action: in conference.
- **Department of Labor/Health, Education and Welfare Appropriations:** AIA testimony urged \$15 million for community design centers. Action: pending.
- **Metric Conversion Act of 1975:** Testimony by AIA supported planned conversion to the metric system and representation by the construction industry on a national metric board. Action: The House committee-approved bill was amended to

include construction industry representation on the metric board.

- **Historic Preservation:** AIA testimony supported the inclusion of \$24.4 million for historic preservation grants in Interior Department appropriations and \$3.75 million for an expanded Historic American Buildings Survey. Action: pending.

Housing Competition Sponsored by Chapter

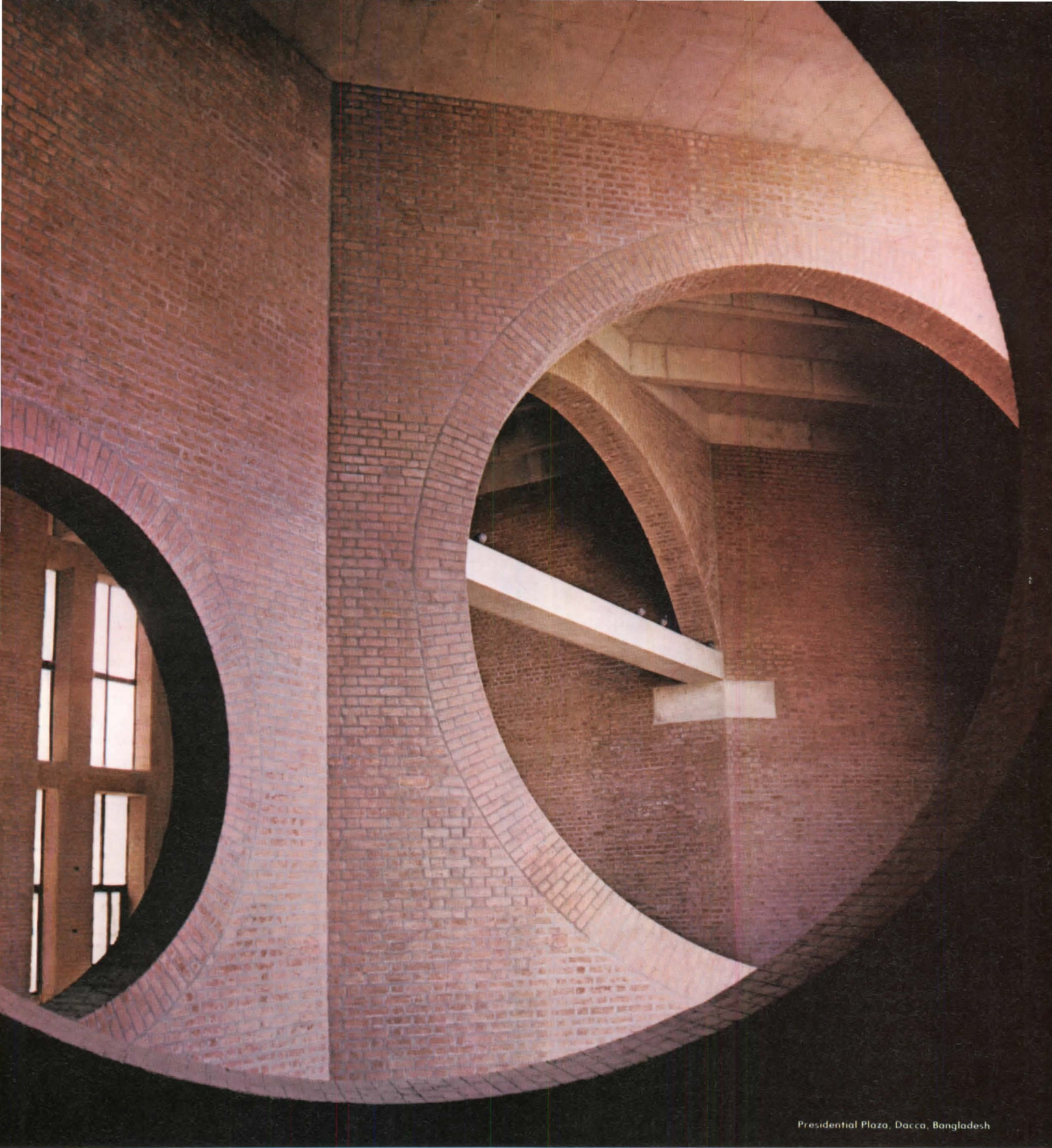
The jury in a recent architectural design competition for a new residential community for the elderly to be built in Trenton, N.J., was unanimous in its selection of the firm of Geddes Brecher Qualls Cunningham as first prize winner. "The architect," said the jury, "has a clear understanding of urban development patterns and has designed a logical sequence of development activities for the total site."

The competition, limited to corporate members of the Central chapter of the New Jersey Society of Architects, was sponsored by the Architects Housing Co., a nonprofit corporation established by the chapter. The aim of the corporation is "to achieve good housing design that will be a continuing benefit to its tenants and its community and a continuing credit to the profession." The sponsor views the competition as a "long step forward toward that goal."

Second prize winner of the competition was Fred Travisano, AIA, who collaborated with landscape architect Lee Weintraub; third prize winner was John S. Rhoads, AIA, and Bernard Rothzeit, AIA. Honorable mentions went to Harrison Fraker; Robert W. Meyer; George H. Pearson, AIA, and Ismail I. Rifaat and Robert W. Miller, AIA.

The jury members were Theodore Liebman, AIA, chairman; Samuel M. Brody, FAIA; Harold Edelman, AIA, and Sandra Howell. William D. Wilson, FAIA, was professional adviser.

Financing for the project will be through the New Jersey Housing Finance Agency, with assistance from the Department of Housing and Urban Development, under Section 8 of the Housing and Community Development Act of 1974.



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AIA JOURNAL/SEPTEMBER 1975 5

Awards: GSA Honors Ten Federal Projects

In ceremonies held at the Renwick Gallery in Washington, D.C., the General Services Administration honored 10 federal projects in its second biennial design awards program. Arthur F. Sampson, GSA administrator, said that the program's purpose is to recognize projects which contributed to the enhancement of the environment and to encourage "humane and responsible designs by the architectural community and the construction industry."

Among the projects to receive commendations was a 1974 AIA honor award winner: the restoration of the Renwick Gallery. AIA fellows Hugh Newell Jacobsen and John Carl Warnecke were praised by the GSA jury for the "sensitive restoration of the building's original design."

Another restoration project to win an award was the Landmark Center for the St. Paul-Ramsey Arts and Science Council, St. Paul, Minn. (see Mar. 1974, p.



32). This historic structure, formerly a U.S. courthouse, was transferred by GSA to the local nonprofit organization. The firms of Stahl/Bennett Inc., of Boston, and Winsor/Faricy, of St. Paul, were praised for the "effective way the building accommodates offices, exhibition areas, restaurants and shops."

Commended for its "approach to rehabilitation through humane design," the Federal Youth Center, Pleasanton, Calif., was another winner. The co-educational correction center is the design of Frank L. Hope & Associates.

The Federal Building, Portland, Ore., was singled out for its "simplicity, dignity and elegance," winning a commendation for Skidmore, Owings & Merrill. Also commended was the U.S. Pavilion for Expo '74, Spokane, Wash., which has now been transferred to the city for use as part of a park. Its "striking appearance, function and continued use" won praise for Naramore, Bain, Brady & Johanson.

The lion and tiger exhibit at the National Zoological Park in Washington, D.C., won an award for Faulkner, Fryer & Vanderpool, and the firm was cited for its careful consideration of the "needs of

the animals and the interests of the viewing public."

Other winners were architects Dennis Green of Denver and Dennis W. Neifert of Bellevue, Wash., for space planning of the Law Enforcement Assistance Administration's Andover Building in Seattle, and GSA architect Ronald S. Wallace of San Francisco, for the remodeling of a cafeteria in a federal agency complex in Los Angeles.

Alexander Calder's sculpture "Flamingo" sited in Chicago won an award, as did *Day on Wheels*, a publication that contains unedited reports submitted by GSA trainees who spent one workday confined to a wheelchair. Commended were Walter A. Meisen, AIA, acting commissioner of GSA's public building services, who originated the concept, and Dianne Walters of GSA who was editor and illustrator.

Jurors were Joseph Carreiro, department of design, Cornell University; Louis de Moll, FAIA, president-elect of AIA; M. Paul Friedberg, landscape architect; Joseph A. Rorick, director of design and engineering, IBM, and Paula B. Wells, of Bell/Galyardt/Wells, Rapid City, S.D.

Awards: 27 'Homes For Better Living'

The oldest and largest residential design awards program in the country is sponsored annually by AIA and *House and Home* magazine. The so-called Homes for Better Living awards program was established 20 years ago to encourage collaboration between architects and builders.

The program recognizes excellent residential design in three categories: custom houses designed for specific clients, merchant-built houses designed for sale and multifamily housing.

More than over 300 entries were sub-

mitted in the 1975 program, and 27 were selected for special recognition. Award certificates were presented to 11 first honor and 16 award of merit recipients. Winning projects will be published in *House & Home*.

Three of the award winners are located in San Francisco and six other winning designs are sited elsewhere in California. California is followed closely by New York State, where there are six award winners.

The California winners are:

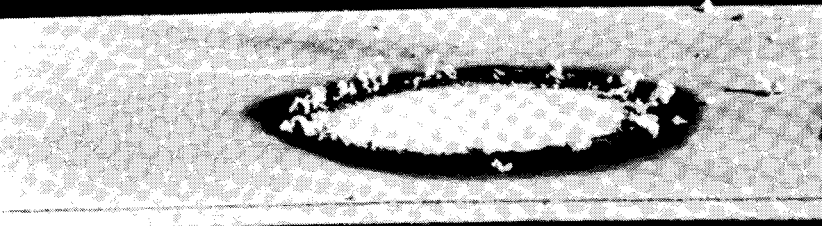
- Residence in Sausalito (custom-designed category, first honor award: Natkin & Weber, below).
- Multifamily project, Newport Beach (multifamily category, first honor award: Fisher-Friedman Associates).
- Volume-built cabins, The Sea Ranch (merchant-built category, first honor award: Obie G. Bowman).
- Residence, San Francisco (custom-designed category, award of merit: Backen, Arrigoni & Ross).
- Apartment building, San Francisco (multifamily category, award of merit: Backen, Arrigoni & Ross).
- Multibuilding project, San Mateo (multifamily category, award of merit: Backen, Arrigoni & Ross).
- Attached housing, Placer County (multifamily category, award of merit: Bull Field Volkmann Stockwell).
- Multifamily project, San Francisco (multifamily category, award of merit: Chan/Rader & Associates).
- Multibuilding project, Foster City (multifamily category: award of merit).

The New York State award-winning projects are:

- Vacation home, Westhampton (custom-designed category, first honor award: Hobart Betts, AIA).
- Remodeled home, Bedford (custom-designed category, first honor award: Myron Goldfinger, AIA).



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- Residence, Westchester County (custom-designed category, award of merit: Alfredo De Vido, AIA).
 - Vacation home, Lake Katonah (custom-designed category, award of merit: Myron Goldfinger, AIA).
 - Residence, Pound Ridge (custom-designed category, award of merit: Christopher H.L. Owen).
 - Vacation home, Mamaroneck (custom-designed category, award of merit: Bartholomew Voorsanger, AIA).
- Other winners:
- Apartment building, Branford, Conn. (multifamily category, first honor award: Dehar Buchanan Associates).
 - Attached housing, Ponte Vedra Beach, Fla. (multifamily category, award of merit: Freedman/Clements/Rumpel).
 - Multifamily renovation, Boston (multifamily category, first honor award: Gelardin/Bruner/Cott, Inc.).
 - Residence, Harbor Springs, Mich. (custom-designed category, first honor award: Richard Meier & Associates).
 - Multifamily renovation, Princeton, N.J. (multifamily category, award of merit: Short & Ford).
 - Residence, Pennsylvania (custom-designed category, first honor award: Hugh Newell Jacobsen, FAIA).
 - Multifamily building, Houston (multifamily category, first honor award: Fisher-Friedman Associates).
 - Attached housing, Houston (multifamily category, award of merit).
 - Residence, Seattle (custom-designed category, first honor award: Hobbs Fukui Associates).
 - Vacation home, Solon Spring, Wis. (custom-designed category, award of merit: Parker Klein Associates).
 - Renovation, southern Wisconsin (custom-designed category, award of merit: Stanley Tigerman & Associates).
 - Housing units, Finegayan, Guam (multifamily category, award of merit: Mackinlay/Winnacker/McNeil).

The jury for custom-designed houses consisted of William Kessler, FAIA, (chairman); Willis Mills Jr., AIA; James Nagle, AIA; Daniel Solomon, AIA, and Walter Wagner, AIA. Merchant-built and multifamily entries were judged by Ray Crites, FAIA (chairman); Richard Aeck, FAIA; John Lawson, AIA; Donald Sandy Jr., AIA; Clarence Kettler, builder, Gaithersburg, Md.; June Vollman, associate editor of *House & Home*, and William Howe, student, Boston Architectural Center.

AIA Staff Changes

Richard M. Kalt, formerly associated with Seymour Auerback, FAIA, of Washington, D.C., where his primary responsibility was assisting in the design and production phases of the National Visitor Center, has been appointed assistant director

of the codes and regulations center at AIA headquarters. A graduate in architecture at the University of Michigan, he also holds an advanced degree in architecture from the Università d'Architettura, Venice, Italy.

Kevin Green has been appointed assistant director of public relations publications for AIA.

Results of Convention User Reaction Tests

One of the most unusual features of the 1975 AIA convention was an experiment testing the accuracy with which architects predict user responses to buildings when compared to nonarchitects.

The experiment was conceived and designed by Don Conway, AIA, director of research programs at the Institute, and John Eberhard, AIA, president of the AIA Research Corporation. Seven architectural spaces in Atlanta were chosen as testing grounds.

In March, Mary Griffin of Harvard's Graduate School of Design began two months of interviewing over 500 people at the spaces, asking them to fill out the questionnaires. In May, architects and nonarchitects attending the AIA convention toured the chosen spaces and filled out the same questionnaires, rating the spaces for liveliness, esthetics, etc.

A comparison of responses to the questionnaires by architects and nonarchitects showed that in answers to 56 questions, architects' assessment of user responses was correct 19 times (34 percent), while nonarchitects were on course 22 times (39 percent).

For a remaining 37 questions, the answers of architects reflected users' reactions 11 times more accurately than those of nonarchitects. The nonarchitects were eight times closer to the target.

Mary Griffin's interviews with users were made into a film, which was shown at the convention and gave a feel of how people actually view and use the buildings. Said keynote speaker, Heinz Von Foerster, "How difficult it is to cure a blind spot; if you have a blind spot, you don't see." William Caudill, FAIA, said, in giving a wrap-up of the convention, "Designers see the world very differently from users. We must find a way for our buildings and our users to fall in love with each other."

Correction

The name of Samuel T. Balen, AIA, was incorrectly spelled in the August issue in a news story in which it was reported that he has been appointed national director of professional development for the National Council of Architectural Registration Boards. We regret the error.

Response to Tall Buildings Explored

Some people who have seen the movie "The Towering Inferno" may have qualms about living or working in a highrise structure, fearing that in an emergency they may be trampled to death. They were reassured by E. L. Quarantelli of Ohio State University's disaster research center who told participants at a symposium on "Human Response to Tall Buildings," held in Chicago recently, that research conducted over the past 25 years "clearly indicates that human behavior under stress is generally controlled, rational, adaptive. Panic behavior does occur, but it is the exception, not the rule. It is only in very rare instances that panic takes the form of a mass of individuals trampling over one another in a wild stampede."

However human beings respond in a crisis, the fear of being trapped during an emergency is a real one. Participants at the symposium, held under the sponsorship of AIA and the Joint Committee on Tall Buildings, spent a great deal of time discussing ways to design, build and manage tall buildings so that fear can be alleviated.

Dr. Lucille Nahemow, a psychologist at the Philadelphia Geriatric Center, said that the elderly more than most people fear entrapment, because of their incapacities. "Their sense of smell is less acute, their hearing diminished, so they especially need a sense of security. Many elderly residents of a tall building have expressed a desire for a second exit, a back door to their apartment," she said.

Gerda R. Wekerle, on the faculty of York University in Toronto, told the audience of architects, social scientists, engineers, building managers and government representatives, about research she had conducted regarding a different class of highrise users—young singles. In a study of residents of Sandburg Village, a highrise apartment development in Chicago, where the residents were largely upper middle class and 85 percent were single, she found that they liked their own units but were less satisfied with things over which they have little control: security and maintenance of common areas, and management regulations.

In large housing projects, such as Sandburg Village, Ms. Wekerle said that people respond to bureaucratic management by "crimes of low visibility" against facilities and buildings, considering such action fair retribution against an impersonal organization. In turn, she said, management comes to expect "destructive and antisocial acts and feels justified in initiating preventive measures and formal control mechanisms. The actions to avoid projected exploitation reinforce the tenants' lack of trust of management."

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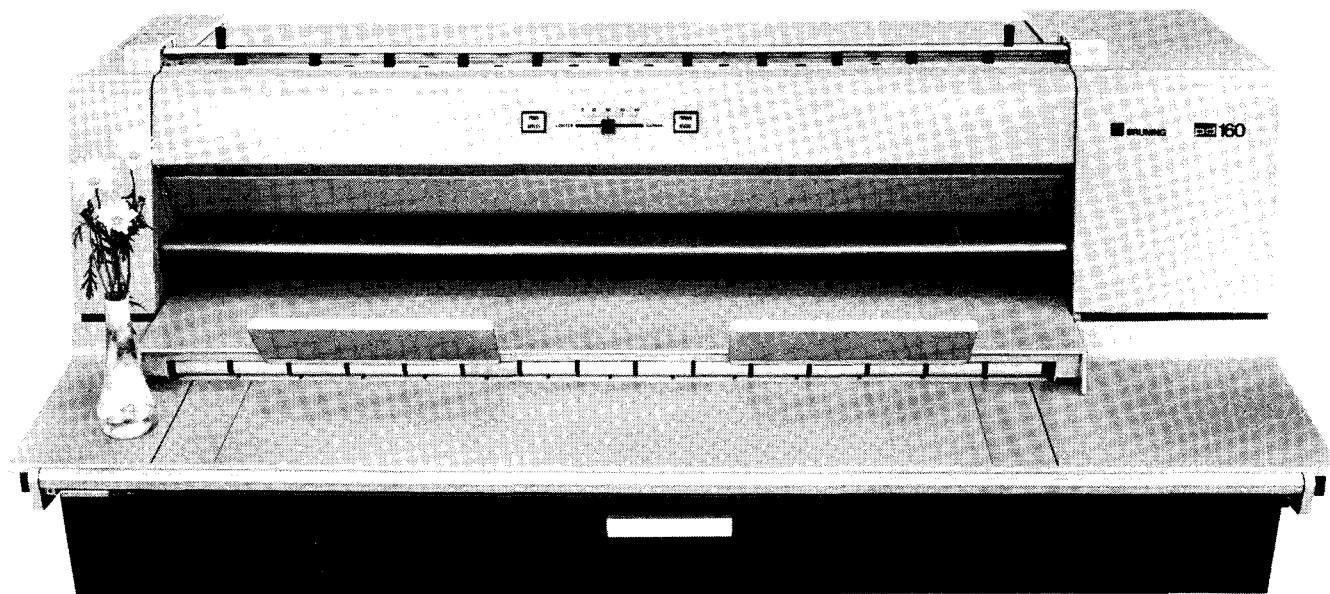


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County School Administrators Apply "Cheaper-by-the-Dozen" Economics to HVAC Budgets



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Tucker, Georgia. If it worked for copy books and pencils, would it also work for HVAC systems?

"It" here refers to the standardization and quantity purchasing approach to lower costs and the question was one posed by the De Kalb County School Board at the start of a \$50 million modernization program. What the answer would be was not at all clear at the time. While standardized HVAC designs and quantity buying were common enough practices in tract-house residential projects, their applicability to large-scale institutional programs was a somewhat different matter.

What prompted the query in the first place was that the administrators were caught in a squeeze between lofty ideals and modest budgets. Attuned to today's energy realities, they wanted to introduce heat recovery HVAC into school operations. But they also wanted to achieve this premium energy conserva-

tion concept at or near the installed cost originally budgeted for the HVAC item—a definitely non-premium \$4 per square foot.

The officials saw that if they could find a system that could be used in most or all of the individual buildings, they could improve the cost picture considerably by quantity buying. Strategic use of purchasing power might well be expected of a school board with a reputation for adroit fiscal management. And their latest venture does nothing to tarnish the board's image in the eyes of the citizenry. Despite the huge sums to be disbursed, financing was arranged with zero increase in the tax rate.

With the confidence that only such a record of success can bring, the board began its search for a versatile HVAC system. After months of evaluation studies, the trail led to electric water-to-air reverse-cycle air conditioning

units operating in a closed hydronic loop with heat recovery capabilities.

Against the Trend. Two major considerations underlay the board's decision to go before the voters on May 8, 1973 with their ambitious school bond proposal. First there was the pressing need for added space to accommodate a continuing increase in student population. In contrast to most other regions of the U.S., which at the time were already trending toward leveled-off and dropping school enrollments, De Kalb's demographic projections indicated that annual admissions would swell by 6000 in the four years ending in 1977. New structures would have to be built, therefore, and some existing buildings enlarged.

The second and perhaps more important reason for the bond proposal was that the long-apparent need to modernize large portions of the existing school system was developing some urgency. "Over more than two decades of rapid growth in the county, we had put up a number of new schools," explains Dr. William H. Adams, the board's assistant superintendent for development. "Those schools rated with the best in the country, superbly designed and equipped for the latest innovations in teaching. But we also had a great many

*One of a series of reports giving recognition to the efforts of architects and engineers on behalf of resource conservation.

Engineers brought the energy-conserving HVAC system in at an installed cost of \$4.10 per square foot. Next lowest bid was 10 percent higher even without heat recovery capability.

outmoded although structurally sound buildings 40 years old or more. So quality learning environments and facilities were available to De Kalb students, but not equally in all sectors of the county. We were well aware of the inequities."

Parents were aware of them, too, and were becoming increasingly vocal about the situation at open school board meetings. The consensus clearly indicated that learning opportunities should not simply be a matter of where a child's home happened to be—in the neighborhood of new construction or old.

Parental Guidance. A number of studies made by professional groups of teachers establish the dependence of the learning process on the students' physical environment. Probably few of the parents had access to these studies but they seemed to know from instinct precisely what had to be done. A "Goals Study" involving thousands of De Kalb parents was undertaken in 1972 to determine the capital outlay needs for the school system. The survey results placed the following high-priority directives before the board:

1. Replace or modernize obsolete structures and install air conditioning in all buildings.



Architect Ralph E. Slay helps reduce the outbreak of a familiar seasonal malady among the young ones of De Kalb County.



To school administrator Dr. W. H. Adams, adroit fiscal management means buying pencils and HVAC systems at a discount.

2. Expand special education programs.
3. Upgrade and enlarge libraries.
4. Widen availability of pre-school classes.
5. Improve facilities for music, art, health and physical education, remedial reading and speech therapy.
6. Provide additional laboratory space in high schools.
7. Re-roof buildings as needed.

Acting under such unequivocal mandates from its constituents, the board got quick approval of its bond issue on the first vote.

Much Work. While the funds realized from the bond sale seem generous enough, there was much work to be done for the \$50 million. With a population of more than one-half million, De Kalb has a student body of about 90,000. The school system is extraordinarily self-sufficient even operating its own fleet of 230 buses. The De Kalb County Junior College is the third largest school body in the state.

The projects listed for completion over the duration of the four-year construction period include seven new grade and two new high schools at an overall cost of \$16.5 million. Three grade schools are getting major additions costing over \$5 million with smaller expansions slated for 14 more schools.

Substantial funds are allocated to transforming the cramped old-style libraries in 73 buildings into modern "media centers". These will feature conveniences such as study carrels, access to TV for viewing recorded instructional programs, and filmstrip projectors and viewers. Laboratory facilities in all high schools are being enlarged and refurbished. Types of labs desig-

nated for upgrading include those devoted to graphic arts, science, business office education, home economics, industrial arts, reading and languages.

More Than Esthetics. In the face of mounting financial pressures, school boards across the country are beginning to call on architects as much for aid in stretching available funds as for traditional esthetics. Ideally, administrators must work as a team of creative fiscal managers if they are to produce exceptional environments on low budgets. They would be expected, for example, to give close attention to an \$8 million item for climate control which appears on De Kalb's list. Although spread over 54 schools, including the 46 grade schools, the sum is considerable and at first view might seem worthy of classification as a "luxury" and open to some debate.

"Arguments over that subject ended years ago," says architect Ralph E. Slay of Bothwell, Jenkins, Slay & Associates. "In Georgia, as a matter of fact, state law requires that summertime cooling be provided in any newly built school with 8,000 square feet or more of floor space. There are many logical reasons for such legislation, one being the proposed increased use of school property during summer rather than letting it lie idle.

"Another is the malady called 'spring fever' once thought to be caused by mysterious body changes in the young. Air conditioning provides a miraculous cure for this, enabling children to perform in the classroom as well in hot weather as in cold." The job of the architect, therefore, was not to judge the intrinsic worth of conditioned air, but how to supply it as economically as possible.



Engineer Richard F. Pressley tries to find ways to limit the number of occasions on which the HVAC wheel must be reinvented.

A Certain Sameness. As the designers approached the HVAC portions of the massive project, the six high schools came under review first. These would be diverse structures of different sizes, shapes and room layouts. They would be intended for different numbers of occupants. Most important, there would be many different types of interior space; not only classrooms, but gymnasiums, auditoriums, laboratories of all kinds, etc. Each high school would have to be treated individually and custom-fitted with its own special HVAC system.

The economic picture became suddenly brighter when the designers turned their attention to the grade schools, those that were to be newly built as well as those slated for renovation. These were as similar as the high schools were different. Most of their space was for classrooms intended for highly predictable occupancy and activities. Structural formats were the same, consisting of one or more wings of double-loaded corridors; i.e., long hallways with classrooms on both sides. Recognizing the cost-saving potential of the situation, administrators and designers set out to look for one HVAC system that would work for all 46 grade schools.

De Kalb's advantage here was that it had a centralized county-wide school system. Elsewhere in the U.S., a county of this size might be divided into 20 or more autonomous school districts supervised by locally elected school boards. Faced with the prospect of add-

ing air conditioning to their schools, 20 districts could come up with 20 different HVAC systems. Each would be the result of an independent feasibility study. The unavoidable duplication of effort is a wasteful exercise that some call "reinventing the wheel."

HVAC System. To meet all grade school air conditioning needs, the De Kalb's design team invented the wheel just once—in the form of a closed-loop water-to-air heat pump system. "From the architectural standpoint," says Ralph Slay, "it is an easy system to accommodate. We did not, for example, have to build separate mechanical rooms nor cut into the outside walls of the structures. All that is required in both new and renovated schools is a suspended fire-rated acoustical tile ceiling in the corridors. The space above the ceiling is about 18 inches deep, houses virtually all of the mechanical equipment and serves as a plenum for return air."

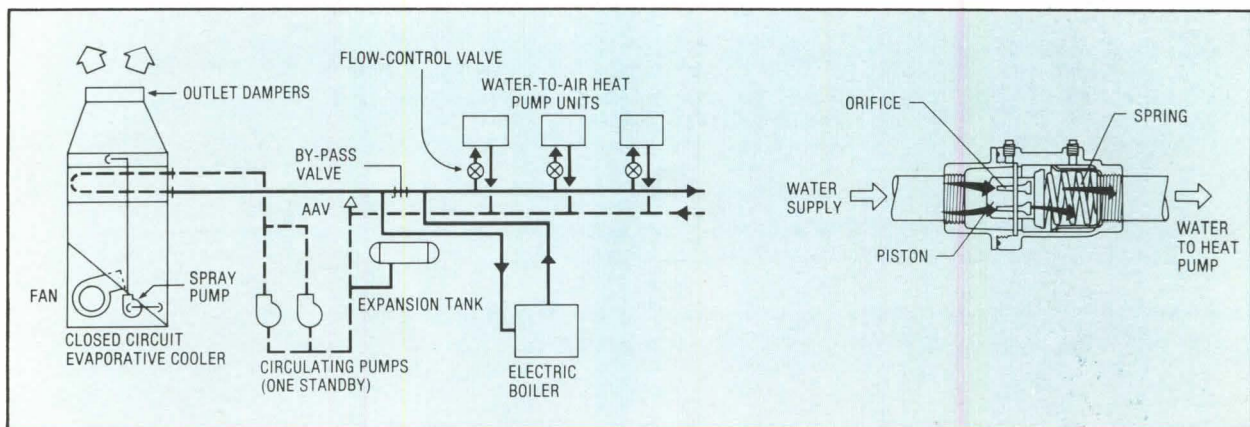
Each classroom or other space is served by its own individual reverse-cycle heating and cooling unit installed nearby within the corridor ceiling. Two short lengths of air duct run between the unit and outlet grilles in the classroom wall closest to it.

The reverse-cycle air conditioning units are connected into a non-refrigerated central water system which is maintained within an approximate temperature range of 60 to 90F. Each unit contains a complete refrigeration circuit (compressor and two heat exchang-

ers), a fan for circulating room air and controls for reversing operation to provide either heating or cooling as needed. One heat exchanger coil heats or cools room air, while the other coil transfers heat into or out of the closed water loop. An independent heating/cooling thermostat mounted on the wall of each room determines the mode of operation of the unit associated with it.

Energy Conservation. A major advantage of the closed-loop, water-to-air system is its ability to recover excess heat energy from one zone and transfer it to another that requires it. Between seasons, for example, some parts of a building require cooling while others need heating. Hence, some heat pumps will be operating in the cooling mode, depositing heat in the hydronic loop. At the same time, other heat pumps will be functioning in the heating mode, extracting heat from the loop to warm the rooms calling for heat. When heating and cooling requirements are essentially in balance, the building may be said to heat and cool itself.

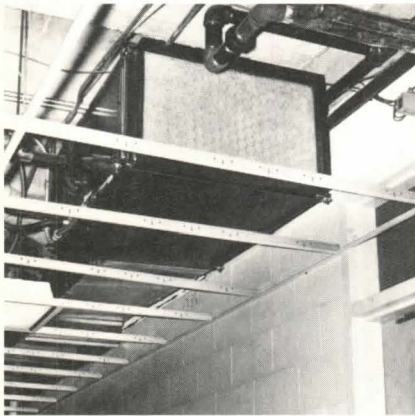
Under balanced conditions, the system draws only enough electric energy to run the reverse-cycle air conditioning units and the loop water circulating pump. As outdoor temperatures rise, more heat pumps automatically switch to the cooling mode and add to the amount of heat being rejected into the loop. Water temperatures then begin to approach the 90F mark at which the fans and spray pumps of a closed circuit cooler or water tower are staged



SCHEMATIC DIAGRAM OF HVAC SYSTEM FOR ALLGOOD GRADE SCHOOL

Each classroom is supplied with warm or cool air by an electric heat pump unit rated at 1½ to 3 tons and installed above a corridor ceiling. A simple direct-return pipe loop carrying constantly circulating water connects all units. Units on cooling reject heat into the loop while those on heating take heat from it. Normal water temperature range is between 60F and 90F. At the upper limit of temperature, the evaporative cooler is activated to dissipate heat into the atmosphere. At the lower limit, the electric boiler is energized for supplementary heat. Crucial to the efficient operation of this system is balanced flow;

i.e. regulation of water circulation in such a way that each heat pump receives the flow rate for which it was designed. And flow rates must be maintained despite surges and drops in water pressure that unavoidably occur. Balance is assured in this system by installation of an automatic flow control valve in the inlet to each unit. In this valve (see inset), flow is regulated by triangular shaped grooves in a spring-loaded piston. When water pressure in the loop increases, the spring contracts closing off part of the orifice area. When pressure decreases, the spring expands and orifice area increases.



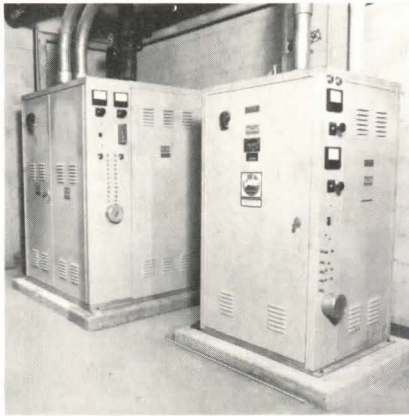
Because installation of system components takes place in corridor spaces, renovation work proceeded without interrupting classes.

into operation. Excess heat is thus dissipated as required to keep water temperature below the allowable maximum.

Fit for Retrofit. In colder weather, most or all of the air conditioning units may be extracting heat from the loop. Heat must be obtained from some other source to maintain the temperature of the loop water above the 60F minimum. This additional heat can be furnished from within the system itself or from outside with equal results, as explained by consulting engineer Richard F. Pressley of Mechanical Engineering, Inc.

"In the new grade schools we add heat by means of a boiler installed directly in the water loop. But it is in the retrofit situations that the flexibility of the water-to-air system really becomes apparent. If the existing heating system in an old school is in good working order, we leave it there in place completely intact. In winter, then, the old system continues to operate at some reduced level to automatically furnish whatever heat is needed over and above the capability of the new HVAC system. Salvaging the old system saves us the cost of tearing it out and buying a new boiler, controls and fittings. In short, the water-to-air system doesn't care about where additional heat comes from."

Fair Share. The success of any hydronic installation depends greatly on each station along the pipe loop receiving its fair share of the circulating water. True even of small residential hot water heating layouts, this is an especially critical factor for reverse-cycle air conditioning units which have very specific gallons-per-minute needs. Engineers, therefore, take pains to insure proper distribution of water flow despite unpredictable fluctuations. Reverse return pipe connections are effective measures as is the use of metering de-



Larger of Allgood's electric boilers is in heat pump loop. Smaller replaces old boiler for unit ventilators of original system.

vices and balancing valves.

"But these add cost and complexity and require attention, all of which we were trying to avoid," says Dick Pressley. "We wanted to put balancing on an automatic basis which would be more compatible with the aim of coming up with a single system that would fit into all situations."

A simple valve (see box) provided the solution. This spring-loaded device installed in the water inlet holds flow constant regardless of substantial pressure changes and without manual adjustments.

Bids and Benefits. A Bill of Materials, written after the generic type of HVAC system for the grade schools was agreed upon, revealed some big numbers. A total of 1800 heat pump units, for example, was needed. Quantities for all other items were proportionately high. Hoping for the best possible quantity discounts, the administrators decided to buy the entire lot of each particular item from one manufacturer chosen on the basis of open bidding.

Single-source purchasing has had other benefits besides low materials cost. Construction costs were lowered as the trades became familiar with installing one type of equipment. Such familiarity is of very great help also to maintenance personnel in servicing and repairing the systems. Only a modest inventory of spare parts must be kept on hand for all 46 buildings.

Economic considerations aside, the De Kalb County modernization plan

DESIGN SUMMARY*

GENERAL DESCRIPTION:

Area: 44,346 sq ft
Volume: 450,000 cu ft
Number of floors: one
Number of rooms: 30
Types of rooms: classrooms, library, cafeteria, kitchen, administrative offices
Number of occupants: 850

CONSTRUCTION DETAILS:

Glass: single
Exterior walls: brick and block cavity wall; U-factor: 0.31
Roof and ceilings: built-up tar and gravel on 2-in. rigid insulation (R-7), poured-in-place pan joist concrete deck, suspended acoustical tile ceiling; U-factor: 0.1
Floors: concrete slab on grade
Gross exposed wall area: 18,000 sq ft
Glass area: 7200 sq ft

ENVIRONMENTAL DESIGN CONDITIONS:

Heating:
Heat loss Btuh: 1,900,000
Normal degree days: 2826
Ventilation requirements: 6500 cfm
Design conditions: 18F outdoors; 68F indoors*
Cooling:
Heat gain Btuh: 1,700,000
Ventilation requirements: 6500 cfm
Design conditions: 95F dbt, 76F wbt outdoors; 78F, 50% rh indoors

LIGHTING:

Levels in footcandles: 50-75
Levels in watts/sq ft: 2-3
Type: fluorescent

CONNECTED LOADS:

Heating & Cooling (140 tons)	655 kw
Circulating Pump	20 kw
Water Tower	25 kw
Lighting & misc.	200 kw
TOTAL	900 kw

PERSONNEL:

Owner: De Kalb County Board of Education
Architects: Bothwell, Jenkins, Slay & Associates
Consulting Engineers: Mechanical Engineering, Inc.
General Contractor: Pitts Industrial Piping, Inc.
Electrical Contractor: Weir & Knight, Inc.
Mechanical Contractor: Pitts Industrial Piping, Inc.
Utility: Georgia Power Company

*For the Allgood Elementary School

has begun to show measurable results as it moves toward completion. Improvements to the physical environment for education can already be seen and felt with good effect on student, parent and teacher. And a most dramatic result of all of this is the abrupt drop in the number of reported cases of chronic spring fever.

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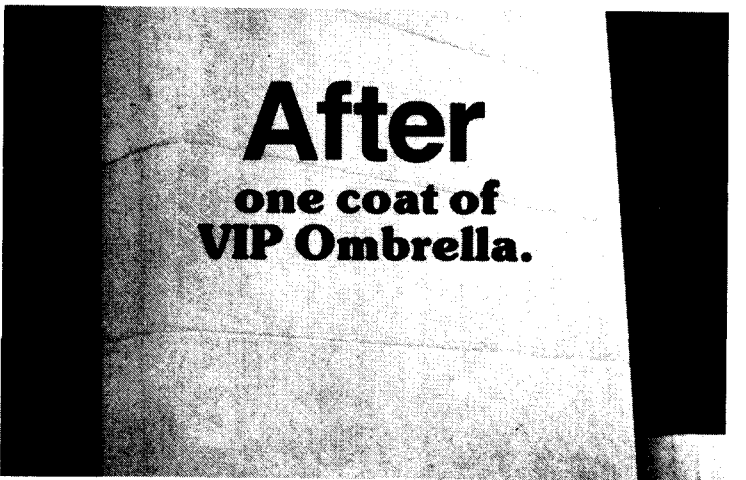
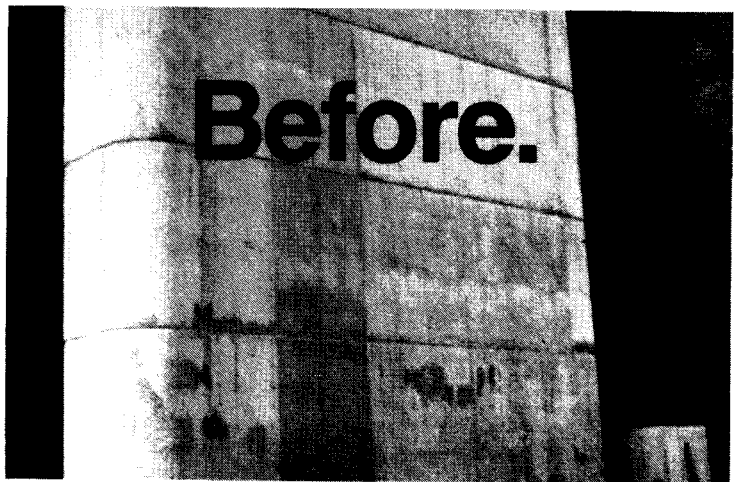
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New Roles—and New Rules?—for The Profession

A major debate on the future of the profession has been quietly building. It began with a search for guidelines for architects' involvement in design-build-bid situations and other forms of combined design and construction services. It will likely culminate in a major re-examination of AIA's ethical standards, particularly those related to advertising and contracting, at the 1976 convention.

Such a re-examination already is underway at the board level, and last month was extended to AIA components through a questionnaire sent to their presidents and executives on behalf of the board. Each component was asked to hold a meeting to discuss the ethical standards, complete a questionnaire on the basis of the discussion and return it by November 1. The returns will be compiled and reviewed at 1976 grassroots meetings, after which the board will decide whether to propose changes in the standards to the convention. The debate has its roots in the rising expectations and demands of building clients for closer control, if not outright guarantees, of project cost and time of delivery. Such demands have risen with the decline in the economy but have been building for some years.

They have led an increasing number of clients into the hands of combined design-construction entities that commit themselves to time-cost guarantees. The so-called "package dealers" that have long nettled the profession have expanded their operations from industrial and commercial buildings to health facilities and other fields. And now educational clients, especially in the Midwest, are turning to the design-build-bid system to achieve a similar form of single-point responsibility for project delivery.

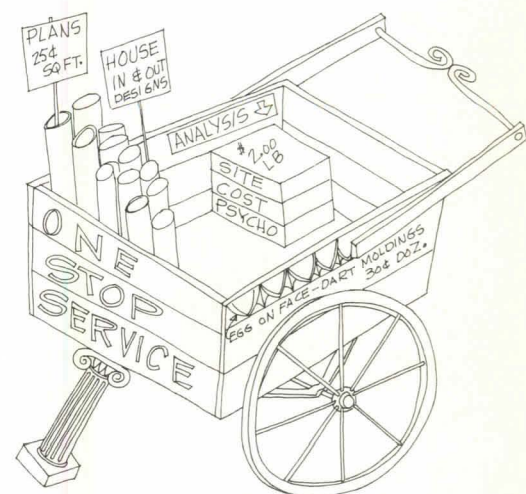
An AIA task force last year produced a 32-page report on design-build-bid, pointing out pitfalls in the system but

recommending a set of standards and procedures to be followed when a client insists on its use. The report was followed in February by a memo from the board and AIA legal counsel on ethical concerns that can arise when architects are involved in design-build-bid situations.

Such involvement can take several forms. One is for an architect to be the administrator or overall consultant on a design-build-bid project, establishing the program on which combined bids are taken and perhaps helping the client evaluate the submissions. There are virtually no ethical inhibitions to an architect's playing this role. Things get stickier when an architect is involved with one of the design-build entities doing the bidding. Here the February memo's basic advice is that an architect joining with a contractor in submitting a bid make clear to the building owner-to-be that the contractor is the architect's client rather than the owner-to-be.

As this suggests, large-scale involvement of architects in design-build-bid entities and other forms of "packaging" design and construction services could wreak significant changes in the architect's traditional role. In most such situations he is no longer the client's agent and overseer and no longer involved in programming and other predesign decisions.

In many ways, in fact, he becomes less a professional and more a merchant or purveyor of buildings as products. As the



February memo says, "when an architect commits himself contractually to produce an end product, he invites the courts and other governmental agencies to treat him as a commercially oriented businessman and not as a professional; he may be subjected to strict liability and other disadvantages." In fact, "such activities may be dealt with as involving warranties and consequently may not be covered by professional liability insurance."

Many of those pressing for a change in the ethical standards are practitioners in fields heavily invaded by the packagers who feel that the standards inhibit them from competing effectively. John C. Reynolds, AIA, of Houston, a member of the architecture for commerce and industry committee, offered this equation at the July meeting of the environment and design commission in Aspen, Colo.:

"Merchant equals merchandising equals selling." Said Reynolds, "We are all selling every day we're in practice—selling the idea that we're better equipped, more experienced, smarter, do better design and all around better guys than the dozen or so others who are trying for the same commission. We do it by every means possible short of paid advertising. . . .

"We sell services, yes, but let's not fool ourselves, we are also selling a product. . . . We try to convince a potential client that we can *produce* (note the word) an end product that will be better than our competitors, just as Pepsodent tells us they get our teeth whiter than Brand X.

"The tragedy is that by trying to be 'pure' professionals (whatever they are) we have, over the years, surrendered almost all control over our product delivery. . . . The question is whether we want to remain in this position, or change our rules to let us, in fact, produce the complete product under our control. It might well be that only a small percentage of our members would practice in this way, but even so, are we right in denying them the opportunity? I think not."

It was the committee on architecture for commerce and industry that brought the matter of changing the ethical standards before the board in May. It proposed that an architect be allowed to act as builder, developer or financier of a proj-

ect and to "hold himself (firm) out as the organizer and principal of a legal entity which may design, construct, finance or lease a project, and advertise himself as such so long as the architect himself (firm) does not advertise architectural services through this legal vehicle."

In response, the board asked the design/build task force to make recommendations for implementation of programs that would (1) inform the profession of "existing techniques by which AIA members can operate in areas of the private market which are now dominated by package builders, and (2) investigate alternatives to the present relationship between the architectural profession, the construction industry and society."

As the scope of these directives indicate, the question of meeting the new client demands and increasing competition goes well beyond possible changes in the ethical standards. It is a matter, in essence, of what the profession wants to be.

Is the way to meet the packagers' competition to beat them at something like their own game? An alternative might be to improve the profession's project delivery capabilities and at the same time intensify efforts to convince the client public that it is best served by the traditional professional services of the architect. *D.C.*

The drawings on these and the following pages are by Forrest Wilson, AIA, chairman of the department of architecture and planning at Catholic University of America.

An announcement: For the duration of the profession's economic crisis, the JOURNAL will publish employment notices for AIA members and firms without charge. The notices can be for positions wanted or positions available and will be published according to the following ground rules:

1. Only one notice will be published for any individual member or firm in any given issue. Each notice will be limited to 24 words.

2. Copy for the notices will be received between the 1st and 15th of each month for publication in the following month's issue (and should be addressed to "Employment Exchange," AIA JOURNAL).

3. The notices will be published strictly on a first-come, first-served basis until available space (usually two pages) is filled. Those whose copy does not make a given issue will be notified by postcard so that they can resubmit their notices for future issues if their need persists.—*Ed.*

Whatever The Future, Design Must Remain The Fundamental Skill

Virgil R. Carter, AIA

The profession of architecture and the individual architect face one of their greatest challenges: response to the dramatically changing needs of society and the economy. The challenge is real, it is increasing daily and the final result may well be the reshaping of the total profession. A fundamental question for architects is how to properly respond to these changes.

The world, and along with it the profession of architecture, is changing; few deny it anymore. The free enterprise system, as we know it, is shifting to one of greater control and overall planning. Financing techniques and sources are being increasingly influenced by government policy. Concern about social, environmental and consumer issues is producing ever more rules, regulations, reviews and revisions. Current forms of use and ownership of land, as well as unregulated growth, are being seriously questioned. Clients for building services are becoming increasingly sophisticated in their organization, experience and requirements. Roles and responsibilities in the building industry are shifting. Organizations that have not traditionally been involved in building and caring for the built environment are making strenuous efforts to enter the field. These trends indicate only a small portion of the changes already underway.

Two major trends are affecting architectural practice most significantly: First, there is the demand of clients for pre-design analysis and decision-making services. Clients are increasingly demanding expanded investigative and evaluative services for all projects. *Second* is the tendency of clients to want to combine various overlapping yet separate services into a single, efficient professional capability. These two trends are influencing major organizational and resource decisions within the architectural profession.

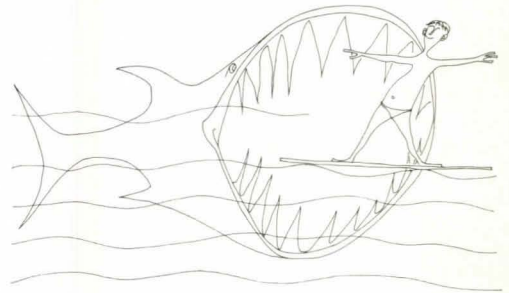
Architects are responding to these trends in a variety of ways. Larger architectural firms, with substantial financial

resources, have, or are developing, diversified services and capabilities. After a reassessment and revision of the code of ethics, many are developing services formerly considered nonprofessional or even prohibited. Nonbuilding activities undertaken by architectural firms have multiplied. Smaller architectural firms have used mergers, associations, joint ventures and other temporary groupings to increase and diversify their architectural capabilities.

Changing too are the roles and responsibilities of nonarchitects involved in building. The distinctions that once characterized the various professions and interests are gradually blurring. Clear dividing lines between the various members of the development, design and construction teams are breaking down as skills and services overlap and roles and responsibilities change. The need to gain increased competence in ever more complex subjects is also producing more and more specialties, thus further fragmenting an already fragmented building industry.

One approach taken by architects in trying to surmount the increasing pressures of the marketplace is to organize in a way similar to that used by their business-oriented clients, matching architectural services and capabilities with typical business concerns. This approach includes developing, in one place, a broad range of

services and skills. It has a great deal of validity. But it is also deceptive and, if not careful, architects who follow it can easily lull themselves into complacency by thinking that they are riding the crest of



the new wave of professional organization and service. This thinking, if allowed to develop to its logical conclusion, creates a most dangerous situation for the profession as a whole and for individual architects.

Questions arise as to whether architects can diversify into fields where there are already functioning experts, and whether they can provide advantages of a total, single and unified professional responsibility while simultaneously maintaining expertise and expanding capabilities in the one essential architectural service—design and its implementation. By diversifying without adequate planning and commitment to its fundamental design needs, the profession runs the risk of sacrificing its historical claim to be the foremost *design* profession involved in the built environment.

Without high level design skills, the total design delivery system, from inception to implementation, loses its very essence, and architecture simply ceases to be a design profession. Instead it becomes a profession, or simply an endeavor, involved in the provision of construction-related services and/or products, and has little to distinguish it from other diversified services offered by experts in other fields. Architecture is increasingly a diverse blend of many essential ingredients, but the one essential ingredient remains as it always has and always will be—design.

If it is to continue to effectively compete, the architectural profession must

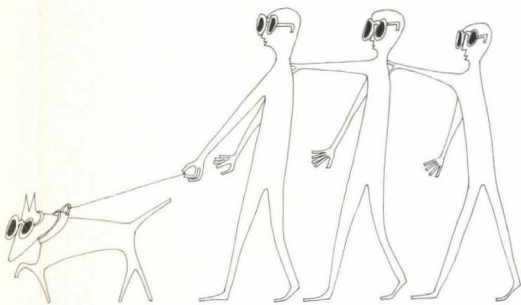


Mr. Carter is director of design for the Palo Alto, Calif., firm of Albert A. Hoover & Associates and planning commissioner for Mountain View, Calif.

First priority need: improvement of the design delivery system.

develop a design delivery system that will consistently:

- Increase the quality of services and products.
- Predict, with reasonable assurance, the quality and time/cost required for various services and products.
- Control and maintain the predicted quality, time and cost parameters, in the face of constantly changing situations.
- Utilize advanced coordination, analysis, implementation and management techniques and tools necessary for optimizing quality, efficiency and control.
- Respond to the needs of project complexity, client requirements and the ever-changing marketplace.



The recent Case & Co. survey of the profession, conducted for the AIA, clearly confirmed what many individual architects had long suspected: The overwhelming majority of responding architects listed design as their single greatest problem and the one with which most assistance is needed. Ironically, the Case study also revealed that the highest salaries were being paid to architectural personnel in nonbuilding areas, primarily administration and marketing, where no professional architectural training is even necessary. Similarly, January's AIA-sponsored economic charrette in Washington, D.C., made sound and valid analyses and recommendations in numerous areas, but none in the essential design delivery system that sustains us all.

How can the professional design service, and the end-product design solution, be improved? How can the responsiveness and creativity of design be strengthened? How can the design search be organized, evaluated and controlled to encourage highest quality, on the one hand, and

marketability, on the other? Can a process that has traditionally been viewed as irrational, intuitive, subjective and undefinable be transformed into a predictable, controllable and responsive delivery and decision-making system? Can this be done without losing the creativity and spark that have characterized the best of traditional efforts?

The answer to all these questions is, of course, an unequivocal yes. The real issue is not *whether* it can be done or *will* be done; for it is happening before our eyes. The real question is *who* will be responsible for such a transformation and *who* will be capable of insuring that creativity is not sacrificed.

There are already at least two separate groups of nonarchitects who are quietly developing comprehensive design delivery systems that offer direct competition to architecture as a design profession. One group is represented by the design/build organizations. In these cost-critical times, they offer reasonable assurance of predictable project quality and dependable control of total project time and cost—an achievement that architects have never been able to completely master. The most recent AIA design/build task force concluded that “(the) design/build process will increase in the future, and that for those (architects) who do not prefer to utilize such a process, alternative methods with the benefits of design/build must deal with the deficiencies of the current (architectural) process, most notably in the area of time and cost.”

The second group which challenges architecture on its home court of design is represented by profit-oriented manufacturing and industrial organizations and nonprofit research organizations. Both have strong multidisciplinary groups of experts at their disposal, capable of handling vast and complex projects. These groups possess formidable skills and are familiar with the latest methods of management, investigation, analysis, decision making and evaluation. Putting a man on the moon is not the least of their achievements. These groups have generally limited their major activities in the built environment to nonbuilding, predesign services, but it is simply a matter of time

until they apply their overwhelming capabilities directly to creation of the built environment.

There are several key problem areas within the design process, which must receive attention if the total design delivery system is to improve. There are, for example, numerous and increasing influences and constraints acting on the design service of a typical architectural project. These must be fully considered in predicting quality and controlling time and cost. Many are common from job to job, and their identification and evaluation are long overdue.

The design capabilities of a firm, for example, are influenced by factors internal to its operation, including its experience, goals and capability; organization and management patterns; fee and profitability policy and history; typical design process; design team aims, motivations and skills; alternative design search and design management organization and strategies, and solution evaluation techniques and procedures.

External to the design delivery system there are even more wide-ranging influences over which architects have had seemingly little control. These are determined by the architectural client; the non-client user; sources of financing; available technology and labor, and review and approval procedures. These constraints are, in turn, affected by social and economic pressures as well as technological and competitive forces.

A second key problem area for the design delivery system has resulted from the growing complexity of the building industry. In response, specialists and specialties and the use of teams with diverse interests and skills have proliferated. *It is important* to recognize that special skills and techniques for organizing, implementing and evaluating the design delivery system are also needed. These are as distinctive from the more common project administration and management skills as design is from other phases of architectural services. The reality is that as a profession we are faced with having to become more specialized, and it then follows that a new specialty is necessary for selecting the proper orga-

nization, strategy, tools and techniques for creating a design delivery system to match a given situation.

The list of design problems and problem areas can be expanded by every practitioner's personal experience. One may have a need for more accurate and dependable methods for determining the scope and type of services and adequate compensation. Another may have problems with locating and using pertinent information and experience bearing on the specific design problem. Methods may be needed to increase the "perceptual span" of the design problem as a means of achieving more responsive solutions. Whatever the specific requirements may be, the overall need should be obvious and is overwhelming. And as a profession and as individual architects, we must initiate *practical, usable* efforts to upgrade and expand our design delivery system.

What is the practicing architect to do?

Undoubtedly, the single most important step in coming to grips with this problem is simple commitment. In the words of the well-known management precept: "Call for it, mean it, reward it." The first step is to acknowledge that expansion and strengthening of the design delivery system is essential for current and future survival. This step must be taken by top management of individual architectural firms; without them, efforts by professional societies, educational systems, research institutions and others will be wasted. So the first step must begin with individual architectural firms defining and communicating their commitment and needs first in-house, then to the profession as a whole and, finally, to the related educational and research organizations.

A necessary part of this first step is to unload the long-held worship of design as a mysterious, uncontrollable, unpredictable rite. The rather superstitious acceptance of a largely trial and error approach to design, passed down from generation to generation, from master to apprentice, must yield to a more responsive, understandable and logical process. There is, and always must be, room for the intuitive, spontaneous and undefinable flash of insight, but the total design delivery sys-

tem must increase its quality, flexibility and predictability, and do so consistently, if it is to remain responsive in the marketplace and as a profession.

If commitment is the first necessary step, then action is the second. Through experimentation, through daring and, above all, through communication with one another, various problems and solutions can be addressed, discussed and evaluated. Laissez-faire leadership must be replaced by dynamic and absolute



commitment to finding, on a profession-wide basis, the most creative design delivery system possible. It seems obvious, yet worth repeating, that it is essential for architects to leave their self-imposed, individual cloisters, and as a group begin to share experiences and expand their abilities to respond creatively to society's needs before that same society gives up and turns elsewhere for its needs.

The initial goals, aimed at energizing

our design delivery system, are attainable, even in these economically depressed times. For despite belt-tightening, moneys are being budgeted and spent. What is required is simply a reapportionment of existing funds and resources after evaluating how they are now being spent. Where are we currently spending our time and money? Are we convinced that these expenditures are purchasing things of greatest need and significance for our present and future requirements? Immediate efforts at upgrading our design delivery system can be started without any additional funding, if we can make the necessary priority decisions.

It is worth mentioning that both the AIA, at state and national levels, and the university-related schools of architecture operate wide-ranging professional education and research programs and can respond to practice-related needs. With proper leadership and encouragement, there is every reason to think that these organizations can effectively assist practitioners in their attempts to gain the needed information and skills for improving the design delivery system. They cannot, however, substitute for major efforts by individual practitioners.

The current and future challenge in the marketplace is tied simply and directly to the architect's ability to deliver his fundamental skill—design. Society, collectively, and clients, individually, will continue to be concerned—and rightly so—with locating and retaining those individuals who can respond imaginatively, reliably and competitively to a given situation. Society in general and clients in particular deserve the predictability and economies of a complete and coordinated approach to design services.

Future growth of the profession and its success in responding to the changing needs and expectations of society will depend to a large degree on whether architects can modify and improve their essential and only unique skill—design. The development of a predictable, controllable and creative design development system capable of responding to a constantly changing marketplace will assure that architects can continue to successfully meet the challenge of the future. □

Examining the Nature and Values Of the Endangered Species Architect



"For the last ten years, I have been looking at architects from a sociological and quasi-psychological perspective. Such is felicitous work, for one could not ask for a more interesting group of people—of men.

"Self-evidently, there is *not* 'an architectural personality' or 'an architectural culture.' To think in such gross terms is to dishonor our fellow human beings and to deny the variety of our social tapestry. Nevertheless, trends may be said to exist—but not more than that.

"Most of the architects with whom I have conducted focused, depth interviews appear to be able and vigorous people. They work hard and they are tough, intense, resilient. There tends to appear an extraordinary level of psychic and even physical energy. The sinewy qualities of the architect are, indeed, much needed: He takes a terrible battering *and* he broods about what is happening to him."

Such was the experience of sociologist Whitney H. Gordon. Numerous social scientists, historians and architects have in recent years begun to look more closely—and critically—at the intellectual and emotional baggage that architects bring to their profession. Under the direction of Don Conway, AIA, the Institute's office of research programs has been collecting such new material. The intention, at least in part, is to shed some light on, and find ways of changing, a disheartening situation in which many architects find themselves. It is described as follows by Gordon:

"Glamorous image or not, the architect's travail in society is real: He finds his head and his work are being bent at an astonishing rate. The role changes seem to be coming at him from all sides. These may expand and freshen his day, e.g., computer skills, property management, environmental planning. But these same ventures are fraught with threats. He may fail at new tasks and young bucks first crowd him and then, later, ignore him. Further, the architect is angered by the 'clods' in A/E firms or in package building systems. They are trampling his professional domain—and doing so with brutal and vulgar effectiveness. But perhaps most poignant is the diminution of cherished skills. When last did I sit down in front of my board and actually *design*.

"Were the shifting ground not sufficient to 'spook' the architect, he faces yet a more profound dread. In his heart he knows that America could get on very well without him. He asks, 'Who really needs an architect? Yet, in the same breath he is convinced that he is best equipped to stop the trashing of this land.'"

Is there perhaps something in the character of the architect to explain how he



might have brought upon himself this sorry state of affairs?

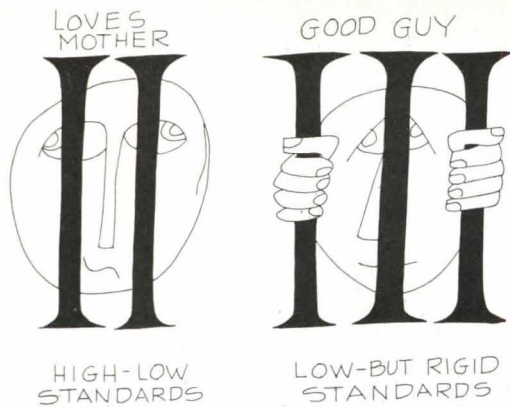
The studies show that the goals of architects are singularly ambitious. True, that most grandiose of notions, "architectural determinism," has been largely discarded. It was characterized by Winston Churchill's proclamation, "We shape our buildings; thereafter they shape us." And it reached new heights in Richard Neutra's contention that if he so wished, he could design a newly married couple's house in such a way as to insure divorce within six months. This belief that physical setting can directly determine human behavior has been replaced by the idea that the built environment can only facilitate or hinder certain behaviors. As Don Conway puts it, "You can use a deep freeze for making love, but it doesn't help." In his keynote address to the 1975 AIA convention, Heinz Von Foerster gave a further dimension to the notion of architecture as facilitator when he said that architecture is a process that allows people to make choices about how *they* want to be and to live. "Therefore," he said, "an ethical imperative for architects is to increase, not decrease, the number of choices available to people."

In studying the self-perceptions of 124 architects, sociologist Donald W. McKinnon separated architects into three types. Those in the first grouping—which he calls Architects I—were originally chosen by a panel of five Berkeley professors for "the unusual creativeness they had shown in the practice of their profession." Those in the second group, Architects II, are considered less creative. They match Architects I in age and geographic location of their practice, and, at some time in the past, had all worked with an Architect I for at least two years. Architects III are regarded as least creative; they had never worked with an Architect I. To corroborate his selection, McKinnon asked professors of architecture, editors of architectural journals and practicing architects (including some of those selected to be in the sample) to rate the chosen 124 on a seven-point scale of creativity.

McKinnon says that the architect in group I tends to see himself "above all else as imaginative; unquestionably committed to creative endeavor; unceasingly striving for creative solutions to the difficult problems he repeatedly sets for himself; satisfied only with solutions which are original and meet his own high standards of architectural excellence; esthetically sensitive; an independent spirit free from crippling restraints and impoverishing inhibitions; spontaneous; forthright, and self-accepting. He has a sense of destiny about his career as an architect."

The picture Architects III have of themselves (and conform to) is in striking contrast. Where the most creative architect is primarily impressed by his own imagination and inventiveness, the least creative sees himself as most characteristically "conscientious, responsible, sincere, steady, practical, logical." Unlike his more creative colleagues, he is a team man who in his professional role prides himself most on being able to get along with others and accept and work with their ideas.

Least sharp and distinctive is the picture McKinnon obtains of Architects II. Just as their degree of creativity is intermediate, so their perceptions of themselves tend to fall between those of the most and least creative architects. In most



respects, however, they tend to see themselves as being closer to Architects III, as “civilized, serious, fair-minded, responsible, sincere, clear-thinking, kind, sensitive.” Indications, says McKinnon, are that “more than the other two groups, they suffer from neurotic conflict.”

In his analysis of architects, Gordon distinguishes between “winners” and “losers”: “One of my most disturbing observations—and one also noted by some architects—is the way ‘the winners’ seem to differ from the ‘losers.’ ‘Winners’ tend to reflect the style and ambiance of their business-class clients: extroverted, concrete, matter-of-fact and buoyantly aggressive in their work. In contrast, ‘the losers’ (not the ‘real bummers’ and the ‘slobs’ of whom there are some in the profession) tend to be eliac, hypersensitive and poetic. They try to avoid becoming bitter. One’s heart goes out to these architects, and this sociologist has left more than one interview a bit heartbroken, a little older. Unfortunately, these men may become almost lost in their broodings—creative or simply neurotic.

“More generally, I have noted that very many architects, both ‘winners’ and ‘losers’, meet their clients and the general public *very poorly*, the more so, of course,

for those men who are absorbed in the imbrogio of their conflicted sensitivities. Frequently, commissions which might be theirs go instead to the able enough and aggressive boors within the field.”

As might be expected, the architects who fall into McKinnon’s “most creative” category tend to dominate the profession, despite being in the minority and being less concerned with responsibility to the profession than their less inventive colleagues.

In an effort to identify persistent values of the architectural profession and the changes these may have undergone in recent years, architect Randall Lasky undertook a study of *Progressive Architecture’s* annual design awards from 1957 through 1972. His intention was to trace the relative emphasis given to those age-old and still-respected aims of architecture, “commodity, firmness and delight.” Laid down 351 years ago by Sir Henry Wotton, in today’s idiom, “commodity” can be translated: How well does the building fulfill its function and the needs and desires of its users? Firmness can be transposed into an emphasis on principles of building science. Delight refers to the esthetic and expressive qualities of the building.

Lasky found that in the mid ‘50s architecture was still “impaled upon the spear of appearance. In fact, the modern movement was but the last link in a chain of ‘delight’ oriented architectural theories.” In 1957, according to Lasky, the design awards began to show a flight away from the values of the international style and toward “a restless search toward a pragmatic expression of the community, of what the people want.”

“Firmness” was notably low on P/A juries’ list of priorities. It was of real significance only in the years 1957 and 1961, and then mainly because structure was considered vital to visual expression.

Beginning in the early ‘60s and especially after 1967, “commodity” rose steadily in importance, but “the difference between rhetoric and action was vast,” says Lasky. It remains mainly a vague sensibility, a mood that was not widely realized in practice. It consisted primarily of a “humanism,” which, says Lasky,

“had few principles more substantive than its own creed, ‘don’t twist the whole building (form and organization) for reasons of esthetics and articulation’ . . .”

In 1970, considerations of “delight had again come to the forefront. And in 1972, a separate jury was selected to review urban design submissions. In an unprecedented action, it gave no awards, no citations. The following somewhat merciless comments by juror Ian McHarg explain:

“I think my objection to almost everything I’ve seen is that there isn’t any statement which allows me to believe the architect/planner had any idea who the people were, what their needs were, and what was important to them in terms of the physical or cultural environment. Obviously, a program has got to be able to discuss something about the nature of man and human behavior.”

The bulk of the material gathered by Conway points to the conclusion that architects have, in his terms, “failed to explicitly and systematically address the issue of user response, and that this is largely explained by architects’ preoccupation with esthetics. Humanistic rhetoric notwithstanding, being an artist



seems to come first, with everything else being secondary, at least for architects who regard themselves as primarily ‘creative.’”

Of McKinnon’s three architectural types, none placed “responsibility to society above all else,” while all placed “taking an esthetic view” very high on their list of priorities. Similarly, in a study of Swedish architectural students, by Gosta Edberg, 74 percent of subjects

tested were found to "have their thought processes oriented toward *objects*." Only 12 percent were oriented toward the human aspects of problems.

In an attempt to identify the intentions and goals of architects, sociologist H.N. Boughey interviewed scores of practitioners. A typical respondent explained his approach to architecture in the following manner: "The architect usually practices in inverse ratio to his ability to talk. He has to use a pencil. He's got to feel it. It's a feeling of how to use a scalpel. A man knows how to play the piano he's got something in his fingertips, or a painter knows how to use a brush or a sculptor a chisel. You get a certain point of being intellectual about this and there it stops. This is why people are either creative or not creative."

In a recent address, AIA President William Marshall said: "The process by which we try to make known our vision of a better world is generally a visual one. . . . These designs—the plans, the drawings—are symbolic manifestations of that inner vision."

Neurological studies provide evidence that nonintellectual, nonverbal tendencies which the researchers have seen among architects can be explained at least in part, by cerebral physiology. There are strong indications that among architects, as among artists, a larger than normal percentage of persons than in the population at large has right hemisphere brain dominance. Characteristically, such people think in spatial, visual imagery and in a holistic manner. By contrast, the left hemisphere of the brain is responsible for speech and verbal, analytical thought processes. Left-handedness is one symptom of right hemisphere brain dominance and almost twice as many architects as people in other groups are left-handed. "We see right-hemisphere dominance in architects' typical inability to spell, their general distaste for analytical processes, their choice of graphic communications, the need for architects to talk with a pencil," says Conway. He adds that "we know that 80 percent of an architectural student's time is spent in the design studio. And we know that the profession places a high value on visual communication.

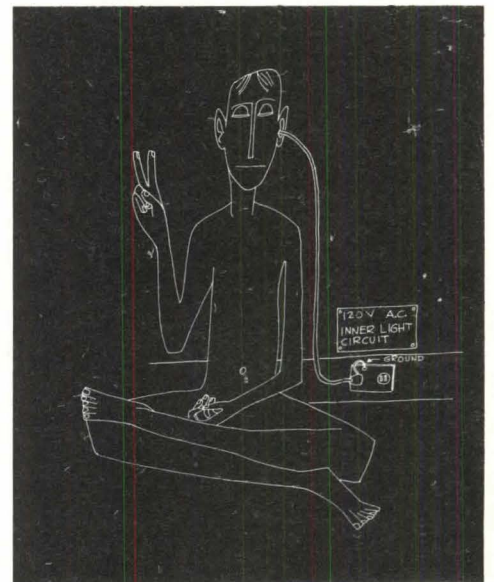
The point of all this, he warns, is that architects' typically visual rather than verbal, analytical orientation will tend to restrict their perception of problems and limit the range of solutions they might find for them."

According to Marshall, "In the scientific world, intuition comes into play *only* after existing knowledge has been exhausted, or after a reasonable effort has been made to gain new knowledge. Intuition is what scientists fall back on when there is nothing else to use. Designers, on the other hand, usually jump over that part of the process that calls for use of existing knowledge. Part of the reason could be that the design professions have traditionally given very close attention to matters of esthetics and are only now realizing the profound impact that design decisions can have on behavior."

Of the architects interviewed by Boughey, over 80 percent quite frankly admitted that their actual knowledge of how people would react to their designs is based solely on "private, subjective feelings, intuitive understanding, hunches and guesswork."

A majority of the same architects also admitted that the feedback they receive about how well their buildings meet user requirements and desires comes only in "informal observations," rather than as "decisive tests of design hypotheses." While a majority of the architects interviewed by Boughey said they welcomed more research, over a quarter indicated through facial expressions, tone of voice and mannerisms that they felt "threatened by the prospect of concrete testing of the results of their designs." The "art defense," says Boughey, is the main strategy used by the architect to vindicate an aversion to systematic testing and research. He defines what the "art defense" is by quoting an architect respondent as follows: "But we're not technicians, after all, trying to solve rational problems with logical means. We are artists. Architecture is an art. How dare you suggest that what we do could be subjected to objective testing? What we do is not measurable; to measure would be to destroy its very quality as art, and to straight-jacket the artist."

Boughey observes that the "art defense" allows the architect to deal in mystery, in subjective truth; it gives him complete autonomy to change his mind at whim and be guided only by his inner lights. It protects him from being held ac-



countable. "The proposal to subject his work to scientific testing threatens this autonomy and the 'art defense' is his bulwark against the attack."

The insistence of architects upon autonomy was remarked upon by Walter Gropius many years ago: "So many of my colleagues are still wedded to the 19th century idea that individual genius can only work in splendid isolation. Just as our profession 50 years ago closed its eyes to the fact that the machine has irrefutably entered the building process, now it is trying to cling to the conception of the architect as a self-sufficient, independent operator, who with the help of a good staff and competent engineers, can solve any problem and can in this way—and *only in this way*—keep his artistic integrity intact." He insisted that the complexity of contemporary building required teamwork and collaboration. Frank Lloyd Wright's response to the idea of collaborative teamwork is summed up by his remark: "But, Walter, when you want to make a child you don't ask for the help of your neighbor."

The importance architects have placed upon being autonomous is also reflected

Left-handedness, degrees of creativity and use of the 'art defense.'

in their attitudes toward clients and toward each other. Most architects regard a majority of their colleagues as "hacks," according to Boughey. The architects he interviewed described a "hack" as an architect who is first of all just in the business to make money. "He is also uncreative, a mechanic, a conformist, a copyist, a nuts-and-bolts architect" who is slavishly doing what the clients want him to do in design. He acknowledges, however, that architects regard it as a serious breach in proper professional work to disregard too completely the wishes or needs of clients and users.

In pointing out auspicious breeding grounds for "creative architects," McKinnon writes: "One finds in the histories of creative architects a number of circumstances which, in the early years, could well have provided an opportunity as well as the necessity for developing the secure sense of personal autonomy and zestful commitment to their profession which so markedly characterize them." He says that in most cases, the parents of future creative architects have an extraordinary respect for the child and confidence in him, which prompts them to give him unusual freedom to explore and make decisions for himself. "The expectation of the parent that the child would act independently but reasonably and responsibly appears to have contributed immensely to the latter's sense of personal autonomy which was to develop to such a marked degree."

According to McKinnon, the home which typically nurtures the future creative architect is one in which the father presents a model of effective and resourceful behavior, where mothers too are unusually independent, where clear and consistent standards of discipline are set, where values of integrity and self-sufficiency and other such good things are stressed. Altogether McKinnon describes a highly principled, predictable and challenging home environment. The result, in many cases is "the generalist . . . inclined to be an intuitive type. In his perceptions and in his thinking he is set to experience the deeper meanings and possibilities inherent in things and situations."

Boughey asked the architects he interviewed: "Do you think your training in college and graduate school provided adequate background?" The conclusion he drew from their answers was: "No. The problem is, the whole education of the architect so far has led him to evaluate intuitive, inspirational design," and "architectural schools in no way provided them with knowledge adequate to deal with the problem of how human beings react in their behavior to design solutions."

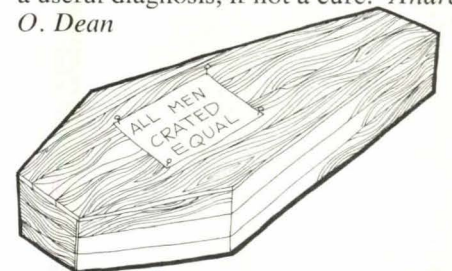
A comparison of first year architectural students with first year medical students by architect Andrew Gruft produced the following picture of the architectural student: Like the medical student, working independently is very important to him and extrinsic rewards are not. He shares with the medical student the top place, of all groups, on the "intelligence measure tapping abstract thinking capacity." However, his grades are lower on the whole than those of his colleagues in medical school, which would indicate that he is less achievement-oriented or, more likely, less academically facile. Unlike the medical student, he is casual in manner, free of group influence; he tends to evade rules. He is more imaginative, unconventional, inner-directed and careless of practical matters than his counterparts in medical school. And similar to them, he is "warm, out-going, attentive to people," but somewhat more detached than the typical student. In sum, says Gruft, the architectural students seemed disdainful of material rewards, split on the desirability of working with people or helping them, but tested very high on "self-actualization through working with ideas and creative self-expression."

A study of architectural students by sociologist Sheila Campbell of the University of Edinburgh showed that students formed into distinct camps. And there was, said Campbell, "little love lost between the long-haired zoo designers who were trying to create a total environment experience and the more sober-suited students intent on coming to terms with the flow complexities of a brewing factory to produce some kind of envelope design."

While McKinnon might call "the zoo designers" creative architects, Campbell described them as "system independent," and their more sober-suited colleagues as "system dependent." She says that the typical "system dependent" student will work away at the things he is given to do and "will not waste time following up on his own interests and pursuits outside normal college activities." He will not work intensively or late at night and keeps his notes well ordered and tidy on files and cards." He doesn't openly disagree with teachers, is perfectly willing to have work closely supervised, and "as long as he knows what he is supposed to produce, he will work well and he will be confident that the assessment of his work reflects his abilities as an architect." His ambitions are modest, as are the buildings he designs. His background and class identifications tend to be solidly middle class, usually conservative.

By contrast, Campbell's "system independent" architectural student is "someone who spends a lot of time exploring and expanding his own ideas, who feels constrained by the restrictions imposed by the kind of projects he is expected to produce and who positively resents examinations." His notes are untidy, his files nonexistent. He works intensively or not at all, disliking supervision, always seeming to have a quarrel with persons in authority. His ideological tendency is to be radical. He is idealistic, unafraid of risks, ambitious. And when he enters the real world of architectural practice, he is often disillusioned. Says Campbell, "One student summed up the feeling nicely saying 'the profession I'm being trained for is sick'."

To the degree that the students were right, the analysis of architects by behavioral scientists and others can provide a useful diagnosis, if not a cure. *Andrea O. Dean*



Finding the Right Social Scientist As Collaborator

Edward Ostrander and Susan Blumenthal

There has been a heartening increase in concern among architects about the fit between the buildings they design and the needs of the ultimate users of the buildings.

With it has come a search for information about these needs that can be fed into the programming and schematic phases of the design process. A natural source of such information is the behavioral sciences, and a direct way of getting it is to engage a researcher as a consultant.

Once the decision to do so is made, the task is to find the right person in what, to most architects, is an unfamiliar and somewhat mysterious field. As C. M. Deasy, FAIA, says in his recent book *Design for Human Affairs*, "not just any Ph.D. will do. . . . It takes someone who feels that the rather mundane problems of the built environment are worth solving, someone who is capable of true collaboration, and who is willing to accept the arduous time and money pressures that are an inevitable aspect of any planning program."

To put it in a more methodical framework, most important criteria for evaluating a researcher are area of specialization, professional credibility and work style.

1. *Area of Specialization.* Just as all engineers are not alike, so there are fine-grain differences in content mastery among researchers. Some have specialized in postconstruction evaluation and user-feedback methodology. Others have been particularly interested in developing facts about users that are the basis for activity analysis and programming. Still others concentrate on the way people symbolically interpret buildings and spaces. The last deal with cognitive maps, subcultural groups' perceptual meanings. There are a great many specialties in terms of dynamics, methods and topical areas.

There are also pronounced differences

Issue/criteria Professional training

General professional experience/specialties relevant to the project in question: User group(s), user setting (micro), site/geography (macro), functions/activities, organizational structure, size of undertaking

Evidence

Degree
Field of training
Resumé
Publications
Completed/built projects
Presentations
Professional assignments and responsibilities
Speeches
Recommendations from former clients

TABLE 1: Formal Criteria for Evaluating a Behavioral Researcher

in researchers' familiarity with user groups and users' stage in the life cycle. Some investigators have concentrated on young children. They might be quite useful if the project involves designing a kindergarten, playground or primary school. In contrast, a design project for the elderly may require a gerontologist or at least someone conversant with the behavior and physiology of old age.

Social scientists working in design have also tended to focus on particular building types of functional spaces. Some have dealt with playgrounds, parks and malls while others have been particularly concerned about health care facilities or institutional settings, office spaces of factories. The architect in search of a collaborator or consultant will sift through these differences in the initial screening.

2. *Professional Credibility.* Once a researcher's area of topical specialty is identified, his professional excellence must be assessed. At this point in the history of this relatively new field, there is no standardized procedure for licensing behavioral researchers. None of the available directory listings supplies any type of accreditation or competence ratings.

There are, however, formal criteria for judging the behavioral researcher's competence. There is also identifiable evidence to measure how well he meets the criteria.

We can expect the researcher who has grown professionally to have had a wide variety of experiences, as reflected in diverse assignments. Less extensive experience need not, however, exclude from consideration a younger researcher who is just beginning to develop a track record.

3. *Work Style.* Once the researcher's specialty areas and credibility are ascertained, the question remains of how well he works with other people. People differ greatly in work style, flexibility, intelligence and tact. Working well in a team hinges on effective interpersonal involvement, so it is essential to select someone who will work creatively and vigorously in the design group.

In many ways, working with a person from another discipline is not unlike working with someone from another culture. There may be problems of communication, of understanding different life styles, and accepting new points of view. When the academically trained behavioral researcher joins the practicing design professional, these disciplinary differences may surface or be magnified.

English author C. P. Snow explicitly describes the differences between the scientific and humanistic cultures, as each having its own common attitudes, standards, patterns of behavior and assumptions. He contends that because of these two distinct perspectives, there is a lack of understanding between the two groups which contributes to a distorted image of each other. The situation fits the comparison of architects and the behavioral researchers.

One question which may arise is whether an architect, not trained in research, can evaluate the effectiveness of a behavioral science researcher's work. The question underestimates the capabilities of the architect. For he, like the behavioral researcher, has also been trained as a rational problem solver. So surely he can

Mr. Ostrander is associate professor in design and environmental analysis, New York State College of Human Ecology, located at Cornell University. **Ms. Blumenthal**, on leave from the city of Chicago's department of development and planning, is a graduate student at Cornell's department of urban planning and development.

determine whether the researcher's ideas make sense.

Mike Brill, president of the Buffalo Organization for Social and Technological Innovation, Inc., speaks of the importance of "transparent communication." He argues that no matter how complex the subject matter, a specialist should be able to present technical information in such a way that a person without particular training or knowledge in the area can still judge if the discussion makes sense.

Being tolerant of diverse work styles and flexible in approach are as important as being able to communicate clearly when working on a team. Without these qualities, and in spite of a researcher's professional expertise, the collaborative effort will probably be ineffective if not exasperating.

Granted that there are few saints in the consulting business, how can suitable ordinary mortals be identified? The following questions should prove useful in screening a candidate on the crucial issues of communication and collaborative teamwork:

- Do you understand what the person is talking about?
- Do you feel comfortable about asking for clarification if the ideas presented do not seem clear?
- Are the candidate's answers direct or evasive?
- Does the individual come to the interview (or presentation) well-prepared and has he provided intelligible background materials in advance?
- How well would you feel about having this consultant represent or speak for your firm with your clients?

When it comes to collaborative teamwork:

- Does the researcher understand the architect's areas of concern?
- Do you envision being able to argue or debate major points with this person and still maintain a constructive and congenial working relationship?
- Do you feel that the individual understands and respects your professional competence and training?
- Does the researcher show patience with your naiveté about his field?
- Will work styles and pace of working be

compatible? If not, will both of you be able to, or be willing to, make accommodations?

- Do you think the individual will welcome your informed professional input in his domain of competence?
- Does the individual refer to his colleagues or competitors in a complimentary, neutral or critical manner?
- Does the individual appear to be secure or threatened in his role as consultant?
- Does the person share his knowledge with you in an effort to help you contribute to, and make judgements about, his work?

Though not an exhaustive list, these questions may help take some of the guesswork out of making the decision.

The procedure described here is not complicated. It spells out some of the cues that you already use in making other personnel decisions, only now they are applied to the selection of a behavioral scientist.

Where then might the sought-after researcher be found?

1. *Personal Referral.* In certain respects, it is similar to finding a consultant in engineering or landscape architecture. Generally, one uses word-of-mouth references and compares notes with other people who have employed a consultant's services.

However, this strategy, while appropriate, may not be completely productive for two reasons. First, only a limited number of architects have worked with behavioral researchers and can provide reliable recommendations. Second, only a small number of behavioral researchers have collaborated on architectural projects. Fortunately, there are other sources than word-of-mouth references for obtaining a list of potential team members.

2. *Publications.* Behavioral researchers are listed in directories or other publications put out by professional organizations. The following are among the most useful:

- *The International Directory of Behavior and Design Research*, published by the Association for Study of Man-Environment Relations (ASMER), P.O. Box 57, Orangeburg, N.J. 10962 (this is a "who's who" of behavioral scientists, giv-

ing biographical data and significant accomplishments).

- *The Environment Design Research Association Membership List*, EDRA is an organization of architects and social scientists formed for the study of man-environment relationships.
- *Design & Environment*, Fall 1970, a quarterly publication with editorial offices at 355 Lexington Avenue, New York, N.Y. 10036.

A first glance at these lists may suggest that the number of potential candidates is very large, and that the selection process must, therefore, be complex. This is not actually the case. A first cut screening of resumés, including a statement about the researcher's specialty in terms of user group, building type or nature of space use will eliminate a great many names.

3. *Staff of Professional Organizations.* Some organizations are set up to provide information on design research specialists. Don Conway, AIA, director of AIA research programs, has developed an informal network of capable people and can provide a list of potential consultants. The AIA Research Corporation is also well acquainted with experienced behavioral researchers.

After a researcher has been chosen, guidelines for working with him during various stages of design can be found in the recent AIA publication, *Architectural Design and the Social Sciences*.

In detailing the overall benefits of collaboration, an architect who contributed to the book said that we "must have that as a common objective, and there has to be some way we can help relate this information to each other in order to build buildings that do a better job for people. It seems to me a building can be judged on how well it serves the people. If the building doesn't do that, we have failed somewhere."

James Groom, of the Architect's Collaborative, puts the benefits of collaboration with scientists in more practical terms: "They saved us money because they helped us stay away from false starts. We got some information that we could live with. For us it was a foundation, it cut down our board time, our planning time, our total project time." □

“A System of Architectural Ornament . . .”: Further Sullivan-Journal Correspondence

George E. Pettengill, Hon. AIA

During the period when Louis H. Sullivan was writing *The Autobiography of an Idea*, as related in the JUNE AIA JOURNAL, he was also creating drawings for the Burnham Library of the Art Institute of Chicago. The Autobiography and the drawings, titled *A System of Architectural Ornament According with a Philosophy of Man's Powers*, were published by the Press of the American Institute of Architects virtually simultaneously. The origins of the drawings project are not as clear as those of the Autobiography, but it was obviously another effort by Sullivan's friends to provide something to keep him occupied that would also yield an income for him.

The first reference to the drawings in the correspondence between Sullivan and Charles Whitaker, editor of the JOURNAL, was on January 28, 1922. Sullivan wrote: “You will, I know be pleased to learn that I have concluded arrangements with the Burnham Library Board for the 20 sheets of drawings illustrating my system of ornament. I have just concluded a written prelude to the work which is a novelty in its way.” Whitaker replied, expressing his pleasure and the hope that the drawings could be published by the Press.

Sullivan commented further on February 2: “As to the Burnham Library Drawings: My first act was to work out a ‘Prelude’, a 5-page single-spaced essay setting forth Man and his Powers—the natural man with his natural powers. . . I intend by means of notations on each sheet, to extend the power of the Prelude through the entire set (20) of drawings, and finally draw all the threads together (after the completion of the set, in some sort of epilogue.”

A letter dated February 2 to Thomas E. Tallmadge, Chicago architect and historian, indicates that he was a leader in the project, for Sullivan acknowledged receipt of checks of \$50 each from George Nimmons and Max Dunning (directors of the Press) which Tallmadge had forwarded. Sullivan wrote that he was gratified that the fund was growing. Parenthetically, a contemporary review of

the System stated that the fund was subscribed to by 10 Chicago architects, the Armour Institute of Technology and the Burnham Library. (The letter to Tallmadge is in the collection of W. R. Hasbrouck, FAIA, who has made it available. Other letters, as noted in the June issue, are in the Burnham and AIA libraries. Quotations are verbatim, with errors unchanged.)

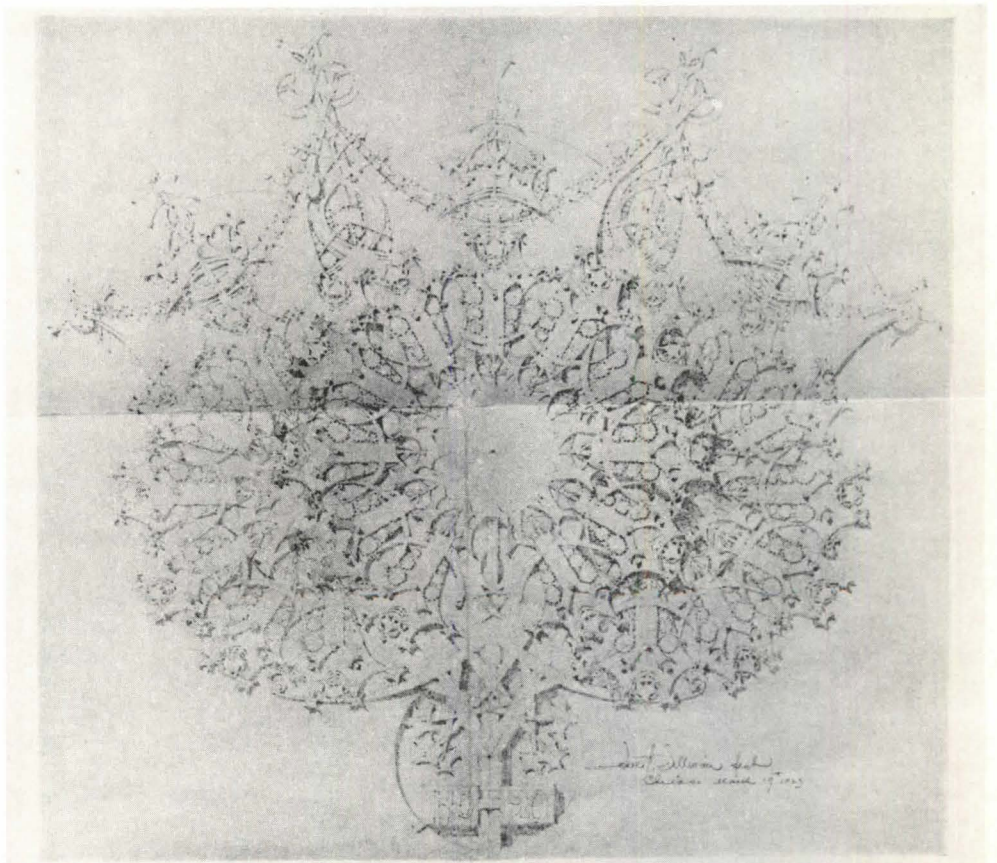
By the 13th, plate 3 was finished and plate 4 was blocked out. On March 18, Sullivan asked about reproduction of the plates. Whitaker replied: “It would have been magnificent could the drawings have been made upon stone or upon transfer paper.” But he foresaw difficulties and suggested that either photolithography or some high light process of photoengraving be used.

On April 4, Sullivan wrote: “Plate #9 is entirely didactic as I found it necessary to make a literary philosophic Interlude.” On July 17, he wrote that he expected to finish plate 14 the next day. As

with the Autobiography, it was taking longer than expected to complete things. The first 14 plates took about seven months; the remaining six plates nearly 11 months; it was not until June 11, 1923, that Sullivan reported finishing the last one.

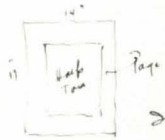
Meanwhile, there had been considerable discussion of how the plates would be published. On November 2, 1922, Whitaker had been sent a special drawing for experimental purposes. Whitaker noted on January 23, 1923, that Dunning had been given a check for \$250 to take to Sullivan as first payment on reproduction rights and also a halftone of the sample.

Sullivan wrote Whitaker on February 19, including a sketch of his proposed layout. He reported that he was pleased with the reproduction. “I have talked with Max, and we rather agree on leaf-size 14” x 17” (vertical) and that the half tone should be printed on a paper of low, delicate, but solid tone, and the half tone to be solid thus: . . . if anything should



Mr. Pettengill is AIA librarian emeritus and archivist. © G.E. Pettengill 1975

ready and that the half tone should be printed on a paper of low density, but white tone, and the half tone to be solid thus:



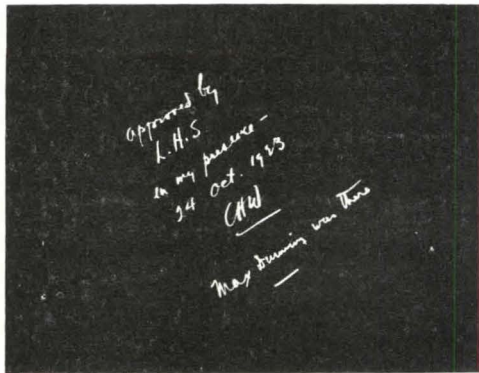
sample to be obtained by you. As to reduction in size of the original, in the half tone: there should be some experimenting should be done. This would involve

taking East some of the large ones, (this of course by someone

happen to these originals I could never replace them."

Whitaker agreed that the size should be kept "down to the point where no sacrifice is made in the purpose. Architects, as well as others, are getting much to dislike large volumes, especially when office space is getting so costly."

By May, Sullivan was no longer reticent to ask for funds. He wrote on the 28th: "As drawing #19 the last of the series is now under way, and will shortly



be done, Max thinks that as I am a bit short of funds, I might as well have at once the bal: \$250.00: on publication rights." Three days later, after talking to Dunning, he wrote: "As to the drawings: We both agreed that half-tone is the best method and that the paper should not be white but some soft tone—not too dark. . . . He was to write you. Hope he mentioned the \$250.00—I need the 'mon.'" (He got it, acknowledging receipt on June 5.) Also on June 5, Whitaker noted that the Press had bought the publication rights for \$500 and that he would be able to establish costs, price of the book and royalty when the drawings were received.

The drawings arrived, and experiments were made with No. 20. On August 2, Sullivan commented at length: "Now as to the experimental reproductions of Drawing No. 20. I first went over them very carefully alone, by daylight, comparing all values. Then I called in I. K. Pond, Geo. C. Nimmons, and Henry Holtzmann, and today Max Dunning.

After consideration from all angles they unanimously agree with my choice. We all agreed that the purity of reproduction of the original, as a pencil drawing, is the vital issue. The choice therefore has fallen upon the half-tone on *white* paper: and I wish to felicitate you upon the success of your work.

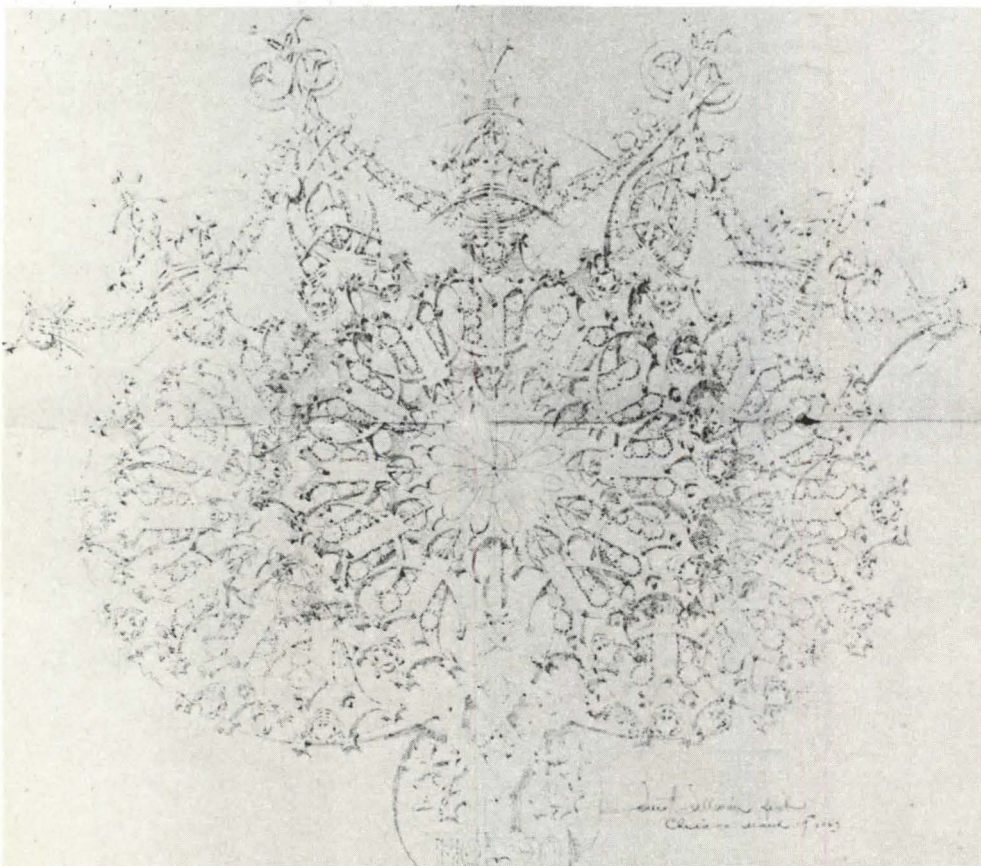
"I am enclosing this sheet under a separate cover. (It survives, endorsed "OK by LHS 8/2/23.") Should you wish the other prints returned kindly inform me. I was quite surprised at first to note that the white paper effect gives the happiest effect, but soon discovered that the deeper tones showed through the half-tone thereby giving the drawing the quality of increasing torpor (?) as the paper tone grows deeper. The quality and tone of the ink used in the approved sample seems to me exactly right, and very close to pencil work. Deeper tone of ink gives a muddier effect. . . ."

Whitaker, however, did not like the decision, although he said that he would accept it. Then Sullivan asked for examples of plates 12 and 16 in halftone since he deemed those critical drawings. In response, Whitaker elaborated on the difficulties he anticipated with halftones: "The problem is rendered the more difficult because of the marked decline in printing craftsmanship, these days." He asked Sullivan to tell him where the fault in the line method lay, which Whitaker had proposed as an alternative to halftones. Whitaker said that it was not a question of saving money as the halftone was less expensive.

Sullivan was not to be convinced. He wrote on August 16:

"Dear Whitaker:

I have just had a long talk with Max, in re your letters of Aug 5th and 13th both of which he has read. Max brought up the point, which I think well taken: that you probably could not look at the reproductions with *my eyes*. This gives me my start: So let me say that many of the drawings are emotional in character, #12 and #16 highly so. All the drawings from beginning to end are intended to represent states of feeling—even those which deal with geometrical dynamics.



#20 for instance stands for a sense of gayety, exuberance and freedom: its values are delicately adjusted. Now place side by side the two reproduction of #20, and regard them carefully: You will at once note that the half-tone is alive, the line process—souless. Now note technically that the values in the line process are heterogeneous and false; those in the half tone well preserved in their mutual relationships; compare, for example the calm center of the half tone with the irritating lines in the line-process.

"To give you my full point of view would require I fancy some five or six thousand words—which I will spare you.

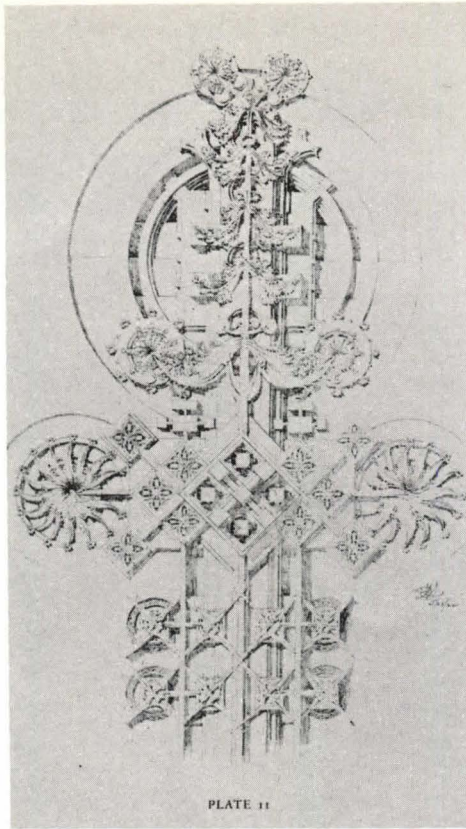
"I feel deeply however that the work in its entirety should be presented as a thesis—which it is; and that, as a very important part of that thesis, the drawings should be presented as nearly as possible in, their original quality by the half tone process: and that all other qualities of book-making yield to this prime requisite.

"I will follow up the subject a little later.

Sincerely Sullivan"

Not much happened—Whitaker was ill. A month later, on September 20, Sullivan complained that he was "heartsick" at the delay in issuing the book of plates. Whitaker replied on the 26th: "As for the drawings, this is a subject which troubles us very much. We cannot rid ourselves of the feeling that the sale of the book will be seriously handicapped by the reproduction on half tones, because the hard lines of the rectangle enclosing the subjects will not make a good looking presentation. The sizes vary, and this has led us to see whether we cannot find another medium by which we could get a reproduction satisfactory to you. We of course are thoroughly pleased with the line plates printed in the grayish ink, but these do not please you, and so it is my feeling that we must discover if we can some way of reconciling these differences. The reproduction is quite an expensive matter. Again we do not want to make any mistake. We want to put out a work that will sell largely."

On October 10, Whitaker wrote again saying that Dunning had pointed out



specifically why Sullivan disliked the reproductions in line. Whitaker had investigated and found that the plate-maker deliberately put in lines that did not exist in the drawing. He said that he would have a new plate made in a smaller size. He forwarded the plate to Sullivan on the 19th. Evidently, Whitaker went West shortly thereafter for there exists a line proof endorsed: "Approved by LHS in my presence 24 Oct 1923 CHW Max Dunning was there."

On November 28, further proofs were sent on the recommended paper. Sullivan replied on December 5: "I don't think it necessary for you to send any further proofs of the drawings.—I dislike them as you know and for reasons I have fully explained. I would like to know however why you have omitted the headings (titles) at the top: They are important to an understanding. It's a pity our views are so divergent on a work so important—at least to me."

Whitaker responded on the 10th, explaining that he thought Sullivan was pleased when informed that the construction lines could be taken out. He noted further that it was not possible to reletter the plates; therefore, type was being used that would be harmonious. Sullivan's reply was short: "As to the plates—let us consider that incident closed. You have had your way, so let it go at that."

On the 22nd, Sullivan wrote again: "Concerning the portfolio you make an error: You state there are 20 drawings: there are not. There are 19 drawings and Plate #9 is a literary 'Interlude'—as there is to be a literary prelude of several pages.

"I am afraid you do not understand the

structure of the thesis which the drawings illustrate as incident to the literary matter and the notations. It is an organic work and must be so presented to the student. . . .

"I have no objection to autographing 500 copies of the volume of drawings if you think it will help sales. It will however delay matters for at least 10 days more."

The correspondence ended with Sullivan's letter of February 1, 1924, to Whitaker (quoted in the June issue) regarding Whitaker's request for a duplicate of the "Prelude," which Sullivan found to be "exceedingly irritating."

Some 20 years ago, a question arose concerning the techniques that had been employed to print the drawings, and it was decided that it was not by a relief process. Now this newly discovered documentation seems to have resolved the question, and it can be noted that the Standard Engraving Co. received an order for line plates on copper at three-fourths of the original size of the drawings, which were to be insured for \$2,000. The typographer was Frederic Goudy, to whom AIA had given its craftsmanship medal for typography in 1923. The printing was done by William E. Rudge, a printer of fine books.

Although there never were the autographed copies that Whitaker wanted, his desire for a fine book was realized and his judgment vindicated when the book was chosen by the 1924 jury of the American Institute of Graphic Arts as one of the "Fifty Books of the Year." This was truly a tribute to a small firm for which this was one of its first major productions.

Like the Autobiography, the System has also been reprinted in recent years to meet the demands of a new generation. Thus it seems that Sullivan's books may go on living longer than most of his buildings. □

Ed. Note: *A few copies of the original edition of "A System of Architectural Ornament" have survived. The bindings are more or less chipped, but the contents seem fine. They are offered "as is" for \$40 per copy, postpaid. Direct requests to Pettengill, AIA library. Sales will benefit AIA's Louis Sullivan fund.*

Recycling and Restoring Landmarks: An Architectural Challenge and Opportunity

Morris Ketchum Jr., FAIA

The architectural profession has a unique opportunity to profitably serve the cause of landmark preservation in every major city in our country. By close collaboration with landmark preservation commissions, architects can:

1. Help to analyze the richness and diversity of our landmark heritage.
2. Evaluate its current economic status.
3. Propose programs for restoration or recycling where necessary.
4. Administer the achievement of such projects.
5. Develop public interest programs in landmark preservation.

In these hard times, the profession must enlarge its creative activities in appropriate fields which, as well, will provide an economic return for architectural services. National, regional and local funds are becoming available for this purpose.

Landmark preservation is an architectural challenge and opportunity in terms of building design and planning. As always, the profession will rise to meet the challenge.

Landmarks are the invaluable and irreplaceable gift of the past to the present.

Brand new cities, such as Brasilia, are gleaming white skeletons awaiting the slow accumulation of urban flesh which landmarks have given to the fabric of such cities as Rio de Janeiro. Whether this be native vernacular or imported eclectic architecture, whether it be an individual building or an historic district, it is a priceless record of urban man's life and achievement to be constantly guarded and preserved. Cities desperately need the variety and delight which have been provided by different men at different times in a nation's development. Heaven knows that there is little enough of urban antiquity and visible tradition still left to be protected against the bulldozer and its master, the land speculator, so that past and present can continue to be woven together to create the living fabric of each and every city.

The Landmarks Preservation Commission of New York City, now celebrat-

ing its 10th anniversary, has dramatically proved the richness and diversity of a great city's landmark heritage. Its chairman, Beverly Moss Spatt, has said:

"The Landmarks Preservation Commission has attempted, by its designations, to preserve the character of New York, its special flavor and traditions, and is proud of such landmarks as the Brooklyn and Queensborough Bridges; Hunterfly Road Houses in Bedford-Stuyvesant which are the remainder of an early free black community; First Houses, on the Lower East Side, which was the nation's first publicly financed public housing project; Ocean Parkway, a scenic landmark designed by Olmsted and Vaux, which was the first parkway in the nation; the fine residences of Gramercy Park Historic District on the East Side and the St. Nicholas Historic District in Harlem and the Stuyvesant Heights Historic District in Bedford-Stuyvesant; the Otto Kahn and James Burden Mansions on upper Fifth Avenue; the SoHo Historic District, containing a wealth of cast-iron architecture in its commercial structures, which now provide a special district where artists live and work, and Sailors' Snug Harbor in Staten Island.

"The city's finest institutions are among its finest landmarks: City Hall, Surrogate's Court, the Municipal Building, the New York County Courthouse and the U.S. Courthouse at Foley Square; its finest cultural treasures: the Museum of Natural History, Metropolitan Museum of Art, the Cloisters, the Frick Collection, the Henry Street Settlement House, the Hall of Fame and other buildings at Bronx Community College, Carnegie Hall, buildings within Bronx Park and Prospect Park, the Richmondtown restoration in Staten Island, and the New York Public Library, as well as several branch libraries, and all of Central Park."

The majority of the great landmarks in New York City have never changed their functions or character. Some have needed restoration; a few have been recycled to new uses for economic survival in today's world. In every landmark historic district, from tiny Sniffen Court to gargantuan Greenwich Village, there are buildings which have been quietly restored or recycled, largely by unknown architects.

Of the approximately 450 New York City buildings designated as landmarks, only about 30 have needed minor restoration or recycling, and only 36 have required major recycling or restoration by architects who are more well-known. With few exceptions, of the more than 10,000 structures included in 26 landmark historic districts, many of the buildings have been rescued, restored or recycled by less well-known architects.

The architectural and planning approach to landmark preservation has been clearly demonstrated to be both practical and effective. In addition to those landmark projects shown, some of the other 66 examples are:

The Morton F. Plant House, 615 Fifth Avenue: This dignified six-story neo-Renaissance building is a fine example of the successful conversion of an elegant townhouse into a distinguished commercial building. Designed in 1903 by Robert W. Gibson, it was remodeled in 1917 as a shop for Cartier, Inc., by William Welles Bosworth, FAIA.

Amster Yard, East 49th Street: Formerly an elegant group of townhouses of the 1869-70 period, this landmark again demonstrates how interior remodeling converted a distinguished neo-Italian Renaissance structure. It was converted to headquarters of James Amster Associates by Harold Sterner, AIA, in 1945.

The Vincent Astor House, 130 East 80th Street: Now occupied by the Junior League of the City of New York, this exceptionally fine neo-federal structure was recycled by appropriate interior alterations. It was designed in 1928 by Mott B. Schmidt, FAIA, and was converted by Schmidt about 1960.

The James B. Duke House, 1 East 78th Street: Designed by Horace Trumbauer and completed in 1912, this house was recycled by necessary interior alterations in 1958 by the AIA firm of Robert Venturi, Cope & Lippincott. It is now occupied by the Institute of Fine Arts, New York University.

The William Goadby Loew House, 56 East 93rd Street: Now the Smithers Alcoholism Center, Roosevelt Hospital, this elegant neo-English Regency style mansion, designed by Walker & Gillette

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and built in 1932, was renovated by alterations in 1974 by the AIA firm of Rogers, Butler, Burgun & Bradbury. It was first occupied by Loew and later by the theatrical producer Billy Rose.

Cooper Union Foundation Building, Cooper Square: Opened in 1859, this is one of the oldest extant buildings in the country to use an iron framing system. It was originally designed by Frederick A. Peterson and, in 1974, was appropriately restored by John Hejduk, FAIA, thus giving the old landmark new life.

Sailers' Snug Harbor, Staten Island: Consisting of five buildings, this group is one of the most notable in the country in the Greek revival style. The former administration building (1831-33) is attributed to the well-known architect Milton Lefever. The structures will be recycled according to interior alterations proposed by Giorgio Cavaglieri, FAIA, for use by the State Island Institute of Arts and Sciences.

Landmark buildings in any city of the country can thus be preserved, adapted to the present and protected for the future on an economically viable basis.

Landmarks are unique commercial assets, ready if necessary to be architecturally restored or recycled for new functions appropriate to today's world. There is no need to turn them into one more museum that is costly to restore and maintain when they can provide space and character which can never be duplicated in terms of today's economy or craftsmanship.

In New York or any other city, the prime question is: Can cold-blooded economic analysis—not starry-eyed enthusiasm—justify the cost of recycling? Here is the opportunity for the architectural profession and every landmark preservation commission to closely collaborate, starting with landmark selection.

Landmark designation should depend, first, on the selection of a landmark building, building group, publicly accessible interior space, exterior environment or historic district which is qualified not only for its esthetic, historic and social value, but also as a vital economic urban component. Second, the collaborators should undertake a complex architectural/planning investigation of possible restoration,

reconstruction, recycling and maintenance costs; third, they should perform a similar analysis of income-producing factors for maintenance and amortization.

Today and tomorrow, this process can bolster the economy and diversify the spice of every cityscape.

Historic districts require a different approach, and their present and future are dependent upon community participation. Public support is just as important for landmark preservation as for protective laws of all kinds. Whether it be in New York City or elsewhere, landmark commissions must work closely with their communities to create each district and to protect it as an entity. Historic districts are often true cities within a city, far more than any stereotyped public housing development.

In the past, landmark commissions have protected and preserved historic district character. Now, with new legal powers to designate exterior open space and publicly accessible interior space, there is a new opportunity to re-evaluate each historic district in urban planning terms to decide whether great interior landmarks be designated, whether parking lots should be parks, whether new construction should be appropriately but not excessively high rise. Larger districts can include interlocking communities; smaller districts can be given perimeter landscaping.

Control of the total urban environment can provide new historic, social and economic validity for every historic district.

Citizens are often aware that their city's landmarks may be a rich treasure trove, but often they are not sure what the landmarks are, where they are or how to see them. Each city should publish a landmark guide containing a series of **landmark walking tours** whereby every citizen can become better acquainted with his own urban environment, old and new. It is the best way to create public understanding and appreciation of landmarks and to raise the battle cry for their preservation.

Such tours could link together landmark buildings, historic districts and parks. In New York City, the landmark commission's excellent guide titled *New York City Landmarks* may be supple-

mented by a series of walking tours. For example, one of the tours might start at Gracie Mansion at East End Avenue and 88th Street and terminate at the Metropolitan Museum of Art.

Gracie Mansion, with views of the East River and adjoining Carl Schurz Park, was built for a wealthy merchant, Archibald Gracie, about 1800. Since 1942, it has been the official residence of the mayor.

Across the street is the one-block-wide Henderson Place Historic District, where John C. Henderson, in 1881, built small Queen Anne-style rowhouses "for people of moderate means." Then walking along 88th Street, one comes to Holy Trinity Church, St. Christopher House and Parsonage, a superb neo-Gothic church group of 1897, designed by architects Barney & Chapman. Walking west and south, one finds the neo-Renaissance Church of St. Ignatius Loyola on Park Avenue.

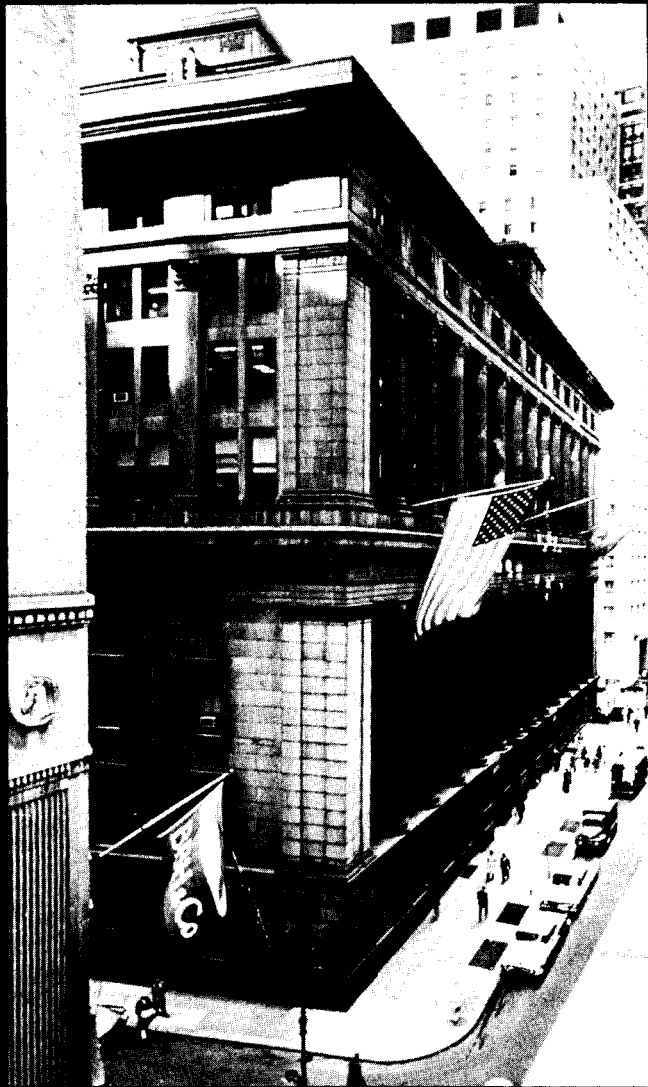
The Metropolitan Museum of Art, seen against the landscape of Central Park, was built by various architects, including Calvert Vaux and Jacob Wrey Mould (1874-1880, Victorian Gothic); Richard Morris Hunt (1902, Beaux-Arts); McKim, Mead & White (1911 and 1926, neo-classic), and now, Kevin Roche & John Dinkeloo Associates, in the fantastic expansion—north, south and west—of vast greenhouses enclosing new and old wings and an Egyptian temple.

This is but one example of how landmark walking tours can add to the public's appreciation of the past. In large historic districts, there could be many walking tours.

Realistic and enlightened collaboration on landmark preservation has been an effective tool throughout America. Such collaboration can inspire in man a knowledge of and a deliberate participation in the history of his day and age to the enrichment of both his mind and his heart.

Every architect and every landmark preservation commission in the nation should give high priority to collaboration on the character of our landmark heritage; the evaluation of its economic vitality; the creation of necessary programs for restoration and recycling; the execution of such programs, and the enlistment of public support for landmark preservation. □

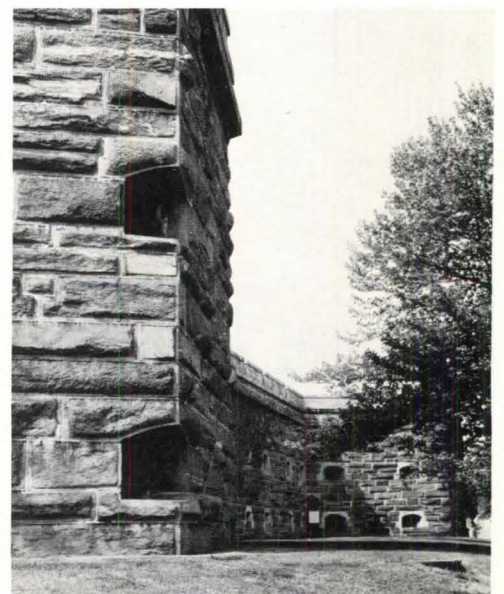
First National City Bank, 55 Wall Street: Erected between 1836 and 1842 from designs by Isaiah Rogers, this notable Greek revival building was first the Merchants' Exchange and later the U.S. Customs House. In 1907, it was converted by McKim, Mead & White into headquarters for the bank. The restoration architects added an upper two-story colonnade which blends harmoniously with the original classical design.

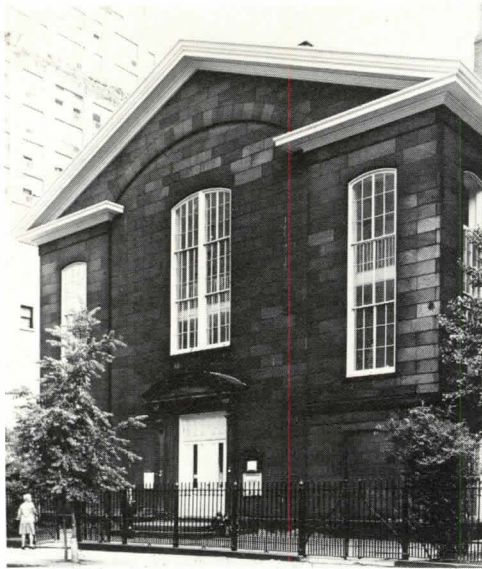


City Hall, City Hall Park: Undoubtedly the most notable of restored landmarks in the city, this handsome structure resembles a miniature 18th century French palace, with Georgian details. It was designed by winners of an architectural competition, Joseph F. Mangin and John McComb Jr., and built between 1802-11. The building was grievously harmed during the ensuing years by fires, neglect and clumsy alterations. Between 1906 and 1920, its interiors were faithfully restored by Grovesnor Atterbury, FAIA. Its exterior, built of New Jersey sandstone and Massachusetts marble, originally included a rear facade of brownstone. Badly eroded under attack of pollution and pigeons, the facade was peeled off in 1954-57 and reproduced piece by piece in unpolished red Missouri granite and Alabama veined limestone, a treatment which also replaced the brownstone rear facade—all the work of the architectural firm of Shreve, Lamb & Harmon. No other landmark in the city has required such extensive restoration.

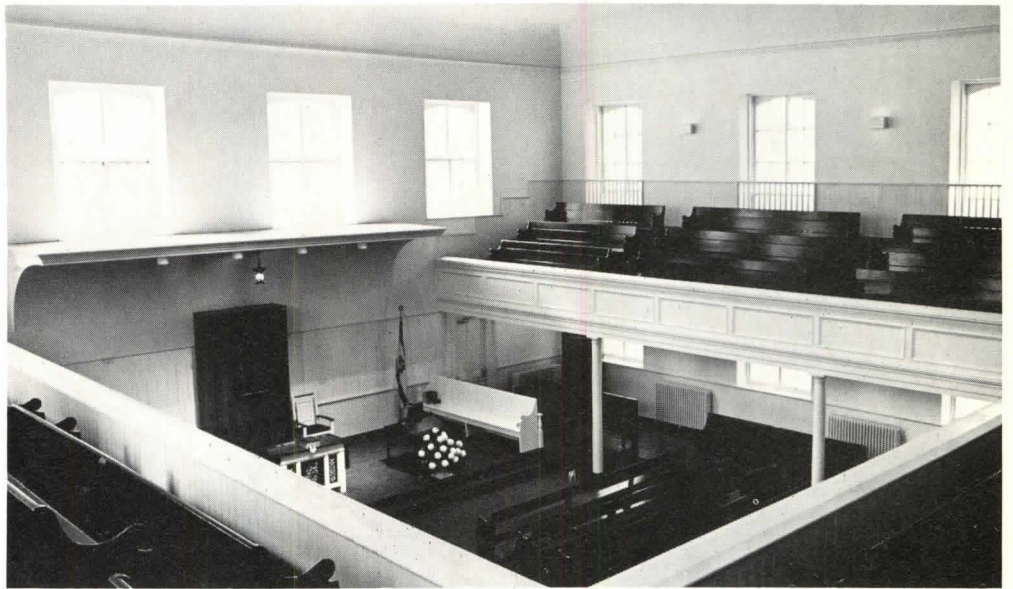


State University of New York Maritime College, formerly Fort Schuyler, east end of Pennyfield Avenue, the Bronx: Called the finest example of 19th century fortress design in the nation, Fort Schuyler was abandoned in 1870 and allowed to fall into disrepair. Once, 312 guns were mounted in the gun ports of the 11-foot-thick granite walls. After some restoration work by WPA, it became an educational institution in 1938. In 1962-66, there was exterior renovation by Ballard, Todd Associates; and in 1966-67, William A. Hall, FAIA, remodeled the interiors. His conversion of the old gun galleries into an academic library was a brilliant achievement.

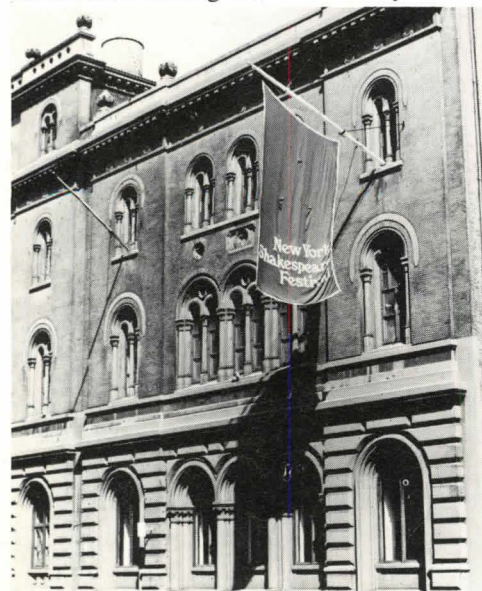


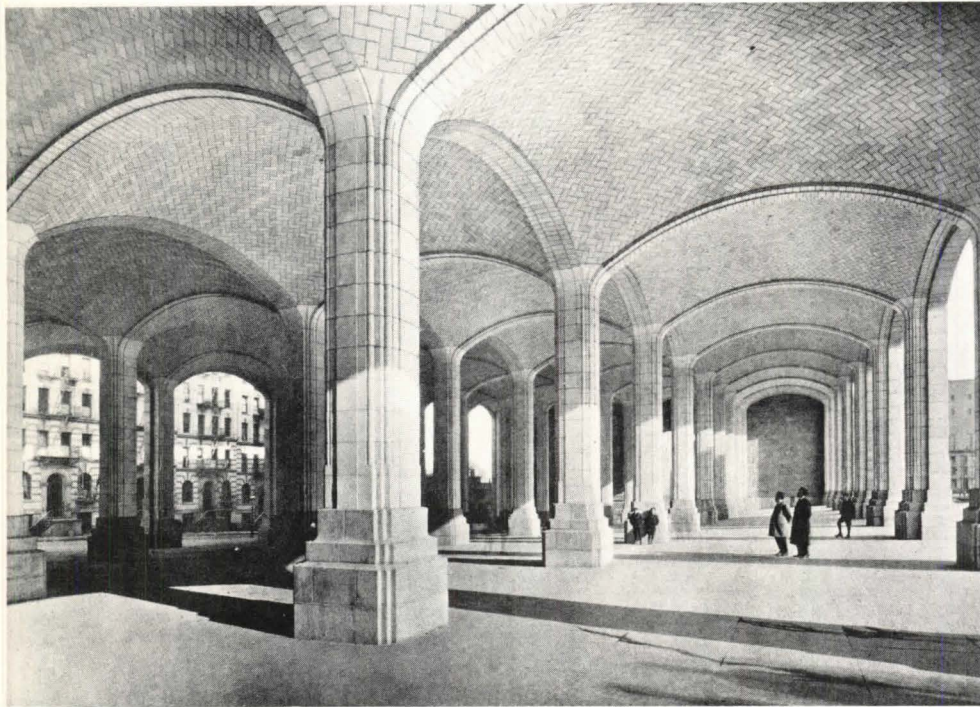


Brotherhood Synagogue, Gramercy Square: Beautifully proportioned, this building in the Italianate style was erected in 1859 from the design of architects Gamaliel King and John W. Kellum as the Friends' Meeting House. It was sensitively restored for its present owners in 1974-75 by James S. Polshek, FAIA.



New York Shakespeare Festival Public Theatre, 425 Lafayette Street: Adapted to contemporary use by Giorgio Cavaglieri, FAIA, in 1966, as a series of dramatic stages for Shakespearean repertory and other theaters, this handsome structure resembles an Italian Renaissance palace. It was built over a period of 30 years in the mid-1800s from designs by Alexander Saeltzer, Griffith Thomas and Thomas Stent. It served first as a library for the poor—a benefaction of John Jacob Astor—and from 1911 to 1965 as the home of the Hebrew Immigrant Aid Society.





The American Cinematheque, between the ramps of the Queensborough Bridge: Back in 1909 when the public market formerly sited here was opened, there were six days of festivities to celebrate the design achievement of Henry Hornbostel, FAIA. Now, this landmark will house within its dramatically vaulted cathedral space the world's largest collections of archival and experimental films. There will be theaters, a screening room, restaurant, exhibit spaces, reference library. A vaulted lobby, freely accessible to the public, will open onto a landscaped plaza's outdoor film exhibits and kiosks. The grandeur of the original Guastavino tile vaulting will be combined with contemporary materials, equipment, graphics and color to create new vitality for an historic landmark. Restoration architects: I. M. Pei & Partners.



Washington Market Housing, Harrison Street: Two and a half stories high, this remarkable group of federal houses, the oldest dating from 1796, still retain their original roof lines, gables and dormers. Two were designed by John McComb Jr., New York's first native-born architect and one of the designers of City Hall. Once converted into market warehouses, they fortunately were reconverted into residences in 1973 by Oppenheimer, Brady & Vogelstein as part of an urban redevelopment project. Nine of the houses were moved to Greenwich and Harrison Streets, just eight blocks north of the World Trade Center, where they share a new cobblestone courtyard with low-rise apartments. The architects successfully integrated the old landmarks into contemporary land use patterns. The Landmarks Commission said that the townhouses "preserve intact, as a group, the characteristic late 18th century scale and profile which exists nowhere else in the city."

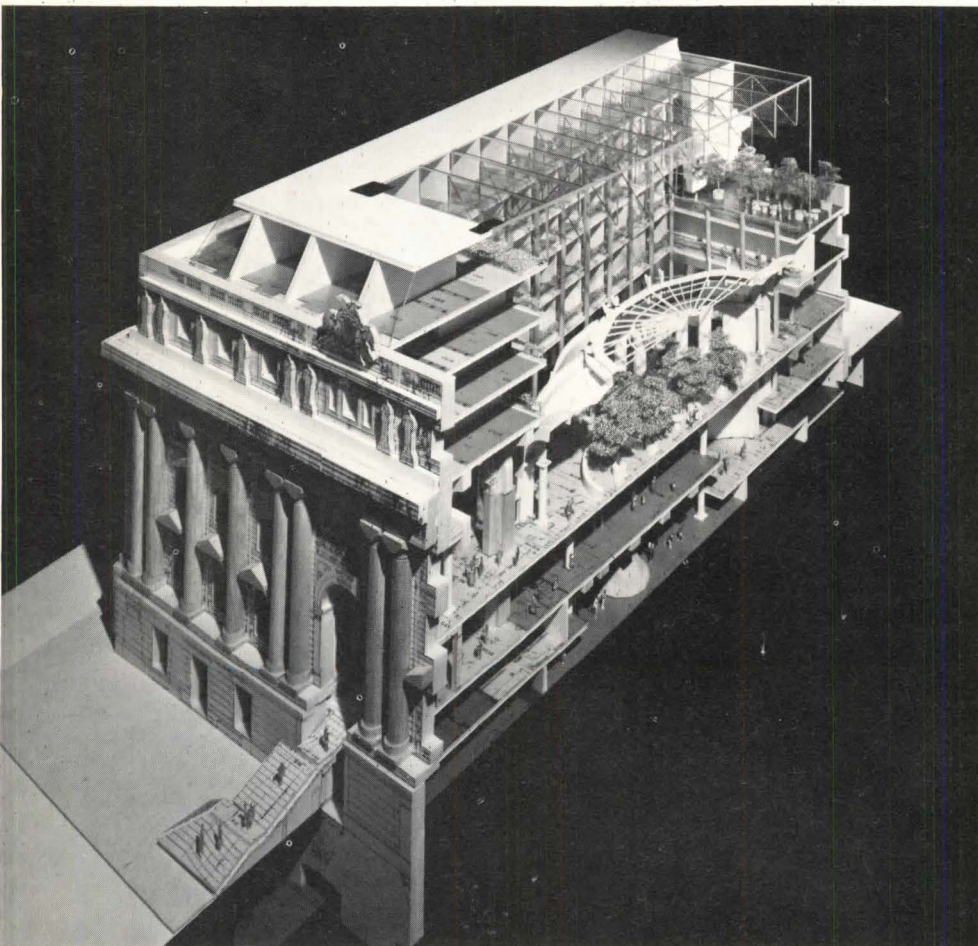


International Center for Photography, 1130 Fifth Avenue: This elegant neo-federal style house was designed by Delano & Aldrich as a home for Willard Straight. It was recycled by interior alterations for the Audubon Society in 1952 by Werner Walter Johnson and again in 1962 by Pederson & Tilney. The renovation for its present occupants was accomplished in 1974 by Robert H. Simpson, AIA.





Squadron A Armory, Park and Playground, Intermediate School 29, 66th to 67th Street. All that was left of this old landmark, built in 1877-79 from designs by Charles W. Clinton, were the twin towers and a connecting wall. It was saved from the bulldozer by last-minute action of the community. The matchless brick craftsmanship of this landmark fragment inspired its own restoration and design into a new park-playground and intermediate school by Morris Ketchum Jr. & Associates, Morris Ketchum Jr., FAIA, partner in charge. Completed in 1974, the open park-playground permits inspection by police squad cars. The central asphalt paved area is used for sports; when the movable equipment is stored away, the space is used for community plays and concerts. The tree-sheltered brick terraces provide space for audience seating and relaxation. The school's 1,800 pupils form three autonomous subschools, with shared educational facilities.



United States Custom House, Bowling Green: Designed in the Beaux-Arts tradition by Cass Gilbert, this monumental structure, completed in 1907, is now abandoned. The Landmark Conservancy has proposed that it be converted for commercial use and for various exhibitions. I. M. Pei & Partners have made design studies for the proposed conversion. One of the architectural changes envisioned is the enclosure of the interior courtyard, with a 15,000-square-foot skylight placed over the central court.



Jefferson Market Library, Sixth Avenue and West 10th Street: Formerly the Jefferson Market Court House, built between 1874 and 1877 on the site of an old marketplace, this gem of Victorian Gothic architecture was the creation of Frederick Clarke Withers and Calvert Vaux. The exterior restoration and superb interior remodeling were done by Giorgio Cavallieri, FAIA, in 1967. □



Environmental Education in Florida Schools

John E. Stefany, AIA

Florida's unusually rapid growth in recent years has created a host of environmental problems that resemble those being experienced by other regions of the country. But Florida's have been more severe, making the need for control all the more urgent. Because this state also has enviable assets for gaining such control—a legislature committed to environmental education, abundant university talent and a citizenry concerned with preventing further plunder of the environment—many look to Florida as the ideal educational laboratory in which to pursue solutions to environmental problems.

Florida's efforts to bring environmental education into the public schools grew out of years of activity by a small group of citizens primarily concerned with the conservation of the natural, rather than the built, environment. Beginning in 1965, the early efforts of this citizen's group were fragmented and their resources pitifully short. Before long, however, they turned their efforts toward the political arena, as they recognized the need to define long-range goals and develop statewide direction. At the same time, support for legislation was growing rapidly because of Florida's rapidly worsening environmental problems.

Therefore, the environmental education bill of 1970 received broad support and was easily passed. This was due in part because it was less controversial than other bills dealing with the environment which endorsed direct control of land use. The goals of the bill were to develop a master plan for environmental education in Florida's primary and secondary schools; to establish an advisory council composed of legislators, educators and representatives of organizations concerned about the environment, and to assess the state's current environmental programs and capabilities. The sum of \$75,000 was appropriated to implement the bill during its first year; the amount was increased for subsequent years.

One of the first lessons taught by the

Mr. Stefany has been active in Florida's environmental education program since its beginnings and is a member of the state environmental education advisory council.

1970 legislation was that in order to have influence and credibility, advisory councils must be representative of the full range of groups having an interest in environmental issues, from conservationists to pollution-producing industries. Since 1970, local as well as state-level advisory councils have been established in over half the county school districts. They have been valuable in gathering and disseminating data, identifying community goals in environmental education and rallying local support for legislative action.

Inventorying the state's existing environmental programs showed that although there were excellent projects being carried on in schools, there was also a great need for materials and expertise which dealt with the built environment.

The preliminary bill had entirely neglected the urban environment, and because of this was to be soon amended. As a result of efforts by the Florida Association of Architects, an architect was appointed to the advisory council. At the same time, citizen concern with the built environment was mounting as areas of natural beauty were being replaced by ugly cancers of uncontrolled and unserviced urban sprawl. Local government, utilities, the design professions, environmental groups and the development industry all rallied around the cause of expanding education about the environment. Some saw it as a viable alternative to the passage of "no growth" legislation.

The Florida environmental education bill as amended in 1973 used other lessons learned in the process of trying to implement the initial 1970 act. Importantly, the Florida bill stressed that environmental education cannot be a single course or discipline, but must act instead as an "umbrella," under which other courses can be pulled together for purposes of creating awareness about the environment and change in our treatment of it. A statewide bureau of environmental education was therefore created within the division of elementary and secondary education.

Underlying the programs was the idea that through tools taught in math, social studies, art, literature and other courses, selected environmental problems could be recognized, defined and discussed and al-

ternatives found to continued spoilage. The new trend was to use the environment itself, including community organizations and citizen participation to teach youngsters. As State Commissioner of Education Ralph D. Turlington said, "Children should be given an opportunity to study the resources of their environment under natural conditions and to become involved in open-ended explorations of their surroundings." The goals of environmental education, as stated by him, are to:

- "Stress the development of attitudes rather than the acquisition of facts. Emphasis will be placed on the development of a positive self-concept among students concerning their role in society and their responsibility to wisely manage the environment.
- "Strive to involve the total community in the environmental education process and to enlist the aid of all agencies, both private and governmental, who share a concern for the environment.
- "Stress the processes of inquiry and problem solving.
- "Include a comprehensive pre-service and in-service teacher training program.
- "Be continuously involved in research to study the efforts being made elsewhere in this field, to establish pilot programs, to evaluate more accurately the outcome of existing programs and to determine the best means of producing the change in value patterns necessary to solve today's environmental problems."

Under the act, each district school board and school principal can submit to the commissioner a proposed program. According to the guidelines, each is to stress coordination with other programs and development and distribution of instructional materials with "special concern being given to the urban environment."

To provide incentive, a "minigrant" program was established, under which state department of education dollars are used to fund the development of "exemplary programs or instructional materials" submitted by district school systems or individual teachers. This incentive proved surprisingly successful. In 1974, \$300,000 was granted directly to local school districts. A study made in 1973 showed that

continued on page 42

Survey of Firms Charts Decline In Employment

AIA's first hard survey of employment trends in the architectural profession indicates that what most architects *knew* was true is statistically accurate: The architectural profession has been hit hard by the economic crisis. Employment in architectural firms, the survey reveals, has declined by 6.8 percent in the period from the last quarter of 1973 through the first quarter of 1975. Regardless of ownership structure—sole proprietorship, partnership or corporation—there has been a decline in employment.

In order to gather some statistical data about employment in architectural firms, AIA sent out a questionnaire in April to 4,605 firms. The purpose, outlined in a letter signed by President William Marshall Jr., FAIA, was "to obtain information on employment in architectural offices so that AIA can present *hard facts* on the economic conditions of architectural firms and propose actions to governments and others to alleviate the current situation."

The firms were asked to enter in a column the total number of employees, architectural and all, on the payroll as of the last quarter of 1973, each of the four quarters of 1974 and the first quarter of 1975. It also was requested that the firm indicate its ownership structure: sole proprietorship, partnership, corporation, "owned by another firm" or "other." If the status of the firm had changed since the end of 1973, a box was to be checked and the nature of the change described.

By June 10 of this year, 73 percent of the firms had returned the questionnaire. Of the 3,372 returned questionnaires, 2,533 responses were tabulated in AIA's data processing department. Omission of some responses was undertaken in order to obtain comparable figures. For example, 291 firms which had changed status during the period were eliminated.

From the tabulated returns, AIA now has more definite information about percentage changes in employment by firm category and firm size and by states for the period of study. William L. Slayton, Hon. AIA, executive vice president of the Institute, points to "one defect" in the survey figures. He notes, "There is no way to know or to show which firms have gone out of business and the effect of this on

the total statistical picture." Nonetheless, the figures do reveal an overall downward curve in employment.

The effects of the economic recession are evident. From a base line of 31,884 employees at the end of 1973, there were 31,987 employees, or an increase of 0.3 percent, at the end of the first quarter in 1974. By the end of June 1974, there were 32,729 employees, or an increase of 2.6 percent over the base line. At the end of the third quarter, there were 31,885 employees, showing almost precisely the same number as at the base line. Then by the end of 1974, there were 30,668 employees—a loss in personnel of 216 in three months—or a decline of 3.8 percent. Matters worsened by the end of the first quarter of this year, when 29,712 employees were reported by the firms—a decline from the base line of 6.8 percent. When the percent changes are studied for the last three quarters, an accelerated drop is seen. By the end of September 1974, there was a minus 2.5 percent drop; a minus 6.3 percent by the end of the year; by 9.2 percent at the end of March 1975.

Overall, total employment by firm size of this year shows a drop in every size firm:

Firm size	Firms reporting	Percent change
1-9	1,807	- 7.2
10-24	492	-11.9
25-49	148	- 7.8
50-99	47	- 7.0
100+	39	- 1.8

It is interesting to note that in all categories of ownership structure 71 percent of the firms reporting employed from one to ten persons.

For the period of study, the sole proprietor firm has suffered the greatest loss in employment. Of the 1,033 firms polled in this category, the percent change from the base line is minus 15.2 percent:

Size of firm	Firms reporting	Percent change
1-9	984	-11.1
10-24	48	-30.5
25-49	1	-80.6

The 649 firms categorized as partnerships had a 4.5 decline in employment

from the base line (note the one gain):

Size of firm	Firms reporting	Percent change
1-9	415	-2.3
10-24	166	-8.9
25-49	46	-7.5
50-99	8	+5.8
100+	14	-2.9

There were 827 corporate firms in the survey, and they show a 7.3 percent decline, with firms of every size suffering a loss:

Size of firm	Firms reporting	Percent change
1-9	400	- 6.9
10-24	274	-10.8
25-49	96	- 9.5
50-99	38	- 7.4
100+	19	- 2.8

There was an increase in employment among the 12 firms which categorized their structure as "owned by another firm," with an increase from the base line of 7.5 percent.

There are wide differences in the percent changes of employment by state. The 10 states to suffer the greatest loss in employment, in order of decline from minus 28.1 percent to minus 11.2 percent, are: Rhode Island, Connecticut, Arizona, New Hampshire, Vermont, New Jersey, Florida, Texas, California and Georgia. Conversely, the 10 states to show greatest gains, ranging from a plus 57.1 percent for the first to a plus 4.05 percent for the last, are: Alaska, Wyoming, West Virginia, Iowa, Nevada, Missouri, Maine, North Carolina, Nebraska and Delaware.

There appears to be no regional pattern to explain the differences. For example, North Carolina's percent change from the base line was a plus 6.4 percent but neighboring South Carolina and Tennessee both reveal a minus 6.8 percent change.

When Professor Brian J.L. Berry, professor of urban geography, University of Chicago, was asked if he could suggest any general national trends that may account for the differences, he said that in the 1960s Arizona, California, Florida, Texas and Connecticut were fast growth states, with metropolitan concentrations that generated architectural activity, but

that this growth had slowed, undoubtedly accounting for less work for architectural firms. He said that New Hampshire and Vermont have placed an emphasis on ex-urban development which did not call for a like measure of architectural arrangement.

Specifically, he mentioned that Rhode Island, which is largely metropolitan Providence, had large cut-backs in the military installations, affecting architectural activity. Moreover, the unusual building program in metropolitan Atlanta has tapered off perceptibly, affecting the state's decline in architectural work.

As for the states that showed increased architectural employment, Berry pointed out that Alaska, West Virginia and Wyoming are resource-based states which, under the impact of the energy crisis, are enjoying a growth that generates architectural activity. Iowa, Nevada, Missouri, Maine, Nebraska and Delaware, he suggested, perhaps reflect the trend of recent years during which nonmetropolitan areas grew by 4.2 percent as opposed to 2.8 percent in metropolitan areas. As for North Carolina, he hypothesized that this state has shown steady industrial growth.

Robert Allan Class, AIA, director of technical programs at the Institute, said: "Statistics that break down employment by type and size of firm and by states can only give a hint as to the factors influencing these numbers. What the figures *don't* show is how many firms recognized their plight early and came back with some sizable volume of business from Washington, D.C., or Teheran, Iran. A firm can be located in the architectural boondocks and still have a full portfolio of work obtained from sources far from home."

For 11 years, *Engineering News-Record* has reported annually on the largest design firms in this country and their growth in volume of business. This year's report (see May 15 issue) on the top 466 design firms indicated a billings/staff ratio jump in all types of firms. "The total number of professional employees working for the 389 firms on the list both in 1973 and 1974 increased 8.6 percent," ENR said. "Conversely, the total professional and technical staffs of all firms on this year's list . . . grew by just 2 percent from 1973's

total. These figures are not entirely comparable, but they do show a trend in 1974."

The significant factor in 1974, when billings soared 27 percent, ENR reported, was foreign contracts awarded to "big industrial constructors." In 1974, foreign billings increased 44 percent over 1973, with billings in the Middle East alone hitting \$61.6 million. These billings are for big firms with multidisciplinary teams. As mentioned previously, 71 percent of the firms responding to AIA's survey employed fewer than 10 persons.

Even among ENR's big firms, however, there was not an upward trend for all. "The 42 architectural firms on the roster for two consecutive years cut their professional staffs by an average 14 percent." Conversely, architect-engineer firms increased professional staffs by 6 percent and engineer-architects and consulting engineering firms by 10 percent each.

The ENR figures cannot be compared with the AIA survey data, of course. But, apparently, the two surveys suggest that architectural firms have suffered a significant loss of work during the period of economic recession. For the most part, the impact has been even deeper than some architects thought. Certainly, AIA's data describe a serious situation. *Mary E. Osman*

Environment Education from page 40
local jurisdiction and private agencies were supplementing the state dollars, at a rate of four to one. Thus, the \$300,000 funded in 1974 produced an estimated \$1,200,000 throughout the 57 districts which participated in the program.

Another measure of the minigrant program's success is that 67 school districts and 165 individual teachers' proposals, requesting a total of \$711,023, were received in 1974/75. For 1975/76, requests have been projected to a total of \$1,050,000. Actual funding will fall short of these requests because of current economic constraints, but commitment to environmental education has never been higher.

A look at some of the environmental education projects funded in 1973/74 gives an indication of the types of specific programs included in the Florida environmental education effort:

- An interdisciplinary survey of the Miami River basin by students and teachers, which includes identifying environmental problems associated with the river and seeks solutions to these problems.
- Guided tours of "local areas of environmental concern," which emphasize the interrelationship of populations, pollution, natural resources and the quality of life.
- Workshops emphasizing on-campus field trips and the development of a county environmental education newsletter.
- The identification of existing and potential future environmental problems in one county by a community advisory committee. Education activities were then geared to creating an awareness and understanding of the problems.

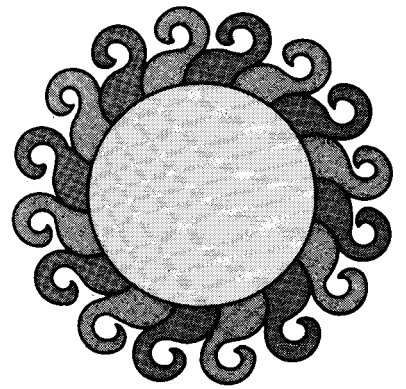
In math and physics classes throughout Florida, students can be seen measuring and evaluating pollution. In social studies classes, the active case study approach is being used more and more.

For the most part, architects have yet to assume a role of significant leadership and participation in Florida's environmental education programs.

The Florida Association of Architects has attempted to encourage local architects to contact local school systems and volunteer their special technical skills to help develop curriculae and programs relating to the built environment that could qualify for state grants. And it has had moderate success.

Such programs provide a fantastic opportunity for architects to influence subject matter in the public schools. The expertise of architects has been welcomed by the state and it has contributed to closing the gap between advocates of the built and natural environments.

"Florida can serve as a model in environmental education, James E. Ellison, AIA, the Institute's administrator for education and research" has said. AIA has pulled together information from other state environmental education programs and hopes to draw especially from the Florida experience in developing guidelines for legislation and for action architects can take, acting individually and through components, to promote environmental education in state systems of education." □



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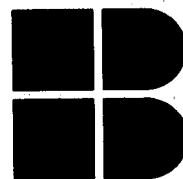
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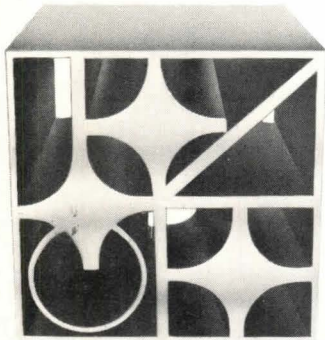


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- Henry T. Hopkins**
Director, San Francisco Museum of Art, San Francisco, Ca.
- William Marshall, Jr.**
V.P., McGaughey, Marshall & McMillan, Norfolk, Va.; President, A.I.A.
- Arthur J. Pulos**
President, Pulos Design Assoc., Inc., Syracuse, N.Y.; Chairman of the Board, Industrial Designers Society of America
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- Arnold Wolf**
President, J.B. Lansing Sound, Inc., Los Angeles, Cal.; Regional V.P., I.D.S.A.

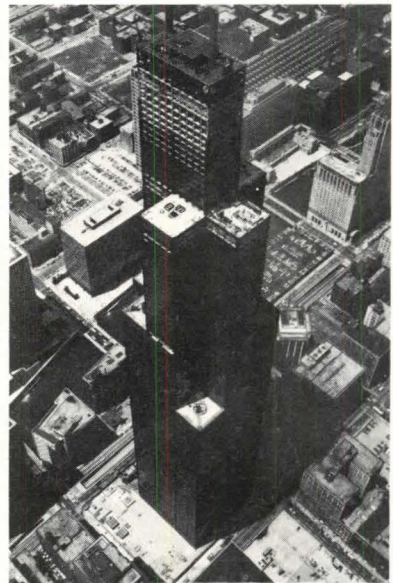
Structures



Best Design of Low-Rise Construction was awarded to Richard Levin Associates, Inc., Architects, Dayton, Ohio, and Overly Manufacturing Company of Greensburg, Pa., for the new headquarters of Homestead Federal Savings & Loan Association. The new structure features a monolithic, three-story-high, 143-foot-wide façade of satin finish stainless steel panels. The façade acts as a huge kinetic mirror of the surrounding urban scene.



R. Levin



B. J. Graham

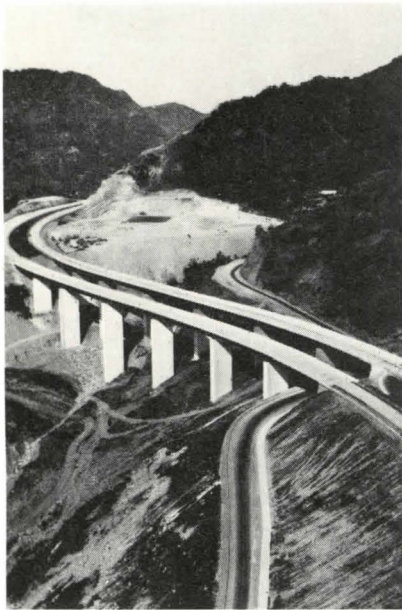


R. C. Halpern



R. T. Baum

Best Engineering of High-Rise Construction was won by Skidmore, Owings & Merrill, Chicago, for the world's tallest building, the 1,450-foot-high, 110-story Sears Tower. Composed of nine framed steel tubes, each of which is virtually a skyscraper in itself, the building design held steel weight down to just 33 pounds per square foot.



A. S. Balbiani



H. Horn



L. Gersten

Best Design of Public Works Construction was won by the firm of Tippetts-Abbett-McCarthy-Stratton, New York, for the La Palma Viaduct, along the Las Americas Expressway between San Juan and Ponce, Puerto Rico. Twin steel spans, with curves at each end flowing in opposite directions, promote an uncluttered appearance. The seven-span, steel-plate structures measure 1,036 feet in length and stand on piers ranging up to 180 feet in height.



Best Design of Low-Rise Construction also went to Caudill Rowlett Scott, Los Angeles, and A. Dean Taylor, Columbus, Indiana, for their unique Fodrea Elementary School, in Columbus, featuring a 24-hour community concourse that invites people of all ages to come in and exchange ideas, read, and play. Structure has spiral stairs and slides to funnel children from the mezzanine to the media center.



P. Kennon



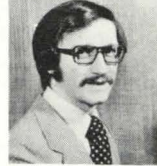
T. Garrison



W. R. Tresten



E. C. Baker



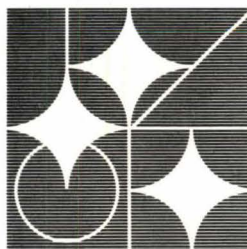
D. B. Carter

Best Engineering of Low-Rise Construction was awarded to W.R. Tresten, E.C. Baker, and D.B. Carter of The Austin Company, Houston, for steel "trees" they designed to support the roof enclosing the Bon Marche shopping center, Baton Rouge, La. The trees combine functional support with pleasing appearance, without impeding pedestrian access to the stores.



E. F. Collins

Best Engineering of Public Works Construction went to Carswell Engineering Ltd., Calgary, for its 615-foot-long cable-stayed pedestrian bridge. The bridge, incorporating advanced orthotropic design theories, and constructed in just three months, connects North Calgary with the Princess Island recreation park in the channel of the Bow River.



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AJ



Psychology and the Built Environment.

Edited by David Canter and Terence Lee. New York: Wiley, 1974. 213 pp. \$22.50.

This book bears a title that promises far more than it delivers. It would have been more accurate, and fairer to the book-buying public, if it had been labeled *Proceedings of the 1973 Surrey Conference on Psychology and the Built Environment*. But publishers know, even better than you and I, that a title like that would be lucky to sell 12 copies.

The enormous difference in quality among the 23 papers included confirms my view that rushing into glossy print with a set of proceedings of any conference is a mistake. Conference papers should be aged before being judged. Like cheese, they should be laid down in some cool cellar to see whether they ripen with authority or simply develop a bad odor. Even a brief aging would have helped this volume. One sniff would have ruled out a third of the entries.

The contributions come from a variety of countries, including the U.S. and Canada, but the majority of the papers are from Great Britain. The questions addressed range from such standard fare as "Do people react to a changing thermal environment?" (Yes) to "Is the social status of a neighborhood related to street layout?" (No). Titles range from such heavy-weight behemoths as "The Development of Environmental Knowing: An Overview of an Interactional-Constructivist Theory and Some Data on Within-Individual Development Variations," by Gary T. Moore, to the happily irreverent "Should We Tell the Children about Aesthetics or Should We Let Them Find It Out in the Streets?" by T.F. Heath. Some of them are good, a few are excellent and a large number are very dull.

Although the papers presented at the conference were clearly not aimed at an architectural audience, some of them deal with matters that are, or should be, of interest to architects. Roger Brauer's study of the use of military housing demonstrates that people use buildings in such different ways that there can be no ideal solution. The only rational strategy for the architect, in such circumstances, is to design in as many options for alternate behavior as

he can. Michael Edwards presents a comparison between the furniture arrangements assumed by the architects for public housing and the arrangements actually used by the tenants. The results remind us once more that we don't know as much as we should about people who use buildings.

One irritating aspect of the book is the impenetrable jargon adopted by some of the writers. I believe it was Barbara Tuchman who observed that the "... behavioral sciences have painted themselves into a corner of unintelligibility." That statement is not completely fair; many behavioral scientists write and speak with force and clarity. But unfortunately, some of these papers exhibit the worst features of the genre. Here is one gem extracted from a study of (of all things) facades:

"Following the suggestion of Nunally (1962) a principal axes factor analysis with varimax rotation of the 18x18 matrix of sums of profile crossproducts was computed. The somewhat unorthodox method of factor analysing sums of crossproducts does not allow a statement on the amount of variance extracted by the two factor solution in percentage terms. The plotting of the two factor solution in a two-dimensional Euclidean space using the loadings of the variables on the two factors shows, however, two distinct clusters."

The unfortunate result of such writing is to create the suspicion that the writer isn't really saying anything. It leads me to propose the following general principle (advanced as a null hypothesis, of course):

The more incomprehensible the jargon, the more numerous the standard deviation tables, and the longer the multiple regression analyses, the less the author has to say. Or: The larger the smoke screen, the smaller the fire.

That such language is not essential to accurate scientific communication is demonstrated by several papers. Whether this results from self-confidence, maturity or just competence, the authors know what they did, know what it means and have no difficulty telling us about it. In the first paragraph, you sense the spark of instant communication between individuals.

Of the papers in this category, two are of immediate interest to architects. Both deal with children at play and should be

required reading for anyone designing facilities for young children. Peter Smith's example demonstrates the importance of "resource density" rather than population density as the crucial factor in preschool play. Since different kinds of play equipment encourage different kinds of behavior, he suggests that a play area capable of accommodating different sets of equipment would be an unusually effective setting for learning.

Robin Moore deals with a slum area playground in Boston. His study confirms the idea that loose, "ephemeral" resources, such as boxes, crates and garbage can lids, are just as important as the fixed features of the playground. In order to record his observations, he has developed a useful notation for classifying activities called Patterns of Activity in Time and Space (PATs). Using this classification, it is possible to understand the order and patterns that underlie what appears to be a scene of complete chaos.

(Smith and Moore are not very helpful with the critical problem of quantity, how much for how many. For this information, try the invaluable *Planning Environments for Young Children*, by Kritchevsky, Prescott and Walling.)

Psychology and the Built Environment presents a problem that the design profession must ultimately solve. The Surrey conference was not the first to deal with the environment and human behavior and will surely not be the last. The production of scholarly papers in this field, which is already substantial, is bound to increase. Much of this material is of limited interest to practicing architects, but a small percentage is extremely useful in the most direct, problem-solving way. Who will sift this mountain of information, separating the wheat from the chaff? Until the profession solves that problem, we will all, inevitably, design at less than the optimal level.

Apparently, there will be another Surrey conference soon. Predictably, there will be another book like this one. When that volume of papers appears, someone will have to wade through the whole thing if we are to know about the Smiths and the Moores—but it will be someone else's turn. C. M. Deasy, FAIA

Overly shared in the design of this award winner.



This building, owned by Homestead Federal Savings and Loan of Dayton, Ohio, already had received two design awards when the architect and Overly Manufacturing Company were cited for excellence of design in the prestigious Design in Steel awards program sponsored biennially by the American Iron & Steel Institute.

Homestead Federal wanted a small, distinctive building. One that would not be dominated by the 20-story bank across the street. The building stands at the intersection of two one-way streets. For maximum traffic exposure, the architect suggested a virtually free-standing wall that would reflect the landscaped plaza. The 3' x 10' stainless steel panels with unique interlocking edges were designed, fabricated and installed by Overly. The panels are weather- and air-tight, and are the key design element of the building. There are no separate joint covers, and no mastics were needed for sealing. All fasteners are concealed. The system relies solely on the mechanical joint integrity for its leakproof performance.

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Architects: Richard Levin Associates Inc.,
Dayton, Ohio

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LETTERS

Credit Due: In the article about Robert L. Wilson, AIA, in the June issue, the credit for the design of the award-winning New Hope Towers project in Stamford, Conn., is somewhat misleadingly attributed solely to Mr. Wilson. The article should have stated that design as well as working drawings were done in partnership with James Evans Associates, architects in Stamford.

*James A. Evans, AIA
Stamford, Conn.*

Hotel/Motel Architects: One of the 15 degree-granting programs at Cornell University is in the school of hotel administration, with an enrollment of 550 undergraduates and 100 graduate students. A portion of the required curriculum includes a four-course sequence in hotel design and engineering systems, or "properties management." Each course deals heavily with actual hotel case studies and we need to update our sources constantly.

The school would like to assemble a directory of architectural firms—U.S. and abroad—which have hotel design experience. We would like to invite architectural firms to advise us of their hotel, motor inn, resort, etc., projects, both built and planned. This list would be available to potential clients, and the school hopes to use it to generate data and statistics on current hotel development. Interested firms should send a list of projects, date of building, location and number of rooms.

*Professor Richard H. Penner
School of Hotel Administration
Cornell University
Ithaca, N.Y. 14853*

EVENTS

Oct. 7-8: Seminar on New Techniques for Life and Fire Safety in Buildings, Roosevelt Hotel, New York City. (Repeat seminars on Oct. 22-23, Beverly Hilton Hotel, Los Angeles; Nov. 6-7, Marriott Hotel, Atlanta; Dec. 4-5, Statler Hilton Hotel, Washington, D.C.). Contact: American Society of Heating, Refrigerating and Air-Conditioning Engineers, 345 E. 47 St., New York, N.Y. 10017.

Oct. 8-10: Michigan Society of Architects annual convention, Kalamazoo, Mich.

Oct. 8-12: National Trust for Historic Preservation annual meeting, Boston.

Oct. 10-12: New England Regional Council/AIA annual meeting, Newport, R.I.

Oct. 15-17: New York State Association of Architects annual conference, New York Hilton Hotel, New York, N.Y.

Oct. 16-17: Institute on Site Development for Conservation and Rehabilitation of

Urban Environments, University of Wisconsin, Madison, Wis.

Oct. 17: Receipt of first stage submission deadline, competition for the design of a Walter Burley Griffin memorial. Contact: Information Officer, Embassy of Australia, 1601 Massachusetts Ave. N.W., Washington, D.C. 20036.

Oct. 19-23: International conference on Limits to Growth '75, Woodlands Inn and Conference Center, The Woodlands, Tex. Contact: John Naisbitt, Urban Research Corp., 5454 S. Shore Drive, Chicago, Ill. 60615.

Oct. 20: Receipt of entries deadline, AIA honor awards program. Contact: Maria Murray, AIA Headquarters.

Oct. 22-24: Central States Regional Council/AIA annual meeting, Stouffers Riverfront Inn, St. Louis.

Oct. 23-24: Conference on Revitalization of Shopping Centers, Mitchell Center, University of Wisconsin, Milwaukee.

Oct. 29-31: Texas Society of Architects annual meeting, Fort Worth, Tex.

Oct. 30-31: Seminar on Airport Planning and Design, University of Wisconsin, Madison, Wis.

Nov. 1: Receipt of entries deadline, competition for adaptation of two Philadelphia stadia for 41st International Eucharistic Congress in 1976. Contact: Mario Romanach, AIA, 117 S. 17 St., Philadelphia, Pa. 19103.

Nov. 1: Postmark deadline, applications, grants for graduate study abroad. Contact: Correspondence Unit, Institute of International Education, 809 United Nations Plaza, New York, N.Y. 10017.

Nov. 3-5: International Conference on Conversion of Refuse to Energy, Congress Hall, Montreux, Switzerland. Contact: E. Aubort, 42 Grand-Rue, Box 97, 1820 Montreux, Switzerland.

Nov. 7: Postmark deadline, submissions for Institute honors program. Contact: Maria Murray, AIA Headquarters.

Nov. 12-25: Interbuild Exhibition and Conference on Conservation of Resources, Olympia Hall, London, England, and aboard ship Queen Elizabeth II. Contact: Peggy Patton, Cunard/Interbuild Transatlantic Conferences, 555 Fifth Ave., New York, N.Y. 10017.

Nov. 15: Receipt of entries deadline, CRSI design awards program. Contact: George F. Leyh, Concrete Reinforcing Steel Institute, 180 N. LaSalle St., Chicago, Ill. 60601.

Deaths

Alfred M.T. Hardesty, Rio Piedras, Puerto Rico

Palmer Hewlett, Portland, Ore.

Norman Klein, Washington, D.C.

James D. Masey, Columbia, S.C.

F. W. Roudebush, Salisbury, Conn.

Robert N. Sheley, Toledo, Ohio

continued on page 50

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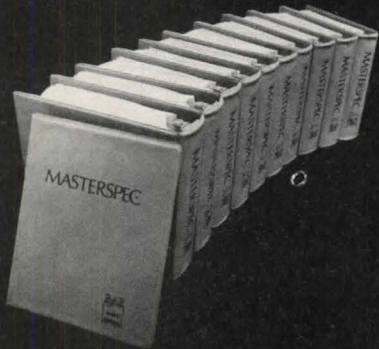


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Deaths continued from page 48

Edward D. Dart, FAIA: President of the Chicago firm of Loeb Schlossman & Hackl since 1969, Dart played a leading role in the design of many distinguished works of architecture, including St. Procopius Abbey in Lisle, Ill., which won an AIA honor award in 1971. Dart, who died on July 9 at the age of 53, was the architect of Water Tower Plaza, now under construction on N. Michigan Ave., in Chicago; several buildings at Northwestern University; the medical office building at Circle Campus, University of Illinois; Chicago Theological Seminary faculty housing; the athletic building at Lake Forest College and other residential, commercial and religious structures.

Michael L. Radoslovich, FAIA: Elected to AIA's college of fellows in 1959 for his "notable contributions in public service," Radoslovich was director of architecture for the New York City Board of Education from 1958 to 1969. He was awarded the New York Municipal Art Society's gold medal of honor in 1960 for his contribution in placing works of art in public school buildings. He was formerly associated with the New York City firm of Max O. Urbahn Associates and during the late '30s was employed by the City of New York. Radoslovich, who died on July 13 at the age of 72, was a member of AIA's school and college committee, 1960-62, and of the New York chapter/AIA's executive committee, 1956-59.

Newslines

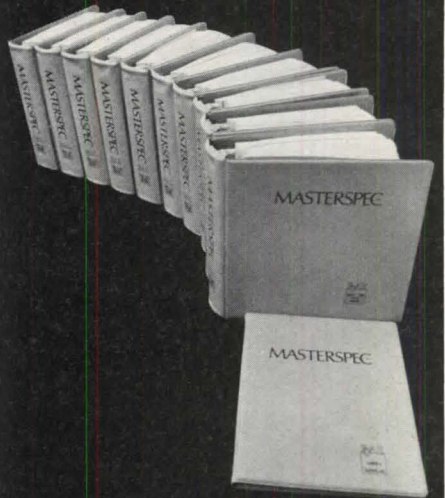
Two architects are among the four winners of mid-career fellowships granted jointly by the American Academy in Rome and the National Endowment for the Arts. They are Arthur May, AIA, associate at John Carl Warnecke & Associates, and Marvin H. Buchanan, designer with Architects Associated.

Carl C. McElvy, AIA, retired California state architect and formerly associated with the University of California at Los Angeles campus for 20 years, has been awarded the distinguished service award of the Association of University Architects.

Gerald L. Clark, AIA, of Phoenix, has received the 1975 distinguished achievement award of Arizona State University's college of architecture. He is president of the Arizona Society of Architects.

George Gentoku Shimamoto, AIA, a consulting partner in the New York City firm of Gruzen & Partners, has received the Order of the Rising Sun in the name of the Emperor of Japan for his outstanding contributions in furthering Japanese-American understanding and culture. □

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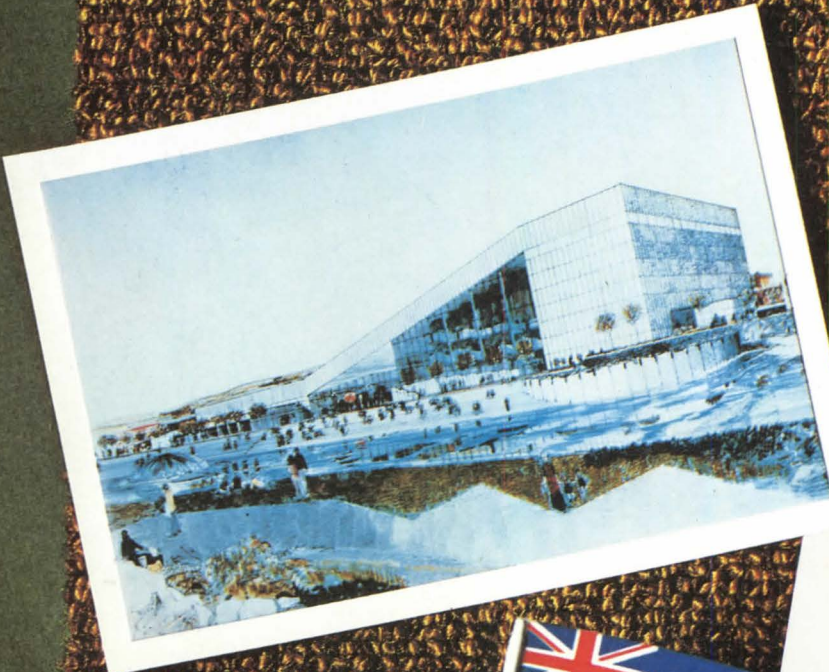


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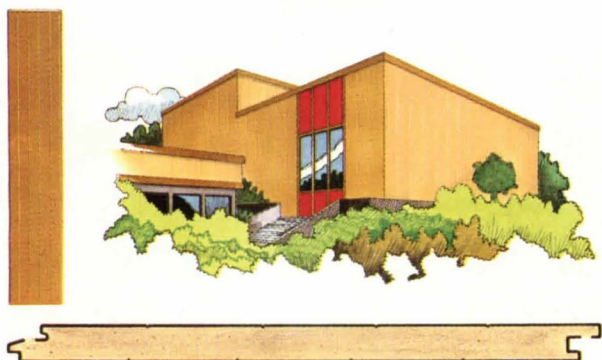
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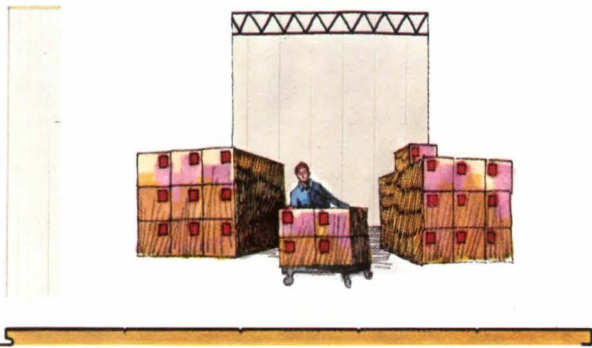
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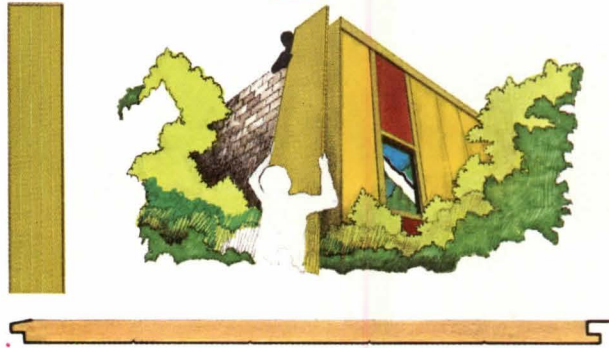


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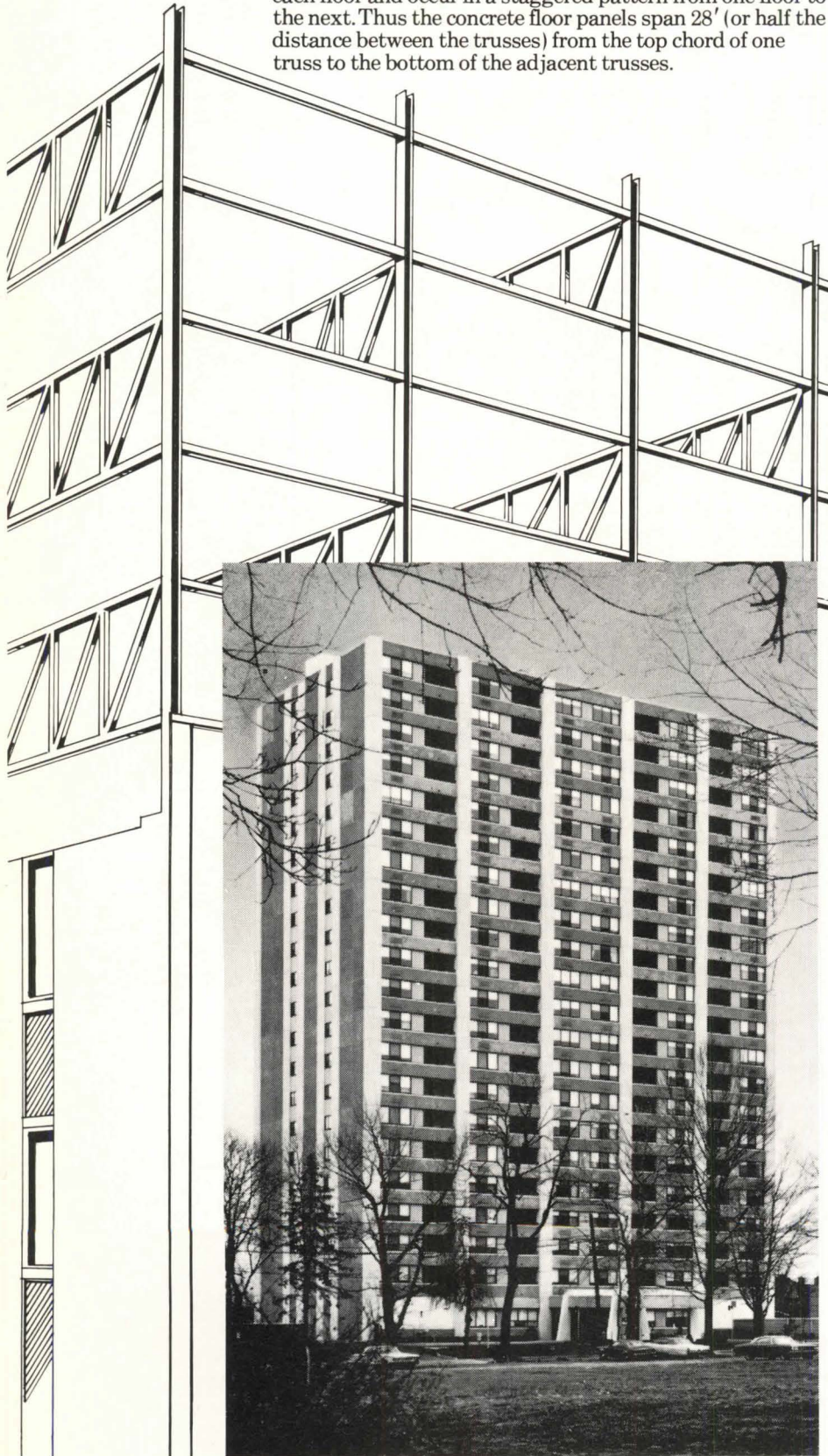
Owner: Alsan Realty Co., Hackensack, New Jersey.

Architect: Eugene A. DeMartin, Lyndhurst, New Jersey.

Structural Engineers: Jesse Schwartz & Gabriel Senes, Upper Saddle River, New Jersey.

Erectors: Skipcon Building Systems, Inc., an affiliate of Schrenko Steel Corp., Upper Saddle River, New Jersey.

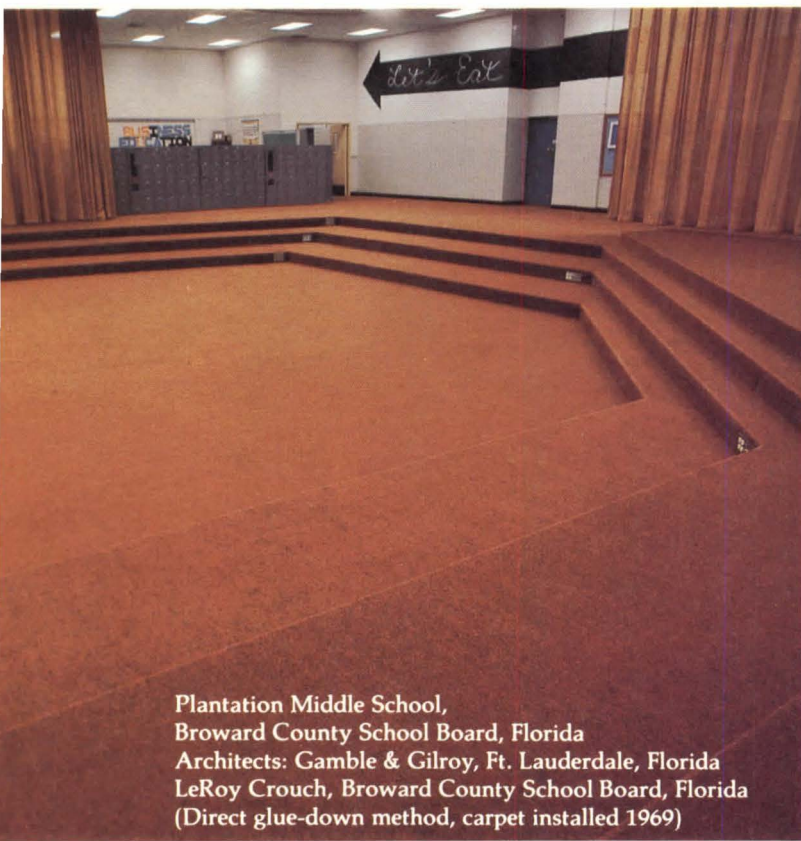
Fabricator: Frank M. Weaver & Co., Inc., Lansdale, Pennsylvania.



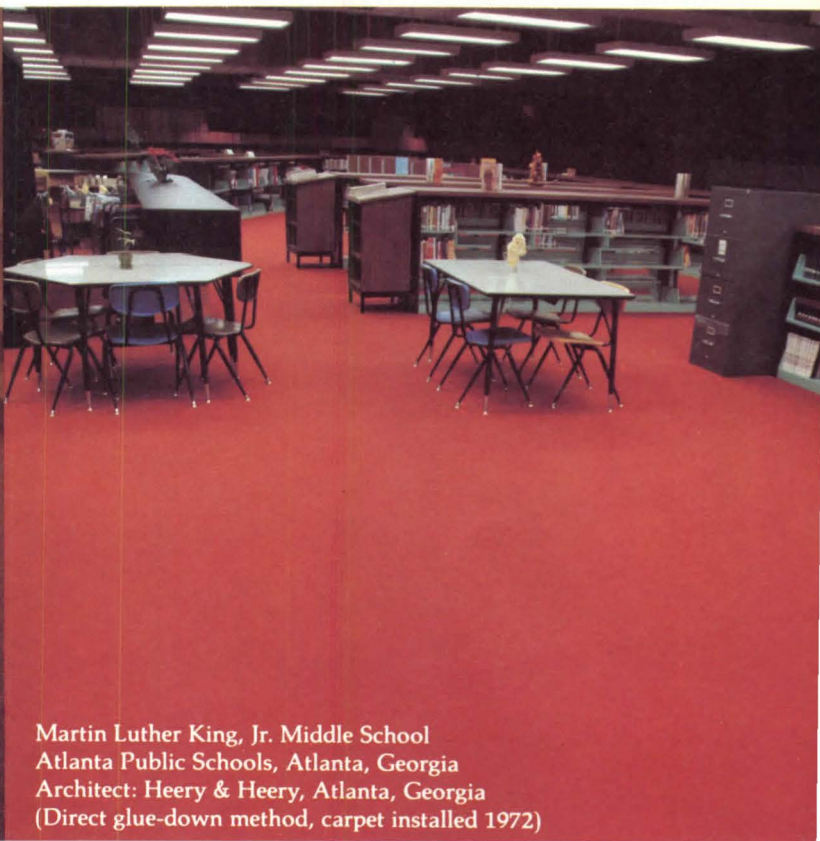
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Architects: Gamble & Gilroy, Ft. Lauderdale, Florida
LeRoy Crouch, Broward County School Board, Florida
(Direct glue-down method, carpet installed 1969)

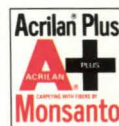


Martin Luther King, Jr. Middle School
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Architect: Heery & Heery, Atlanta, Georgia
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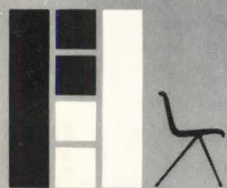


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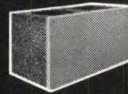
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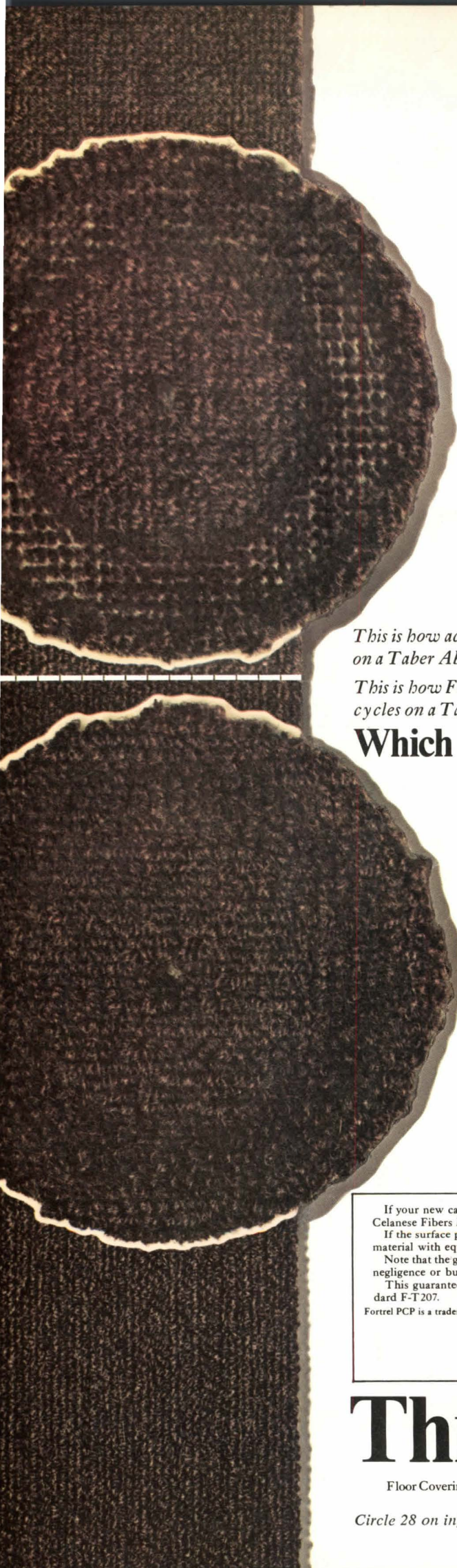
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This is how acrylic looks before and after 1,800 cycles on a Taber Abrader.

This is how Fortrel PCP looks before and after 1,800 cycles on a Taber Abrader.

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The pictures above show the actual results of a Taber Abrasion Test (ASTM D-1175) conducted by Certified Testing Laboratories, Inc., on a commercially available carpet of Celanese Fortrel PCP producer colored polyester and a commercially available carpet of acrylic fiber of similar construction.

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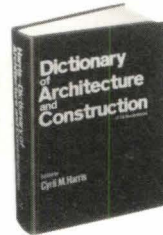


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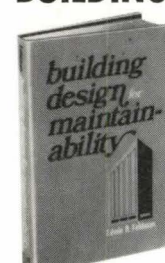


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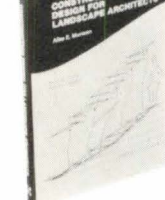


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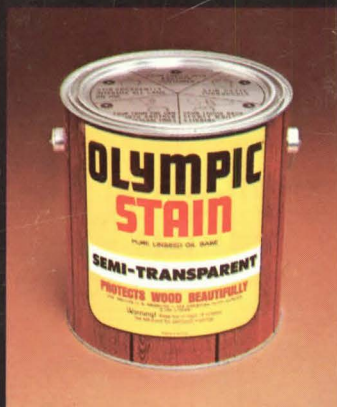
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