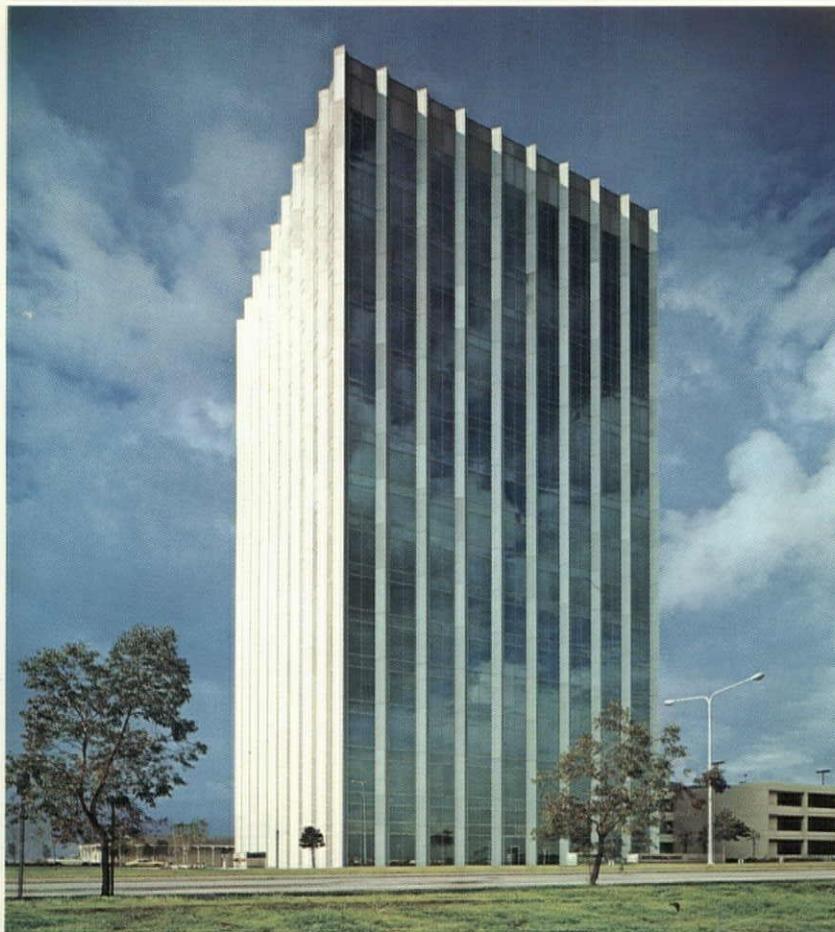


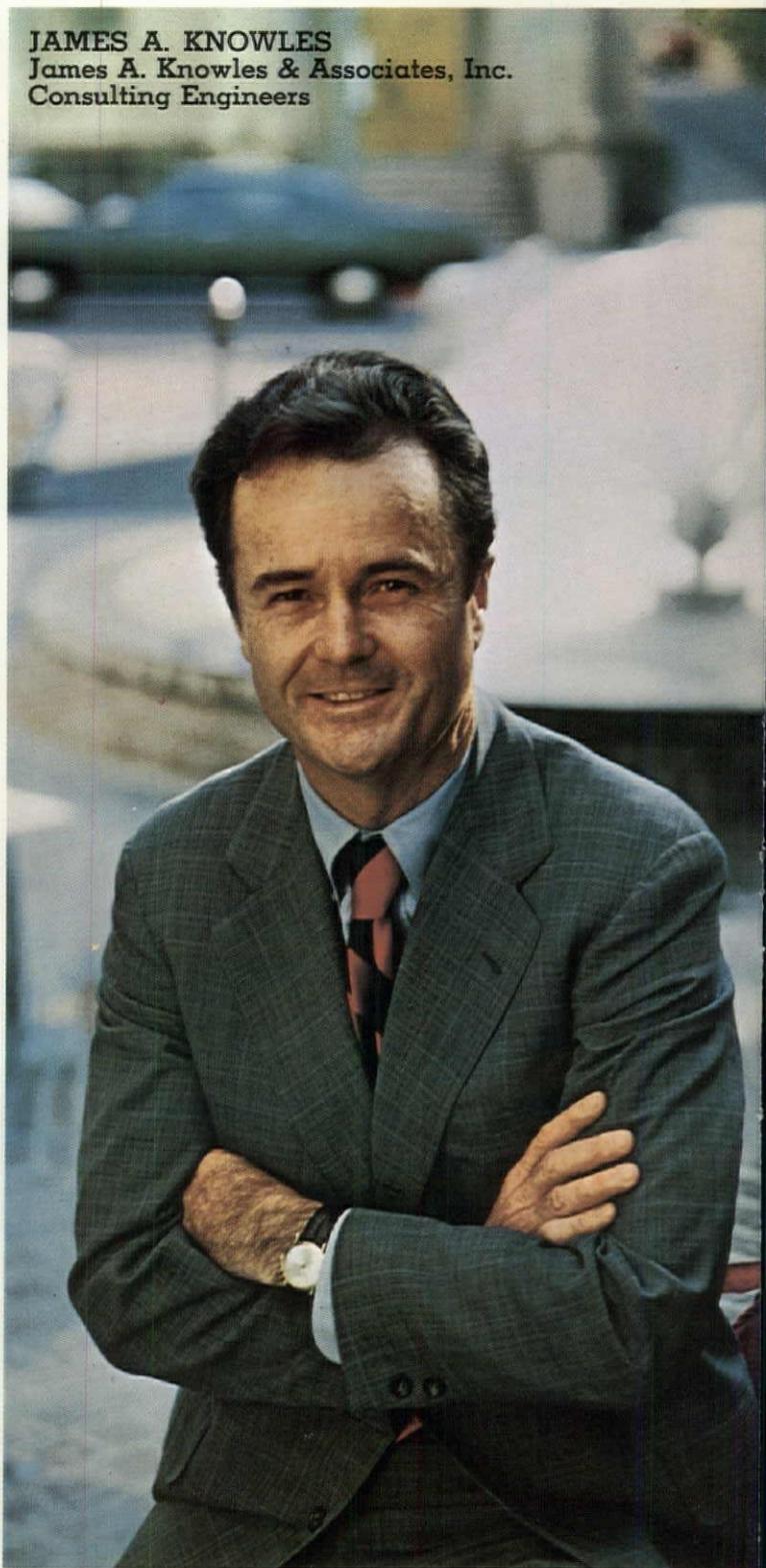
ALIA JOURNAL



# "WE KNEW WE'D CUT OWNING AND OPERATING COSTS WITH LOF GLASS..."



JAMES A. KNOWLES  
James A. Knowles & Associates, Inc.  
Consulting Engineers



Avco Financial Center, Newport Beach, California • Owner: Balboa Insurance Company • Architects: Welton Becket and Associates • Consulting Mechanical Engineers: James A. Knowles & Associates, Inc., Los Angeles • Glazing Contractor: Golden State Glass Company, Los Angeles

Circle 2 on information card

# "BUT WINNING THAT ENERGY CONSERVATION AWARD WAS A VERY SATISFYING SURPRISE!"

RAY BORING  
Building Manager  
Avco Financial Center



The Avco Financial Tower at Newport Beach soars into the California skies in everchanging beauty. Many things about the building are gratifyingly predictable, however.

The engineering consultants—James A. Knowles & Associates—predicted that the use of Thermopane® insulating units made with Vari-Tran® coated glass from LOF would save Avco almost \$20,000 annually in owning and operating costs when compared to conventional bronze plate glass. Additionally, LOF reflective glass enabled the owner to install smaller fan-coil machinery on the upper 15 floors, thereby gaining more than 6,000 square feet of rental area for the owner.

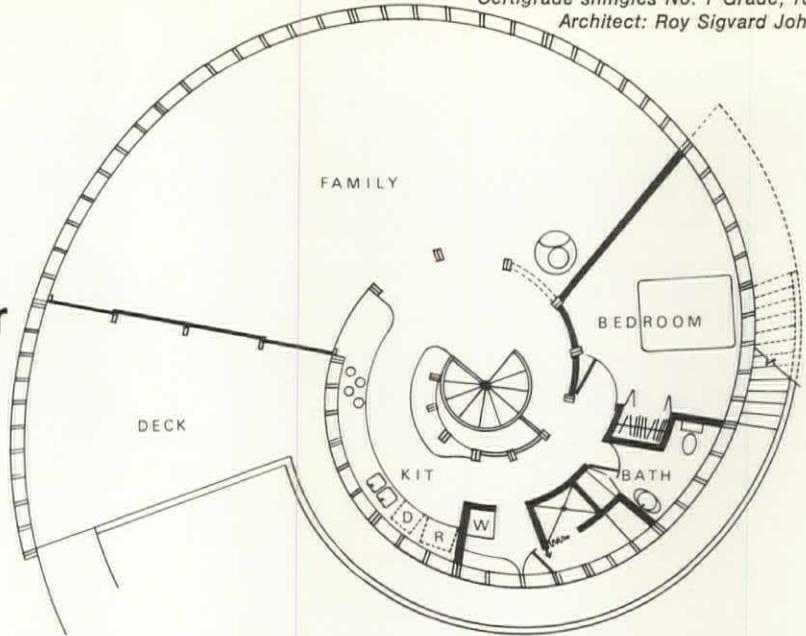
Now, the Avco Financial Tower has won the 1972 Utilization of Energy Award in Southern California, a tribute to sound design and selection of materials that is made more meaningful by the energy crisis that afflicts many parts of the country.

An LOF architectural representative can't guarantee that yours will be an award winning building, but he can show you how building owners can conserve on operating costs. For the entire story, send for our brochure, "Reach for a Rainbow." Libbey-Owens-Ford Company, Dept. A-773, Toledo, Ohio 43695.

# LOF

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 Certigrade shingles No. 1 Grade, 18" Perfections.  
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**Red cedar  
 knows its way around  
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This New York beach home is an eddy of warmth and texture with a practical twist. Its red cedar clad outer shell and shielded front deck acknowledge the harsh marine environment. Inside, the unique circular design permits informality, easy movement between living and leisure areas,

and a sweeping view of the sea.

The red cedar shingles conform effortlessly to the home's swirling design. They blend easily with the seaside setting. They'll weather beautifully, retaining their natural elegance for decades with virtually no upkeep. And they'll withstand

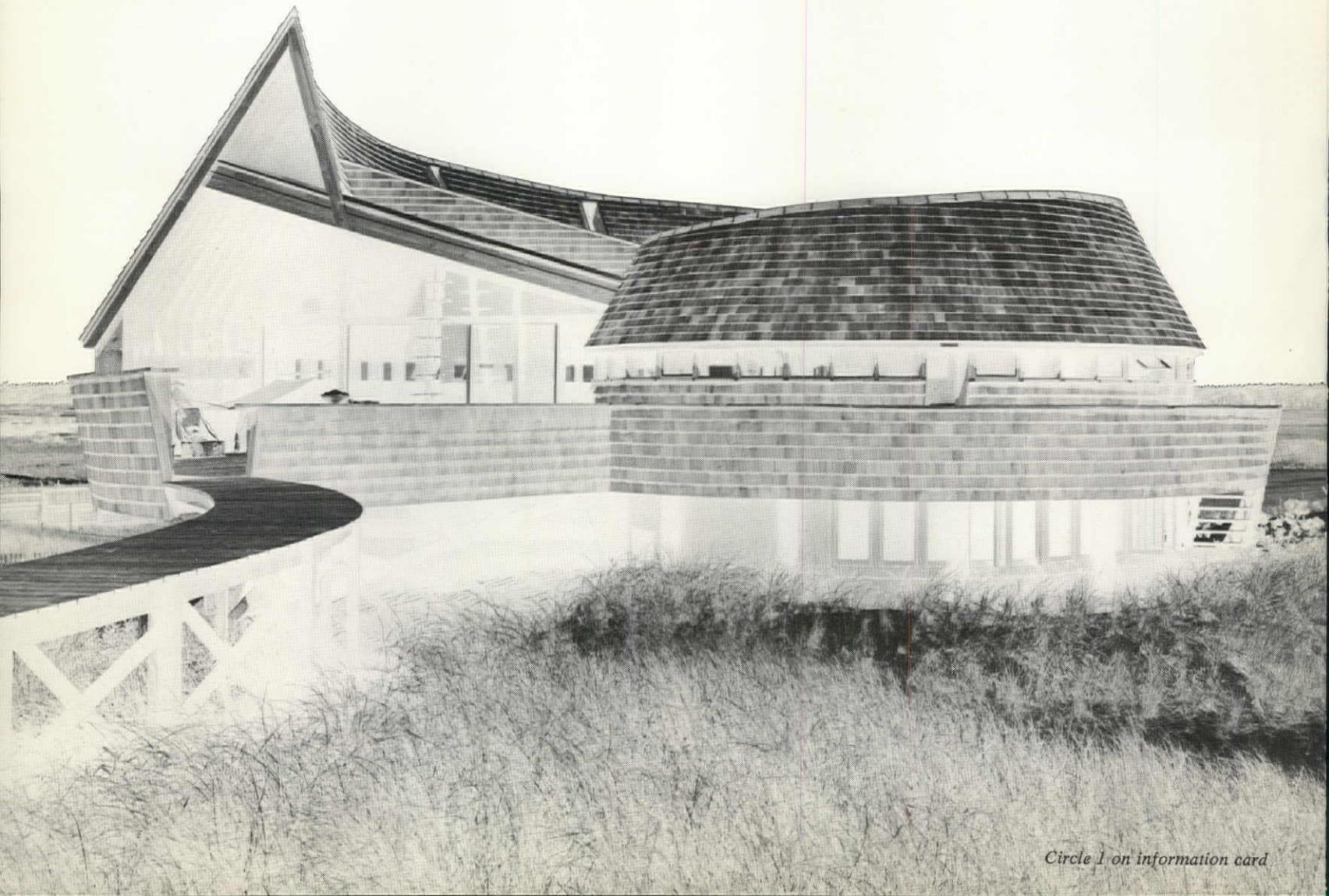
even hurricane winds.

For details and our specification guide on Certigrade shingles and Certi-Split handsplit shakes, write us at 5510 White Building, Seattle, Washington 98101. In Canada, write 1055 West Hastings Street, Vancouver 1, B.C.



**Red Cedar Shingle & Handsplit Shake Bureau**

One of a series presented by members of the American Wood Council.



Circle 1 on information card

<b>Robert Ramsey and Robert Guthrie</b>	<b>Here You Have It: Life-Cycle Costing</b>	If you aren't sure what it's all about you're not alone, but here comes light on a fascinating subject	11
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**Cover:** When engrossed in the subject of life-cycle costing (p. 11), the authors took a breather to make a playful representation of the process for awarding the contract for the in-system portion of their project. Peter Bradford took it from there and presents his own version.

**Acknowledgements:** 6, 28 through 44, 51 through 54, 62, William Douglas Ganslen.



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AIA JOURNAL, official magazine of The American Institute of Architects, published monthly at 1735 New York Ave. N.W., Washington, D.C., 20006. Telephone: (202) 785-7300. **Subscriptions:** for those who are, by title, architects, architectural employees, and to those in architectural education (faculty and schools), and to libraries, building construction trade associa-

tions and building product manufacturers: basic rate \$5 a year, \$8 two years, \$4 to architectural students in the US, its possessions and Canada. For all others: \$10 a year in the US, its possessions and Canada; other countries to those who are, by title, architects: \$10 a year. All others outside the US, its possessions and Canada: \$20 a year. Single copy: \$2, payable in advance. Publisher reserves the right to refuse unqualified subscriptions. **Change of address:** Give Circulation Department both old and new addresses; allow six weeks. **Second class postage** paid at Washington, D.C. Microfilm copies available from University Microfilms, 300 N. Zeeb Road, Ann Arbor, Mich. 48106. Referenced in *The Architectural Index*, *Architectural Periodicals Index* and *Art Index*. © 1973 by The American Institute of Architects. Opinions expressed by contributors are not necessarily those of the AIA.® VOL. 60, NO. 1

**After San Francisco — an Appraisal:** The annual convention as an entity in a good many organizations, including The American Institute of Architects, has been undergoing rapid changes in the past few years. Even its overall validity has been questioned in some quarters. But somehow the San Francisco proceedings, to which a goodly portion of this issue is devoted, seemed a reaffirmation to me, at least, that the convention continues to be a viable institution.

The 1973 gathering was a record-breaking event, not only in terms of total participants but also, and more significantly, of corporate members. This does not imply that the biggest is necessarily the best. Large numbers may be accompanied by certain inconveniences such as long registration and food lines, which can be important considerations when one is trying to meet a program schedule. But the logistics of these matters are not insolvable, and as Dan Meltzer, convention manager, explains, continuing attention will be given them to accommodate the expected increases.

The point is that our convention planners must be doing something right. Putting the site aside for a moment — we all assumed that San Francisco in itself would be a drawing card — the revamped format deserves its share of the credit. Members are responding to the Marketplace of New Ideas, which was introduced at Houston last year. While the keynoter and all of the theme panelists, with the exception of one substitute speaker and a moderator, were all drawn from outside the profession to give a broader perspective to "The Challenge of Growth and Change," the Marketplace on three successive afternoons was devoted to multifarious aspects of practice, encompassing everything from joint ventures to personnel practices to working with citizen groups.

The number of participants varied, of course, with the subject matter at hand, but a check from time to time found most of the seminars well attended. Here was an opportunity for practitioners to listen to and question those actively engaged in the particular areas and to exchange ideas on a face-to-face basis with their colleagues.

Another contributing factor to the success of the San Francisco convention was that the city and the surrounding area truly became an extension of the Civic Center site. Tours and field trips were organized which provided a closer look at the ways in which the Bay area is meeting today's urban challenges in such arenas as restoration and renewal projects and a mass transit system. Every convention city has assets upon which to capitalize.

Finally, the warmth and hospitality of the representatives of the host chapters — this year there were three: Northern California, East Bay and Santa Clara Valley — seemed to exude all over the place. On Friday, after the official program had ended, for example, a "Day on the Bay" was planned for those who decided to stay over in San Francisco. I don't know how many showed up, but I do know that several who did told me that it was one of the most enjoyable activities they have ever encountered during a convention stay. Donn Emmons, FAIA, who was in charge of the activity, sent a suggestion: "From our experience here we would recommend that a similar tour be included whenever the convention is held in a water-oriented city. We found somewhat to our surprise that nonarchitects, often people who had no connection with the construction industry, were both willing and pleased to be asked to participate with their boats and themselves and crew."

I mention this in passing because conventions are more than speeches, smoke-filled caucus rooms and receptions, and somehow the whole thing was put together in San Francisco in both a meaningful and a pleasurable fashion. *Robert E. Koehler*

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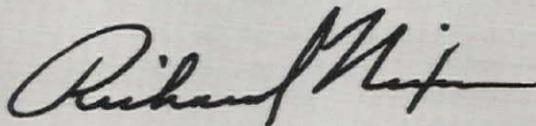
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THE WHITE HOUSE  
WASHINGTON  
June 11, 1973

My warmest congratulations go out to the members of the American Institute of Architects as you dedicate your handsome new headquarters building in our Nation's Capital.

Your profession has always been in the vanguard of the concern for design excellence. At my direction, through the Federal Design Improvement Program, our Government now joins you in this important effort to encourage higher design standards.

Today, I share your satisfaction in the realization of this National AIA Building, which proudly symbolizes our joint hopes for the creative spirit of the future. I know that the Institute will prosper at this site, and that its fellows and members will add further to their enduring contributions toward a more gracious and workable urban environment.



**Impressive Ceremonies Mark Dedication Of the AIA's New National Headquarters**  
"It is fitting that The American Institute of Architects has set an example of architectural excellence in its national headquarters building," said Nancy Hanks, Hon. AIA, chairman of the National Endowment for the Arts, whose remarks were a highlight of the dedication ceremonies for the formal opening of the AIA's new seven-story building in Washington, D.C., on June 11.  
The new structure, whose construction costs amounted to \$7.4 million, was pro-

grammed and conceived as part of a complex including the Octagon House and garden on the diamond-shaped site at the corner of 18th Street and New York Avenue N.W. Some 800 guests were present for the occasion including Washington, D.C., Mayor and Mrs. Walter E. Washington, a number of Congressmen, government officials and past presidents and directors of the AIA. The Octagon Building was designed by The Architects Collaborative Inc., Cambridge, Mass.  
William L. Slayton, Hon. AIA, executive vice president of the Institute, opened

Formally opened on June 11, the Octagon Building represents years of planning effort as well as a new era of service to the nation by AIA members. After the dedication ceremonies, there was a reception at which music, floating balloons and ladies in finery added to the evening's festivities.

the dedication ceremonies which were held on the building's outside plaza. He welcomed guests and AIA members, then introduced Max O. Urbahn, FAIA, former AIA president, who served for a number of years as chairman of the Headquarters Committee. Following the invocation by Urbahn, S. Scott Ferebee Jr., FAIA, president of the Institute, greeted the assembly.

After reading a special message from President Richard Nixon, Miss Hanks commented that the new AIA building "is now a beautiful part of the urban landscape. But its strength and vitality will depend on the records of your accomplishments and your contributions to the places where people 'walk and live.' . . . Architecture is possibly the art form which affects people the most and which until recently they have been aware of the least.

"A nation's image," she continued, "can be conveyed in a number of ways, but architecture is its most visible symbol. Though seldom thought of as a means of communication, our buildings are indeed a statement about ourselves — about the value we place on quality and the visual environment and the faith we have in the future. . . ."

Ferebee said, "This building which we dedicate this evening represents years of planning and effort, and the beginnings of a new era in the life of our professional society. . . . As the AIA grows in size and strength, it is vital that we keep in mind the principles and beliefs on which the Institute was founded. Therefore, I hope that as we dedicate this building, we shall also rededicate ourselves as individuals to the task of insuring that coming generations of Americans will enjoy a better man-made environment."

Tribute was paid to AIA members who worked so long to make the Octagon Building a reality. Two of them introduced to the guests were G. Harold W. Haag, FAIA, of Doyleston, Pa., a member of the Headquarters Dedication Committee and of committees which expended time and effort in planning the new structure, and former AIA President George E. Kassabaum, FAIA, of St. Louis, chairman of the Headquarters Dedication

*Continued on page 62*

**S. Scott Ferebee Jr., FAIA**  
President

**Challenge and Opportunity:** No one questions the need for architects to provide leadership in meeting the challenges that face our nation. Crises and stalemates threaten us from all directions. On the one hand environmentalists concerned with the preservation of our natural resources are calling for a halt to all development, while on the other community



development advocates are pushing for more and more housing and industrial job opportunities for the nation's poor and deprived citizens. The architect, with his instinctive concern for the environment and his responsibility for the design of the physical develop-

ment of our cities and countryside, falls squarely in the middle in the resolution of these opposing points of view.

Certainly our remaining natural resources need to be sheltered and preserved and we all have a right to clean air, clean water, open spaces, unspoiled beaches and a balanced healthy ecology. On the other hand, the poor and underprivileged elements of our society cannot have these opportunities unless they can be lifted out of their ghettos. They need and want lower housing densities, consumer goods and vacation opportunities, just as you and I have them now. Their standard of living can only be improved through better job opportunities and expanding economy.

Obviously, the solutions to these conflicts can only come through careful planning of future development, thoughtful preservation of our architectural and historic heritage, enhancement and preservation of our natural resources and through the design of shelter, transportation and recreational facilities that, while serving our physical needs, will have a minimum impact on energy consumption and will

create an attractive and livable landscape and cityscape to equally serve our emotional needs.

Some will say that our profession has neither the knowledge nor the ability to provide the leadership required to accomplish this. Granted that this may be so, is there any group better trained to fill this role? As traditional leaders of the design team, the architectural profession must accept primary responsibility for this task. This may be the toughest job that any group ever tackled. It also presents the greatest opportunities that any group ever received.

How difficult is it? The Institute has some 24,000 members, slightly more than one hundredth of 1 percent of the population of the United States. Together with our employees and non-AIA brethren, we represent 75,000 to 100,000 people. Can we fulfill the leadership role thrust upon us, and if so, how? Obviously, we must pull together and, obviously, the coordination and direction of our efforts must come from our professional society, the AIA.

The AIA is seeking to strengthen the architect's role by working to make his voice heard and respected on the national scene, in his community and within the construction industry. The principal responsibility for the first of these, his leadership on the national scene, falls on your national officers and directors and the AIA staff in Washington.

You are all familiar with the report of the National Policy Task Force and its recommendations for a strategy for urban growth, which has received a great deal of favorable attention. As a follow-up to this we are working on a number of new efforts; one is the development of a recommended national housing policy.

We have also established a Task Force on Creative Economics to look at ways in which the ground rules governing taxation and mortgage lending might be changed to encourage investment in the rebuilding of our inner cities and in housing for low and moderate income families. Hopefully, this task force can also come up with recommendations that will show us how to use tax and interest incentives to promote good design and quality construction.

In a related area we have established a

**"The theme of the 1973 AIA convention, 'The Challenge of Growth and Change,' might well have been 'Opportunities Resulting from Growth and Change,'"** the Institute president remarked during the San Francisco sessions. **"We are not threatened by change, we are challenged by it."**

task force to study the re-creation of our inner cities. This group is addressing the many factors and restraints that make rebuilding of inner city areas difficult, if not impossible, under present conditions.

Another principal effort, entitled Creative Public Administration, will look at the restraints and limitations placed on good planning by zoning, codes, ordinances, arbitrary regulations, design review boards and planning authorities, and how these might be improved to become a positive force in design for the future.

There are a number of other activities that assist in bringing the Institute a national prominence which is perhaps greater than at any other time in our history, but I am not equally satisfied with the leadership role that we are playing within the construction industry. It is important that we not become so engaged with activities involving public concern that we suddenly discover that we no longer have a place in the real life world of design and construction. For this reason, I have inaugurated a series of liaison meetings with the presidents of the Associated General Contractors and the Producers' Council. We hope that these separate activities can ultimately merge into a top-level construction council that will include the leadership of subcontractor organizations, the building trade unions and other design professionals.

I have mentioned a few of our efforts to provide leadership on the national scene and our hopes to demonstrate leadership in the construction industry. But our activity in Washington will have little effect in our states, cities and communities unless architects are willing to make similar efforts on the local level. In any locality the strength and prestige of the architectural profession will be in direct proportion to the leadership provided by our members to the community and to the construction industry. We need to fight like blazes to demonstrate that we offer a service that is designed to improve the ultimate appearance and character of our communities. The Institute, with your help, is not just ready to accept the challenge of providing a better living environment for all Americans. We are ready to seize the opportunity. □

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What happens when the greatest population concentration is in the northeast quadrant of the country and most of the national parks are in the West? What has been considered in the way of indoor recreation, year-round availability of services, the role of the arts in recreation?

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## ANALYTICAL COST ESTIMATES/FIRST 6 MONTHS 1973

### APARTMENTS / TOWNHOUSES / HOTELS / MOTELS

Princess Payne Townhouses, Alexandria, Virginia, <i>Fry &amp; Welch, AIA</i>	11 units
Condominium Apartments, Rehoboth Beach, Delaware, Anderson-Stokes, Inc., <i>Duane &amp; Duane, AIA</i>	17 units
Keegan's Landing, Virginia Beach, Virginia, Edward L. Tiffey/Ralph B. Williams, <i>Oliver, Smith &amp; Cooke, AIA</i>	44 units
Delta Park Family Housing, Greeley (Colorado) Housing Authority, Turnkey COLO 35-1, <i>H.W.H. Associates, Inc. Architects</i>	50 units
Bowman Court Family Housing, Annapolis (Md.) Hsg. Auth., Turnkey MD 1-10, Victor Devel. Co., <i>Benjamin Brotman, AIA</i>	50 units
Family Housing, Athens (Georgia) Hsg. Auth., Turnkey GA 3-10, <i>Sheetz &amp; Bradford, AIA</i>	50 units
Bryce Village, Bryce Mountain/Basye, Virginia, <i>Oxman &amp; Stewart, AIA</i>	60 units
Ramada Inn Motel, Nags Head, North Carolina, Sea Kal Development Corporation, <i>Jack J. Russell, AIA</i>	60 units
Montrose Woods, Rockville, Maryland, Montgomery County Housing Authority, Turnkey MD 4-16, <i>Madis Valge, AIA</i>	65 units
Wheelwright Townhouses/Sec. 50, Block 6, Reston, Virginia, Gulf-Reston, Inc. <i>Oxman-Stewart, AIA</i>	65 units
Newbridge Townhouses, Reston, Virginia, Gulf-Reston, Inc., <i>Jansons Roberts Taylor, AIA</i>	84 units
Alpendorf Garden Apartments, Salem, Virginia, Dr. G. Wayne Fralin, <i>John P. Cone, Jr. AIA</i>	98 units
Tiburon Condominiums, Ocean City, Md., Jeffmar Development Corp./Martin L. Weil & Irv Rosen, <i>Nelson-Salabes, AIA</i>	100 units
Hunters Green Townhouses, Reston, Virginia, Gulf-Reston, Inc. <i>Ronald L. Taylor, AIA</i>	118 units
Generation Townhouses, Reston, Virginia, Carl Bernstein, <i>Cohen-Haft, AIA</i>	125 units
Crestview Townhouses, Herndon, Virginia, Albert J. Dvoskin/Schultz Construction Corporation/ <i>Robert J. Schwinn, AIA</i>	140 units
GladeTowne Townhouses, Walkerville, Md. Louis Zuckerman/David Katz/Metro Devel. & Invest. Co., <i>Cohen-Haft, AIA</i>	147 units
Elderly/Family Housing, Flint, Michigan Housing Authority, Turnkey MICH 9-9, <i>Architect-Engineer Collaborative</i>	147 units
Sawyer's Cluster Townhouses/Sec. 50, Blk. II, Reston, Virginia, Gulf-Reston, Inc. <i>Oxman-Stewart, AIA</i>	148 units
Elderly High Rise, Montgomery County (Md.) Hsg. Auth., Turnkey MD 4-17, Macro Devel. Co., <i>Andrew Donnally, AIA</i>	156 units
Harambee Hotel, Washington, D.C., Edward Murphy, <i>Sulton &amp; Campbell, AIA</i>	169 units
High Rise Condominium, Reston, Virginia, Edmund J. Bennett & Associates, <i>Cohen-Haft, AIA</i>	170 units
Rockville Tower Motel, Garage Cost Comparison, Rockville, Maryland, <i>Donald Hudson Drayer, AIA</i>	175 units
Herndon Square Townhouses, Herndon, Virginia, Gerald S. Lilienfield, <i>Horowitz-Seigel, AIA</i>	190 units
Elderly High-Rise, Annapolis (Md.) Housing Authority, Turnkey MD 1-9, Joel Zenitz, <i>R. H. Siegel, AIA</i>	200 units
The Brentwood, Baltimore Housing Authority, Turnkey MD 2-56, Urban Devel. Corp./Alvin Greenfield, <i>Nelson-Salabes, AIA</i>	202 units
Carol Park Manor, Frederick, Maryland, Gerald S. Lilienfield, <i>Horowitz-Seigel, AIA</i>	204 units
Stuart Woods, Sec. II, Herndon, Virginia, Albert J. Dvoskin/Schultz Construction Corporation, <i>Robert J. Schwinn, AIA</i>	210 units
Oakton Village, Fairfax, Virginia, Jeffrey Sneider/Richard Parli, MAI, <i>Cohen &amp; Haft, AIA</i>	219 units
Pinecrest Cluster, Townhouses, Reston, Virginia, Gulf-Reston, Inc. <i>Kohler-Daniels, AIA</i>	220 units
Tyson's Cluster Garden Apartments, Fairfax County, Virginia, <i>Sheridan, Behm &amp; Eustice, AIA</i>	220 units
Edgewood Terrace, Sec. II, Washington, D.C. Mid-City Developers, <i>Abel &amp; Weinstein, AIA</i>	258 units
Reflection Woods/Single Family Houses, Fairfax, Virginia, Stanley Martin Communities, Inc., <i>Stattler, Stagg &amp; Assoc., AIA</i>	286 units
The Stonewall Jackson Apartments, Alexandria, Virginia, Charles Bressler/Burton Reiner, <i>Gitlin, Cantor &amp; Rosenberg, AIA</i>	315 units
Walnut Creek/Charlene Single Houses/Townhouses, Gaithersburg, Maryland, <i>Larwin Atlantic, Inc.</i>	319 units
The Elizabeth Condominium, Friendship Hts., Md., Brighton Commercial Corp. (Robt. Hahn)/Bernstein Conc. Corp., <i>OKE</i>	353 units
Stoneview Garden Apartments, Reston, Virginia, Gulf-Reston, Inc. <i>Sulton &amp; Campbell, AIA</i>	450 units
Churchill Condominiums, Germantown, Maryland, Arlas Community Builders, <i>B.A. Berkus, Environmental Design</i>	582 units
Westwood Villages, Harrisburg, Pa., Martin L. Weil, <i>Collins &amp; Kronstadt-Leahy Hogan Collins, AIA</i>	926 units
Woodbridge Apartments, Prince William County, Virginia, <i>Ames-Ennis, Inc.</i>	NFP

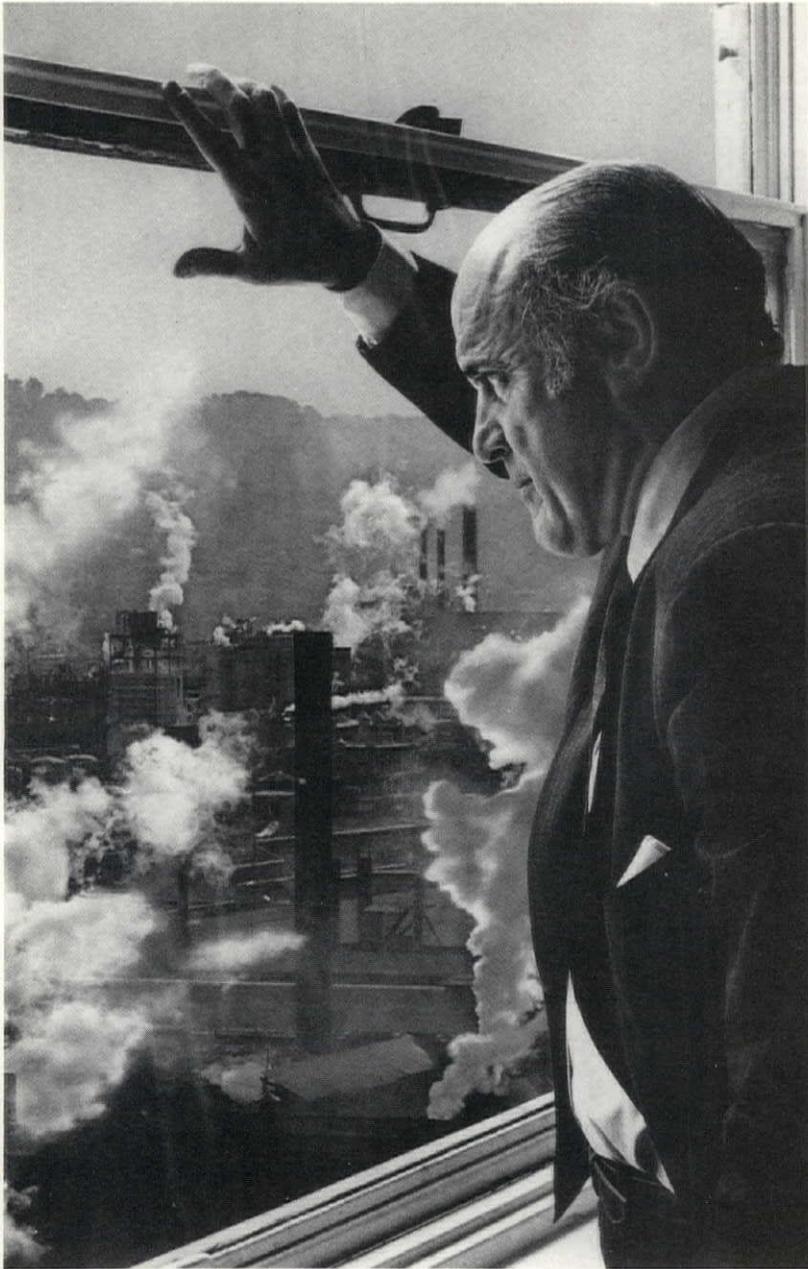
### SCHOOLS / COLLEGES / UNIVERSITIES

Washington Technical Institute, Renovations to Building 5, Washington, D.C., <i>Andrew Bryant, AIA</i>	\$ 200,000
Washington Technical Institute, Demolition/Task I, Phase 1B, Washington, D.C. <i>Bryant/Bryant &amp; Ellerbe, AIA</i>	200,000
Bancroft Elementary School, Washington, D.C., <i>Brown &amp; Wright, AIA</i>	830,000
Geo. Mason Univ. Central Heat-Cool'g-Maint. Plant, Fairfax, Va., <i>Hankins, Anderson/Glave, Newman, Anderson, AIA</i>	1,350,000
Benning Elementary School, Washington, D.C., <i>Abel &amp; Weinstein, AIA</i>	2,100,000
Washington Tech. Inst., Class/Admin. Bldgs. 2,3,9, Phs I/Catalytic, Inc., Constr. Mgrs., <i>Bryant/Bryant &amp; Ellerbe, AIA</i>	3,000,000
Burrville Elementary School, Washington, D.C., <i>Gray, West &amp; Wilson, Architects</i>	4,500,000
Federal Mine, Health & Safety Academy, GSA, Beckley, West Virginia, <i>Chatelain, Samperton &amp; Nolan, AIA</i>	12,000,000
Dunbar Senior High School, Washington, D.C., <i>Bryant &amp; Bryant, AIA</i>	13,500,000

### GOVERNMENTS—FEDERAL / STATE / LOCAL

Bluefield (West Virginia) Municipal Building, <i>Architectural Associates/Richard L. Smith, AIA</i>	\$ 850,000
U.S. Treasury Building Renovations, Washington, D.C., <i>Bucher-Meyers, AIA</i>	1,600,000
Public Safety Building (Police Dept./Jail/Garage), Newport News, Virginia, <i>Rancorn, Wildman &amp; Krause, AIA</i>	3,200,000
E. Falls Church (Va.) Metro Substation, <i>Andrew D. Bryant, AIA/Polytech, Inc./De Leuw Cather/Harry Weese, AIA</i>	3,500,000
Hampton City Hall, Hampton, Virginia, <i>Rancorn, Wildman &amp; Krause, AIA</i>	6,000,000
City Post Office Parking Garage, Washington, D.C., <i>McGaughan &amp; Johnson, AIA</i>	9,000,000
Metro Substation, Washington, D.C., Gordon H. Ball, <i>Rummel Klepper &amp; Kahl/De Leuw Cather/Harry Weese, AIA</i>	20,000,000
Correctional Detention Facility, Washington, D.C., <i>Thalheimer &amp; Weitz/McDonald &amp; Williams/Brown &amp; Wright, AIA</i>	32,000,000
Metro Car barns (4), Washington, D.C., O. Roy Chalk/D.C. Transit, <i>Donohoe Construction Company, Inc.</i>	NFP

NFP—Not For Publication



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A tough ad, signed by a conservation group, predicting "highly dangerous" pollution once the plant starts operating . . .

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# MAY WE ASSIST YOU AND YOUR CLIENTS DURING THE NEXT SIX MONTHS?

## HOSPITALS / NURSING FACILITIES / LABORATORIES

Exhibit Design & Production Laboratory/Smithsonian Institution, Washington, D.C., <i>Harold Lloyd Sanders, AIA</i>	\$ 180,000
St. Mary's Nursing Home, Leonardtown, Maryland, <i>Cross &amp; Adreon, AIA</i>	270,000
Woodbridge (Va.) Research Facility/Harry Diamond Labs., Modifications to Bldg. 101, <i>Mayne, Oseroff, Van Besien, AIA</i>	300,000
NIH Laboratory Alterations, Building 10, Bethesda, Maryland, <i>Noakes, Cohen &amp; Benefiel, AIA</i>	300,000
Commonwealth Psychiatric Center, Richmond, Virginia, Psychiatric Institutes of America, <i>Lockman Associates, AIA</i>	600,000
Federal Communications Commission Laboratory, Laurel, Maryland, <i>Saunders, Pearson &amp; Appleton, AIA</i>	600,000
Provident Neighborhood Comprehensive Health Center, Baltimore, Maryland, <i>Sulton &amp; Campbell, AIA</i>	1,700,000
National Children's Center/Clinical & Training Center, Washington, D.C., <i>Fisher &amp; Elmore, AIA</i>	1,800,000
Harry Diamond Laboratories, Adelphi, Maryland, <i>Ellerbe Architects</i>	17,000,000
Wake County Memorial Hospital Addition, Raleigh, North Carolina, <i>Holloway &amp; Reeves, AIA</i>	20,000,000

## ARMED FORCES

USN Data Processing Plant, Andrews AFB/Camp Springs, Maryland, <i>Chapman &amp; Miller, AIA</i>	\$ 300,000
U.S. Army 40 E.M. Barracks/Mess (2), Camps A.P. Hill/Pickett, Va., <i>Bryant &amp; Bryant, AIA</i>	720,000
USN Academic/Gen. Instruction Bldg., Patuxent River, Md., <i>The Mills-Petticord Partnership/Syska &amp; Hennessy, Arch./Engrs.</i>	1,400,000
U.S. Army Reserve Center, Ft. Belvoir, Virginia, <i>Saunders, Pearson &amp; Appleton, AIA</i>	1,700,000
USN BEQ Modernization, Patuxent River, Maryland, <i>Johannes &amp; Murray, AIA</i>	1,850,000
USN Aircraft Data Analysis Facility, Patuxent River Naval Air Station, Maryland, <i>Jansons Roberts Taylor, AIA</i>	2,100,000
U.S. Army 300-Man BOO, Ft. Belvoir, Virginia, <i>Jansons, Roberts, Taylor, AIA</i>	3,100,000
USN BOO with Mess/290-Men, Norfolk, Virginia, <i>Collins &amp; Kronstadt-Leahy Hogan Collins, AIA</i>	3,560,000
Armed Forces Reserve Complex, Washington, D.C., <i>Chapman &amp; Miller, AIA</i>	10,000,000
Improvements to Quarters/1618 Units, Ft. Belvoir, Virginia, <i>Mayne, Oseroff, Van Besien, AIA</i>	NFP

## CHURCHES

Pilgrim AME Church, Washington, D.C., <i>Reg Griffith, AIA</i>	\$ 325,000
Addition, First Presbyterian Church of Hilton Head Island, South Carolina, <i>McGinty &amp; Dye, AIA</i>	400,000
Cherrydale Baptist Church Addition & Alterations, Arlington, Virginia, <i>Sheridan, Behm &amp; Eustice, AIA</i>	540,000
Andrews AFB Chapel, Washington, D.C., <i>Sulton &amp; Campbell, AIA</i>	570,000
Chapel Center, Bolling AFB, Washington, D.C., <i>Sulton &amp; Campbell, AIA</i>	750,000

## MISCELLANEOUS-COMMERCIAL / INDUSTRIAL / INSTITUTIONAL

Imperial Gardens Restaurant, Reston, Virginia, Fox Vale Construction Co./Wm. Randolph, <i>Austin Spriggs, AIA</i>	\$ 100,000
Liquor Store, Washington, D.C., <i>Yettekov Wilson, Architect</i>	150,000
Holly Farms Restaurant Prototypes (2), Washington, D.C., <i>Bernard Lyon Frishman, AIA</i>	196,000
Temporary Parking Area, Anne Arundel County, Maryland, Reynolds & Reynolds, MAI, <i>John E. Harms, Jr., Engineer</i>	200,000
Kasun Oldsmobile, Fairfax, Virginia, <i>Sheridan, Behm &amp; Eustice, AIA</i>	350,000
Hampton Inn/ADW Whse., Pr. George's County, Md., Jos. Bahen Constr. Co., <i>Zubkus, Zemaitis/Edmund Dreyfuss, AIA</i>	350,000
Park Court Office Complex, Vienna, Virginia, Fox Vale Construction Co./William Randolph, <i>Walter H. Mitchell, AIA</i>	500,000
Mercantile Club, Baltimore, Maryland, McCurdy-Lipman & Associates, Real Estate Appraisers, <i>Bonnet &amp; Brandt, AIA</i>	720,000
Gulf-Reston/Georgetown Shops, Washington, D.C., Gulf Oil Real Estate Devel. Corp. <i>Hugh Newell Jacobsen, FAIA</i>	750,000
Dixiedale Warehouse, Lanham, Maryland, Fortuna Construction Co./Eugene Donati, <i>Johnson &amp; Johnson, AIA</i>	815,000
Merridale Gardens Shopping Center/Safeway, Drug Fair, etc., Mt. Airy, Md., David C. Smith, <i>Bucher-Meyers, AIA</i>	1,000,000
Tall Oaks Vill. Shopping Cntr/Giant Food, Reston, Va., Gulf-Reston, Inc. <i>Collins &amp; Kronstadt-Leahy Hogan Collins, AIA</i>	1,000,000
4084 Office Building, Fairfax, Virginia, Hazel, Beckhorn & Hanes, Attorneys, <i>Paul Conklin Quigg/Dean Reighard, AIA</i>	1,100,000
United Virginia Bank Building, Roanoke, <i>VVKR (Vosbeck, Vosbeck, Kendrick &amp; Redinger, AIA) Partnership</i>	3,900,000
Allentown Shopping Center, Prince George's County, Maryland, Samuel Rosenstein, <i>Bruno Aras, AIA</i>	4,000,000
Rossmoor Mall Shopping Center, Silver Spring, Maryland, John K. Kilbane/Frank Spinetta, <i>Anthony Campitelli, AIA</i>	5,000,000
United Virginia Bank Operations Center, Richmond, Virginia, <i>Lee, King, Poole &amp; White, AIA</i>	8,000,000
1801 K Street, Washington, D.C., Washington Medical Center, <i>Holle &amp; Graff, AIA</i>	13,000,000
Hunter Woods Village Shopping Center Leases, Reston, Virginia, Gulf-Reston, Inc. <i>Cohen-Haft, AIA</i>	NFP

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## Here You Have It: Life-Cycle Costing

Robert Ramsey and  
Robert Guthrie

It is 2001, Arthur (Space Odyssey) Clarke's favorite year.

You, an architect, have been selected as a juror for the trial of a rather elderly colleague accused of "squandering natural resources" and "causing inordinate amounts of energy to be consumed through design negligence."

The accused, an abject fellow, the weight of his years clearly evident, designed the building in question in the year 1974. Now, in Clarke's year, it is but 27 years old.

Your jury of peers must announce its verdict: "Your Honor, we find the defendant guilty of negligence and of wasting energy, a crime against society."

The judge: "You are sentenced to . . ." (Lights dim. Curtain down.)

Another scenario, another architect or engineer on trial, this time in civil court, and you are a judge. It is 2001, and the accused is being sued by his client for wasting money—not resources.

The hangdog defendant is being chastized by the client's lawyer: "Your Honor, this man neglected to calculate the differences in cost to my client for installing carpet instead of Brand X floors. Maintenance of Brand X over the past 27 years has cost my client (insert your own figure) dollars more than it would have cost had the defendant specified carpet . . ."

The judge: "In restitution, you are ordered to pay . . ."

(Lights dim. Curtain down.)

Now let's go to Johann Wolfgang von Goethe: "I call architecture frozen music."

Wait a minute! What happened to "frozen music" in these two scenarios? What's happening to architecture? Maybe it should be more than frozen music.

Today, our firm finds that the United States Government is, in fact, *insisting* that the design of structures—office buildings in particular—consider more than esthetics. Far more.

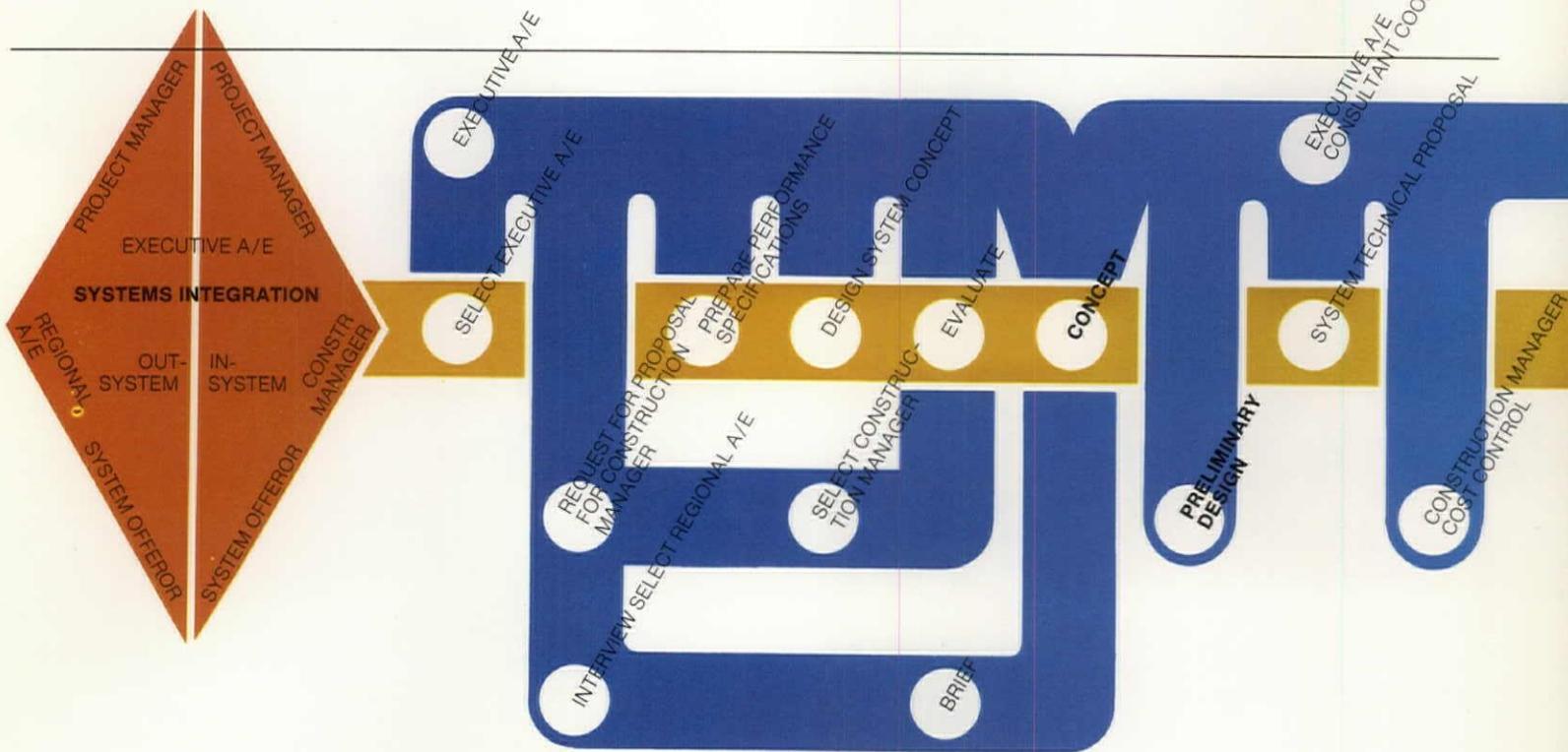
To cope with the complex Social Security Administration Systems Building Project (under the aegis of the General Ser-

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**Mr. Ramsey, PE**, is a vice president of the Leo A. Daly Company in Omaha; **Mr. Guthrie** is director of the firm's communications division.

This is architectural history in the making: Life-cycle cost analysis is tied to the award of a government contract. The project: to design and build, concurrently, three Social Security Administration Payment Centers in three different areas within three years, using systems design and construction techniques.

One specific goal of the government with this project is to stimulate the total American construction industry to produce less costly buildings while retaining an effective quality equal to or better than that now obtained through the regular linear processes used in design and construction.



ices Administration's Public Buildings Service), the Leo A. Daly Company and its joint venture partner, the Nolen-Swinburne Partnership, had to break several new trails for both project management and life-cycle costing. Still another challenging aspect was that word "systems." The recently appointed Acting Commissioner of the Public Buildings Service, Larry F. Roush, now has the responsibility for overseeing the SSA project.

Let's consider the project: to design and build, concurrently, three Social Security Administration Payment Centers in three different areas (Chicago, Philadelphia and San Francisco) within three years, using systems design and construction techniques. The total project, to give an idea of scale, was to enclose 1,900,000 square feet. The tentative construction budget is \$93 million.

With these figures, some in-house produced slide shows and a lot of personal appearances by our people, the system offerors came forth.

Genesis of the project was twofold: first, the desire by the government to strike a telling blow for systems building techniques and second, the research undertaken by PBS and the National Bureau of Standards.

How do you make an impact for systems building? By making the project too big to ignore by the most talented and capable resources. How do you scope it? Well, you begin by turning PBS and NBS loose to construct a document (about an inch and a quarter thick) outlining performance specifications for the office buildings you are using for the "test." You *don't* force the architects to conform to building materials; you simply specify the

performance you expect from the building and let the architects, engineers and others devise the answers to meet those specs.

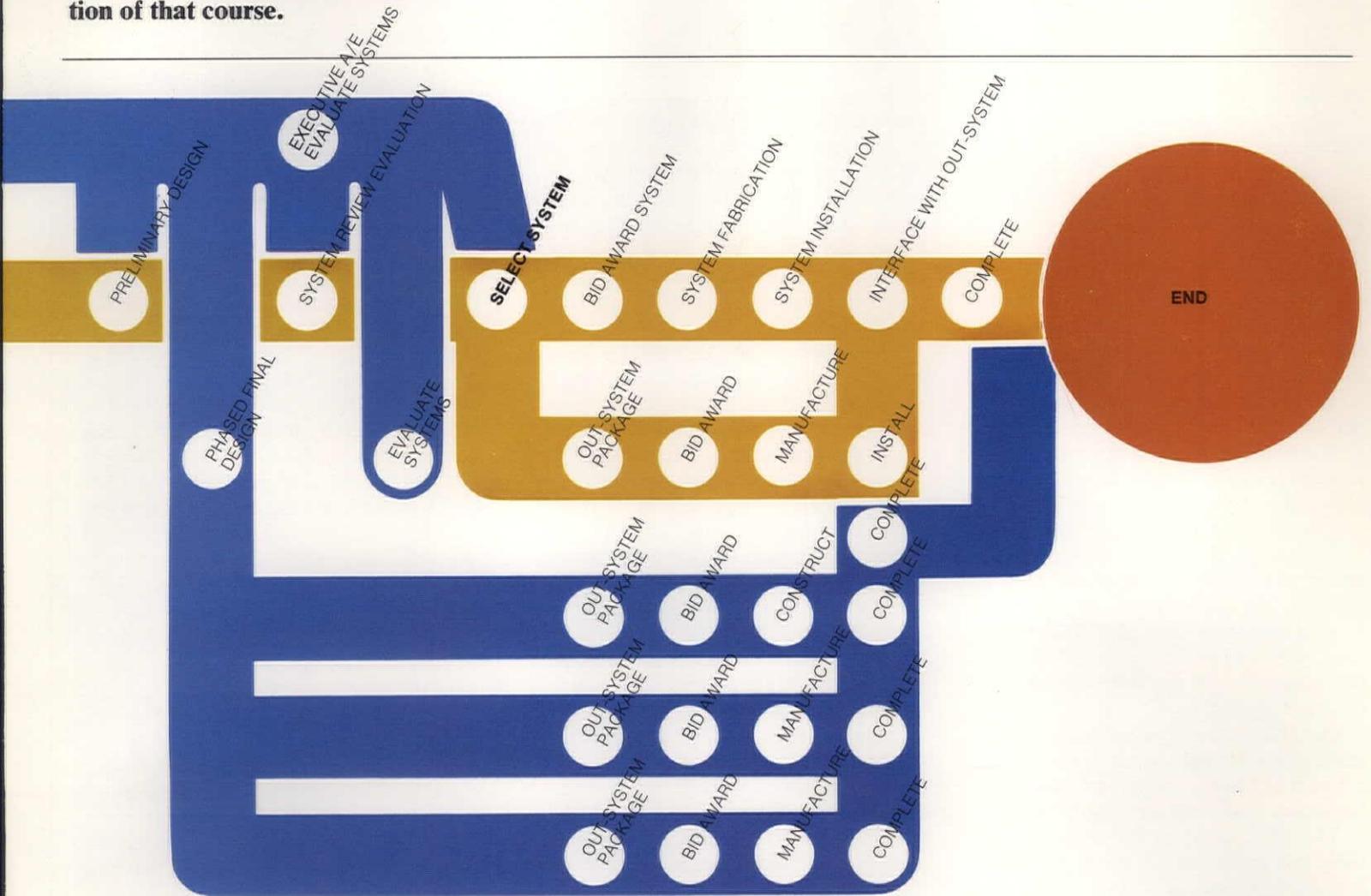
The "others" in that last sentence are the systems offerors, an extremely important element in the "grand design." Here's how it works.

Performance specifications give the architect and engineer a greater degree of control over the materials within the building in two ways:

1. By specifying the performance of the various systems and materials in relation to real tests, the systems can be specifically designed for the building in the secure knowledge that they will work to provide exactly the performance called for. All of the subsystems not only can be made to work together but also the architect is not required to design for the poorest material he could possibly receive.

When a multidisciplinary group applies an advanced problem-solving procedure to increase quality while reducing time and cost of a project, the first thing to do is to chart a course. Such a course was prepared by the executive A/E, the Daly/Nolen-Swinburne joint venture, for the project manager of the Public Building Services, General Services Administration. Below is a stylization of that course.

With the use of an in-system and an out-system, integration of the two will be accomplished under the guidance of Daly/Nolen-Swinburne. Although some of the activities are the sole responsibility of the executive A/E to initiate and carry through, all activities are his concern to assure creative systems integration.



Incidentally, the PBS/NBS Performance Specifications document, the culmination of five years of joint research, opens the door to another possibility: an actual test of life-cycle costing applied to the elements of the building system. The document's specifications are weighed against an intended building life of 40 years. We'll see later what this means.

2. The engineers in the manufacturing industry are brought into the project through the system offerors. The manufacturers are uniquely qualified to design subsystems related to performance. This involvement helps to bring quality control—for a 40-year building life—right down to the most elemental parts of the building. Furthermore, the building designers are relieved of having to use inadequate catalog material and thus do not continually have to reinvent the wheel.

We said earlier that we had to break trails in new areas, among them life-cycle cost analysis. The most significant factor was the creation of a life-cycle cost formula which directly attaches the principles of such analyses to building costs, using the formula, in fact, as the basis for awarding the contract for the systems portions of the SSA project. We believe it is the first time in the history of such projects that this has been done.

To comprehend just how valuable the systems approach and the tie-in with life-cycle costing can be, it is necessary to understand the background in which this evolved.

The climate in which the SSA project developed included a progressive rise in construction costs, increasing emphasis on conservation of resources and a client (SSA) which has an urgent need for the

physical environment to house its ever expanding operations.

GSA and PBS joined with the Department of Health, Education and Welfare and its Facilities Engineering and Construction Agency (FECA) to launch the "grand experiment" at the beginning of this decade. It had two avowed purposes:

1. To demonstrate the usefulness of the systems approach for designing, specifying and constructing buildings.

2. To encourage the development of precoordinated, subsystem components for the construction of commercial office buildings.

If you read between the lines in these two statements, you will see history in the making. Note first the intention to demonstrate (to whom?) the value of systems design and construction. Second, note the goal of encouraging someone (who?) to

**The out-system parts of the project are the responsibility of regional architect/engineer units for each of the three buildings and insure that the structures will not be doomed to production-line sameness; the in-system, provided by the in-system offeror, makes up the heart of the working structures.**

develop subsystem components. And, finally, note the word "commercial" as it relates to office buildings. The government did not simply say "office buildings," nor did it narrow the idea down to "government" office buildings.

It is very clear that the goal was to stimulate the total American construction industry to produce less costly buildings (office buildings in this case) while retaining an effective quality equal to or better than that now obtained through the regular linear processes used in design and construction.

If we further analyze what can happen as a result of the ultimate success of the SSA project, we can see its effect on architecture and engineering, too.

Since so much depends upon the system offeror in the final designs of the structures and their costs, it is obvious that the industrial engineers, who in the past had been neglected as a building resource, will play an important part in the building industry of the future.

Does the systems process mean that the architecture of the future is doomed to a mediocrity of production-line sameness? We at the Daly Company don't think so.

Through a complex delineation of trade-offs in the basis of award formula and the far-sightedness of the government, frozen music won't be totally neglected. We believe it simply will be matched more closely than ever to the realities of long-term costs.

The project was separated into two parts, in-system and out-of-system. To simplify discussion, the out-of-system elements might be considered as being the frozen music and the in-system elements the heart of the working structure.

The out-of-system elements are the responsibility of regional architect/engineer units in each of the three areas where the buildings will be erected. These are: Lester B. Knight & Associates, Inc., Chicago; Deeter, Ritchey, Sippel Associates, Pittsburgh; and Pereira/Bentley/Tudor, San Francisco.

It is the regional A/E's who are responsible for the frozen music, the exterior design of the structures. The three payment centers are almost assured of diverse appearances, through the regional

A/E concept. They are most likely to be well fitted to their local environments, too.

The out-of-system portion of the project specifically includes the following seven elements: the roof covering; exterior walls; special-purpose spaces; foundations; electrical and mechanical *generating* equipment; site and site development; and core elements of the structure, such as elevators.

The in-system portion includes these seven elements: structure; the heating, ventilating and airconditioning *distribution* system; the electrical *distribution* network; the finished floor; the finished ceiling; illumination; and the partitions or space dividers.

We said that the system offeror—the consortium responsible for the in-system elements—is a vital part of the project. The system offeror, with whom the contract was signed in March of this year, holds an unusual position with the SSA project team. He is a designer as well as a manufacturer and erector. He must provide a packaged kit of parts which must interface with the out-of-system portions of the structures and he must then erect this kit on the selected sites. The system offeror, selected through the life-cycle cost evaluation formula, is a joint venture of Owens/Corning Fiberglas and Wolff & Munier, Inc.

The system offeror can provide his packaged kit in either, or both, of two ways: from off-the-shelf components or from the design of new components matched to the performance specified in the document devised by PBS and NBS.

In the case of the Owens/Corning-Wolff & Munier consortium, both methods were used and occasionally a marriage of the two was devised.

Before we go into the details of the life-cycle costing formula devised by our firm in its role as executive A/E for the SSA project, we should make special note of the relationships between various costs of producing the built environment as envisioned by the PBS performance specification document:

"An office building can be described as part of an information processing system, containing the building itself, people, rules, and energy for operation. An analy-

sis shows that the life costs of the system over 40 years are approximately: 92 percent cost of people to process information (salaries); 6 percent maintenance and operation of facilities; 2 percent first cost of the buildings.

"It is evident that building cost reductions can have only limited benefits, while a more thorough analysis of users' needs and ultimately behavior is potentially the more useful."

Thus it is clear that an enormous leverage effect on life-cycle costs is obtained when one grapples with the cost of "people to process information"—the 92 percent portion of the 40-year costs. Architects and engineers are only beginning to consider this element. How efficient can you make the operation in the structure? Indirectly, the SSA project does begin to deal with this.

Early in the planning stages a potential for a building design factor which could make the payment center operations more efficient was identified, even though it could not be quantified. The personnel at the centers will be handling massive amounts of paperwork. With an elevator for the paper at the center and with the main core elements—elevators, restrooms, telephone, electrical and central ductwork—removed from the center of the structure, the personnel could speed up the work and save many a step during a day's work. Such large, clear floor areas could also perhaps make a single supervisor sufficient.

A method was devised to accommodate either a central or fragmented perimeter core through the systems approach. Eventually all payment centers chose the core-at-the-exterior arrangement. It is possible that the potential savings realized by thus influencing the 92 percent portion of life costs may be on the order of several magnitudes greater than any other processes affecting either the 6 or 2 percent portions of life costs.

The leverage effect of the 92 percent can be put another way. Consider that the life-cycle cost of the operations in the building weighed against the building's cost are on the order of 45 to 1; for every dollar spent on the construction of the facility, \$45 will be spent on the operations

**Enters life-cycle costing: "An analysis shows that the life costs of the system over 40 years are approximately 92 percent cost of people to process information (salaries); 6 percent maintenance and operation of facilities; 2 percent first cost of the building," the PBS performance specification document states.**

carried out in the facility. Suppose you consider total SSA project construction costs to be about \$100 million. Applying the 45 to 1 ratio in reverse, you can see that the costs for operations in the facilities are on the order of \$4.5 billion. When you are dealing with this magnitude, it is clear how great any savings in this area of operations might be. If you managed to save only 1 percent of this figure, you are talking about a \$45 million saving, nearly half the cost of the facilities.

We are convinced at the Daly Company that much more needs to be done to affect this factor through careful design that deals effectively with the efficiency of personnel who must work in built environments. We are working hard to realize such benefits in design of virtually every major project we undertake.

It is true that decisions affecting the 6 percent involved in the operational costs of the facility itself at this time yield more readily quantifiable results and it is toward this area that most of our life-cycle cost analysis was devoted and applied in the life-cycle cost formula which constituted the basis of awarding the SSA systems contract. The fact remains, however, that the core decisions are affecting the 92 percent factor.

Life-cycle costs, incidentally, are specifically identified by FECA in its *Systems Building Technical Handbook* as including the following:

- first cost of the facility
- cost of money during construction
- cost of denial and use of the facility by the user during design and construction phases
- cost of use, i.e., operations, maintenance, repair and improvement including modifications for normal user organization changes
- cost of the process taking place within the facility.

Having set the climate in which the SSA systems project evolved and having emphasized the role of life-cycle costing, it is time to recap and spell out the procedures and the members of the team working to achieve the goals stated earlier.

The following techniques were considered to be a part of the systems approach: comprehensive planning; industrialized

building; value engineering; construction management; phased construction; performance specifications; alternate concepts and life-cycle costing. For the SSA project, two-stage procurement is used for purchase of the in-system portion.

The critical mass of talents and personnel using these methods to achieve the goals is: client; client representative; project manager; in-system design supervisor and project management/concept assistance: executive A/E; out-of-systems design: regional A/E s; construction manager; in-systems design: system offeror/contractor; out-of-system constructors (using local builders).

There's the entire background for the SSA project. If you have followed us this far, you are ready to cope with the formula devised for locking in the life-cycle cost of building elements (in-system) to the actual construction through the award of the contract to the system offeror. Two-stage procurement meant that the system offeror was required to submit the development of his kit of parts in the form of a technical proposal. This was not considered a final design document, but it did include drawings, specifications, a written description of the performance of the system, samples, a general testing plan, a management plan, a bid unit plan and a space adjustment and maintenance plan.

The technical proposal had to be responsive to the PBS Performance Specification for Office Buildings. As mentioned, this does not detail the building elements, it only describes how they must perform in use and what physical tests they must pass.

During the development of their technical proposals, the system offerors required assistance in the interpretations of the performance specification. The project manager and the executive architect/engineers spent many weeks meeting with the system offerors and many hours on the telephone answering questions.

Because of the dynamic nature of building technology today, manufacturers had many requests for changes to the specifications to incorporate recent technological advances. This required additional meetings to evaluate these suggestions. The accepted suggestions were incorporated into

**The PBS document goes on: "It is evident that building cost reductions can have only limited benefits, while a more thorough analysis of users' needs and ultimately behavior, is potentially the more useful."**

the performance specification in the form of amendments. It is important to note that this approach made it possible to develop the system to reflect the latest advances in such things as acoustical environment, energy conservation, fire protection and life safety.

Incidentally, it was during this period of technical proposals that the use of life-cycle costing as the basis for award of the in-system contract appeared as a distinct possibility. It became clear that putting the dollars on the line could encourage manufacturers to develop and integrate subsystems to an unprecedented degree.

The technical proposals now were evaluated by the project manager and the executive A/E, each against the requirements and criteria of the performance specification. The executive A/E was charged with evaluation of all the technical aspects of the proposal; the construction manager evaluated the management plan and the bid unit plan.

Evaluation forms were created to account for every required element in the technical proposal. These forms were filled out by architects and engineers of the executive A/E's staff, noting whether each offeror had complied with every requirement.

The completed forms were then fed back to the system offeror, who was required to clarify or provide additional information. This left open the opportunity for each system offeror to make his proposal acceptable. And throughout this period, intensive discussions were carried on with the offerors to help them meet the various requirements of the performance specifications.

This zeroing-in process left three amended proposals which met all of the criteria and requirements. This marked the end of the first of the two stages of system offeror procurement. Now the three successful offerors were invited to submit price proposals for the supply, erection and installation of their systems.

The bid packages, prepared for each system offeror, included the offeror's bid unit plans and the basis of award calculation, the latter being the heart of the life-cycle cost analysis for the SSA project. The bid unit plan consists of a bill of ma-

It is clear that an enormous leverage effect on life-cycle costs is obtained when one grapples with the cost of "people to process information," the 92 percent portion of the 40-year costs. (Pictured here is a playful representation of the process for awarding the contract for the in-system part of the project.)

LIFE CYCLE COST  
CATALYTIC CONVERTER



**Decisions affecting the 6 percent involved in the operational costs of the facility itself yield more readily quantifiable results. The fact remains, however, that design decisions should also be made that affect the 92 percent factor.**

**Much more work needs to be done in this area through careful design that deals effectively with the efficiency of personnel who must work in built environments. Architects and engineers are now beginning to pay more attention to this element.**

materials of the various system components, with prices assigned by the offeror to each component. This unit pricing method permits GSA to vary the size of the building, with costs for increased quantities remaining at the competitively bid unit prices.

The basis of award calculation, which was reduced to a single page document, was the key to selection of the low bidder on the basis of life-cycle cost of the system elements. The formula included a system price, bid equalization factors, a prorated bid price, life-cycle cost factors and an optional maintenance cost. The offeror having the lowest total of all these factors was considered the low bidder. The formula encouraged the bidder to apply value engineering to his hardware selections, rather than simply using the lowest first-cost materials.

Let's consider each of the bases of award calculation factors in order:

1. *The system price* is the total cost of all material to be furnished by the offeror as computed from the bid unit plan.

2. *Bid equalization factors* are a system of price adjustments established for each system to account for costs imposed by the in-system elements on out-of-system construction.

These factors produced an equalized total price, which determines the lowest cost building and not necessarily the lowest cost system.

The factors considered included the FCS thickness (i.e., the thickness of the floor-ceiling sandwich, controlled by the system offeror), which was a credit or debit listing to account for decreased or increased costs of the out-of-system vertical elements such as exterior walls and elevators.

The next factor was foundations. This gave proportional credit to the lighter systems which placed less load on the out-of-system foundations, making them, therefore, less costly. Structural walls were next. This factor allowed the system offeror the option of replacing certain specified out-of-system walls in the core with structural walls and gave equivalent cost credit for any out-of-system wall replaced.

Then came heating, ventilating and air-conditioning central plant costs. A system of par values had been established for a

standard building HVAC design and the system offeror was given credit for any reduction in size required for such things as boilers, chillers, electrical service and mechanical room space, based on the utility demands of his system.

Another factor, conductors, were "bid equalized" by accounting for any differences in degree of difficulty for installing out-of-system electrical and communication wiring in each system.

A bid equalization factor for luminaire voltage and frequency was established to account for transforming a voltage or frequency that might be required by the system offeror different from the standard specified for the buildings.

The fire protection bid equalization factor accounted for the cost of out-of-system built elements needed to achieve fire safety equivalent to that provided by a complete automatic sprinkler system, if one was not furnished as part of the system. This cost could cover out-of-system fire detection and additional fire-rated doors and corridors as well.

The credits and debits from these bid equalization factors were then added to the total system price to provide an equalized total price. This comparison determined the system providing the lowest cost building.

3. *The prorated bid price* factor translated the equalized total price per building into equalized total price per usable square foot of office space and thus gave credit to a system with smaller columns. Use of such, of course, means more usable floor space within the same size buildings.

4. *The life-cycle cost* factor in the basis of award calculation for the SSA project takes into account those life-cycle costs that can be objectively measured by calculation and confirmed by tests.

The first life-cycle cost factor identified was that for operating the HVAC system. The system offeror subjected his HVAC subsystem to a computer simulation. To do this, the computer simulated the specified environmental performance during a model year to determine the energy required to operate the system for that year. These energy factors were then multiplied by pre-established unit costs for energy, to determine an annual cost, and were then

multiplied by 40 years, the expected life of the system.

The next life-cost factor identified was space adjustment. A space adjustment model was created on paper; this required the system offeror to calculate the hours required to rearrange partitions to different room sizes and move light fixtures and other utilities to accommodate those room changes. The times required for these model space adjustments were then multiplied by standard hourly rates to obtain the space adjustment cost for one year; these were multiplied by 40 to account for costs of expected building modifications within the life of the building.

The third life-cost identified was for luminaire operation. This factor was obtained for one year by multiplying the energy required to operate each luminaire, times the number of luminaires required to provide the specified performance. This yearly energy cost also was projected to provide the 40-year life-cost of operation.

The final item on the basis of award calculation was the nine-year optional maintenance cost. Each system offeror was required to provide the government with an optional maintenance contract for his system for three years, with two renewable options. This was the cost required to maintain performance of the system in use and included normal house-keeping of the system elements as well as maintenance of the HVAC and luminaire subsystems during the nine years.

The system offeror having the lowest total of net system price, 40-year life-cycle cost and nine-year maintenance cost, was ruled the low bidder.

There you have it. You can see that the life-cycle cost analysis, tied as it was to the award of contract, provided a historic step in the progress of architecture and engineering. Some call it value engineering. Life-cycle costing is more correct.

The mere fact that it came to fruition on March 14, 1973, is certainly worth noting in the journals of American architecture and engineering. Scenes such as those playfully depicted at the beginning of this article need never occur if we can turn our talents toward the real world analysis and evaluation of life-cycle costs in new ways each day. □

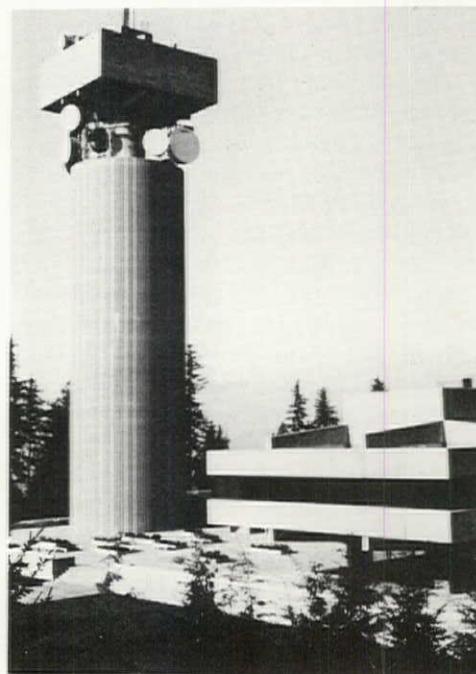
# 1973 Awards Program for Utility Design

The biennial Awards Program for Utility Design was initiated in 1967 by the American Public Power Association to recognize electric utility facilities which achieve excellence in design and show leadership in the improvement of community environment. Cosponsors include The American Institute of Architects, the American Institute of Planners, the American Society of Civil Engineers and the American Society of Landscape Architects. Each organization selects one member of the awards jury.

The Burnaby Mountain System Control Center, a key part of the electric utility system operated by the British Columbia Hydro and Power Authority, Vancouver, B.C., is top winner in the 1973 program. Certificates recognizing the achievements of the center and six other winners were presented to executives of the utilities and their design and planning consultants at ceremonies during the recent annual APPA conference.

This year's judges were Fred Bassetti, FAIA, Seattle, a previous winner of the APPA awards program; Samuel S. Baxter, Philadelphia, former commissioner of the Philadelphia Water Department and past president of the American Society of Civil Engineers; James A. Labrenz, Columbus, Ohio, a vice president of the American Society of Landscape Architects; and Theodore Oldham, AIA, Washington, D.C., an associate member of the American Institute of Planners. □

## FIRST HONOR AWARD



**Burnaby Mountain System Control Center, Simon Fraser University**  
Vancouver, B.C.

**Utility: British Columbia Hydro and Power Authority; Architects: Rhone & Iredale; Planners: Erickson-Massey; Civil, Electrical and Structural Engineers: International Power and Engineering Consultants Ltd.; Landscape Architects: Canadian Environmental Sciences.**

Jury Comment: "The center ties in beautifully with the surrounding buildings and demonstrates a sensitive handling of the landscape. Everything is done in a clean, sophisticated manner with imagination and good use of materials. It is consistent throughout. There are no weak points."

## HONOR AWARD

**Power Operations Center**  
Knoxville, Tennessee

**Utility: Knoxville Utilities Board; Architects: Richard H. Eckert, Barber & McMurry; Planner: Frank E. Seaton Jr., Knoxville Utilities Board; Civil Engineer: George R. King, King & Hudson Associates; Electrical Engineer: Fred S. Vreeland, Vreeland Associates; Mechanical Engineer: Richard A. Piske, I.C.**

**Thomasson & Associates; Landscape Architect: Ralph Smith, Knoxville Utilities Board; General Contractor: Robert E. Rose, Rentenbach Engineering Co.**

Jury Comment: "The site is well organized in terms of circulation patterns and represents a clean statement of the problems and solutions. There is a consistency of detail showing a great deal of programming which put under one roof all the facilities for centralized control and maintenance of facilities. It is a pure expression of program and program needs."

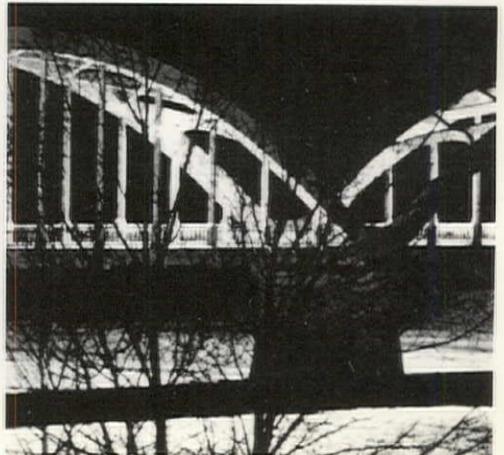


## HONOR AWARD

**Borden Bridge Lighting**  
Saskatchewan, Canada

**Utility: Saskatchewan Power Corporation; Electrical Engineer: D. Hoogeveen, Saskatchewan Power Corporation.**

Jury Comment: "This is a small but well done and refreshing project. The addition of lighting serves not only a practical purpose but also enhances the attractiveness of the bridge."



Seven electric facilities were cited in the 1973 APPA awards program, which is cosponsored by four professional societies, including the AIA. The aim is to stimulate esthetic and environmental consideration by local, publically owned utilities.

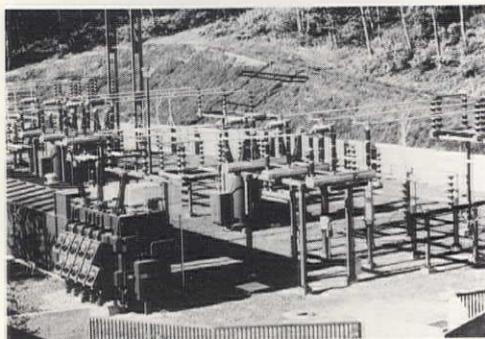
AWARD OF MERIT



**Olive Power Plant Unit 3**  
Burbank, California  
Utility: Public Service Department, City of Burbank, California; Planners: A.E. Capon and J.D. Woodburn, Public Service Department; Engineering: Public Service Department.

Jury Comment: "This power plant has a great deal of richness, vitality and interest and is a pure expression of engineering. It cannot be compared with other entries, but it stands on its own as a handsome piece of machinery."

AWARD OF MERIT

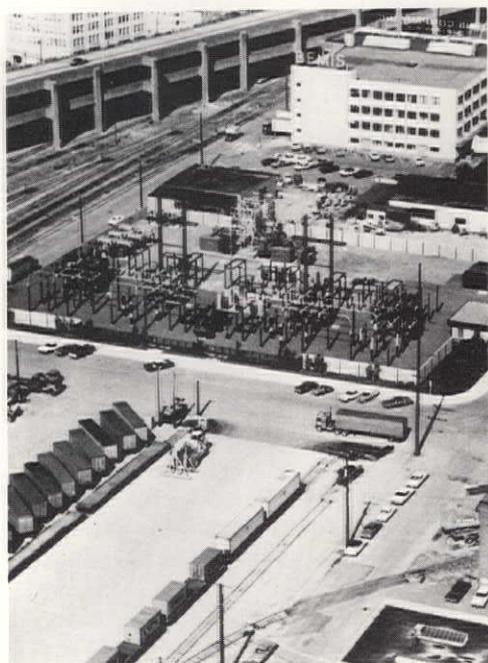


**Delridge Receiving Substation**  
Seattle  
Utility: Seattle City Light; Architect: G. R. Bishop, Seattle City Light; Civil

Engineer: G. W. Bishop, Seattle City Light; Project Engineer: A. L. Talbott, Seattle City Light; Mechanical Engineer: G. Paul Groner, Seattle City Light; Structural Engineer: G. W. Bishop, Seattle City Light; Landscape Architect: Richard Carothers, Richard Carothers Associates.

Jury Comment: "The substation enclosure gives protection without really hiding too much of the handsome, well-organized electrical apparatus. There is a simplified and rather consistent use of steel structures in the tower."

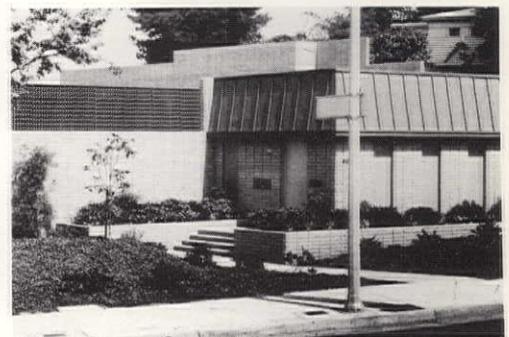
HONORABLE MENTION



**Massachusetts Receiving Substation**  
Seattle  
Utility: Seattle City Light; Architect: G.R. Bishop, Seattle City Light; Civil Engineer: G.W. Bishop, Seattle City Light; Electrical and Project Engineer: A.L. Talbot, Seattle City Light; Mechanical Engineer: T.R. Miller, Seattle City Light; Structural Engineer: G.W. Bishop, Seattle City Light; Landscape Architect: Glen Hunt, Glen Hunt & Associates.

Jury Comment: "The response to the problem of the site is to make the substation consonant with the surrounding rectangular forms of the inner city."

HONORABLE MENTION



**Distributing Station 115**  
Los Angeles  
Utility: Department of Water and Power, Los Angeles; Architects: William W. Gossy, AIA, and Lawrence E. Dubal, AIA, Department of Water and Power; Civil Engineer: James H. Anthony, Department of Water and Power; Electrical Engineer: Donald J. Goldklang, Department of Water and Power; Mechanical Engineer: Leonard A. Gettinger, Department of Water and Power; Structural Engineer: Joseph T. Callaway, Department of Water and Power; Landscape Architect: Charles L. Mathias, Department of Water and Power; Consulting Architect: Paul Robinson Hunter, FAIA.

Jury Comment: "The landscaping is superb. The substation structure is on a residential scale and thus blends in well with the surrounding community."

# A User's View of Computer-Based Financial Management

Peter Piven, AIA

Practice Aids 15

The architectural firm of Geddes Brecher Qualls Cunningham was an original subscriber to and now uses The American Institute of Architects' computer-based financial management system (FMS). A brief historical perspective of the firm seems in order to understand the events leading to subscription, how the system is currently used and how it has affected the firm's practices.

Robert L. Geddes, FAIA, and Melvin Brecher, FAIA, founded the firm in Philadelphia shortly after they were graduated from Harvard University's Graduate School of Design. George W. Qualls, FAIA, and Warren W. Cunningham, AIA, joined the partnership several years later. At first the practice was quite small; the number of employees ranged from one to 10, and billings were from \$250 to \$800,000. GBQC's management information and accounting system at that time consisted of double-entry bookkeeping which was manually produced by the bookkeeper and reviewed quarterly by the firm's accountant. A full set of double-entry books was kept on the accrual basis, and the output included: general ledger; cash receipts journal; purchase journal; cash disbursements journal; and sales (invoice) journal.

In 1967 the firm began to use a "one-write" system. Still requiring manually input double-entries, this minor modification allowed simultaneous entries onto different reports by the simple expedient of peg-board alignment. Notwithstanding this improvement, the bookkeeper was still required to produce information manually for office accounts. Project accounting remained arduous and time-consuming and, consequently, project accounts were produced only as specifically required and requested. The accountant estimated that proper *project* reporting on the accrual basis would have required the services of an additional full-time bookkeeper to maintain a full set of double-entry project accounts from time sheet takeoffs.

In 1968 GBQC learned of a system developed by Paul Goldstein, then general manager of Toombs, Amisano & Wells in

Atlanta. He had developed a computerized system which generated independent project and office accounts. The system appeared to offer new capabilities for developing data for project history and control in addition to general office accounts, and GBQC accepted Goldstein's offer of the program, beginning its use that year.

Eventually the system was marketed and other subscribers enrolled. That system produced: job cost (individual); job cost summary; accounts receivable; cash disbursement journal; cash receipts journal; general ledger/trial balance; journal vouchers; and sales journal (invoice log). Input information was transmitted by mail and processed by a service bureau in Atlanta for \$175 per month. Although better than manually developed double-entry accounts, this system did not reconcile project costs with general office accounts.

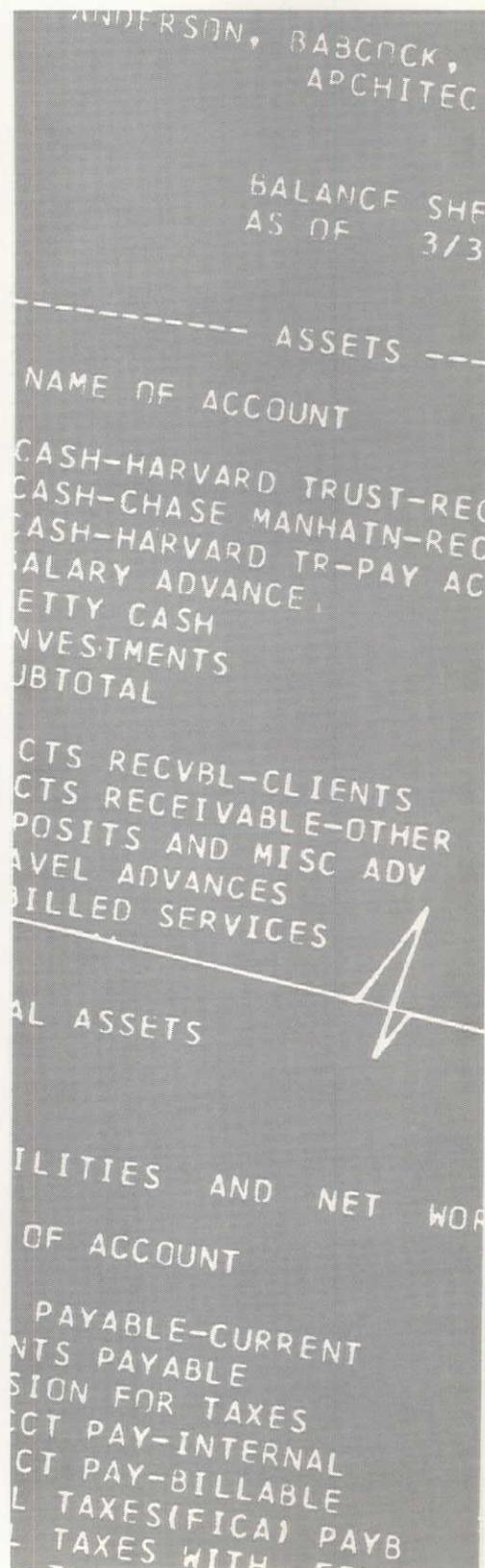
GBQC learned in 1971 of the AIA computer-based financial management system through Brecher's participation on the Institute's Committee on Office Practice. The AIA system appeared to offer several distinct advantages:

- It generated fully integrated project and office accounts.
- It established a standard system for the profession related to the AIA's previously developed and published accounting recommendations.
- It provided a basis for the eventual retrieval of information by the profession.
- It afforded the ability to work with people knowledgeable about and in tune with the profession and its problems.
- It allowed information to be processed locally.\*

GBQC carried the Goldstein system through December 1971 and simultaneously prepared to use the AIA FMS. We implemented this in January 1972 as one of the early subscribers.

The AIA FMS can generate a full range of reports for developing project and office historical data, for managing the firm and its projects and for systematizing and recording accounting information. Its most significant features are: its integration of

\* *ED. NOTE: Information also may be mailed to and processed at a central data center.*



Mr. Piven is general manager of Geddes Brecher Qualls Cunningham, PC.

**In December 1972 the AIA JOURNAL published G. Neil Harper's description of the new computer-based financial management system available through the Institute. Here are the views of the general manager of a 50-man architectural firm with offices in Philadelphia and Princeton, New Jersey—one of the initial subscribers to the system.**

project and office accounts; its modular development and use potential; and its internal flexibility which is vital in dealing with various project and office conditions.

The original system consisted of a program (on discs) which, with proper user input (on cards) produced a complete, integrated set of reports as follows: update input card list; payroll journal; project detail report; project progress report; project summary report; cash disbursement edit list; journal entry edit list; percent complete edit list; cash journal; summary of direct expenses; journal log; project percent complete log; invoice edit list; invoice list; balance sheet; income expense report; office earnings report; aged accounts receivable; expense analysis; general ledger; and time analysis report.

Since its inception, various users, including GBQC, have initiated development of additional features which have expanded the capacities of the system. Many of these, like the close-out and initialization routines, were developed to simplify normal operations and reduce computer consulting and operation expenses. Others, like the general ledger analysis developed for GBQC, have expanded the system's output sophistication and utility and are now available to other subscribers.

How do we use the system on a day-to-day basis? GBQC employees record hours on time sheets and submit them semi-monthly. At mid-month these time sheets, along with system update information such as new projects, salary changes, etc., are sent to the processor who runs the segment of the program which produces the update input card list, time card edit list, payroll journal and project detail reports. At the end of the month, the inputs expand to include percent complete, cash disbursements and receipts, journal entries and invoices.

The input is generally completed by the bookkeeper manually on forms available from the AIA. The processor keypunches cards from input manuscript, runs the program along with the input and returns output in the form of computer-printed reports. That output at month's end comprises the full range of reports beginning with the update input card list and ending with the time analysis report. Our average

monthly processing cost to process data for 50 employees and 80 projects in various stages of activity averages \$400.

The various edit lists are semifinal in nature and are provided as an input check; they are retained for the record but are not distributed nor otherwise used. A full set of reports is retained intact by the bookkeeper, a full set goes to the general manager for his use and a third set is split. Project detail and project progress reports are distributed to individual project managers for their use in monitoring projects for which they are responsible. The accounting reports (cash disbursements, journal entries, cash journal, invoice log, balance sheet, income expense report, office earnings report, aged accounts receivable and general ledger analysis) are forwarded to the accountant who visits one week later to prepare his monthly statement.

Project managers monitor direct job labor and other direct job expenses against project budgets which are developed at job initiation and which are input as part of the basic project information when new jobs are added to the file. The project progress report printouts include: hours and dollars expended by task type for both the accounting period and the job to date; percent complete as input by the project manager; earned budget; and total budget.

In addition, that report lists direct and reimbursable expenses and project totals, both inclusive and exclusive of overhead-allocation. The project detail report backs up the progress report with individually itemized labor expenses charged against the project in the accounting period. The bookkeeper uses the project detail reports as base data for preparing monthly billings and the time analysis reports to monitor allocation of hours to the various indirect expense accounts established by the firm as part of its individual chart of accounts. The cash journal is used to check the firm's bank account and the salary review; vacation/sick hours reports are used to monitor personnel status.

At GBQC the payroll journal has a special use. Since the firm has had its payroll processed and paychecks prepared by an independent service bureau for many years, we have elected not to use that ca-

SYSTEM INSTALLATION  
AIA FORM F901  
AIA COMPUTERIZED FINANCIAL MANAGEMENT

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**The computer-based financial management system generates general office accounting data and provides reports which produce a quantitative record of a firm's practice. Among the benefactors are the general manager and the principals because the system is a management tool which gives the necessary information for effective decision making.**

pability of the AIA system. Consequently, the bookkeeper uses a journal entry to prepare the simple but necessary payroll reversal, which backs out the time-card payroll and inputs the actual semimonthly payroll with its accompanying tax distribution.

The accountant uses the various accounting reports to prepare the firm's monthly balance sheet, income/expense statement and tax returns. In the first operating year on the system, the accountant lacked confidence in the results and kept separate books. With the start of our new fiscal year on October 1, we have made modifications in the computation of direct labor expense, in the assignment of direct and indirect labor expenses and in accruing consultant expenses. The computed results are now virtually identical to those that the accountant produces, and we expect that in the near future the balance sheet and income/expense statement generated by the AIA system will suffice.

The general manager uses the time analysis report to monitor personnel activity and productivity, the expense analysis to monitor actual overhead expenses against those budgeted and the invoice log and accounts receivable report to watch cash flow. The two most important reports for the general manager and the principals to whom he reports are the income/expense statement (I/E) and the office earnings report (OER). The OER is a comprehensive listing of active projects and indicates for the project to date: project number; project name; percent complete; income type; earned income; billings; unbilled services (work in process); receipts; accounts receivable; expenses; and profit/loss.

For the year to date it prints earnings, expenses and profit/loss. The OER bottom line is the consolidated report of office conditions as a direct function of projects and relates directly to the income/expense statement and balance sheet which deal with the financial situation of the office as a whole. The I/E states income, indirect expenses including overhead labor, direct (job) expenses including labor, reimbursables and profit/loss. The OER and I/E, taken together, are the two key indicators of the

quantitative aspects of the firm's operations and can be the basis for most, if not all, financial management decisions.

GBQC has realized most of the benefits expected from the system's use and expects to realize all of them. Project managers now have a good basis for preparing budgets and believable results on which to make project management decisions. The bookkeeper has been freed of much laborious and time-consuming entry preparation and has more information and time for more important tasks, such as getting the bills out. In addition, we now have available to us detailed project information for historical and management purposes that, at the very least, would have required the services of an additional full-time bookkeeper just to produce the most rudimentary data. The accountant, although desirous of the addition of a purchase journal to accrue nonconsultant expenses, appreciates the quantity and accuracy of the data produced and will soon be relying on the bottom line as well as the detail.

Advantages have accrued to the firm in general as well as to the various individuals who use the information directly. Coordination of the schedule of accounting reports has made us more conscious of getting billings out and outstanding bills paid. In short, we have improved our cash flow. We have realized some monetary savings in reduced payroll and processing cost by converting to a semi-monthly system which could have been accomplished without the computer-based system but was prompted by it. The greatest benefits accrue to the general manager and principals, and ultimately to the firm, in the form of quickly and accurately produced raw material for effective decision making.

We should not imply, however, that we have attained perfection in producing management and accounting information. On the contrary, computers (and by extension their programmers) are hard taskmasters and do not readily tolerate mistakes. The same features which cause the generation of integrated project and general accounts from proper user input are the same features which produce trash from input errors. To be sure, mis-

takes can be corrected but only with additional time and expense. We have learned to manually adjust for user-produced mistakes in the current month and try for perfection in the next month's run.

Also, the general flexibility of the system is not limitless, and specific individual circumstances that require user adjustment will occur inevitably. The program cannot, for example, calculate income on a percentage basis for projects whose fees change at each phase. This, however, is a minor problem, and sufficient flexibility exists for the user to find alternative solutions to specific problems of this kind.

In terms of pure cost, the system is not inexpensive.\* GBQC paid \$2,325 to the AIA for initial access and \$5,500 to CLM Systems, Inc., for installation. Current operating costs include \$258 quarterly to the AIA and an average of \$400 per month for processing. We also incur occasional consultant costs for infrequent but necessary conferences with G. Neil Harper, whose assistance has been of inestimable value.

In terms of cost/benefit, however, the system has been invaluable. We simply would not have had the information without it. By far the biggest problem to be encountered is not with the system itself but rather with its use. Without the desire and ability to understand and utilize effectively the data produced at all levels, the data is virtually worthless. Fortunately, we see the system acting as a catalyst. The ability to have good data produced has caused the persons responsible for using that data to become more management conscious and to act to produce good data.

In summary, despite minor problems, GBQC has found that FMS has proved to be of real value even beyond its immediate product. □

*\* ED. NOTE: The AIA is developing a revised pricing mechanism based upon centralized data processing to reduce costs for small and medium sized firms. The recently formed firm of Neil Harper Associates, Inc., in Belmont, Massachusetts, will specialize in the installation and operation of the AIA computer-based financial management system.*

# Bridging the Learning/Practicing Gap

Bruce E. Erickson, J. William Rudd and William C. Widdowson

Our increasingly diverse environment is being dealt with by a something less than effective and diversified education model. The traditional linear or 'string-of-pearls' model has become inappropriate.

## Architectural Education

Architectural education today is faced with a two-pronged challenge. From the outside, evidenced by recent actions of The American Institute of Architects, comes a challenge to transcend the banal goal-image presently projected by the profession. From inside education itself, evidenced by student and faculty unrest and departmental groping, comes a challenge to develop and adopt curricular models more analogous to the reality of architectural practice and more conducive to realizing the goal-images of students and faculty.

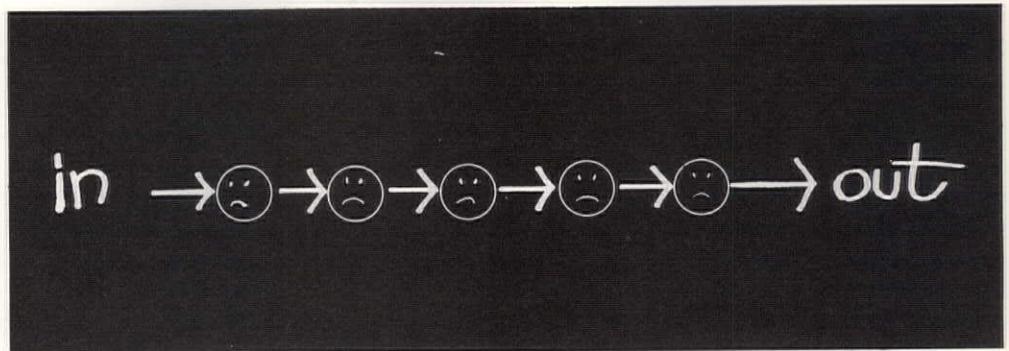
The array of career-role opportunities fans out to encompass a much broader field than the profession of architecture contains. The traditional linear, fixed-sequence or 'string-of-pearls' model is inappropriate to this field. It also fosters and perpetuates departmental isolation, both intra- and inter-institutional. This is becoming an ever larger obstacle to effective education.

All this is meant to suggest the existence of an increasingly diverse environment which is being dealt with by a something less than effective and diversified educational model. There is an intolerable mismatch between model and reality. With the profession of architecture contained within the field of architecture as one of its subsets and possibilities, architectural education can and should address itself to the entire field of architecture. When we speak of architectural education here, clearly we are speaking of the whole supra-institutional enterprise.

At Cincinnati, while we have identified these challenges, we have also gone about reviewing our own situation to discover peculiarities which could mold our particular responses to them. Briefly, some are:

- Students appear to learn best in specialized or concentrated contexts.
- Students learn best and teachers teach best in contexts of their own designs and choices.
- Our best third-year students are better than our worst sixth-year students.

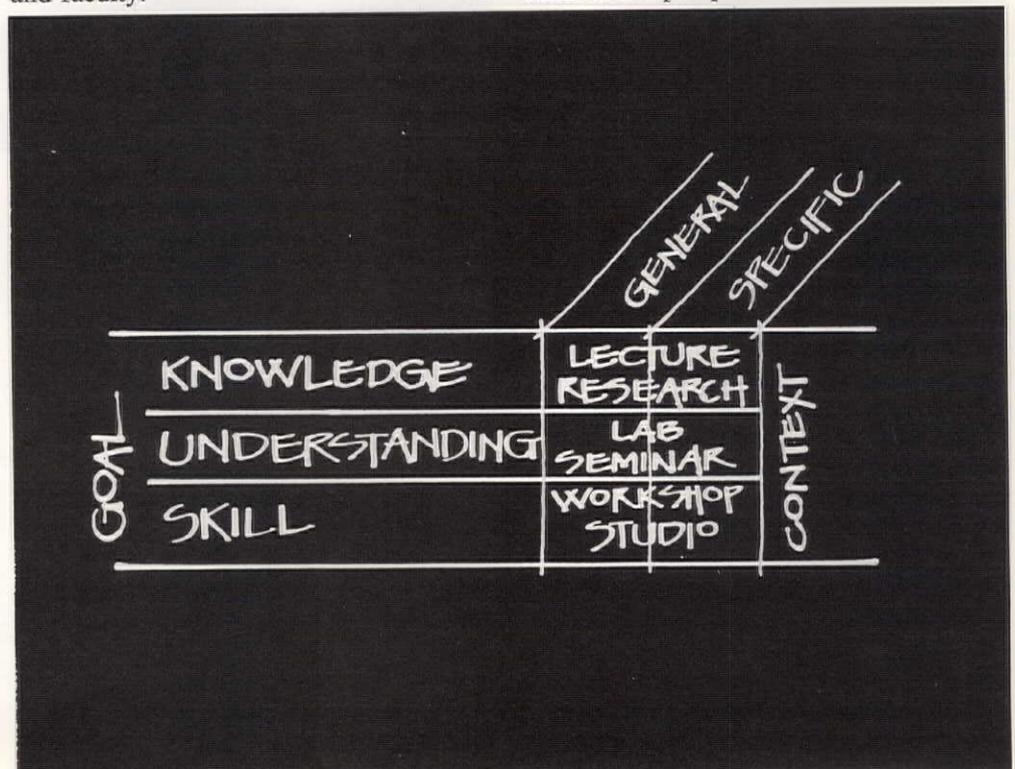
Mr. Erickson is professor and head, Messrs. Rudd and Widdowson associate professors, Department of Architecture, University of Cincinnati.



We also discovered these conditions:

- As a faculty group we fell short of comprehensive coverage of the expanding field of architecture.
- As an organization we lacked the structure to create and regulate self-growth.
- Education is not training (in the Pavlovian sense) but is the acquisition of knowledge and skills, as well as the understanding of how to apply them.
- A curriculum ought to be the result of the people within it and not vice versa; curriculum is not universally prescribed content but a structure which accommodates the ideas and desires of students and faculty.

Our response to the above challenges has been to evolve a curricular model which centers around interest and task, both being developed in the wide cultural context on the one hand and the specific locus of architecture on the other. This has resulted in our adopting a model which has three primary objectives: First, to recognize a distinction between a general level and specific levels of education for the field of architecture; second, to distinguish between understanding, knowledge and skill, and the different means which promote the development of each: lecture, laboratory, seminar, studio, etc.; third — the primary objective, — to achieve an open pattern which allows stu-



**One university's response to this problem has been to develop a curricular model whose primary objective is to achieve an open pattern which addresses itself to the broad field of architecture — the whole supra-institutional enterprise.**

dents and faculty to group around commonly defined issues and to follow mutually designed courses of action in their investigations.

The specific means we have adopted to apply this model has three general program areas: foundation years, TOPAC (topical package) years, and concluding years.

During the foundation years (presently two years) the student is introduced to:

1. The societal, technological and physical determinants of environmental form. The thrust is toward widening the student's understanding of his environment as the result of man's attempts to achieve his ideals within the constraints of the social and physical milieu.

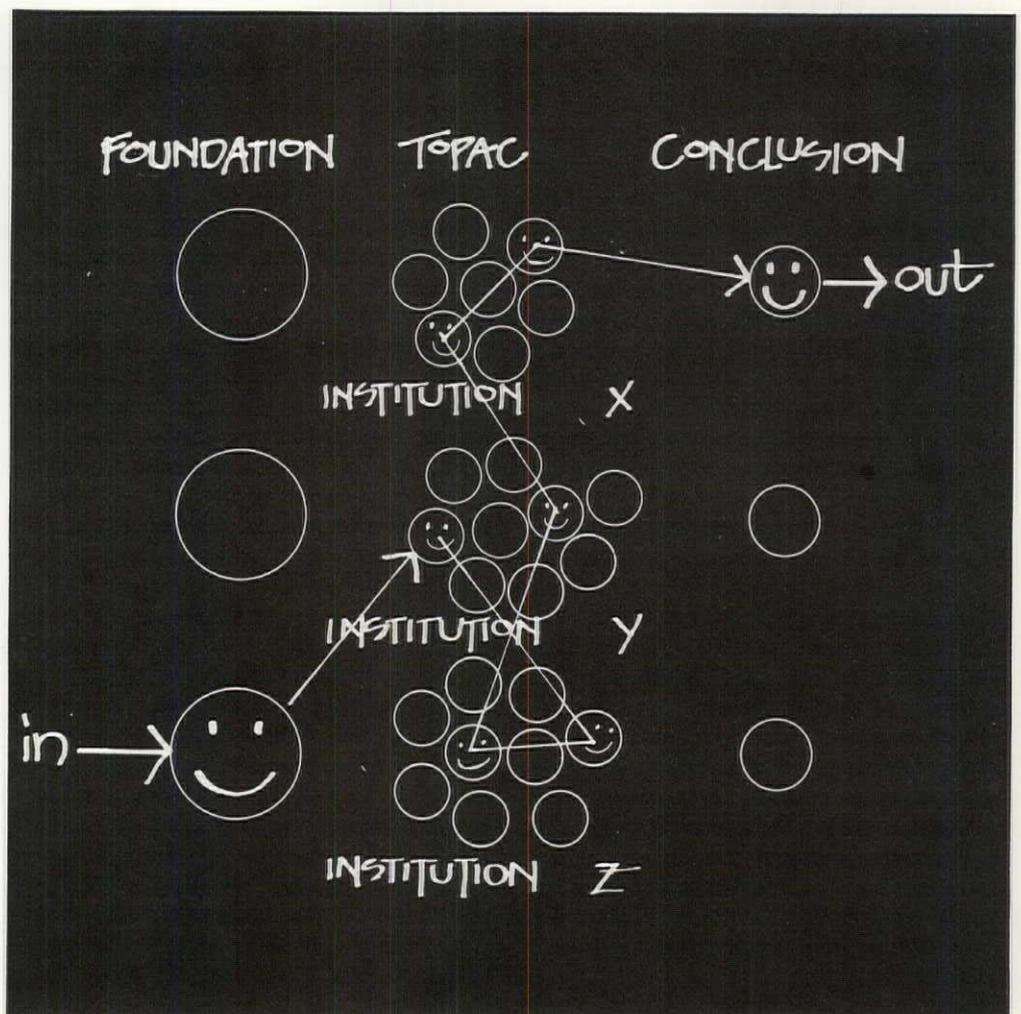
2. Design methods, problem solving, decision making and communicative skills.

Since these years are intended to lay the foundation for the following program segments, all work is carried on at a very general level to keep the range of possibilities for application as wide as possible. These years also include elective choices to accommodate the student's emerging particular interests. This portion of the program is the most formalized.

Next come the TOPAC years (presently years three through five). This program area initiates the student's concentrated study into various specialty fields of architecture by using a combination of lecture, laboratory, seminar, studio and elective exposures. Students and faculty work together within topically defined areas of their own selection and design. The student group within each TOPAC is structured 'vertically' by interest rather than 'horizontally' by year level. Among other advantages of this approach are:

- the opportunity to offer the educational efficiency of a specialized concentration while preserving a generalist program;
- the flexibility for each TOPAC to include supplementary and elective course work to the extent and in the manner which best complements the task; and
- the opportunity for each group to plan its time and actions best to suit their specific perception of the task.

All students are required to take the lecture component of each TOPAC we presently offer. Thus, they will be exposed



to the basic principles of all the topic areas. Then, if the student wishes to pursue a topic further he can elect into a TOPAC laboratory, seminar, or studio, whichever application best suits his inclination for either analytical or synthetic methods of concentrated involvement. The mode, direction and sequencing of concentration is voluntary; a minimum number of exposures in each mode is specified for graduation.

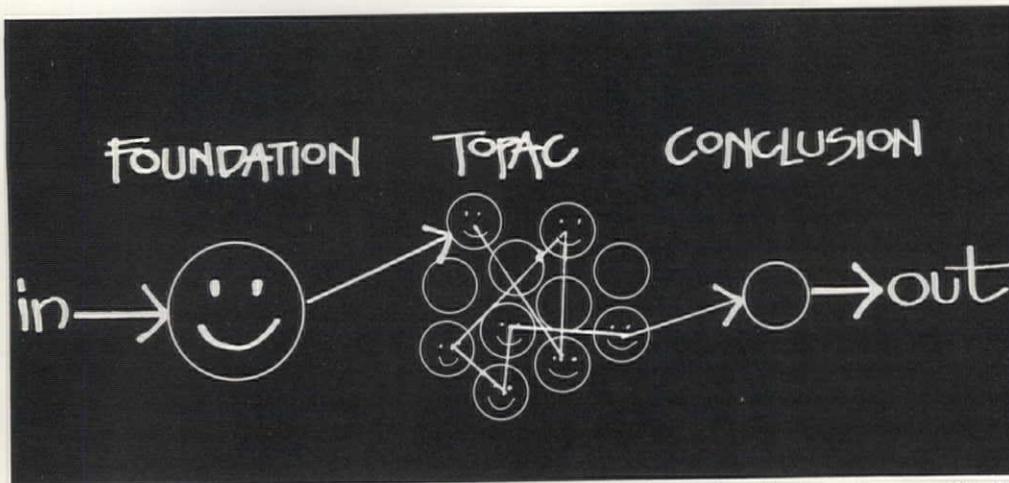
This freedom of election into deeper investigations by either analytical or synthetic application is the basic characteristic of the TOPAC segment of the program. Recognizing interest as a better grouping device than age and the inevitability of change in the interest patterns of both students and faculty, we have made this part of the program most adaptable.

The concluding year (presently the

sixth year) requires an involvement aimed at bringing the student's full range of skill, knowledge and understanding to bear upon a project of his own choosing and design. Not only does this provide the necessary final evaluative tool but, what's more important, it also offers the student the opportunity to gain competence and self-confidence.

The wide-ranging flexibility which exists in these final two segments of the school years demands a comprehensive counseling program to advise and guide the student among the many alternatives before him at each juncture. The principal emphasis of counseling is to give encouragement to each student to maximize his range of exposure across the whole curriculum. Concentration is possible and allowable but it is not the limit of the new program. We have aimed to create the pos-

This open pattern is achieved by recognizing the general level and the specific levels of education; by realizing a distinction between understanding, knowledge and skill; and by allowing students and faculty to group around commonly defined issues and to follow mutually designed courses of action in their investigation.



sibility for in-depth involvement without forcing anyone to get 'stuck in the mud.'

Our co-op program, which requires the students to alternate academic with work and travel quarters after the second year, makes, in effect, the 'outside world' our partner with whom we share the responsibility for developing the student's understanding and skills. We thereby enjoy the benefit of students who quickly develop a high level of analytical and communicative skills. Further, we reap a time bonus which allows us to emphasize theoretical pursuits during academic quarters to an extent otherwise not possible.

Numerous implications follow from our adoption of this particular kind of model. Some of these are:

- Academic emphasis is not programatically focused in analytical research, in theoretical lectures or in syncretical studios. Any student can concentrate either the topic or the mode of his exposure or range across them all.
- There is no programwide prescribed analysis/synthesis model but rather the recognition and accommodation of the fact that individuals vary in problem solving approach. The proper model is the one that works.
- Topic areas beyond basic requirements in which we lack faculty or academic resources are simply not covered. However, if sufficient desire for an area emerges it can be identified and the necessary action taken to assure its realization without completely disrupting the program. Conversely, if an area no longer sustains interest or the faculty resource is no longer

available, it can be eliminated or modified. Our curriculum, as the form of learning, is stable, but program content, being free from curriculum, can vary to accommodate shifting interest and resource patterns.

- The overall thrust of our program is still general in character, but we avail ourselves of the educational efficiencies of concentrated learning experience. It is paradoxical that the more specific you become, the wider your appreciation for ostensibly peripheral relationships and hence the more general you become; and it is ironic that you can approach the general through a number of specific involvements.

Responding to the challenge from within architectural education has been relatively easy. The faults of the traditional model were manifest; the image of what we desired was inescapably present in the obvious misfit between the diversity of the field of architecture and the anachronistic singularity of architectural education. The response to the challenge from the profession, how to transcend a banal self-image, is far more difficult. It is and it has been our hope that a proper response can be implicit within our response to the educational challenge.

By broadening the academic focus of our program to include the understanding and knowledge on an equal par with the development of skills, and by raising the esteem of lecture and research participation to equal that of studio participation, we aim to provide students with an expanded sense of the possibilities of architectural practice which goes beyond the

reality of architectural practice. Essentially, this means that our curricular model must not only have a high degree of analogousness but must be normative as well. It must not only be as diverse as the reality for which it purports to be a preparation but also a prescient adumbration of what the future of that reality ought to be like. Then tomorrow will be neither an accident nor just another today.

Specifically this means making an issue of value. It does not mean teaching values; it means developing critical judgment in an atmosphere dedicated to the examination of alternatives by analyzing the value assumptions which characterize and differentiate alternatives. It means transcending rule and precept to focus upon principle, for the seeds of adaptability, to meet inevitable change, can mature only from principle. Banality can be banished only by unmasking the vacuity of it as a pursuit, and it can be displaced as a style only by individuals who freely discover and develop more valuable alternatives.

What we are doing at Cincinnati is of no great originality. Our initial TOPACs have, of necessity, been make-overs of our previous curriculum, and the cry to concentrate on principles is ancient. The greatest novelty is perhaps that we are doing it and, we feel, doing it with ingratiating success.

A final implication — the impact of which we have only begun to imagine — stems from the form of curriculum we have adopted. To succeed locally, it appears, is not to succeed at all: first, because the challenges are not confined to a locale and second, it would fall so short of the full potential of the model that it would be grossly wasteful. No one institution can provide the increasingly wide varieties of concentration which the model makes possible. It is a model which, in order to mature, demands more universal implementation which can become at least extra-institutional or regional in scope. The model can only begin to realize its fuller potentials when the resources of several institutions combine to achieve a more complete comprehensiveness and a higher degree of analogousness with the reality of the field of architecture. □

# What's Happening in Architectural Education

**After a spirited campaign for office, ACSA at its annual meeting votes Donald P. Schlegel in as vice president and president-elect, while Sanford R. Greenfield moves up to the presidency.**

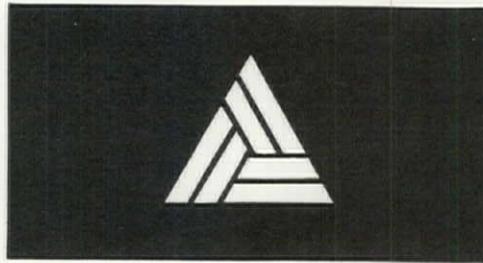
The annual meeting of the **Association of Collegiate Schools of Architecture** was held on May 5 in the newly renovated Stanford Court Hotel in San Francisco. The main business was to act on a number of important and carefully prepared resolutions and to announce the elections of new board members and officers.

The years 1970-72 were essentially times of internal affairs for ACSA. During those years new bylaws were adopted, new staff was acquired and a number of programs were created to serve the schools. These programs served to increase the cash flow and raise the consciousness of the membership of ACSA. By the end of that time almost every faculty member in the country knew what ACSA is and had an inkling as to what its activities are. The distribution of the ACSA Newsletter and the *Journal of Architectural Education* to all faculty certainly helped in this matter.

In no way can it be said that all the internal machinations of ACSA are perfectly oiled, however. The councilor system of representation has had its sticky points; there is talk of carving up the regions again in new and more useful ways; and the workload of ACSA's modest gains is beginning to weigh heavily on its diminutive staff of one. That brings us to one of the three resolutions offered by the board of directors at the annual meeting. This essentially asked for a modest dues increase, with a promise of a larger one later on. The increase is aimed at providing staff support, either in terms of part-time or full-time help, for the following "missions" of ACSA:

- Statistical information clearinghouse
- Career information and counseling service
- Learning packages development and distribution
- "Lobby" for the schools with the AIA, NCARB, NAAB, ASC and other professional organizations.

The recent change, however, in the recent climate of ACSA has been to turn some of the attention from internal affairs back to the outside world. Part of this tendency is caused, simply enough, by the rush of human events and institutions around us. More specifically, it is at-



tributable to the success of the Five Presidents meetings that have been occurring — with some vigor — during this last year. Composed of the presidents of ACSA, AIA, NAAB, NCARB and the ASC/AIA, the meetings have let each organization know what its own voice sounds like.

Aside from the exchange of information and contemplating action in shared problems, this forum has forced ACSA to a higher degree of explicitness in expressing its positions on various issues than it has ever enjoyed before. Further, the *structure* of the meetings placed ACSA in a position of speaking for the schools of architecture rather than just for itself as an autonomous institution. This has greatly enhanced the sense of responsibility felt at ACSA meetings and in the long run can only be beneficial.

Out of all this came the other two board-offered resolutions. The first of these asked for ACSA to take up a near-atrophied responsibility, latent in the NAAB bylaws, that gives ACSA the right to negotiate on behalf of the schools for dues or fees increases by NAAB. This was not by any means meant as a "hostile" move by ACSA toward NAAB but rather as a notice that ACSA would no longer abdicate its historical role as the guardian of the rights of schools of architecture in the total absence of any other candidates.

The second resolution had to do with two proposed studies — one by NAAB and one by ACSA. The NAAB year-long self-study was already endorsed during the year by the ACSA board as long overdue. All the resolutions asked for was permission to levy the schools for ACSA's share of the cost of the study. The NAAB self-study will be financed by the sister (and founding) organizations: the AIA, NCARB and ACSA. The other section

of that resolution had to do with the ACSA study of architectural education proposed by the ACSA Committee on Education. Expected to be financed with public monies, the study intends to review developments in architectural education *as they exist* rather than as ACSA wished them to be. The study will not, then, necessarily lead to recommendations for the future.

All the resolutions offered at the annual meeting were resoundingly passed, and the board took it as an authentic vote of confidence in ACSA activities. Cries of "do more" carried with it the sense of "what you've done so far is encouraging."

In elections, Vice President Sanford R. Greenfield, director of education at the Boston Architectural Center, automatically moves into the presidency as provided for by the new bylaws. Greenfield's vice-presidential year was especially active, which seems to indicate that the successive mechanism is working well. Similarly, outgoing President Robert S. Harris, dean of the University of Oregon School of Architecture, will remain active on the board as past president. The new vice president and president-elect is Donald P. Schlegel, the department head at the University of New Mexico. Running against Schlegel was Bernard P. Spring, dean at the City College of the City University of New York. Perhaps it can be taken as a sign of vigor in ACSA that it was a spirited campaign for office.

Keith McPheeters, dean at Auburn University, moved off the board as South-East regional director and right back on as treasurer. The new secretary is Richard Wheeler of the University of Cincinnati. New regional directors are Richard Larry Medlin (West-Central) of Washington University; Robert P. Burns Jr. (South-East) of North Carolina State and, surfacing as North-East regional director, Bernard P. Spring, who ran in a special election to replace John P. Eberhard, who has left the board by virtue of leaving the field of architectural education. He recently accepted the post of president of the AIA Research Corporation, and in so doing resigned as dean at the State University of New York at Buffalo and, therefore, from the ACSA. *David Clarke*

**New curriculum programs are added; fellowships are bestowed; and the recipient of the first William A. Scheick Research Fellowship looks back at what the award has meant to him.**

The University of Texas at Arlington has recently been granted the right to offer a master of architecture degree. The six-year program, which will start in September, will include city planning, urban design and landscape architecture.

Pennsylvania State University's Departments of Architectural Engineering and General Engineering have designed a two-year associate degree entitled Architectural Engineering Technology. The program will be offered in the fall at the campuses located in Scranton, Sharon and Uniontown. For further information, contact Professor E. R. Weidhaas, 101 Hammond Building, University Park, Pa. 16802.

Penn State's College of Arts and Architecture is sponsoring a conference on **Legal Aspects of Zoning** September 9-12. For information, contact conference coordinator Mrs. Patricia Ewing at the University, University Park, Pa. 16802.

Harvard University's Graduate School of Design is conducting a **Laboratory for Computer Graphics and Spatial Analysis** this summer. A workshop on Graphic Display of Spatial Data will run from August 6 to 10; a Video Workshop from August 27 to September 5; a Problem Solving Workshop from September 10 to 14. For details, write the Laboratory at the Graduate School of Design, Harvard University, 520 Gund Hall, 48 Quincy St., Cambridge, Mass. 02138.

The American Academy in Rome has selected three winners in the architectural category of the **Rome Prize Fellowships** for 1973-74: Marc Balet, of Waterbury, Conn.; Franklin David Israel, of New York City; and Robert S. Livesey, of Montclair, N.J. In the field of environmental design, Robert W. Braunschweiger of Newark won the coveted prize. The fellowships carry \$4,620 a year, free residence and studio in Rome, and use of the library and other facilities at the American Academy. Jurors of architectural submissions were Henry N. Cobb, FAIA, chairman; Charles G. Brickbauer, AIA; Samuel M. Brody, FAIA; Charles Rogers, AIA; and Robert A.M. Stern; for the environmental design category, Edmund N. Bacon, FAIA, chairman; Nash Castro; Michael Rapuano; and Conrad Wirth.

Craig D. Roney of Andover, Mass., is winner of the **1973 Rotch Travelling Scholarship** award; alternate is Duane A. Kell of Wellesley, Mass. The award is \$10,000, to be used for foreign travel. This year's scholarship committee includes Francis B. Sellev, FAIA, permanent member; Hugh Shepley, FAIA; Donald Gillespie, AIA; Walter F. Bogner, FAIA; William E. Haible, FAIA; Norman C. Fletcher, FAIA; and Hugh Stubbins, FAIA, secretary.

The **1973 AIA Research Communications Fellowship** of \$3,000 has been awarded to Barry Korobkin of Harvard University. The purpose of the fellowship is to enable the recipient to study the problems of communication between the research community and architectural practitioners. In addition to assessing the nature and scope of this problem, the winner is also expected to make a significant contribution toward devising methods which will ultimately lead to solving or lessening the problem. Korobkin was awarded the fellowship on the basis of his proposal to develop and test a number of communications devices with a group of architects in the Boston area using behavioral science research findings as the content material.

The **1973 William A. Scheick Research Fellowship** has been awarded to Vernon A. Williams, a doctoral candidate at the University of Michigan. Williams, a former AIA staff member in the Community Services Department, was awarded the fellowship on the basis of his proposal to study the potentials and possibilities for converting low income public housing into condominium housing. He will concentrate on financing, rehabilitation and legal transfer aspects of this problem.

What has the **Scheick Fellowship** meant to its first recipient, Fred Ian Stahl? "Without a doubt, the single greatest effect has been my growing awareness of the critical need for basic research in all areas of environmental design, and of conditions with which 'architectural researchers' may be confronted," writes Stahl.

The annual \$2,500 grant under the fellowship, named for former AIA Executive Director William H. Scheick, FAIA, is to help a graduate architectural student to

pursue, during one academic year, an original investigation into the subject of human needs and requirements in low income housing of the multifamily type.

Stahl, who holds an architectural degree from the City College of New York, carried out his fellowship research project at the Rensselaer Polytechnic Institute with the study "Ecological Psychology and the Design Professional: Another Look at Urban Dwelling Environments, and the Architect's Contribution to Their Planning and Design."

"Having involved myself with a basic research effort, I came to realize that architectural education presently provides little or no training in skills necessary in basic research," Stahl states. "In fact, neither the schools nor the profession in general provide environmental design students with the incentive to consider basic problems in research. At the graduate level, programs such as the Scheick Fellowship seem to be a valuable step in the right direction. At the undergraduate level, however, schools still seem to be largely in the business of cranking out people to fill the drafting room needs of local practitioners, saying relatively little about the greater concerns of the profession and the future of our society. And frankly, I don't envision many architectural firms hiring those of the new breed of architectural researchers, since basic research hasn't as yet impressed the practitioner as either lucrative or necessary to his immediate goals."

But Stahl is convinced that environmental design research will, in the very near future, begin to provide the practitioner with accurate, more comprehensive understanding of the consequences of design decisions.

"Fortunately," he goes on, "the graduate program in architecture at Rensselaer provided an environment in which I could pursue my independent research as a mature professional. The program appeared highly adaptive to the demands of the fellowship. One could ask for little more from graduate education." Stahl is now an instructor of design and architectural research at Kansas State University's Department of Architecture, College of Architecture and Design. □

# San Francisco 1973



**Getting together on the eve of The American Institute of Architect's annual convention are guests at the Dodge/Sweet's Spectacular, which has become almost tradition and is looked forward to by conventioners as a "picking-up-where-we-left-last-year" event (across page). Caldwell's keynote address, which like other addresses is excerpted here, follows the official opening of the convention the next day.**

## Professional Program

### The Challenge of the Future Keynote Address

*John T. Caldwell, Chancellor, North Carolina State University:*

In one phrasing or another, we have all heard it said that a good structure results from a good architect serving a good client. You are the architects. Who is your client?

America is. Better still, the human race is your client.

Is it possible that somehow you as a profession and your fellow man as your client can better perceive your role so as to glorify life and elevate the human condition? Is not one aim of your annual conclave to revitalize the ancient challenge?

The material universe as it is perceived and accepted by the mass of humankind can be an overwhelming and oppressive fact. By its nature it is an enforcer of finiteness, hence of limitation. Against its walls and forces and strictures, that special creature man must make his way. Man carves out his habitation from century to century and salient to salient against these limitations of matter. Even the intellectual universe he creates is largely conditioned by his observations and experiences with the physical universe. But not entirely so. For "there is a spirit in man" which looks through and beyond the physics and, in looking, hopes, and, in hoping, strives for room.

I like to think that the magnificent profession of architecture exists to serve those hopes and those strivings to make room for the human spirit.

Special arrangements for meeting human needs differ in the human experience from period to period and from one part of the planet to another. Witness the historical cycles of tyranny and freedom. Witness in our own time the differences between the economic and political arrangements under which the mainland Chinese live and the economic and political arrangements under which the people of San Francisco live. Whatever the arrangements, a body of doctrine develops to account for the arrangements, to describe them, to bring about change in

them, or what not. And so is generated the discourse comprising the intellectual universe you and I inhabit.

In most of the world the economic arrangements are characterized by some degree of concession to what is called the profit motive. The systems are in one degree or another incentive systems. Material rewards encourage human effort. The American economy epitomizes the incentive system and is called an individual enterprise economy. Every human being becomes in this system a potential center of initiative, a potential creator of some sort, whose efforts will be rewarded. It is no accident, therefore, that an individual enterprise society is above everything else dynamic. It is energetic and it is productive. Certainly a productive, dynamic, free enterprise society is bound to encourage what we call creativity, innovation, variety. Resting upon the potential of each individual, the individual enterprise society, with all its miscarriages, does expand the potential for achievement. The achievements are evident.

A growing population crowds the planet with individual wills seeking that which is visibly profitable, such as whiskey or guns or oil or land, and still exploiting to private advantage that which is commonly available, such as the air and the sea. We are indeed aware that under the variety of human systems on this planet there are those which pursue and rationalize a denial of the individual enterprise system and even of private property. The American society, however, expresses its continued reliance upon individual enterprise coupled with the concept of private property (even in land) as the intellectual and practical framework for realizing the human potential. In championing this commitment the society must assume that man's altruism as well as his self-interest will curb the baser motives or the extremes of selfishness which can also grow and flourish in the garden labelled profits. In other words, for the system to be humanly tolerable it has to be assumed that man's goodness as well as his intelligent self-interest will place boundaries of decency and fairness and compassion on the exploitative activities of a profit-seeking population.

The record is mixed up to now. But all the future is in front of us. There is no question but that commonly available air and water have been polluted with selfish disregard for people present and unborn. It is obvious that our planning and zoning have lagged behind continued exploitation of limited land resources and that the common interest in beauty and order is sacrificed. Even so, humanity survives. Right now abroad in this land is a sometimes quiet, sometimes noisy, sometimes clear, sometimes fumbling but nevertheless insistent voice of conscience and enlightenment asserting itself in the corporate boardrooms, in city halls, in the Congress and in neighborhoods. This is the voice of the human spirit striking out again as in other times of history against the apparent tyranny of materiality, against materialistic thinking and against the bland acceptance of mechanistic determinism in decision making. It is my conviction that this human voice is so essentially a part of God's man that it will not be downed. The demonstrable vigor and creative potential of the individual enterprise system is such that we will hardly abandon it in our striving for balance and justice and beauty in human life. But because we *must* temper its excesses with inspired leadership and behavior, surely we *will* so temper it.

Architects have practiced under all kinds of political systems—absolute monarchies, church domination, Chinese autocracies, Egyptian pharaohs and political democracies—all systems. Economic systems of great variety have used architects. Works of great beauty and service have come forth in all ages and under many systems. In each case, of course, a designer of talent and integrity must have had a decent client!

The architectural profession wherever practiced is a part of the universe of material forces, of intellectual disputation, of emotion and searching. How will you, as individual practitioners, see yourselves in the pulling and hauling between profit incentive and the common good, between idealism and practicality? No matter what codes the profession may adopt, the contribution of the profession always rests on the character and motives of the individ-

**Drawing a goodly part of the convention crowd are the opening ceremonies at the San Francisco Opera House, where keynoter Caldwell points to the challenge of seeing the "fullness of man and respecting that image" as a means of transforming the world and renewing its beauties.**

ual practitioner. Whatever skills, whatever talents he possesses, he brings them to each design commission he is given. And with his talent and skill he brings also his moral commitment and character as a member of the human race.

I suppose that I personally was more inspired standing in front of Michelangelo's Moses than with any other artistic experience in my life. I have reflected on what kind of man was Michelangelo. A block of Carrara marble was set before him; inside it he saw his image of the man Moses: heroic, worshipful, thinking, strong, intelligent. So he chiselled away the spaces to reveal that image.

We all stand both in front of and within the material universe of earth and sea and air and water and growing things. From the beginning of time man has been chipping away at spaces, reordering this physical universe to house himself, his creations, his movement. Architects, builders, entrepreneurs, homemakers, manufacturers, developers—we have all been manipulators of the spaces inherited by man. We can be grateful that a few craftsmen have been able to see man in these spaces even as Michelangelo could see his Moses in that block of marble. Seeing man as occupying these spaces, the noblest of our artisans have ennobled the race. Others seeing only the material universe minus the unction of the human spirit have disserved man. Even when we think we are housing mankind, we have too often seen him as only a physical creature with immediate physical needs. The choice is always there. The choice is there now as our expanding man-made environment is being chiselled out of the spaces of earth and sky and field and forest.

So what is the plea? That the designers of an unfolding world, as each of you is each day, see in the spaces before you what is really there. It is man, not an animal. It is the noblest work of God, whose spirit reaches out for beauty and joy and purity and integrity if he is to remain himself the very expression of beauty, power and grace.

If we would each see the fullness of man and respect that image in all our endeavors, then we would transform the



**Getting ready for an architectural tour of San Francisco and vicinity are some of the conventioners and their families, while others gather to hear the four speakers at the first theme session, "The Challenge of Growth and Change."**



world, correct its injustices, remove its frustrations, renew its beauties and make way for fresh fulfillment. No longer deceived by the apparently harsh limitations of materialism, designers would free their own talents, anchor more solidly their professional integrity and serve more effectively their client.

### **The Challenge of Growth and Change** First Theme Session

*Sam T. Hurst, FAIA, Dean, School of Architecture and Fine Arts, University of Southern California:*

For two decades we architects have wallowed in self-analysis and self-criticism, seriously and in conscience examining the way we work, the way we educate, the way we serve or fail to serve society. Every president since Phil Will has contributed to that examination and some outstanding documents result. It is now, I suggest, the decade for commitment, for implementation, for action. The hard choices seem inevitable.

The Task Force on National Growth Policy has given us an admirable platform and yet in its very core it states its own equivocation. Having rightly identified the problems, including fundamental land ownership attitudes, tax policies and jurisdictional constraints, it says: "In fact, it well may be that a diversified nation which values free choice above all may have to live with a national growth policy which is less than coherent, which contains more inconsistencies than it solves, which turns the power of conflicting forces into creative energy—and which succeeds because it strives toward unity but does not mutilate its freedoms in an all-out effort to achieve it."

In this very statement of equivocation can be seen the basic value conflict which plagues every planning effort in a free society. How much constraint of freedom (choice) can one justify in the public interest? How do we define the public interest and how do we bend our institutions and processes to its service?

The challenge of change is necessarily a value challenge, and we cannot speak

of it unaware of the value conflicts which underlie our actions as individuals and as groups.

In *Growing Up Absurd* Paul Goodman wrote this painfully timely critique: "Our abundant society is at present simply deficient in many of the most elementary objective opportunities and worthwhile goals that could make growing up possible. It is lacking in enough men's work. It is lacking in honest public speech, and people are not taken seriously. It is lacking in the opportunity to be useful. It thwarts aptitude and creates stupidity. It corrupts ingenious patriotism. It corrupts the fine arts. It shackles science. It dampens animal ardor. It discourages the religious convictions of Justification and Vocation and it dims the sense that there is a Creation. It has no Honor. It has no Community."

In 1973 we are indeed in search of community, and the old images of homogeneous, pedestrian neighborhoods, socially supportive and insulated against the assault of growth, do die hard in the heads of architects. Needed is the willingness to embrace new images, new modes for family structure, family living, for neighborhoods which embrace mobility, economic and racial diversity, and the reintegration of work and play and education and socialization.

Needed are programs which see change in respect to the rights and opportunities of those substantial groups which remain unserved by architects, unable to participate in American life.

What are some areas of value conflict?

- the equivocal acceptance of planning, which has entered through the back door by way of zoning

- the advocacy of social planning as an instrument of national policy, not yet accepted by government or people
- guns or butter, inflation or controls, rising expectations and waning resources
- how much growth, where, for whom? Growth goals and regulatory systems
- land, a public trust or a negotiable commodity, public resource, or private?
- mobility and the choice of place
- housing and the choice of shelter
- authority, security and crime—our garrison schools

- professionally, service in the public interest versus service to the establishment client. Agency for whom?

Certainly it is true that the reality of the 1960s in American life was the change in consciousness. We have yet to articulate it within our institutionalized structures, we have yet to have faith in it, we have yet to find ways to act upon it in political programs necessary to change our lives.

We have yet to recognize that our nation cannot operate with a socioeconomic system built upon servitude of any of its people. In a rip-off society, how to be unripped, unraped and unraveled by hostile individuals, hostile noise, hostile blight—these are questions we all face.

Do we really want change? Let me provoke you with some "what ifs":

What if the AIA called for nationalization of the housing industry, to at least place the entrepreneurial role in the public sector, leaving ample role for the private sector in the production of housing? Housing might then be built *where* it is needed to serve social, ecological and economic goals. Public subsidy could then serve the *public* interest. We could then build housing for the poor.

What if we advocated urban land banking on a scale equivalent to the subsidy to agricultural conservation and marginal farming through the agriculture land bank programs of the past 30 years? If block grants of federal monies to cities are to achieve desired social goals in the shelter industry, then land acquisition and land recycling are proper steps to take.

What if a national land act and a national urbanization policy were coupled to a national growth policy which had as its primary goal the conservation of the human and the natural resources of our nation? Which put to work the alienated, the unemployed, the undervalued and underserved people of the other America? Which located new settlements where resources of energy and jobs would allow them to live productive lives?

What if we took the leadership to establish energy waste standards for the design and operation of buildings, equivalent to the exhaust emission pollution standards now being mandated for the

**Jotting down impressions from the first theme speaker is a practitioner who heard Hurst say that the challenge of change is necessarily a value challenge, and then ask if we can "get the private and corporate ego and interest out of architecture and planning in order to let the natural and the public interest in."**



automobile industry? What if we seriously studied building forms responsive to natural forces in the environment, in order to respond to climate rather than overpower it with energy-wasteful technology?

What if the AIA San Francisco convention declared itself to be the last annual national convention for a three-year period and initiated a new three-year cycle, reinforcing regional and state conventions, with enormous conservation of public and professional energy?

One could go on. If we are serious about change, then let us talk about real change.

This is not the fantasy of Brave New World revisited. This is the reality of the 1970s. Our students understand it; young architects understand it; our sons and daughters understand it; women understand it; all those who struggle upward understand it.

Can architects trained to believe that to build is everything come to understand that *not to build* is sometimes everything? Can we get the private and corporate ego and interest out of architecture and planning in order to let the natural and the public interest in?

This *is* the way of growth. This *is* the challenge of change.

*Dudley Kirk, Morrison Professor of Population Studies, Stanford University:*

Much attention has been given to the population 'crisis,' described in terms of the menace of population growth. But there are other aspects of the problem even more important for architects and others concerned with the future of our country.

**The Size of Our Population:** The United States has a large population, at the moment some 210 million people. But we also have a large area. The continental US has roughly the world average in population density, but our population is very unevenly distributed. Our present population size and overall density are not in themselves the chief causes of our pollution, crime, racial strife and the multitude of other social ills that we are now facing. Countries like Great Britain, with 10 times the density of our population, or the

Netherlands, with 18 times, have far less crime, less social disorganization and indeed less pollution. By contrast, Sydney, Australia, has many of our problems: pollution of bay and beaches, traffic jams at rush hours, rising crime, etc. This in a continent occupied by 13 million people. The problems are not just in numbers of people.

**National Population Growth:** This, especially in some of our more favored areas, has been much more of a problem than national totals. But by now most informed persons have read that our national birth rate and rate of reproduction are the lowest in our history and portend zero population growth, though not until after the turn of the century. There is a great deal of inertia in national population change simply because we live a long time—on the average 70 years.

The decline of the birth rate and the reproduction rate has been continuous since 1957 and is still going on. Our present rate of natural increase (births minus deaths) is only 6 per 1,000 (—6 percent per year) by almost any standard. If we earlier had a national population explosion or crisis, we certainly do not have it now. This in no way denigrates the efforts of those who have worked so valiantly for voluntary parenthood to prevent unwanted pregnancies and births. On the contrary, it is a tribute to their success.

True, the upper middle class that forms the chief constituency of the ZPG movement has experienced invasion of its residential and recreational areas, an invasion that it understandably continues to interpret as a population explosion.

First, this class had more of a baby boom in the 1950s than did the rest of the population. Second, the upper classes formerly had close to a monopoly of the better residential areas in the suburbs, the better universities, the best beaches, access to the national parks (by their own cars), etc. What is seen as urban sprawl is the result of the growing affluence of the mass of American people in the lower middle class which now has sufficient income to buy homes in the suburbs, go to the universities and to travel.

Let me illustrate the relative impact of population growth and of rising affluence

from two examples, the first personal, the second statistical.

When I was growing up our household of five persons produced one barrel of trash a week. Today my household of five produces four barrels each week. The same population—four times as much solid waste.

In 1950 there were 33 million visitors to our national parks and monuments. Had the number of visitors simply increased with population growth, there would have been 45 million, or a bit over one-third more, in 1971. (Strictly speaking, the comparison should also take into account the increase in park acreage from 23 to 30 million acres in this period. The combined effect of population growth and increase in park acreage [pro rata] would have meant an attendance of 69 million in 1971). However, 1971 saw some 200 million visitors. The difference is the result of the greater accessibility to the national parks of the majority of our population. Had population growth alone been involved, one would scarcely have noticed the difference.

One could multiply such examples many times. Thus our population is now growing at about 10 percent per decade while our power needs are doubling each decade. Roughly 10 percent of the greater demand is now due to population growth and 90 percent to greater affluence.

At the national level, population control is an exceedingly slow and inefficient approach to solving such problems; we would have them all without *any* population growth.

**Population Distribution:** Most experts by this time are convinced that the distribution of our population is a more serious problem than our population size or growth. The rural heartland of our country in the Mississippi-Missouri Valley is being deserted. Over one-third of the counties of the US lost population between 1960 and 1970, the vast majority by migration. As a people we are being drawn to regions of sun and sand and water.

Above all, however, we have been drawn into the great metropolitan areas. By now some 70 percent of Americans are concentrated in somewhat less than 2

**Pondering a point is an attentive audience, which listens to theme speaker Kirk explain that the challenge of growth lies more in the problem of population distribution than in population size.**

percent of our total area. The congestion we see here is, of course, not typical of the country as a whole but is something new in American life. Historically we have not been an urban people. Perhaps the most significant single social index of the change in the US is this: A century ago, in 1870, the median or average American lived on a farm. A generation later, in 1900, he still lived in a rural area but in a village. After yet another generation, about 1930, he lived in a small town. Today he lives in a suburb of a large metropolitan area.

We have become an overwhelmingly urban nation and have not yet made an adjustment to this new kind of life. This is especially true of our inner city denizens, many of whom come directly from southern rural areas or from rural areas in other parts of the world.

Within the metropolitan areas themselves we have the other phenomenon of urban sprawl and the tentacles of the large metropolises reaching out toward each other. If we have a population explosion today, it isn't in our national population; it is in the rapid spatial expansion of our metropolitan areas. This is because more and more people have the affluence to demand and get more living space.

**Mobility:** We are a highly mobile people and always have been. The effects have been intensified in at least two ways:

- Thanks to our much greater physical mobility, especially in automobiles, we travel farther, faster and more often. Many have mobile homes and increasingly two homes. We must adjust to much greater movement and to meeting far more people, mostly strangers.
- We increasingly live segmented lives and in segregated communities, not so much the more spectacular forms of segregation by race as by age and by stages in the life cycle.

The majority of us now live in age-graded communities and suburbs through which we pass in our life cycles. A large percentage of our young adults, who by virtue of their abilities and education would be expected to be leaders in the next generation, have been moved about as children and do not think of themselves as seriously committed to a "home com-



munity." After graduation from college or professional school, most of them expect to find jobs somewhere other than in the suburbs in which they were raised. As young adults they commonly drift to the larger cities. After marriage and starting a family they are likely to seek lower-cost suburban housing in the urban sprawl. If they are successful, they will move to higher income suburbs. Higher employees of large firms take it as a matter of course that they will be shifted from one city to another. After their children are grown, they no longer need the large houses so they move again, often to some favorable climate.

We have become a rootless people, without the stability of a lasting community life. Our present lifestyle puts great strains on the individual and on society. Many of our young people, especially our most idealistic young people, are turning to lifestyles in which they attempt to re-create the more human personal communities of the past. They are reaching for roots and for the deeper levels of human association that characterize more stable communities.

What can we do about it? Obviously no single professional group can do the whole job itself. But I do think that architects could have a vital role in meeting some of the problems I have outlined. Already we have seen a major revolt against the highrise apartment buildings, whether in slum clearance or in the provision of other housing. We see architects designing much more human living arrangements, smaller units in which people will know their neighbors as well as recognize intruders and strangers. And architects and planners are getting away from the idea of the ordinary city block, instead designing residential areas with curved streets and dead-end circles which tend to bring people together rather than to pull them apart. One sees some efforts, though not too sophisticated, to replace "Main Street" with shopping malls, where the pedestrian is king and on a small enough scale to be accessible on foot or bicycle from residential areas.

I would like to see this carried much further. I can imagine new architectural plans that would introduce more key rec-

**Challenging that we are still in a transition from a folk society to a mass society is theme speaker Hauser, who suggests that we look neither to the conservative nor liberal pastures but to the social sciences as a basis for the resolution of our problems.**

reational facilities such as swimming pools within smaller neighborhoods for adults as well as children. We need communities or subcommunities which include very different types of housing that appeal to people at all stages in the life cycle. We need architecture that brings all ages together in complementary ways.

In our living and physical arrangements we must contend not only with problems arising from population size, population growth and population distribution but with the loss of community and stability arising from mobility and the age-graded patterns of residential segregation in our urban society. The challenge of population change in the US is much broader than the problems of national population growth.

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*Philip M. Hauser, Professor of Sociology, University of Chicago:*

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Man has only recently developed a demographic and technological world. This 20th century world represents a new physical and sociological milieu in which mankind is still trying to learn how to live—thus far not too successfully. It is a world filled with unprecedented problems—environmental, physical, personal, social, economic, political, governmental—which characterize a chaotic world and a chaotic society, including a chaotic American society. They are problems which afflict us and which are likely to become considerably worse before they get better, because mankind and we in the United States are trying to deal with them with 18th and 19th century ideals, values and institutions, including structures of government.

I would go a step further and say that architects, though more in the past than in the present, by virtue of the orientation of their training, have been so isolated from the realities of the social, economic and political milieu as to be primarily in the camp of the conservatives and therefore constitute obstacles to inevitable social change.

To show that I am completely impartial: I hate both conservatives and liberals. I don't think either of them will solve our problems.

I define conservatives as those who look to the past for resolution of our problems. Another definition of a conservative is someone who venerates dead radicals. Similarly, we could define a liberal as one whose feet are firmly planted in mid-air. Neither is going to solve our problems but, I repeat, architects by reason of their splendid isolation from the social, economic and political milieu by virtue of their training and orientation in the first place, in large part constitute obstacles on the path of progress.

Now man, and his close kin, have been on this earth for perhaps four billion years. In the course of his occupation of the planet he has generated four developments which have more profoundly affected his values, his behavior, his institutions than anything else to which we might refer. These are population explosion, population implosion, population displosion and technoplosion.

By the population explosion we refer to the accelerated rate of population growth, especially in the three centuries of the modern era.

By the population implosion we refer to the increasing concentration of the world's people in relatively small portions of the world's surface.

By population displosion (an archaic word I have taken out of the dictionary) I mean heterogeneity referring to diversity of peoples by culture, by religion, by value systems, by ethnicity, by race, by lifestyle, etc.

And by the technoplosion I refer to the accelerated tempo of technological change.

Regarding the population explosion, by the end of this century there is a virtual certainty that we will reach about 300 million persons. Somewhere within that generation, 1995 to 2020, we will probably top 300 million. The question before this nation is therefore: Does it wish to go to 400 million? I think we all want to be careful about citing the present lowest birth rate ever recorded in the history of the US as an indication that our growth problems are resolved.

What about the displosion? We are the most polyglot population in the world. Let me remind you that President Roosevelt, when invited to speak to the DARS

at one of their annual conclaves, incurred their enmity when his salutation was: Fellow Immigrants!

What are the consequences of these developments? There are still ahead of us some drastic problems by reason of the US rate of population growth and world growth. On a worldwide basis, all you need is a mathematical axiom, not a computerized study of the MIT type, to know that zero growth is inevitable. The axiom involved is that infinite growth is impossible in finite space. In the US, the ratio of population to our resources is such as to make us one of the more fortunate peoples of the world. As part of the world, however, we are subject to the problems which face the world as a whole.

What about the consequences of the implosion? I will simply mention the "urban crisis" and all the components which it includes: environmental and physical problems—the latter including the slum and the ghetto (people are not interested in preserving the bald eagle when the problem is how to get rid of the rats); personal and social problems; economic problems and governmental problems. Population concentration alone doesn't necessarily initiate these problems, but there is very little question about the fact that it might exacerbate them.

These are just a listing of some of the problems. How do they come about?

When I was a student at the University of Chicago, Professor William F. Ogburn, who originated in Georgia, introduced the concept called "cultural lag." Some aspects of social change proceed much more rapidly than others.

Let me give you an example of cultural lag. In the US, we became an urban nation as recently as 1920, which means that 1970 was the year in which we completed our first half century as an urban nation. A half century is a brief period of time in the life of a nation. That time consideration alone accounts for many of the contemporary problems, among them for example, the so-called generation gap. Many of the leaders in the House and Senate were born into an agrarian society; our youngsters were born into a mass society. That is the difference.

The rapidity with which we have be-

Addressing an attentive group of architects during the Investiture of Fellows at San Francisco City Hall is S. Scott Ferebee Jr., FAIA, while families and friends attend. New chancellor of the College of Fellows is Albert S. Golemon, FAIA, succeeding Ulysses Floyd Rible, FAIA.



come urbanized accounts for this particular example of the cultural lag. The facts are that the state legislatures in the first 60 years of the century ignored their state constitutions and the federal constitution in refusing to reapportion.

There are those who say that the federal government has usurped states' rights. Why is the federal government in urban renewal, in public housing, in ex-

press highways, in civil rights, education and mass transit? Is it because the federal government usurped states' rights? Not if you read history correctly. It is because nonapportioned state legislatures ignored their states' urban problems.

It was because of cultural lag that as recently as 1960, although there were 39 states in the Union with a majority of urban people, there was not a single state

in which the urban population controlled the state legislature. The inability of the state legislatures to deal with urban problems led the majority of American people to turn to the federal government for resolutions of their problems.

Let me refer to some sacred shibboleths which we all mouth. "That government is best which governs least."

In 1790 it might have made sense. But

**Playing a key role in planning for growth and change is architecture, states theme speaker Seaborg, and this includes the role of energy in such growth. But past work on the design of buildings has not focused sufficiently on minimizing heat waste or heat absorption, he challenges. Leaving business behind for a while, guests flock to the President's Reception at the San Francisco Museum of Art.**



can you imagine our government today without a public health system, without a Food and Drug Administration and so on down the line? Yet we repeat such nonsense as if we were still a frontier society. Another shibboleth from the dead past is "caveat emptor," let the buyer beware. In 1790, when you exchanged a chicken for a sack of flour, you probably were astute enough to know whether the chicken were alive or not. But do you know today what you are buying when you buy a pharmaceutical or an automobile?

Another dead shibboleth is that "taxes are what the government takes away from the people."

We have become more concerned as a nation in keeping our taxes low than in making the public expenditures to assure that the US remains a viable society. If we continue to feel it impossible to afford the implementation of the Report on Civil Disorders, for instance, or if we feel that we cannot afford to give our minority groups the equality of opportunity which under the Constitution of the United States they insist upon, we may keep our tax bill low while our nation goes down the drain of history, still screaming that we kept our tax rate low.

Perhaps I cannot do more than to suggest that our society is still in transition from a folk society to a mass society; that we have not yet learned to live in the 20th century demographic and technological world; that we are not going to find the answers to our problems from either the conservative or liberal pastures.

It took the century from about 1750 to 1850 before the physical sciences achieved enough respectability and enough acceptance so that we turned to them for the application of knowledge, for resolution of physical problems. It took perhaps the century from 1850 to 1950 for us to turn to the biomedical sciences for resolution of problems of health and life. Let me suggest that it might take the century from 1950 to 2050 for the social sciences to gain enough respectability and acceptance so that we look to social science as a basis for the resolution of social problems and not to the gut reaction of the conservative or the liberal, or the Democrat or the Republican.



*Glenn T. Seaborg, Professor of Chemistry, University of California, Berkeley:*

There is no doubt that energy—how much of it we have and the ways we produce and use it—will have a significant effect on our future. If we put our energy picture in historical perspective, few, if any, will deny that the massive use of energy in the past century, and even more recently, has radically changed civilization. Closely related to almost any of the rapidly rising growth curves that one can plot today in almost any field are the availability and growing versatility of energy sources.

Industrial production, transportation, communication, population, knowledge—the growth of these and many other aspects of civilization—are related to and supported by energy growth. Not only has this growth, in both total amount and the increasing sophistication with which we have come to use it, been responsible for the rapid advances in all these fields, but this energy as applied today is the essential underpinning of almost all of our society. If tomorrow we were to suffer an

instant cutback of say 20 to 30 percent of our total energy consumption, we would probably witness the collapse of Western civilization as we know it. This would happen because that civilization now rests on a dynamic man-made ecology of economic growth sustained by physical energy and the energy of human desires. The great amount of attention that has been focused on the ecology of our natural environment, and rightfully so, has not given enough consideration to our man-made ecology and the need for balancing the two. In achieving this balance, it is also essential to make some readjustment of our essential man-made ecology in light of new values and new knowledge brought to public attention by the environmentalists.

How we think about, and what we do with, our energy resources and technologies will be of major importance in this readjustment. In meeting the challenge of the future, we do not have the choice of energy or environment. Our choices for the future rest in how we perceive and use our resources. We are, or should be, seeing all our energy reserves as a huge, versatile energy pool. We must treat it



Enjoying various aspects of the Host Chapters' "Cultural Event" are party-goers who were entertained first at the Oakland Museum and then at the University of California Art Museum at Berkeley.



with a vastly expanded rationale—expanded beyond the needs of *this* spot, *these* short-term economics, *this* point of time—to total global reserves on a very long-term scale. We must begin to determine which resources can serve us best for what purposes and the effects of their various uses on both our natural and man-made environment. This will require enormous changes in our society—on a national basis and an international scale.

In view of both the longer-term energy resource problem and the shorter-term environmental crises due to the misuse of such resources, the time has come, or perhaps is overdue, when men, nations and the entire international community must begin more serious energy policy planning. If we are not thoroughly to deplete many of our irreplaceable natural resources in a few generations, and at the same time put those generations in environmental jeopardy by the misuse of those resources, we must begin to use those resources in a highly rational way. We must no longer allow our energy use to be determined by purely short-term economic considerations, particularly by the competition between fuel resources.



There are signs that our environmental crises are beginning to force us to a more rational use of energy. One aspect of this has been the increasing interest in the proper siting of power plants in the United States. We are bound to see in the near future an approach to regional, national and perhaps international planning of power plant siting that will consider several factors. These will include environmental results such as thermal effects on water systems, air pollution problems as determined by regional atmospheric conditions and population densities, the management of radioactive effluents and the transportation and management of radioactive wastes, the need for better management of land and wildlife and recreational resources, esthetic aspects and many other factors that have not been central considerations in the siting of power plants, not to mention more imaginative energy systems.

There will come a day, and I hope that it will be one that all of us will live to see and enjoy, when instead of 100-car coal trains crossing a section of the country or huge coal barges crossing the ocean, our coal-burning power plants will be mainly mine-mouth plants, the power from which will be shipped as clean electricity via high-voltage underground cables to distant load centers. Instead of nuclear power stations being built one by one in locations opposed for one reason or another by citizens' groups, we will see clusters of such nuclear plants and their fuel reprocessing facilities in "power parks"—areas set aside for their use which do not impinge upon land needed for other purposes. And such power parks might be created so that they are attractive preserves in an otherwise undisturbed natural setting.

By that time, hopefully, we should see such power centers—nuclear, fossil-fueled and hydro—connected in a system of large electric power interties which will eventually not only span single nations but cross many international boundaries, as they are already doing between the US and Canada. Buckminster Fuller, one of our boldest futurists, envisions the day when vast international electric interties able to supply large amounts of very eco-

**Admiring the profession for its bold leadership — its collective decision — in coming out with a statement on national growth is Ylvisaker, who states that this “asks of America that again we trust our public institutions, our public leadership.”**

conomic power will be a prime source of world peace because they will provide nations with the great productive capacities needed to eliminate the want and insecurity of previous generations.

In a somewhat different vein, it has been suggested that should we develop large-scale fusion power plants, we might be able, because of their inherent safety and efficiency, to site them right from the beginning of their use in the heart of large urban or industrial areas. The concept of fusion torch associated with fusion power has led some to believe that a fusion complex located in an urban area might not only supply that city's power but recycle its solid waste, process its sewage, purify its drinking water and perform many industrial functions necessary to sustain the population.

But rather than moving farther into the realm of what some may consider science fiction, let me jump to what others consider the harsh realities of today. Many people, because of the focus on the environment, have turned on energy as the major villain of our time. Whereas only a few years ago its labor-saving, life-saving and mind-stimulating attributes were praised, today energy and particularly the idea of its continued growth are often viewed as threats. Whether it is the potential destruction of nuclear weapons, the air pollution of combustion, the thermal effects of power generation, the radioactive effluents and waste of nuclear power plants, the indiscriminate scraping of a bulldozer or the noise of a jet, many people are pointing the finger at energy, or more precisely our command and release of it, as the real culprit. To make energy a scapegoat for man's indiscretions, excesses or just stupidity, is quite naive. It is much the same as saying that if we did not have food, we would not have indigestion.

Nevertheless, we must view seriously the effects and side effects of energy and its potential growth. The recognition of population growth, the per capita growth of goods and services and their byproduct waste and pollution have forced us to think in terms of limits, controls, stability and more generally what is called “the quality of life.”



We can and will do better on increasing the thermal efficiencies of our steam-generating plants. Somehow it is hard for me to accept that in the US the current waste heat from all our steam-electric plants is estimated to be as high as one-third of the total energy that we consume.

Some people foresee disaster because they directly relate our technological growth and our energy demands. But the relationship is not always direct, and there are many indications in nature that as an organism becomes more complex, it accomplishes an increasing number of activities with a relatively decreasing amount of energy. This is true in human society and will prove increasingly true in the future.

Architecture is certainly destined to play a key role in any sensible planning for future growth and change, including the role of energy in such growth. Past work on the design of buildings has surely not focused sufficiently on minimizing heat waste in winter or heat absorption in summer. Encouragement should be given to the emerging imaginative thinking of architects directed toward alleviation of the frightful aspects of our urbanization.

The esthetic nature of this new thinking renews our hope for the future.

One of the most difficult things that we will have to do soon is to seek ways to ensure that all the peoples of this world share more equitably in the vast benefits that energy can bring. If we want to see our children live in a world of peace based on the fulfillment of human needs and the recognition of human dignity, we must make every effort to narrow the energy gap. The wise use of energy can restore nature and rejuvenate man and give us the means to explore beyond this planet and to open new frontiers.

### **The Challenge to Leadership Second Theme Session**

*Paul Ylvisaker, Dean, Graduate School of Education, Harvard University:*

The subject for this discussion is leadership in a society that is undergoing both growth and change. In a sense, I feel that I am bringing coals to Newcastle. I have been impressed with this profession for going out front with the statement on a national growth policy. I know from talk-

**Shopping for new ideas from the speakers at Marketplace Seminars is a stimulating part of the convention, with topics ranging from computerized financial management to life-cycle costing. Visiting the AIA Media Sales Center between lectures gives a chance to obtain more information on a number of subjects brought up at the seminars.**



ing with many of you as individuals that you have been skeptical of this approach. Some of you are still looking to see where the generalities translate into specifics, whether the statement will mean something — not something to you as a practicing architect but to your community in tangible ways — or whether it will be just another one of those gaseous ones that float forever above action.

I have admired this profession because you have made that forward statement. It goes beyond even the level of your own consensus. If you were to debate the points one by one in your own living rooms, you still may not have the agreements that seem to rest in official actions taken in the past few years.

Assuming that this country's history justifies any of our actions, that history will justify yours and will mark this profession as one of the least self-serving among the new aristocrats, who are, after all, the leaders of the service economy. The economy, moving from manufacturing with its old aristocracy, is giving way to the service economy and what can be the service aristocrats.

My first comment comes out of deep respect that you have taken a statement that goes beyond what you know, what you believe and beyond self-interest to what can be argued as general interest of this country in a tough period.

We should be able to think through how you proceed from the abstract and the generalities to getting the job done. And this stage two is damnably difficult. It really does mean coming from abstractions to what might make a difference in this fluid society around us. It translates to you and what you do tomorrow in your own community.

There are several stages through which leadership in this profession will have to persevere and grow. The first is to translate the generalities into strategies, the strategies into specifics, the specifics into law. Not only the drafting but also the enactment of legislation is now the immediate job ahead.

This is going to put the architect even more squarely into politics than he has ever been before, both individually and professionally.



I find the same situation in the field of education. Educators not only in the last 20 years but for a long, long time have regarded education as self-justifying, as motherhood, God and the rest — above partisan politics. But we have now come to a time in American history where resources are not as abundant as they have been, and we have to make choices between this service and that commodity or whatever it may be, and those decisions no longer can be made entirely by individuals in the private sector, simply because the money is not available to each of us, in either our own or our local budgets, to make all these choices.

Whether we like it or not, the choices are going to be made in the collective bodies of this country called legislatures, and that is where our fates are coming together, where our priorities will be set.

This is a rugged thing to have happen, particularly at this time when the basic question is whether we continue to have a democracy or slip into anarchy.

When I grew up as a young voter 20 or 30 years ago, the battle in front of us was whether it would be authoritarianism or democracy. That was a fight with Hitler. We know how that has persevered, even in TV shows where the Germans and Hitler are still the "enemy."

In many respects we are conditioning our children in the wrong way because that battle may be still a battle, but the toughest one America faces right now is whether we continue to have a democracy which requires collective actions and decisions and the capacity to order things collectively.

One of the things that is moving us toward anarchy is complexity — a baffling complexity that asks how one can play God over 215 million people when you are not dealing in closed systems, when nobody has the exact answer as to how he should zone his community for what kind of income mix, for what kind of quality of life, particularly as we move in a period that goes from qualitative to quantitative standards and judgments.

The activism of the '60s is now discredited, but I think that the discrediting process is going altogether too far and leading us to the exploitation of the cynical. We are being forced into ourselves by the memories. We did try great, noble things during the '60s; we did make great promises of social action. We legislated, bureaucratized and spent, but we didn't seem to come out with a better America. Maybe in another 10 years historians will say that the '60s were a constructive period in American history. If they were wild and woolly, so be it. At least a determination was shown to do something as a group that would keep this country sane and with some promise.

We have been turning into ourselves for other reasons. We are trying to internalize our understandings about society. By understandings I mean, first of all, ourselves. The identity crisis question is understanding who I am and asking how I relate to another human being in a fluid society where people are drawn apart into

**Urging architects to become activists is Weissbourd, who sees the AIA report on national growth as being full of suggestions how practitioners can become leaders and work to sell the proposal's ideas by drafting federal legislation, by lobbying and by testifying before the Congress.**

**Taking a midday break are hungry lunchers, who go on before start of the afternoon sessions to enjoy the many producers' booths and, among other things, the AIA Honor Award exhibit and the Centennial Sculpture of Boston's Trinity Church. This is the work of designer Ray Warburton and sculptor Joseph Augusta for the architectural firm of Shepley Bulfinch Richardson & Abbott Incorporated.**

many commitments. The American family is being devastated by the instabilities of personal relationships and the confusions of identity.

The liberating movements which released first the man as a commuter in the '50s and the blacks from all kinds of slavery and authoritarianism is now releasing women from set roles and moving them in to dominate, in many respects, the nature of this upcoming society. Their request for freedom, which is really a request for elbow room to make judgments and commitments and choices, is beginning to burrow underneath a lot of relationships.

We are concerned now with that intimate level, and the danger is that we will leave the collective decisions as something that politicians can exploit.

The American Institute of Architects comes with its growth statement precisely at this point. The greatest thing against it, I think, is this kind of cynicism, this low expectation of how America can handle these problems at total scale. The AIA statement is going to have a hard time as it winds its way from generalities to the specifics. It asks of America that again we trust our public institutions and our public leadership.

This is not going to come for a while. First we have to go through a few more years of catharsis, almost of a vomiting of some of the evils that have beset our collective action and at the same time a building of a new ethic in which we develop new codes of behavior, new tolerances of different lifestyles and new intonances of phoniness, deceit and the rest.

Leadership is a difficult endeavor. Now is not the time for unadulterated self-interest. One can predict where self-interest goes. It goes to a dog-eat-dog system where the devil takes the hindmost, and the hindmost is where the devil is good: One by one he chews his way up to the front leadership. Therefore, I hope that we can affirm anew what you have affirmed and talk in declarative statements about the future of this country and the necessity of democracy to have not only an individual ethic but also a collective capacity. This is the AIA national growth statement in its fundamental essentials.

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*Bernard Weissbourd, President, Metropolitan Structures:*

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The report of the AIA National Policy Task Force is a wise and pragmatic document, offering a practical approach to the problem of our cities.

I remind you that according to Socrates the state is the product of the state of mind of the people; it is the political reflection of how people view their own nature. We have come, in part, to regard ourselves as victims—victims of the automatic and irrational forces that are driving mankind close to self-annihilation. In contrast to this ominous attitude, your report is a victory for the rational, the humane, the disciplined and the purposeful. It rejects the defeatist notion that we must tolerate the destruction of our environment, the depletion of our natural resources and the helpless abandonment of our cities.

The tendency of democracy to lead to anarchy, according to Socrates, invites tyranny. This is the direction we go if we drift. This is what happened to ancient Athenians when they lost their nerve. Your report says that you have not lost your nerve.

Someone asked me if I had anything new to say because we've been talking about some of these things for a long time. I replied that I was going to say two things. First, if people live closer to where they work, we would save a lot of gasoline. Second, the abandonment of large-scale neighborhoods in our cities is reaching the point where large cities themselves are being threatened. We as a country cannot afford to lose our cities, and this in turn will lead to the implementation of the AIA report.

It is impossible to ignore the peculiar form of urban deterioration which has been called the city disease: abandonment. Abandonment is not a phenomenon that strikes at random, nor does it attack only the worst housing stock. It is like a cancer, beginning usually in the heart of a neighborhood that is poor and segregated and moving outward to engulf former middle class areas from which inhabitants recently fled as if from natural dis-

aster. The causes of abandonment are many and varied: the decline of socio-economic status, the influx of newcomers, the red-lining of neighborhoods finally when investment and insurance companies no longer will invest.

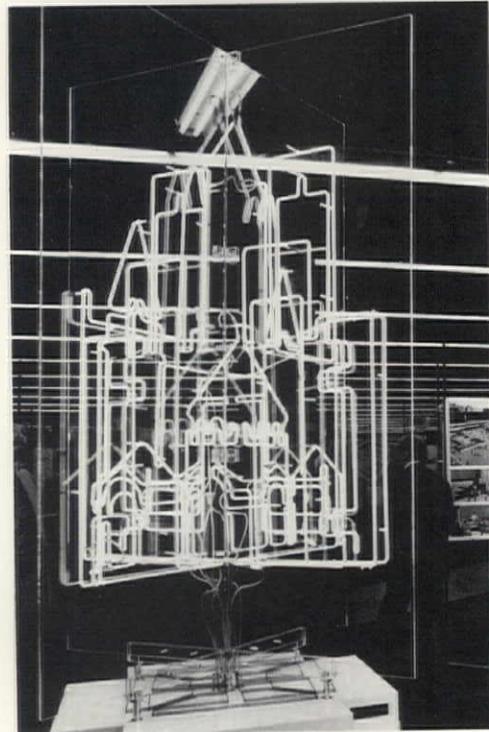
The process of abandonment is closely related to the supply and demand of housing for black people. Between 1960 and 1970, the white population of Chicago declined approximately 550,000 while the black population increased only by 300,000. Other cities with similar abandonment problems exhibit the same phenomenon of white exodus exceeding black increase.

The result is that as additional housing becomes available a chain reaction is set in motion, beginning with affluent blacks moving into vacated housing in formerly all white or mixed neighborhoods and ending with black abandonment of the poorest areas. Now there is no one at the bottom of the barrel to replace the people moving out of the abandoned neighborhoods. If we allow the process to continue, we will soon see the engulfment of whole cities, and we cannot afford that.

Lest I give you the false impression that there is now a surplus of housing units for blacks, let us take a closer look at the demand side of the question. For years blacks in Chicago have been impacted in geographical areas too small for their numbers. Vacant housing is not available to them. The result is that a reasonable vacancy rate exists alongside extreme overcrowding.

As a nation, we have yet to give serious consideration to housing poor people. We tend to treat poverty as if it were a dreadful but temporary condition like the flu. There are many people who simply do not have the bootstraps by which to pull themselves up. We need to develop a national strategy that will permit the poor to live in dignity and hopefully provide their children with the opportunity to escape the poverty cycle.

Two approaches seem appropriate, and both are mentioned in the task force report. The first is direct housing subsidies to the poor, enabling them to exercise some choice in the housing market; the second strategy is desegregation—the ex-



tension to black people of the same housing choices that are available to white people.

According to John Maynard Keynes, compound interest is the second greatest invention of mankind. This kind of cash flow is the opposite of compound interest. That means that a dollar I am to receive 20 years from now is worth only 6 cents today—that is, if I can earn 15 percent on my money. This kind of cash flow, or income stream, is a significant factor in any business and particularly so in new

community development where the question of future revenues from long-term transactions is crucial.

To illustrate this concept, you might try calculating whether the Indians made such an obvious mistake when they traded Manhattan Island for \$24. If they had had the opportunity to invest that \$24 for 300 years at compound interest, the amount of that investment today would conceivably exceed the undeveloped land value of Manhattan Island. The \$24 compounded for 300 years at 6 percent would be worth \$935 million today; at 8 percent, \$250 billion; at 10 percent, \$63 trillion; at 15 percent, so many zeros that I can't count them.

No planned development takes 300 years to complete, but many take 15 years. And the difference in what \$1 million will earn at 6 percent and what it will earn at 15 percent is in excess of \$5.7 million. A private developer borrowing money at the rate of 8 percent and 10 percent interest is not unrealistic in expecting a 15 percent return on his money.

British new towns are considered economically successful because they have returned a profit of 8 percent, which is quite good for a government which can borrow money at 4 or 5 percent. A private developer would consider that break-even.

The point has been made that it would appear more feasible economically for government to acquire land for new community development because the rate of return is commensurate with the govern-

ment obligation and because risks are reduced in the entire transaction. I do not agree that private large-scale development is necessarily more costly, but the public assembly and preparation of land reduces both the time and risk involved in private development.

Urban land, however, has increased more than anything in the economy—more than 400 percent in the last 20 years. The increase is greater by far than the cost of living in general and greater than the increase in building costs. Properly located land is a unique form of monopoly. The supply is limited, and increased demand sends prices soaring. Many land values are created by the proper location of sewers, water, roads, etc., and the proper utilization of these utilities with land acquisition should result in a profit.

So far I've been talking about the money cost of the growth unit as compared to unplanned development, and this type of analysis is obviously inadequate. For example, should we discount the future revenues gained from reduction in expenditures for crime or mental illness caused by urban pressures? We've recognized the intangible benefits of reducing highway fatalities, noise and air pollution and of improvement of the environmental quality. What's it worth to us? We have to put a number on it. What's it worth to have clean air, better access to jobs, reduced highway fatalities?

Consider the savings involved for inner city residents if they could live near their jobs in the suburbs or by suburban residents if they lived near their jobs downtown. There are two streams of traffic: the car pools of suburbanites going to the city and those of inner city dwellers going on expressways to suburban jobs. You are all too familiar with this phenomenon and the relation between it and the energy crisis. Job-linked housing and urban growth policy would save a lot of gasoline.

The savings resulting in gasoline and automobile transportation costs from a job-linked housing program would more than pay for the program proposed by the AIA. There were more than 80 million passenger cars in use in this country

**Applying yourselves to public goals that are worthy of dedication is what Durning sees as a necessity if architects are to become leaders. After a session with many a note taken by listeners that range from students to old-timers (below), busy AIA staffers, on their feet throughout sessions, relax for a moment in the near-empty hall.**

in 1970. In 1969 these cars consumed 62 billion gallons of gasoline at a cost of about \$24 billion. The total cost of operating those passenger cars in 1970, including depreciation, repairs, insurance, etc., amounted to over \$90 billion. These figures do not include trucks. A 5 percent reduction in traffic would save 5 percent of \$90 billion or \$4.5 billion annually.

A man who would see his visions become reality is forced to become political, whether or not he has a taste for that kind of activism. The AIA report suggests ways in which architects can work to sell the ideas, such as drafting federal legislation, testifying before Congress, lobbying for the adoption of this proposal. I want to add that you should be active in your local community where you see things happening on a day-to-day basis that either do or do not fit into a strategy that protects the environment, moves toward desegregation and accomplishes the goals of the report. So architects must become activists or be content to mourn at the funeral of our cities.

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*Marvin B. Durning, specialist in the field of environmental law:*

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We are cowboys in a spaceship. Consider the image we Americans have of ourselves — the most frequent image is seen countless times on TV screens, on billboards and in magazines — the cowboy in Marlborough Country. We used to see him riding across the prairie, in the evening coming home. There he was against the horizon, and as he came closer we saw that he had a square jaw, cleft chin and a very white Anglo-Saxon profile. He was wearing his big 10-gallon hat, riding across the prairie. And as he came still closer, he lit up a cigarette — and off screen, he threw the package or butt away.

Out on the prairie, more is better; there is more of everything. Horizons are limitless. Two cowboys are better than one; they can herd more cattle. Ten cowboys are better than two. If you had 100 cowboys, what a roundup you could have because there is all the cattle and all the land you'll ever need. Move out there, Americans, cut the trees, burn what you

will, camp where you will, move on, and as for your trash — throw it away.

The trouble now is that there are 215 million cowboys out on the prairie, cutting the trees, burning it down, throwing it away. But something has happened. There is no more "away." My "away" is your "here," and your "away" is my "here." We are throwing it at each other's faces — in New York City, in Los Angeles, in Chicago, in Seattle.

What other images have we seen? Several years ago I saw one which, I am told, more people saw than had ever seen one thing at one time in history. On my TV screen was a funny sight — it was a shimmering, grayish white — some kind of shadowy figure came down a ladder and looked around. It walked funny, too. Looked like a Buck Rogers creation from my youth. That funny thing was a man walking on the moon. Walking on the moon encased in his life-support system, and from his spaceship, looking back, he saw blue-green earth, another traveler in space. Since then, we've seen the picture again and again. When Adlai Stevenson said it, ahead of his time, it was just a colorful phrase: spaceship earth.

But all the life we know and all the life we have ever known is in that little blue-green spaceship. We've been walking around in a life-support system for several millions, indeed billions, of years. The biosphere of planet earth is the most complicated, magnificent, continuing, thrilling life-support system, and it's just as delicately balanced and interrelated as that one for the man walking on the moon. There is no "away" in the biosphere. Every resource, every waste must be reabsorbed.

Out there on the prairie two or three or 100 cowboys are better, but up there in the spaceship, would 100 spacemen be better than three or four? Are there limitless horizons and resources in spaceship earth? Cowboys in a spaceship. That's what we are. That's how we act. Cowboys in a spaceship all dressed up in 10-gallon hats, driving 400 horses with our guns strapped on or shooting at each other — all locked up together in the spaceship. . . .

We had a debate over the subversiveness of communism to capitalism or free

enterprise. I suggest that the debate which has to go on now is far more subversive. Communist countries or capitalistic countries or mixed economies are agreed on one thing: More is better. They are competing to see which can make more, more effectively. Now I suggest that a system of balance is subversive of both systems. . . .

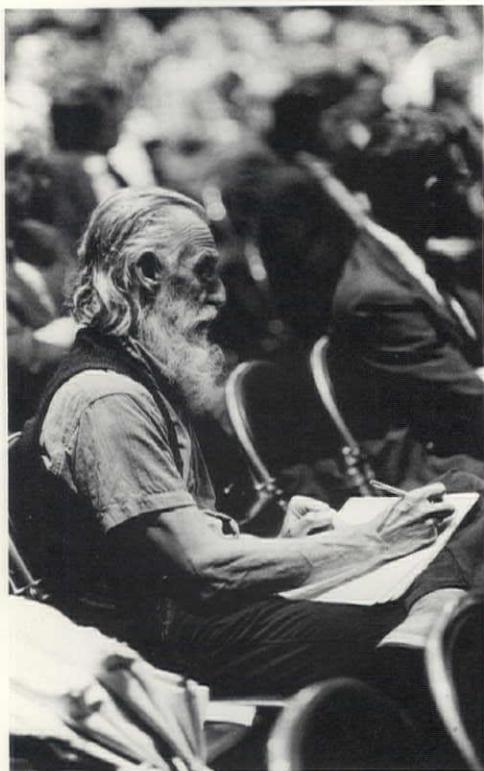
From 1776 or so, economists had certain assumptions and worked out a theory which said that everything worked in balance and all came out all right in the long run. There were intricate geometric curves and price theories which all worked fine in the abstract.

Later, Lord Keynes, in the face of some 20 percent unemployment in Britain, contraction of world trade and worldwide depression, had the rather innovative thought that it might work out in the long run, but we all live and die in the short run. From the "Keynesian revolution" we learned how to so manage government spending and taxing policies as to influence inflationary gaps and deflationary gaps, and we got new charts and curves. They are important, but they did not examine the fundamental concept: More is better.

The Keynesian analysis was implemented because we set up a fancy accounting system. We developed something called the national income accounting system, and gradually words like gross national product, net national product and per capita product came to sound very scientific.

It's as if God had a very large adding machine. He was watching the nation, and every time he saw an automobile produced, he punched 3,500; and every time he saw an orthodontist working, he punched 1,250; and every time you bought a loaf of bread, he rang it up on the cash register. At the end of the year, the totaled cash register receipts said what a productive, wealthy year the nation had. The per capita income was up, and we all went around congratulating ourselves. Every year it's a little higher; therefore, we're wealthier and a little better off. No one challenged the assumption that more is better.

But there are lots of things unaccounted for in the national income accounting system, and some things are overaccounted



for. Starting in the '40s, in the rush to house Americans, the federal government subsidized new housing in the suburbs but not the rehabilitation of old housing in central cities. Billions of dollars of taxpayers' money assisted tens of millions of people to move out to the suburbs, depleting the civic energy of cities. They abandoned neighborhoods which, in turn, declined. We put all the value of the new houses in the suburbs in the gross national product. And the city housing got so bad that we tore it down, and we put all that knocking down in the gross national product.

There were traffic jams getting from suburbs to cities; so we built new roads and streets and even freeways, and we put that in the value of the gross national product. The cars burned more and more gas; so we put that in the gross national product. We found that we needed pollution control devices because the air was polluted by all the cars, and we put the value of the pollution control devices in the gross national product. Finally, we divided it all by the number of people and told ourselves how much richer we were.

I don't believe it. That is self-deception,

and the time has come to reanalyze what we mean by the good life and the quality of life. We have been cheating ourselves by faulty analysis of what is good for people and what we want. When we reanalyze, we'll see that building more free-ways to move people in and out of cities is not the good life. . . .

In economics and government, we are now told that there should be a "new federalism." I don't believe it. The new federalism amounts to cutting all the social welfare programs and reducing expenditures for housing, transportation and social services in return for something called revenue sharing. The new federalism is nothing more than a retreat — a leaving to local government what local government never did. Give me one example of local government anywhere in America that redeveloped slums on its own, or solved labor relations problems or civil rights problems.

The great advances of the 20th century in the United States have been because the people of the nation together legislated that it would be lawful to get together in labor unions; that there would be protection by the federal government; that every man or woman would have the right to vote without regard to race or creed; that there would be clean air and clean water. The civil rights, the labor relations and the environmental revolutions have all taken place because the people as a nation could foresee the dangers. What is being offered today as a "new federalism" is only a disguise for the "old privilege."

The new federalism puts the decision making where it knows the decision will be for the status quo. I suggest to you that the challenge of leadership today is to reject that kind of thinking and to get back to an agenda for this country where Americans' civic and spiritual energy can be used effectively for 215 million people.

We are told that money cannot be spent for housing programs, for water pollution control, but we have the money to send planes to bomb Cambodia and to continue defense expenditures. The Department of Housing and Urban Development is being dismantled. That's the old privilege and the new federalism. . . .

The time has come to recognize that

land is not a commodity. Land, air, water are not a commodity but a community. They are interrelated and interbalanced; they are a life-support system. Land, one of the basic resources of life, is a community-owned asset. For too long we have exaggerated what we call the rights of private ownership of land.

Architects, if you are the leaders of the design profession in America, and you are, where else can I go to ask you to join in what's worth doing? What's worth doing is to apply one's self to public goals that are worthy of dedication — to end poverty in America, to build a country of racial equality, to design cities which will ennoble the spirit of man and to build housing and structures worthy of the inheritors of reason and art. . . .

Fellow cowboys, it's our spaceship!

*Archibald C. Rogers, FAIA,\* Institute first vice president:*

The short term tomorrow—the next three decades—that we are talking about in the report of the AIA National Policy Task Force will be designed from a palette of colors. It is the product of three great tides. The first, an accelerating and strong tide of civilization, goes back about 50,000 years. Upon this tide is a second current, an undulation, the wave of the West, which involves three great crests and necessarily three great troughs. And the last current, on the last of these three waves, is a boisterous whitecap, our own joyous and hopeful and yet to be consummated revolution.

The first current, the tide of civilization, is governed by the law of doubling. There are eight great revolutions which began with the hunters' revolution, followed by the farmers' revolution at about 15,000 to 10,000 BC. This was followed by what was the true urban revolution—the invention of cities about 5000 BC. Then followed the citizens' revolution of Greece and Rome about 600 BC. Then there was the religious revolution in which society perceived not a universal God, unfortunately, but several universal gods. It was a

*\*Mr. Rogers substituted for Congressman Jerome Waldie, who had become ill.*

**Ending the theme sessions with the hope that architects see themselves as a resource to be made available to our troubled society is Rogers. And ending the hopes of anyone else who might have visioned himself behind the wheel of the car to be raffled off is J. Winfield Rankin, Hon. AIA, administrator, AIA Institute Affairs, who picks the winner: Peter MacGowan of Tiburon, California.**

turbulent period from about 600 to 1500 AD. Then came the mercantile revolution which is really what the early Renaissance was all about, and it extended from about 1500 to 1800. Then came the industrial revolution which may have run its course today as we enter the last revolution—the postindustrial society.

The second great current, the wave of the West, which crested first perhaps in Greece and Rome in the Augustan age, was followed by a great collapse or trough. It crested again in the 13th century as the medieval wave. This was followed by the agony of its trough and the Renaissance crest, which I personally believe did not die with Sir Christopher Wren but perhaps is dying in our own time. And, finally, there is our own revolution in which we have lost some of our youthful self-confidence. And from all of these, we see about us parts of a palette.

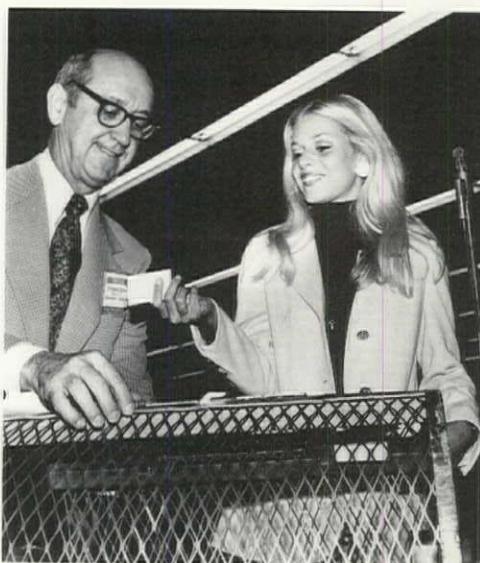
The postindustrial society has to involve the question of quality. The service sector is so strong and so dominant, and the quality of services has much to do with the price of units of service. Yet we see an attempt to measure this new economy by the old quantitative tools which apply to an industrial society.

We see a great value shift. The philosophic cement which bore up the Renaissance wave is disintegrating. Yet it is a hopeful time because, if we are creative and have the will, we may in this nation be able to give first form to the next and fourth great wave of the West. We stand in relation to Western society as Britain stood on its western marches. It is a role we inherited, somewhat reluctantly, from Great Britain.

The value shifts we see about us seem deeper and broader than the perennial generation gap. It is expressed in many bizarre ways of dress, speech and action. We cannot possibly go back to the "good old days" and should accept this shift and build upon it.

We have lost confidence in our own revolution because we succeeded in past missions. We did take the West and exploited it and discovered an urbanized society. And we are still land hungry.

We accepted the promise of the New Deal of an ever-increasing standard of



living—the highest standard of living ever achieved, so far as we know, on this earth. But we discovered that because the standard is measured quantitatively, we are on a collision course with the limited resources available to us. In perceiving this, we lost faith in the New Deal.

And yet we are a great missionary country. We have not always been polite, and we have left a lot of blood behind us,

but we do need missions. Our mission is to put in order our own rather substantial corner of spaceship earth and to demonstrate what a future world society must become.

We are not a great homogeneous society with a temporary minority problem. We are a multiminority society, as is the world. And we can demonstrate how a multiminority society does work without losing the rich variety of our own social tapestry.

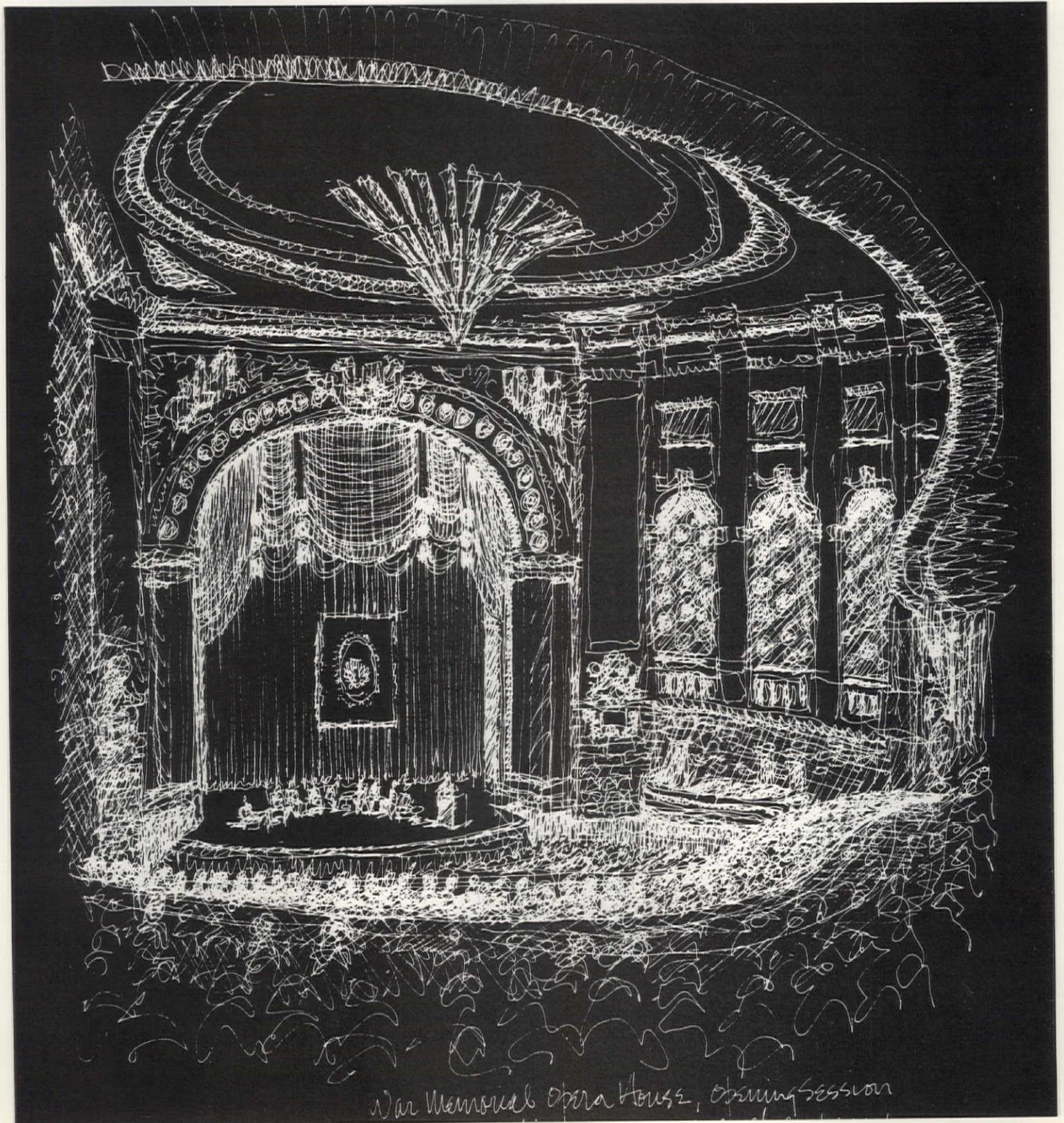
We are perhaps the first nation to enter the postindustrial era, and we can demonstrate to other nations that are going through the preindustrial, industrial and into a postindustrial society how we should address the problems of managing our resources. For the first time we are heading into a situation where we are in short supply and where our purses and appetites are far larger than what is available to buy. We can make the managing of our resources our mission.

If we accept this mission, we may find a great reward. Other frontier nations came out of the troubled times of the 14th century and began to give first form to the Renaissance wave. They experienced their first golden age. We have not yet had a golden age as a national society, but this is really the opportunity before us, if we are creative and if we regain our self-confidence and nerve.

In all of this, we must speak of the role of art—not art reserved for a wealthy and tasteful elite, nor art produced by individual design heroes, but art that is part of the daily spiritual nourishment of our entire society. It includes the art of architecture. Here architecture is thought of as a mosaic of new and renewed neighborhoods and rebuilt cities, nourishing its using society and approaching an equilibrium with its natural setting.

It is our duty to contribute our creativity, our artistry, to our nation at this time. It is our duty to see ourselves clearly, for we are seen as we see ourselves. I hope that we see ourselves as artists and as creative thinkers and doers and as a resource to be made available to our troubled society toward the end of consummating our own hopeful and very real revolution. □

**J. J. Champeaux, AIA, had more input into the convention than most. Besides taking part as first vice president of the Louisiana Architects Association, he made a series of sketches from San Francisco, some of which are shown on this and the following pages. He has made them available to the AIA Community Services Department; any profit would go to the Minority Disadvantaged Scholarship Program.**



*War Memorial Opera House, Evening Session*



Chinatown - San Francisco

**The Institute's second report on national growth policy, although momentarily delayed, is being given a new dimension through the efforts of an interdisciplinary coalition. Meanwhile, copies of the Constraints Conference, which evaluates the first report, are available through the Public Relations Department at AIA Headquarters.**

## Business Sessions

### National Policy Task Force Report

*Chairman Archibald C. Rogers, FAIA, offered a progress report, of which this is an abbreviated version.*

I had hoped to be able to present to you for convention action, as we did at Houston, the second report of the National Policy Task Force. We are behind schedule as a matter of deliberate choice and for a very good reason.

The delay was due to a request that was made in November by Stanley Waranch, then president of the National Association of Home Builders, that his organization be permitted to join with the AIA in the drafting of the second report. This occurred at the end of the Constraints Conference held at Harvard University earlier that month. Many of you have read of this conference.

The Constraints Conference was in fact a critique of our first report by distinguished individuals outside the profession, this effort having been generously funded by the Ford Foundation. It was our original plan that this would form the heart of our second report, which would then be drafted for Board action at its meeting in December and for presentation here.

With the request which was publicly made by the NAHB president, the task force felt that there was an opportunity for developing a strong alliance beyond our own profession. We asked Board approval at the December meeting, therefore, to delay the preparation of the second report in order to establish the Interdisciplinary Coalition for a National Growth Policy. The Board agreed.

Invitations went out to more than 30 organizations that have direct interest in the area of community development: those involved in the design, building and financing of new communities; and, perhaps of the greatest importance, those representing the users.

Twenty-eight individuals accepted on behalf of these groups. Three meetings have been held with more scheduled.

The Associated General Contractors of America publicly, and rather harshly,

declined our invitation. In subsequent conferences with its officers, the AGC has changed its position, and its executive director, J. M. Sprouse, wrote a letter on May 1 to that effect. I will not read the entire contents, but there is one interesting sentence: "Your attempt to solve the problems confronting our country should not be denigrated just because we disagree with some of the solutions."

As a result of this decision, the AGC did make available its executive vice president, William E. Dunn, for two of the three meetings, and I might say that his contributions were of a very high order.

We thought we would be able, following the April 24 meeting, to prepare the final report for presentation to the Board here. We were wrong.

On April 24 the coalition members coalesced: They voted unanimously in effect to call for a national policy; they then voted to accept the eight strategic elements of such a policy which appear in the draft of the second report. They also voted to seek their own institutional backing for this position. In some cases such backing already has been provided.

And, finally, the coalition participants voted to stay in business and asked that the AIA host a fourth meeting in June at which they could 1) give concrete reaction to the second report in draft form and 2) begin to organize themselves as a group of which the AIA would simply be a member.

Again, we feel that the potential of such a powerful and long-term coalition is well worth the price of delaying the report until it can be acted upon by the Board in September and be published.

That is track 1 — the work that has been done toward development of the second report.

Track 2 is implementation of the recommendations in the first report. The task force and its members, and I expect primarily its chairman, have logged 160,000 miles since Houston, more or less all in the air; have spoken directly to an audience of some 17,500 persons and to a far larger one through media coverage and interviews. The first report has become something of a best seller — if "best seller" is the word, for we give it away —

in that it is now entering the fourth printing with some 80,000 copies circulating in this and many foreign countries.

Our plan for urban growth has received growing interest at all levels. An important development has been the request of Senator Hubert H. Humphrey in asking the Institute's help to assist him in a legislative effort which would create the appropriate institutions at the federal level to consider the question of national growth policy. Basically, they are:

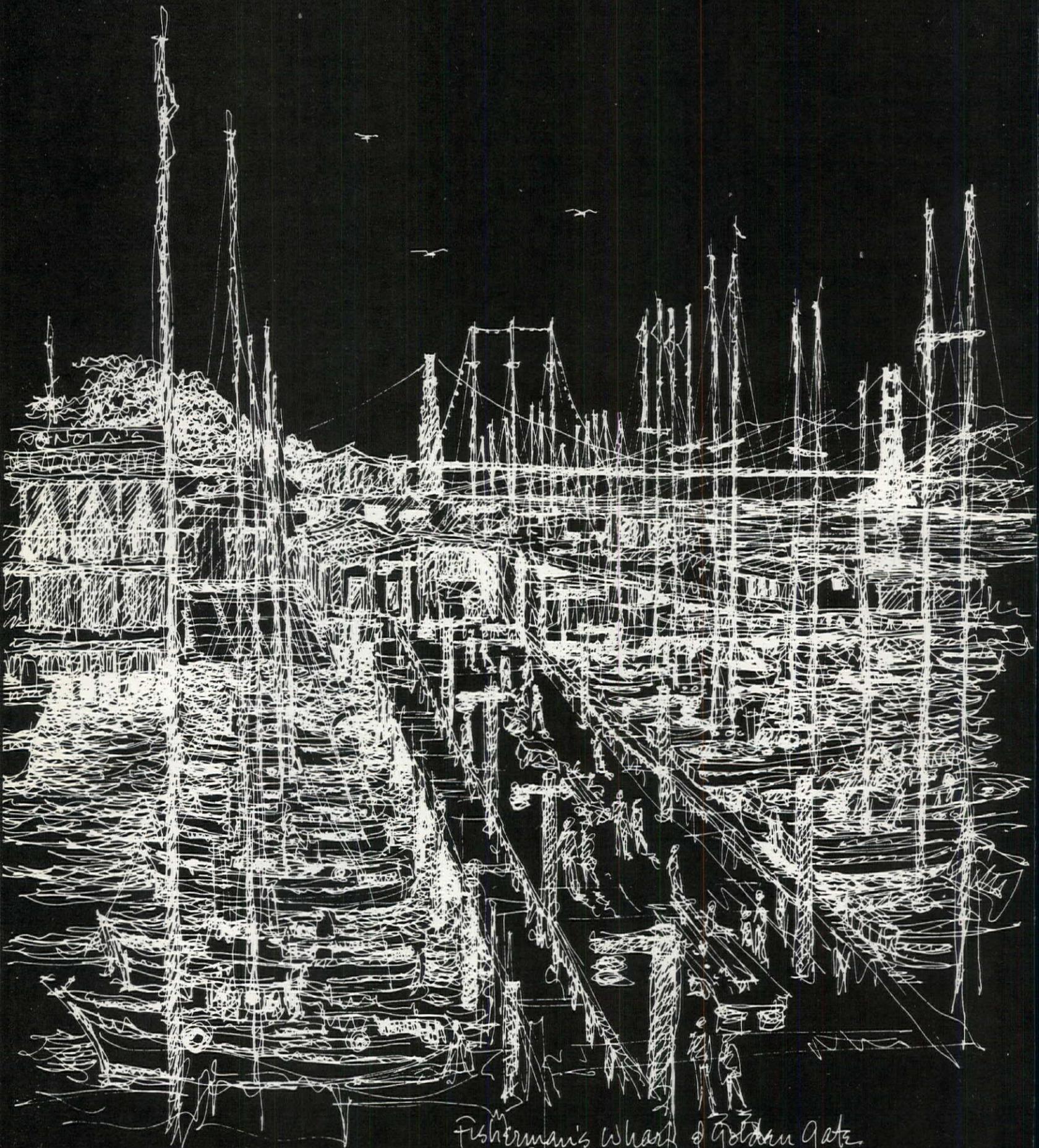
- Office of Balanced National Growth and Development within the Office of the President
- Congressional committees on national growth policy
- Congressional Office of Policy and Planning to aid the Congress in its policy formulation, similar to the General Accounting Office
- National Research Foundation on national growth problems.

The Board of Directors at its meeting prior to this convention endorsed these four elements and further instructed the AIA staff to seek bipartisan support for such legislation.

At the state level there has been a significant movement, too, with land use legislation and related activities being considered in Vermont, Pennsylvania, Florida, Texas, Wisconsin, Minnesota, Washington and Hawaii, to name a few.

On the local level a number of initiatives have been taken. The Southern California Chapter AIA has approved a policy position paper for its geographic area; Tulsa is updating its master plan under the title "Vision 2000"; and Indianapolis is undertaking a modeling study for the alternative futures of that city and region.

When we started this work the concerns we had and the concerns you expressed were essentially that as architects we would have credibility in this field. My concern today is quite the opposite. We are being listened to. We must make sure that the goals we suggest are obtainable. We must be sure that our recommended strategies are carefully and realistically thought out. We must be meticulous in making our proposals in a professional and cool and positive style. □



Fisherman's Wharf & Golden Gate  
from Tarantino's

**The \$10 assessment which was approved at Houston is still at work in the legislative area, having been programmed over a two-year period; and the results thus far have been encouraging indeed despite continuing battles.**

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## Special Assessment Report

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*William Marshall Jr., FAIA,\* special commissioner for the Special Assessment Program, brought the delegates up to date on its activities with these remarks.*

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The Special Assessment Program was uniquely a creation of the Houston convention. It was spontaneous and, in my view, an inspired expression of the delegates' fighting reaction to the Justice Department attacks, which occurred just prior to that convention. It clearly underscored this spirit by the willingness to provide more dues committed specifically to AIA activity concerning legislation and regulations at the federal level so that architectural services are procured on the basis of professional qualifications rather than competitive bidding.

A year ago the outlook was decidedly bleak. The Comptroller General of the United States had been insisting since 1967 that architects must bid competitively for services. The Justice Department in effect made a similar demand.

As you know, the consent decree on the recommendation of our legal counsel was accepted by a majority vote of the Board, and that action was affirmed by a majority of the delegates to the Houston convention.

The language, and I believe it is most fortunate, of the special assessment resolution made it very clear that the consent decree was accepted with the utmost reluctance and that AIA members firmly believe competitive bidding to be contrary to the public interest.

I have always stressed the point, and I think that I should do so again at this time, that each member of the Institute is still

absolutely, completely free to refrain from competitive bidding by his own decision. What he is prohibited from doing is agreeing with one or more other architects not to bid.

Well, what have we done with the special assessment of \$10, yours and mine, over the past year? First, it has served very well to help protect your rights to continue to be a professional and not to bid. Second, it has directly contributed to the passage of the Brooks/McClellan/Percy Bill, and thereby to a nationwide climate which sustains professionalism. And third, it makes possible other AIA programs which are directed toward this same end.

For example, in connection with the Brooks/McClellan/Percy Bill, the assessment enabled us to do something we otherwise could not have done and that was to mobilize the entire membership into a special legislative Minuteman operation. As a result of really magnificent action by members throughout the country in contacts with their Congressmen and Senators, we were really never worried about a vote on the floor of the House or Senate. Our problem was to get the bill acted upon in time, before the session of Congress ended, by the various Congressional committees.

What the bill does is simply to confirm in law the selection process that has been used by the federal government. It rejects, in effect, the Comptroller General's insistence that we must bid.

But its major implications extend much further. I think that many states and local agencies would follow suit if bidding were the federal practice. If governments on the state and federal levels were in agreement, I am sure that most private clients would immediately follow the same course.

The bill is pertinent, therefore, not only to federal design contracts.

It is not particularly beneficial to large firms—I believe that these could cope with bidding better than smaller ones.

In effect, the bill sets and strengthens a nationwide climate so that you and I can continue to practice professionally. That is its real significance.

The other major programs under the special assessment include the development of a client brochure which will put forth AIA's recommended approach to

selection of and negotiation with an architect, rather than bidding as a procurement process.

We have made an increased effort with the federal agencies, not only because they handle a good deal of design work but also because they are so influential across the country in regard to the support and use of AIA's preferred method of procuring services and also to assure conformation of agency procedures to the Brooks/McClellan/Percy Bill requirements.

This also has involved input to the agencies in regard to the implementation of an important provision of the bill which requires advance public notification of all pending federal design contracts.

Another effort has been research and the development of an approach and strategy to amend the Sherman Act to exempt all professions from its provisions. We want to be prepared if it should be advantageous to pursue it. We have done the research and are ready, but we think that now is not the time.

The program which currently is the most important of all concerns itself with the report of the Government Procurement Commission which was made in early January. We expected that the report would be unfavorable, and it was.

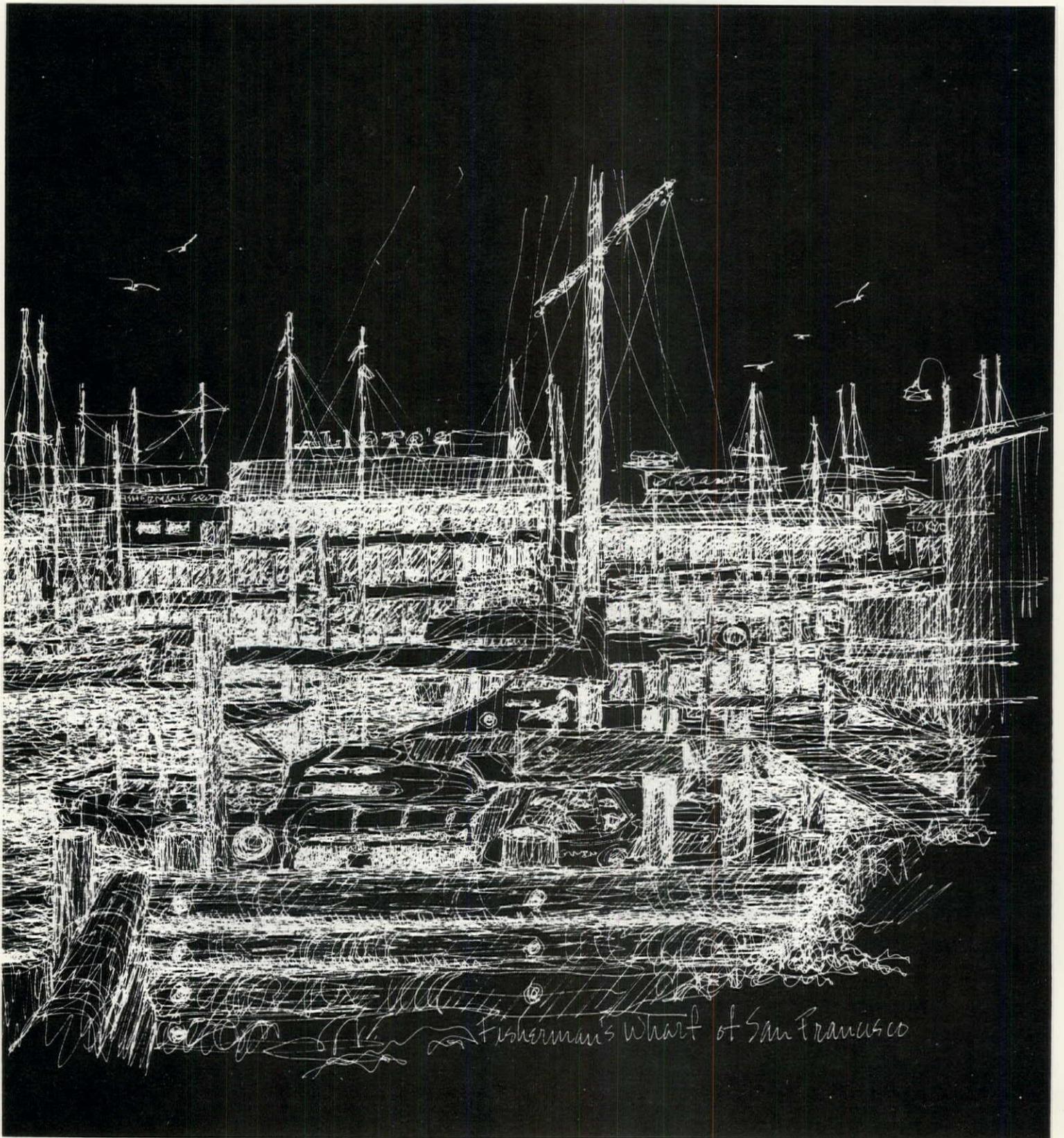
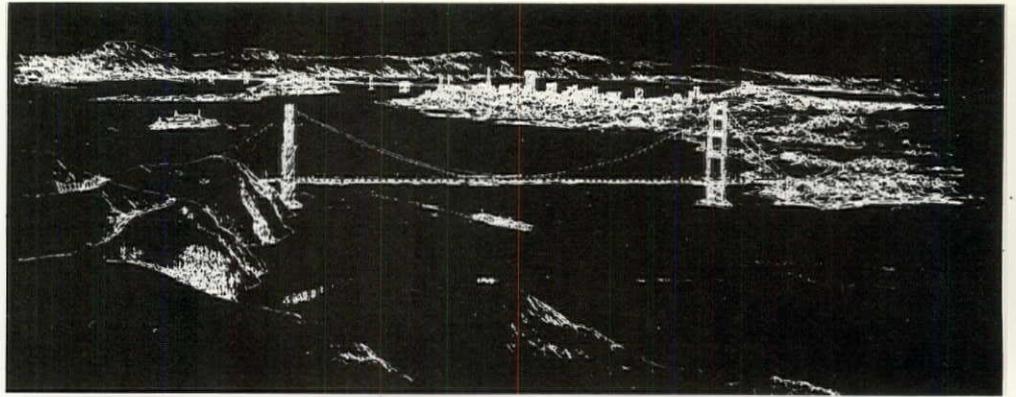
That commission, not a Presidential one, was established by Congress. Its mission was to examine and make recommendations to Congress on the federal procurement of everything, from soap to architectural services to aerospace projects. It put aside a thorough and thoughtful report by an expert study group working under the commission, which included three AIA members. Instead, its major recommendation regarding design services calls for "competitive negotiations."

This term appears to define a process which manages to encompass all the worst features of all procurement methods. The commission has other recommendations of equal merit. This may help us in the long run because some of these are divorced from the realities of design and construction—at least that is our opinion.

Of course, this is of great concern, and it indicates that further battles are going to be fought in Congress. We expect hearings on the overall report to begin this

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\* Marshall was elected first vice president later in the convention. Also named were three vice presidents: Van B. Bruner Jr.; Louis R. Lundgren, FAIA; and John M. McGinty. Joseph Tuchman, FAIA, was elected treasurer. President-elect Archibald C. Rogers, FAIA, will head the slate going into office in December. Hilliard T. Smith, FAIA, will continue into his second term as secretary.



Fisherman's Wharf of San Francisco

**Delegates table three proposed by-law changes which would have altered the method of calculating supplemental dues to allow for further study, but move to streamline procedures dealing with alleged violations of AIA's Standards of Ethical Practice.**

summer but not in our area of concern until next year. We are preparing as best we can. I believe that this will be the most important item in the Special Assessment Program for some time to come.\*

Fortunately, in terms of finances we have been substantially funded from the assessment to carry on these activities. About \$200,000 was collected as a result of the special assessment resolution, and the money was programmed over a two-year period to June 1974. Thus far expenditures are running within this budget, and there are some identifiable accomplishments.

In fiscal year 1972 about \$50,000 was expended; in the first quarter of this year to March 31, an additional \$19,000 was spent, producing, roughly, a total of \$69,000. Of this amount, about 70 percent is related to the passage and implementation of the Brooks/McClellan/Percy Bill; 15 percent to the legal strategy and research on the Sherman Act issue; 10 percent to expenses to date for the client brochure; and 5 percent to Government Procurement Commission matters. No special assessment funds have been spent for expenses, legal fees or anything else in regard to the consent decree.

Many battles lie ahead of us. But we are very much strengthened by the Brooks/McClellan/Percy Bill. It will take legislative action to amend that, which is more difficult to do. And we are strengthened, too, by the resolve of our membership expressed in the passage of the special assessment resolution and the existence of the extra funds it provided, and by the demonstrated ability of our members and staff to successfully operate in the national arena, on Capitol Hill, where many of these major decisions are made.

\* *ED. NOTE: The assistant director of the Special Assessment Program states that initial hearings on parts of the report already have been held in the Senate and that extensive hearings in the House are scheduled to commence in July or September. Even though the A/E sections will not be considered until early next year, any legislation resulting from the report could have wide-range implications for the architectural profession.*

## Proposed Bylaw Changes

**I Change in calculation of supplemental dues—Board's proposal. Tabled.**

**II Change in calculation of supplemental dues—proposed by petition. Tabled.**

**III Alternative amendments to establish a basic year for computing AIA supplemental dues. Tabled.**

In giving a summary on the background of the three changes related to the dues structure, all tabled by one motion, President Ferebee explained:

"No. 1, which was proposed by the Board, recognizes the fact that the present bylaws do not place supplemental dues on the partners' pay which is self-employment tax and therefore partners are not required to pay. Corporate officers are paying supplemental dues on themselves, and partners are not. This change was offered as a means of correcting the inequity, was discussed at Grassroots and has been in the works for almost a year.

"No. II is in effect a reaction to that. It came from the Louisiana Architects Association which felt that maybe the way to correct the inequity was to take the tax off the corporate officers. It is the Board's belief—and this is really a guess—that change No. I would add somewhere between \$125,000 to \$200,000 in income. No. II, because of the fact that the self-employment tax is not as large as the FICA, would probably cost us from \$300,000 to \$400,000.

"No. III, changing the basic year, also came from the Louisiana Association, and it recognizes that the convention in Boston authorized the Board to raise supplemental dues from 2 to 5 percent at the maximum rate of 1 percent a year. None of us anticipated the Congressional action that had upped the FICA rate and base at a very rapid rate. We have all become aware of it. The Board at its March meeting took action to set the rate back from 5 to 4 percent of the FICA."

The president went on to express concern about other things in the area, adding that he had appointed two special committees to look at the whole business

of the dues structure and membership categories. "This is an extremely complex problem," he emphasized.

Ferebee then recognized Charles E. Schwing, president of the Louisiana Association, who proposed:

"Resolved, That the Board is directed to continue its comprehensive study of the dues structure and is directed meanwhile to maintain the supplemental dues at a level not to exceed the proposed 1974 level of \$50.54 per employee (4 percent of \$10,800 at 11.7 percent or such comparable percentage of FICA taxes) unless and until a revised dues structure is approved by the convention, or the convention revokes the limitations stated in this resolution." Treasurer Elmer E. Botsai seconded the motion.

Ferebee said that if the resolution passed, a motion would be made to table the three proposed bylaw changes, noting that "we will continue the dues study and hopefully come back with something we can sell to the convention next year."

The resolution passed and Schwing, on behalf of the Gulf States Region, made the motion to table bylaw changes I, II and III. That action was approved.

**IV Indemnification of Institute officials. Passed.**

Ferebee stated that the change was recommended by legal counsel, based on the growing concern of liability against corporate officers acting on behalf of the Institute.

**V Election of delegates. Passed.**

It was explained that the change gives the chapters the option of which method will be used to name delegates.

**VI Proposed new judicial procedures. Passed.**

Secretary Hilliard T. Smith Jr., FAIA, said that the reason for the change "is hopefully to speed up the business of enforcing our Ethical Standards and also make it less onerous on the chapters and the members, especially for those lesser alleged violations at the local level."

A question was raised from the floor asking for a clarification if charges could be filed by "anybody" and, if that were the case, the logic behind it.

Smith, who was a member of the task force that studied the matter, responded:

**The upgrading of women in the profession wins convention support during the business sessions (across page). For the first time in AIA convention history, a woman's architectural group had exhibit space. Prepared by the Bay area's Organization of Women Architects, the booth's purpose was to affirm action programs for women in the architectural profession.**

"Currently, the bylaws permit only members or chapters to file charges of alleged violations. We feel that if the standards are to have any real meaning to the public, there should be a way that the public or other professionals with whom we work can have some opportunity for redress through those standards. So that is the reason for inserting the word 'person.'

"We feel that there will be adequate protection for the membership from the nuisance type of complaint that we get, that we see quite often, inasmuch as all such complaints will have to be screened by the national Judicial Board and will only be heard after it has decided that they are worthwhile," Smith added.

Ferebee pointed out that "the intent here is to set up some lower level of review, with lesser punishment, and also have an opportunity for appeal."

### Resolutions Committee Report

The aim here is to convey the intent; therefore, the wording may vary from the original motion.

**Resolution 1.** Provides that future Resolutions Committees be allowed to consider only those resolutions which meet the criteria of being relevant and timely. *Defeated.*

The consensus from the floor was that the present system is functioning well and that the proposal would leave too much to the discretion of the Resolutions Committee.

**Resolution 2.** Calls for the Institute to take action to integrate women into all aspects of the profession as full participants and to conduct a study on the status of women in the profession, the results to be reported to the December Board meeting and to the 1974 convention. *Passed with an amendment.*

In regard to the study, the original resolution asked for the formulation of policies in four areas:

- the encouragement of women to become architects
- the involvement of more women in AIA activities and structure
- the elimination of sexist wording in all AIA documents and publications



- the initiation of an affirmative action program to implement the Equal Opportunity Section of AIA's *Guidelines for Personnel Practices Manual*.

Following endorsements from President Thomas F. Galvin and Anna M. Halpin of the New York Chapter, cosponsor with the Boston Society of Architects and the New Jersey Region, an amendment was introduced. Rex Whitaker Allen, FAIA, of the Northern California Chapter proposed deletion of the paragraph covering "the elimination of sexist wording in all AIA documents and publications" because "it seems unnecessary to the intent of the resolution, and we sometimes go a little overboard, letting the pendulum perhaps swing a bit too far when we are trying to be fair."

Upon passage of the amendment, Botsai spoke against the resolution "at the risk of being a male chauvinist." He challenged two points in the preamble: underrepresentation in the profession "as not being AIA's responsibility or fault" and discrimination by omission "as being blatantly not true." Regarding the latter, he

said, "From personal knowledge, I know the Board of Directors has gone out of its way to get female representation far beyond their percentage points on AIA activities, and I challenge anyone to refute that statement."

Botsai also questioned whether a study of any meaning could be completed by December, commenting that "it would be lip service." He summed up his opposition to the resolution by saying, "I really don't think it is relevant nor necessarily in the best interest of the AIA."

A roll call vote was taken on the amended resolution, with 997 for and 627 against the proposal.

**Resolution 3.** Requests mail balloting for national officers. *Defeated.*

Rex Lotery, president of the Southern California Chapter, speaking on behalf of the California Council which proposed the resolution, expressed the sentiments of its supporters from the floor. Pointing out that the number of architects who attend the convention is a relatively small percentage of the entire membership, he maintained, "In our minds there are no inherent advantages in the present system which outweigh the overriding goal of our resolution, which is to increase the democratic participatory process."

Vice President Louis de Moll, FAIA, chairman of the Structure Committee, said that the issue had been discussed during the 1972 Grassroots meetings where "we got about a 95 percent straw vote against going to the mail ballot" and warned that "there may be some mechanics involved that may become rather complicated."

Other delegates in opposition underscored the benefits of the person-to-person meeting with the candidates and the drawback of anonymity that the mail ballot seems to generate, as experienced through other organizations.

**Resolution 4.** Asks the membership to continue giving its full support and endorsement to the AIA Minority Disadvantaged Scholarship Program. *Passed.*

**Resolution 5.** Provides that the Institute develop criteria in making development decisions and work for the implementation of long-range policy regarding energy conservation. *Passed.*

**The Institute's ever-increasing role in the educational process, both as it pertains to students and to practitioners, becomes the focus of several resolutions, all of which receive favorable action.**



Arch R. Winter, FAIA, of the Mobile Chapter introduced an amendment to strike the second point dealing with the formulation of energy criteria for future design awards, objecting to any such limitation since "the essential criterion of any award is good architecture."

President Galvin of the New York Chapter replied that his chapter, which had requested that the plank be inserted, would oppose its deletion. "As we have stated very adequately in our exhibit here on the left of the floor, the energy crisis is here and will be growing; it needs the proper attention to be focused upon it. What greater focus can there be than in the design awards program of the Institute?" he asked.

The amendment was defeated.

**Resolution 6.** Urges the President, Congress and the Environmental Protection Agency to free essential appropriations earmarked for water pollution control measures. *Passed.*

**Resolution 7.** Calls upon President Nixon to initiate proposals for new housing and related programs and immediately resume funding of substantial portions of existing programs while new solutions are being developed. *Passed.*

**Resolution 8.** Recommends professional involvement in architectural education through the AIA components lo-

cated in the vicinity of the schools and through practicing architects in terms of office-based experience and work/study and internship programs. *Passed.*

In emphasizing the second portion of the resolution, Fay DeAvignon, president of the Association of Student Chapters/AIA, remarked, "It places direct responsibility on the part of all practicing architects to participate fully in the educational process. This we recognize to be equally important a charge as the one that was given to the schools in resolution 5 of last year."

**Resolution 9.** (Made into two resolutions, both submitted by the National Advisory Council on Continuing Education.)

**Resolution 9A.** Calls for the AIA Board to undertake a study of the implications of accrediting continuing education programs and matters related to that accreditation. *Passed.*

The preamble explained that recent trends in some state legislatures indicate that the near future may bring requirements for participation in some form of continuing education in order to maintain one's registration.

**Resolution 9B.** Provides for the expansion of continuing education programs. *Passed with an amendment.*

Paragraph 3, which called for income derived from continuing education pro-

grams to be allocated exclusively for the further development and management of such programs, produced a considerable amount of discussion.

Herbert Epstein, delegate-at-large, of Brooklyn explained, "We are hopeful that by the end of this year the entire program will be on a fully self-sustaining basis. However, like any new business, it does need some additional seeding, and we feel that the retention of its income, plowed back, so to speak, into development of more programs will be of benefit to the Institute."

Matt L. Virden III, FAIA, delegate-at-large, of Mississippi, calling it a "bad precedent," offered an amendment to delete paragraph 3. Several others supported his stand, maintaining that it would tie up funds for which there might be a higher priority and that such allocations are basically the prerogative of the Board.

H. Samuel Krusé, FAIA, of the Florida South Chapter took exception, commenting that the resolution "says nothing about setting a precedent. So that is not an issue at all. The issue is where to get the resources to develop a rapidly expanding program. . . . The best and the fairest way is to use the money that the program itself earns to better that program."

The amendment was passed.

**Resolution 10.** Changes the AIA Board

**The majority of resolutions, concerned with a broad spectrum of Institute and environmental issues, are passed with little or no discussion, but the matter of funding in a couple of instances is reason for some delegates to pause and ponder.**



to explore the development of learning package programs on environmental awareness for use in public educational systems at all levels and in schools of architecture. *Passed.*

**Resolution 11.** Expresses appreciation to AIA officers, directors and staff, the host chapters, honored guests, speakers, et al. *Passed.*

**Resolution 12.** (Not in the printed document. Submitted by the Shreveport Chapter and rewritten by the Resolutions Committee with the sponsor's permission to become 12A.)

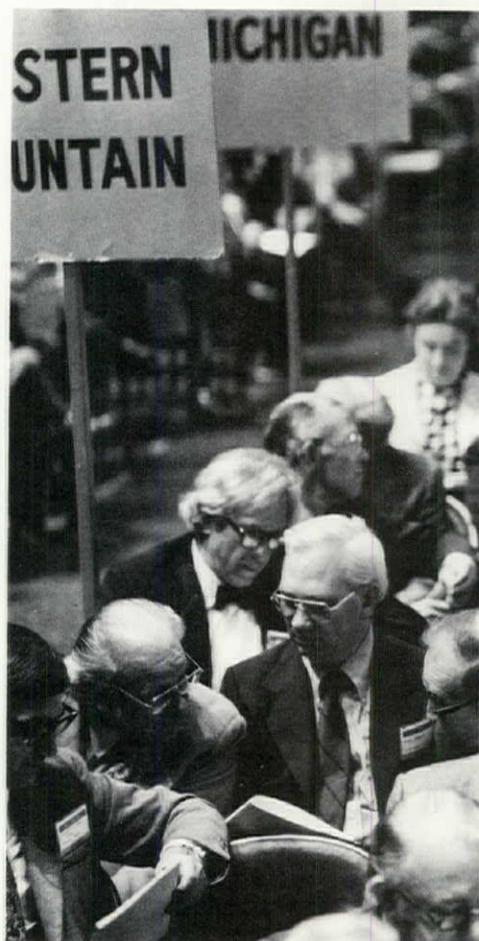
**Resolution 12A.** Asks that the Institute thoroughly investigate and expose to the public and the architectural profession the true aspects of procurement procedures so that knowledgeable judgment can be made by public officials and the profession. *Passed.*

The preamble reads: "It has become evident that the best interests of the public, the architectural profession and the construction industry are damaged by government procurement processes for buildings which place the professional service of the architect in a subordinate position to considerations of expediency and quality, long-term ownership costs and esthetic appearance, and insulate the professional services of the architect from the owner."

**Resolution from the floor.** (Submitted by the Minneapolis Chapter.) Calls for the Institute to work for the transfer of the Design and Assistance Program from the Office of Economic Opportunity, if in fact OEO is dismantled, to the Department of Housing and Urban Development or another appropriate agency and for funds to be appropriated for this program. *Passed.*

The program was part of the OEO amendments of 1972 which would have provided operating funds for Community Design Centers. After a two-thirds vote, which put the motion on the floor, a rather lengthy discussion followed, with several speakers emphasizing the work of the CDCs in making the profession visible in the disadvantaged and distressed areas. Two in particular were cited: Philadelphia's Architects Workshop and Baltimore's Neighborhood Design Center.

As Ehrman B. Mitchell Jr., FAIA,



delegate-at-large, of Philadelphia put it, "The CDCs have been increasing by such numbers that none of us can really keep track of them. The demonstration funds available through the foundations have now been largely cut off with the hope that all CDCs will be able to find viable funding themselves. This has not been the case. And the federal government in this instance should be urged by the Institute to fund these very, very viable programs for this nation with which the AIA is so visibly connected."

Regarding the matter of funds, Botsai proposed an amendment which would have added the words "provided proper guidelines can be developed for their operation." He said that "lest anybody get any wrong impressions, I am not unilaterally opposed to CDCs. I feel there are certain qualms which should be clearly faced by the membership."

He referred to the fact that "some

CDCs are being operated as nonprofit organizations and, in some cases being funded by one source or another, are in direct competition with private practitioners for fee-based projects."

Botsai went on to say, "Now as I understand it, CDCs were originally conceived—the AIA supported them and I supported them—as an agency to help those who were not able to go out and secure normal A/E services. I feel that the continuation of this support without some clear understanding or statement of what the Institute is endorsing is not in the best short-range interest of the AIA or the long-range interest of the public."

Taylor Culver, former student president, replied that if a small number of CDCs have participated on the level as indicated by Botsai, "then in fact we should deal with them on a one-by-one basis as we would deal with neighborhood legal services, but we should not crush the whole program."

There is difficulty in creating guidelines, desirable as they are, David F. M. Todd, FAIA, of the New York Chapter pointed out, because "conditions in different municipalities vary a great deal as to what should be appropriate, what is the best thing for that particular organization, whether chapter backed or not. And I would think that the Institute can be left in its good judgment to continue development of guidelines as I know it has been doing."

Vice President Van B. Bruner Jr. underlined Todd's remarks about guidelines, adding that "it is most important that we continue at the national level to help out our CDCs at the local level due to the crippling effect of what has happened throughout the country all around."

The amendment was defeated.

**Resolution from the floor.** (Submitted by W. J. Wellenstein of the Alaska Chapter.) Asks the Institute to support the building of the Alaska pipeline from Prudhoe Bay to Valdez as soon as possible. *Motion to consider was defeated.*

Earl Fullingim, president of the Alaska Chapter, said that neither his executive board nor any of the three sections—Anchorage, Fairbanks and Juneau—had taken any action regarding this subject. □



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of the world...*

**Plant a tree  
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**New Towns in America: The Design and Development Process.** Ed. by James Bailey; foreword by Carrell S. McNulty Jr., FAIA. New York: Wiley, 1973. 165 pp. \$16.95 AIA members; \$19.95 non-members.

In the summer of 1971 when we were enthusiastically developing the idea of a conference on new community design, we only had vague suspicions about the creeping national cynicism now climaxing in the Watergate affair and the massive withdrawal of the federal government from domestic, social and environmental programs.

A very successful, ambitious, enthusiastic and, in many respects, idealistic "Woodstock for New Towns" was held in Washington, D.C., in October 1971. The conference focused on how building on the new community scale could achieve national economic, social and environmental objectives. The effort of The American Institute of Architects, which produced this excellent book, should not be seen as the last gasp of our confidence and dedication to creating a more humane national environment but rather as a basis from which to move ahead when leadership and confidence are restored.

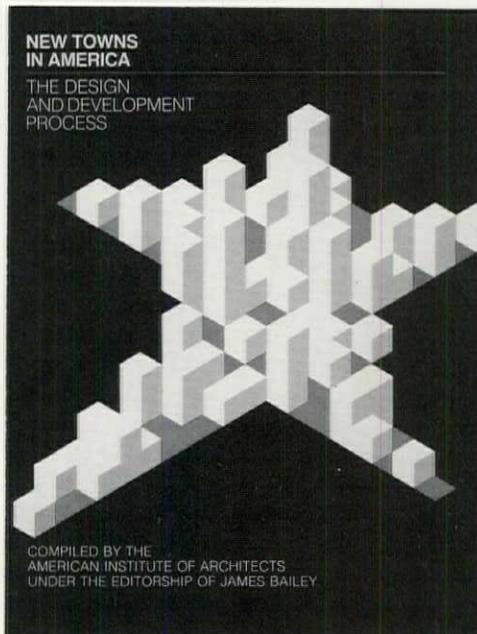
When this time comes, and I believe that it must, decision makers, both private and public, will need foundations to get on with the job ahead. The work of the AIA in *New Towns in America* and, perhaps even more important, the efforts of the Institute's National Policy Task Force will provide elements of the needed foundation to rebuild America to a higher social, economic, political and physical standard.

The book is divided into three major sections: 1) the evolution of new towns in America, 2) the state of the art and 3) new towns and urban growth. Part 1 includes comparative plans drawn to scale for 32 American new towns. This alone would make the book well worthwhile as a reference piece to anyone interested in new community developments in the United States.

Part 2 has important essays by people deeply involved in the new community development process including Archibald C. Rogers, FAIA; George J. Pillorge, AIA; Ralph Rapson, FAIA; and others. Part 3

relates new town development to national growth policy and reprints major portions of the first report of the National Policy Task Force.

Carrell S. McNulty Jr., FAIA, the conference chairman and at the time chairman of the AIA's Urban Design Com-



mittee, sums up the nature of the book in his preface when he says: "Perhaps no book can reflect all the aspects of a topic as broad as that contained in the concept of a new town, and this book is no exception. The essay approach was deliberately chosen in order to convey to the utmost the variety of issues and attitudes current in the creation of what is, indeed, a very fluid art."

This book is a necessity in the library of anyone who is interested in new community development. *Michael B. Barker, Administrator, AIA Department of Environment and Design*

**New Towns Planning and Development: A World-Wide Bibliography.** Gideon Golany. Washington, D.C.: Urban Land Institute, 1973. 256 pp. \$8 AIA members; \$10 nonmembers.

This comprehensive and exceedingly well-organized bibliography of new towns was a decade in preparation. Golany, who is professor of urban and regional planning, graduate program, College of Arts

**The efforts behind "New Towns in America" should not be seen as a last gasp of our confidence and dedication to creating a more humane national environment but rather as a basis from which to move ahead when leadership and confidence are restored.**

and Architecture, Pennsylvania State University, is to be commended for his and his students' efforts in bringing together more than 4,500 verified citations.

The first section of the publication gives references to new towns in general. This section is subdivided into 12 categories such as concept, size, planning and design, the architect's role in planning, etc. There is information about the publication's title, author, place and date of publication and length.

The following major sections are on new towns in the Americas; new towns in Europe; new towns in Asia; new towns and the future; and bibliographies of new towns. Each large topic is appropriately divided into a consideration of many topics including new towns in town; legislation; social, education and health considerations; economics and finance; land use; etc. New towns in the US are treated individually, as are those in Great Britain.

This is a workable bibliography which should be of tremendous help to professionals and laymen alike.

**The American Institute of Architects' Membership Directory, 1973.** Washington, D.C.: The American Institute of Architects, 1973. 253 pp. \$5 AIA members, \$25 nonmembers.

This new directory presents an alphabetical listing of the 23,871 members of The American Institute of Architects, their addresses and chapter affiliations, reflecting the Institute computer membership records as of January 15, 1973. A new category of national membership, AIA associate, links the Institute to another segment of the profession: architectural graduates who work professionally in areas related to architecture and newly licensed architects. These names are listed together at the end of the membership roster.

The directory, which is indispensable to the individual architect, architectural firms, libraries, related organizations and others concerned with construction in general, also contains a listing of the AIA officers and Board of Directors and heads of departments. There is a special listing of Fellows of the AIA, honorary members,

honorary fellows, past presidents and component presidents and chairmen. Included as well is a list of AIA medals and awards and their recipients and of AIA and AIA Foundation scholarships and special programs. The directory concludes with a list of 1972-73 accredited schools of architecture and of associated organizations.

**The American Institute of Architects' Research Survey, 1973.** Washington, D.C.: The American Institute of Architects, 1973. 7 vols. Various priced.

Published in response to two forces—the continued evolution of the design process toward rationalization and the exponential growth of research on the man-made physical environment—the volumes comprising the survey contain abstracts of ongoing research projects. The projects, for the years 1971-73, cover seven major areas. The information was collected by the AIA from the Science Information Exchange of the Smithsonian Institution.

The abstracts contain a summary of the project work, project title, name and affiliation of the principal funding agency or foundation. The reporting agencies include government and state agencies, universities, private corporations and individuals.

Titles and prices of the volumes are: 1) Building Design (\$5.50); 2) Engineering and Structural Design (\$8.25); 3) Social and Behavioral Sciences (\$5.10); 4) Building Materials and Construction (\$6.25); 5) Economics (\$5); 6) Urban Planning, Land Use and Transportation (\$7.50); 7) Non-United States Research (\$12.50). A complete set of all seven volumes is priced at \$40. Orders may be placed with Don Conway, AIA, Director of Research, AIA Headquarters, 1735 New York Ave. N.W., Washington, D.C. 20006.

**Case Histories in Construction Law: A Guide for Architects, Engineers, Contractors, Builders.** William Jabine. Boston: Cahners Books, 1973. 233 pp. \$12.50.

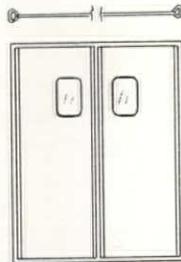
Developments and cases in the law affecting the construction industry are fertile and popular subjects for regular columns in numerous magazines and other periodicals directed toward architects, engineers and contractors. When read singularly, and with the respite of a month's grace between articles, the capsulation of these cases can provide the nonlawyer with fresh insights into the problems confronting his chosen endeavors.

Over the years, Jabine has authored a series of such articles for the *Actual Specifying Engineer* magazine, and he has now reorganized and compiled them in book form. Although his writing style facilitates a comprehension of the principles involved—he nicely intersperses an erudite commentary with salient quotes taken directly from the court's opinion—an an-

# ELIASON

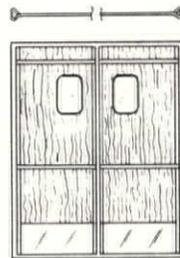
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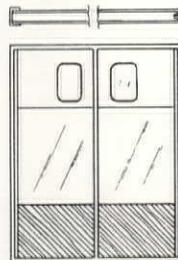


LWP 3

**LWP 4:** Same as "LWP 3" except with decorative high pressure laminate both sides. Decorative doors are practical with protective accessories. Door illustrated has 12" high Base Plates and two sets of Bumper Strips.

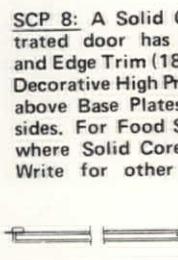


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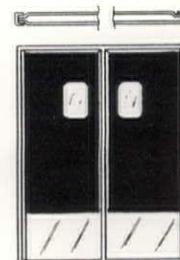


SCP 5

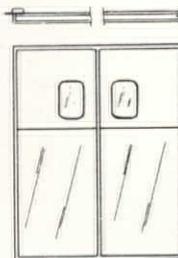
**SCP 5:** A Solid Core Door 3/4" thick. Illustrated door has Anodized Aluminum, Top Panels, 18 gauge steel center panels (SS front, Galv. rear), 14 gauge high carbon steel kick plates. Write for options and other Solid Core Door models. Applications same as "LWP 3", a heavier door but same easy action.



**SCP 8:** A Solid Core decor door. Illustrated door has 18" high Base Plates and Edge Trim (18 gauge Stainless Steel). Decorative High Pressure Plastic Laminate above Base Plates to top of door both sides. For Food Service and other areas where Solid Core Decor doors desired. Write for other models and options.



SCP 8



SCC 1

**SCC 1:** Gasketed, Solid Core Door 3/4" thick. Illustrated door has Anodized Aluminum top Panels and 48" high 18 Gauge Stainless Steel Base Plates. For Refrigerated areas, Work Rooms, Processing and Cooler to Processing. Write for options and accessories. Ask about 1 1/2" thick Foam Core Doors.

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thology is a difficult format for holding the reader's attention in so many diverse and complex subjects. The reformatting of material from a series of magazine articles has resulted in a couple of unavoidable shortcomings: The limitations of space in the original article and the lack of time to exhaustively research other pertinent material related to the same subject are apparent in the book. In addition, the anthology approach tends to result in a somewhat disjointed sequence of material, giving the reader the impression that he missed something somewhere.

The table of contents gives a broad in-

dication of the subject areas covered, and a quick glance indicates that the reader will find material on such subjects as licensing, the consequences of missed deadlines, bidding and interpreting plans, specifications and contracts, among others. Unfortunately, current topics of personal interest are omitted such as the statutes of limitation relating to improvements to property and strict liability for professional services, although the latter is touched on briefly in one case in the section on the engineer's responsibilities.

Nonetheless, for people such as myself who are compulsive collectors of books on

the law affecting design professionals and construction, the book can take its place on the shelf to stand ready for the next question that arises and can be answered in a minute—if I can only remember where I read about that case! *Arthur T. Kornblut, AIA, Administrator, AIA Professional Practice Department*

**Decision Making: Creativity, Judgment and Systems.** Edited by Henry S. Brinkers. Columbus, Ohio: Ohio State University Press, 1972. 276 pp. \$10.

This book contains a series of presentations at an interdisciplinary conference on decision-making aids. Its goal is the advancement of the use of scientific methods for decision making within the disciplines concerned with the enhancement of the environment. Together the papers give a comprehensive treatment of the subject; several important aspects of decision-making techniques are covered in depth.

The book has four basic categories of information. The first deals with decision-making strategies; the second concerns specific decision-making aids; the third includes several examples of decision-aid applications which demonstrate their use in environmental problems; and the fourth category concerns human creativity and judgment.

Designers of environments who are interested in looking at different thought processes and, perhaps, in introspecting their own should find the book stimulating. *Stuart Rose, Director, AIA Continuing Education Programs*

**Royal Persia: Tales and Art of Iran.** Carrella Alden. New York: Parents' Magazine Press, 1972. 64 pp. \$4.95.

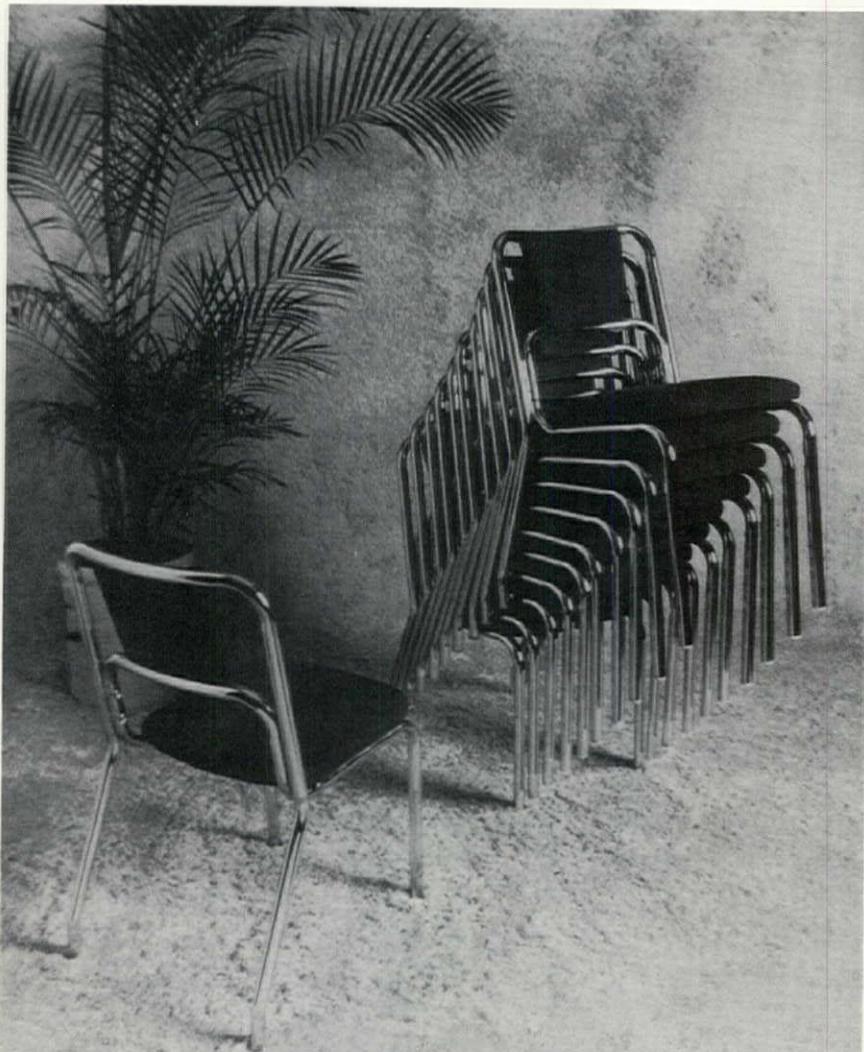
"Cyrus, king of universe, great and mighty king and king of lands." So Cyrus proclaimed to the people after conquering Babylon in 539 BC.

So begins the enjoyable story of the history of Persia. The reader is taken on a tour through time by beautifully illustrated stories.

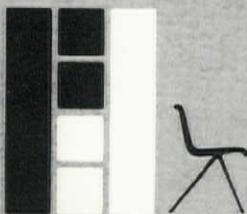
We learn about the spring and winter carpet of Khusraw which was designed to show a formal garden and about the Shah-nameh, or Book of Kings, written by Sa'di in 1011. These represent some of the finest Persian art.

The reader is shown the huge square that Shah Abbas and his master architect planned for his capital in Isfahan. The royal Masjid-e Shah on the square is the biggest mosque built at the time of the Safavid period (16th century). Vaulted domes and arches were a popular method of construction in Persia, and inside of Masjid-e Shah Mosque are domes covered in blue mosaic.

Early in the 18th century the last of the rich period of the Persian art ended. Many other dynasties rose and fell periodically, invaders swept across the land and the



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capital was moved. The dusty little village named Teheran became the new capital which in 1925 saw the Pahlavi dynasty started.

So the story of Persia ended, but its art and architecture remain. *Danny S. Rosenfeld, Rockville, Md.*

*ED. NOTE: We are proud of this book reviewer, who is the 10-and-a-half-year-old son of another frequent book reviewer, Steven H. Rosenfeld, director of AIA Professional Programs. Except for a couple of easily misspelled words, which we corrected, the review is exactly as he wrote it. We only add that the book, written for children, is indeed a beautiful one.*

**Remade in America: The Grand Tour of Europe and Asia Within the U.S.A.** Sheldon S. Brown. Salem, Ore.: Old Time Bottle Publishing Co., 1972. 384 pp. \$20.

The Old Custom House in Erie, Pennsylvania, is an example of classic architecture which has been re-created in the likeness of the Roman Pantheon. Pisa, Italy, may have its leaning tower, but Niles, Illinois, has a similar one. And America has its own Stonehenge in Maryhill, Washington, a concrete version of England's.

Although many of the examples of famous structures and treasures shown in this book are not exact copies of their foreign counterparts, they all bear resemblance to them or were inspired by them. In most cases, there is a photograph of the American version and one of the original. A general history of the American look-alike is given with information about days and hours that it may be visited by the public.

**Italian Architecture up to 1750.** F. M. Godfrey. New York: Taplinger, 1971. 340 pp. \$8.50.

This is an examination of the characteristics of Italian architecture from the early Christian and Byzantine period through the baroque era. Too much is encompassed for the book to have any depth. It is a companion to the author's *History of Italian Painting 1250-1800* and *Italian Sculpture 1250-1700*.

**Land Subdivision Regulation: Policy and Legal Considerations for Urban Planning.** Richard M. Yearwood. New York: Praeger, 1971. 332 pp. \$16.50.

Can cities and counties enact and enforce subdivision regulations as a tool in urban and regional planning? Here the associate professor of Urban Planning at Virginia Polytechnic Institute addresses himself to this question. He reviews the history of subdivision control and suggests ways in which more effective means can be established to achieve it. On the basis of case law, he recommends procedures whereby subdivision control may be more acceptable to the courts.

**Wood Technology in the Design of Structures.** Robert J. Hoyle Jr. Missoula, Mont.: Mountain Press Publishing Co., 1972. 370 pp. \$10.

In 1970 new lumber size and quality standards were adopted. This book contains much information about the choice of wood structural materials to meet the prevailing code regulations. It is intended primarily for students, but it offers the practitioner as well a comprehensive design manual.

Much of the material assembled by the author draws upon pertinent publications by the industry, associations, research

laboratories and university and government divisions. Among the topics discussed are the physical character of wood and its properties, the grades and sizes of soft plywood, plywood for sheathing, wood trusses, pole building design, etc.

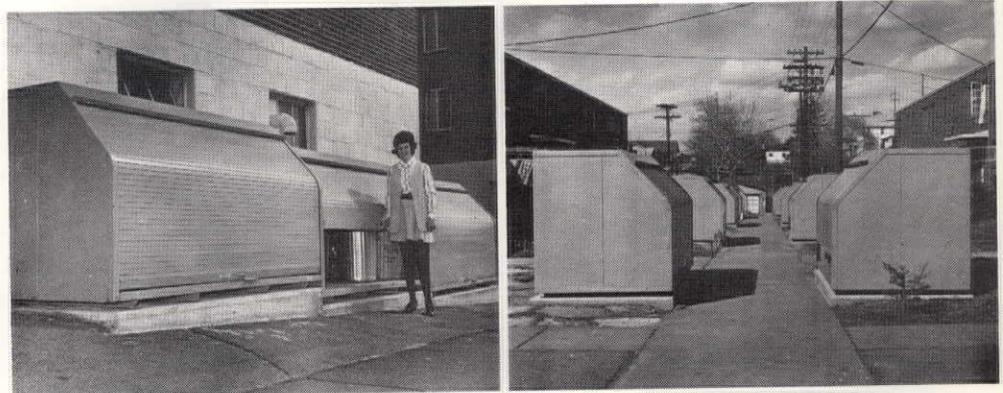
**Perspective Sketches.** Compiled by Theodore D. Walker. West Lafayette, Ind.: PDA Publishers, 1972. Unpaged. \$8.95.

The 130 sketches in this compilation illustrate the work of 36 professionals and/or firms. Many of the sketches are preceded by a description of the media used, type of paper and original size. □

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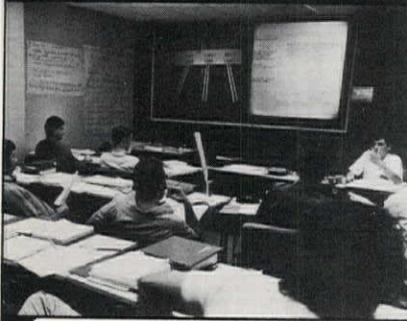
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**LETTERS**

**Convention Afterthoughts:** The AIA convention was a succession of contradictions and outright phenomena from the start. First of all, it was completely overshadowed by the host city. No gathering of human beings, however dedicated, no program, however imaginative, could pretend to compete with a setting of such incomparable dimensions.

San Francisco distorts all logic and reason. It is the apotheosis of the vulgar grid plan which, in contrast to Burnham's lofty contoured proposal, results in a breathtaking vista at every street corner. To the pedestrian, it contradicts the very laws of physics. The angle of the streets changes abruptly between descent and ascent, thus providing history with its first national monument on wheels, complete with sound effects.

Compared to previous convention sites, San Francisco has none of the prim charm of Boston, the brash pretensions of Houston, the relentless dynamism of Detroit and Chicago and the overpowering magnitude (and resulting anonymity) of New York City. But if one may use a somewhat shopworn metaphor, San Francisco indisputably has charisma. It is no wonder that the visiting architectoids, armed with the usual complexity of photographic paraphernalia, spent most of their waking hours in the unbelievable outdoors.

This paved the way for a phenomenon. A quadrumvirate of speakers in sociology, demography and science were able, through the power of their intellect, the depth of their passion and the incisiveness of their wit, to rescue some 3,000 of these transient souls from the seductive wiles of this siren city and remind them forcefully that their *raison d'être* lay somewhere beyond the glazed eye of the camera.

We were informed that despite our annual reassortment of brave new words, we still represent a major obstacle in the path of the very progress that we profess to espouse. We were introduced to that newly discovered and age-old environmental element, energy, an element which we architects have been abusing in consummate style in a continuous performance of which this fabulous city, seen from a plane at night, offers a gleaming, unforgettable, yet horrible example.

The response to the national housing crisis was dramatically illustrated by a 600-unit highrise project for migrant workers whose staggering proportions are affectionately referred to as "the Hyatt Regency." This stupendous contribution to one of the nation's major needs is certain to inspire editorial repercussions well beyond the weekly HUD newsletter.

For psychological impact in an ambience already graced with several magnifi-

cent suspension bridges, the assemblage was treated to the element of suspense in another form by the well-staged announcement that The Architects Collaborative had won the competition for the Johns-Manville world headquarters. So far as our own annual honors were concerned, it was learned from informed sources that the absence of a Gold Medalist was by no means due to lack of merit but to the abnormally high price of gold.

To record all of one's impressions of SF '73 is like trying to force Niagara into a thimble, and we can conserve that much energy at least. President-elect Archibald C. Rogers, FAIA, and the national growth policy are going to need all the help that they can get, even if they're only competing with city hall, and not the city itself.

One remaining thought. On the morning after, in the midst of an unprecedented accumulation of items to be recycled, there was found a full bushel of return-trip tickets to all parts of the country, all unused. That settles it. If the theme of the 1973 convention was a challenge to "growth" and "change," my earnest plea to San Francisco is, "Please don't!"

*Robert H. Mutrux, AIA  
Bridgeport, Conn.*

**Music to the Ear:** Congratulations on the cover of the April issue. Fantastic! Since you represent a profession intensely involved with design, I am sure that the issue, which is graphically superb not only on the cover but on almost every page, is appreciated by all your subscribers.

The quality of the black and white photographs is super. They are works of art.

I hope that you will continue this trend in the future.  
*John J. Hoffmann  
New Haven*

Thanks to Robert B. Marquis' "Entrée to an Epicure's Feasting Spots" and to Peter Bradford's new format, the April issue is the most delightful and civilized magazine that I have seen.

*John Robert Henderson, AIA  
Santa Barbara, Calif.*

The improved format is really great, as well as the subject matter. I liked the cover and the handling of the book reviews.  
*John Desmond, FAIA  
Baton Rouge, La.*

Congratulations on the new design format. The April issue was an excellent one to prepare members for the convention in San Francisco. Our congratulations to the staff.  
*Harry A. Golemon, AIA  
Houston*

**Disaster Mitigation:** The devastation and destruction of residential buildings and commercial structures caused by tornadoes and hurricanes is a yearly occurrence.

In this country, the average yearly estimate of wind damage to structures caused by large-scale storms and thunderstorms is \$550 million; it has run as high as \$1.5 billion per year. The damage due to tornadoes has averaged about \$150 million per year. Much of this damage is to small structures.

In the aftermath of such storms, the US government, upon declaring a region a disaster area, normally provides millions of dollars in interest-free loans and outright grants to owners suffering damaged or destroyed property. A portion of such funds could well be used as an incentive to incorporate those engineer-designed details which can make a home tornado and hurricane resistant. Little research has been directed toward understanding the formation and destructive characteristics of such storms or toward the possibility of designing structures to resist damage, thereby reducing the number of deaths.

Architects, builders, owners, banks and insurance companies are all becoming increasingly interested in the need for strengthening buildings against high winds. There is an urgent need right now for a clearcut engineering approach, including design data and details, to the ever-present problems of damage and destruction to structures caused by tornadoes and hurricanes.

A recently published paper by the undersigned entitled "Residential Buildings Engineered to Resist Tornadoes" and published in the April 1973 *ASCE Journal of the Structural Division* deals with this problem in detail. Architects may obtain a copy by requesting it from the author.

Zachary Sherman  
299 Douglas Drive  
State College, Pa. 16801

**Transatlantic Communication:** Published in France, the magazine *CREE* is a leading design and architectural journal. Its staff is aware of the good quality of American architectural design, and we'd like to tell our readers more about it.

We are interested in telling the European public about the work and the capabilities of today's American architects and architectural students. The major emphasis of the magazine is on design, but the scope is broad and involves such matters as urban planning, structural design and details, interiors, the landscape, graphics and symbols. We give consideration to every project type where research or construction is underway or accomplished.

We invite American architects to send us descriptions of projects and illustrative materials such as black and white photographs, color transparencies or slides.

Mokless Al Hariri Rifai  
Foreign Correspondent  
*CREE*  
1921 24th St. N.W.  
Washington, D.C. 20008

## EVENTS

**July 26-28:** North Carolina Chapter AIA Summer Convention, The Blockade Runner Hotel, Wrightsville Beach, N.C.

**July 31:** Entries due, White Cement Award Competition. Contact: James A. Frohlich, Portland Cement Association, Old Orchard Road, Skokie, Ill. 60076.

**Aug. 1:** Entries due, Design of Mobile Home Exteriors. Contact: Mobile Home Design Competition, Reynolds Metals Co., P.O. Box 27003, Richmond, Va. 23261.

**Aug. 1:** Entries due, Lowrise Building Projects Using Architectural Aluminum Products Awards Program. Contact: Architectural Aluminum Manufacturers Association, 410 N. Michigan Ave., Chicago, Ill. 60611.

**Aug. 9-11:** Michigan Society of Architects Mid-Summer Conference, Mackinac Island, Mich.

**Aug. 25:** Submissions postmarked, Architectural Awards for Excellence to encourage the creative use of structural steel. Contact: American Institute of Steel Construction, 101 Park Ave., New York, N.Y. 10017.

**Aug. 31:** Entries due, Energy Conservation Awards Program. Contact: Architectural Products Division, Owens-Corning Fiberglas Corp., Fiberglas Tower, Toledo, Ohio 43659.

**Sept. 1:** Call for papers, third International Symposium on Housing Problems to be held in Montreal, May 27-30, 1974. Contact: Dr. Paul Fazio, Systems Building Center, Sir George Williams University, Montreal 107, Quebec, Canada.

**Sept. 6-8:** Indiana Society/Kentucky Society of Architects Regional Convention, French Lick Sheraton Hotel, French Lick, Ind.

**Sept. 9-13:** National Association of Home Builders Apartment Conference, Regency Hyatt House, Atlanta.

**Sept. 13-15:** New Jersey Society of Architects Convention, Playboy Club, Great Gorge, N.J.

**Sept. 20-21:** Institute on Designing Working and Living Environments for the Physically Handicapped, University of Wisconsin, Madison, Wis.

**Sept. 23-25:** Northwest Regional AIA Conference, Victoria, B.C., Canada.

**Sept. 27-28:** Virginia Chapter AIA Fall Meeting, The Homestead, Hot Springs, Va.

**Oct. 5:** Entries due, Swimming Pool Design Awards Program. Contact: National Swimming Pool Institute, 2000 K St. N.W., Washington, D.C. 20006.

**Oct. 10-12:** Central States Regional AIA Conference, Wichita, Kan.

**Oct. 10-13:** Pennsylvania Society of Architects Annual Forum, Pittsburgh Hilton Hotel, Pittsburgh, Pa. □



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## GOING ON

going on from page 5

Committee and also a member of past new headquarters committees.

A symbolic key to the building was presented by S. Peter Volpe of the Volpe Construction Company, general contractors for the project, to Norman C. Fletcher, FAIA, principal in charge for TAC. In turn, Fletcher presented the key to Ferebee. Thus the Octagon Building is now officially open and ready to receive AIA members from everywhere.

### Joint Publication by the AIA and RIBA To Disseminate Research to Architects

The AIA Board of Directors has taken a number of steps since 1970 to strengthen architectural research efforts and to encourage the infusion of research knowledge into the intuitive design process. It recently approved a joint venture arrangement with the Royal Institute of British Architects for the publication of the journal *Architectural Research and Teaching*.

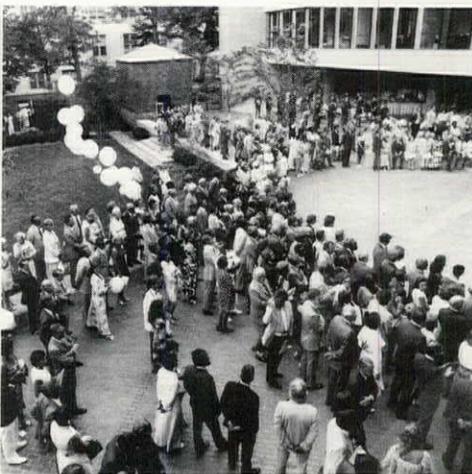
The subsidiary organizations — RIBA Publications Ltd. and the AIA Research Corporation — through the magazine will attempt to increase the dissemination of research findings to practicing architects. The two editorial boards, one in Great Britain and the other in this country, will solicit and screen research papers for publication in the journal. Initially, it will be published three times yearly. Heretofore, it has been published by RIBA alone.

For information concerning subscriptions and manuscripts, write to Don Conway, AIA, Director of Research Programs, AIA Headquarters, 1735 New York Ave. N.W., Washington, D.C. 20006.

### Land Use Reforms Key to Growth Issue, Says Citizens' Environmental Group

The urban region is a fact of life, states a report of the Citizens' Advisory Committee on Environmental Quality which was set up last September by a White House mandate. Tendencies of uncontrolled growth could be altered, continues the report, "without denying valid development needs or asking Americans to change preferred lifestyles." Land use decisions are the most important determinant of urbanization patterns, contends the task force, but land has been neglected as an issue in the country's efforts to improve environmental quality. "No growth" is simply not a viable option.

The 12-member group held a conference in Washington, D.C., recently to present its findings to about 250 conferees. Under the sponsorship of the Rockefeller Brothers Fund, the report has been published in book form under the title *The Use of Land: A Citizens' Policy Guide to*



Greeting guests at the dedication of the AIA's new headquarters is President S. Scott Ferebee Jr., FAIA (top).

*Urban Growth* (New York: Thomas Y. Crowell Co., 1973, \$3.95).

The task force argues for an end to the landowner's "traditionally presumed right to develop his property regardless of the cost in scenic, ecological and cultural assets." It continues, "When the protection of natural, cultural or esthetic resources or the assurance of orderly development are involved, a mere loss in land value should never be justification for invalidating the regulation of land use."

The task force states that specific decisions about the use of land should be left to the states and local communities, but it envisions an increasing role of the federal government by awarding grants to states which initiate programs of help in land use planning and regulation and by sanctions against noncomplying states in the form of cuts in airport, highway and land and water conservation funds.

Among the major recommendations is that governments should encourage large-scale developments and channel as much as possible into new communities or, where this is not feasible, into the growth units (500 to 3,000 dwelling units) recommended by the AIA National Policy Task Force.

First chairman of the task force was Laurance S. Rockefeller who was succeeded by Henry L. Diamond, commissioner of the New York State Department of Environmental Conservation. Deputy chairman is Paul N. Ylvisaker, dean of the Graduate School of Education at Harvard University and a member of the AIA National Policy Task Force.

### Eating Well Can Help a Needy Student

A cookbook called *Designs from the Cookhouse* has been compiled by the wives of AIA Board members. It contains recipes guaranteed to please an architect's taste buds.

More than a thousand copies of the cookbook have already been sold. The proceeds are going to the AIA Minority Disadvantaged Scholarship Fund.

Copies are available for \$5 plus 50 cents for mailing and handling charges for up to two copies or \$1 for four to six copies. Checks should accompany orders, made payable to AIA Cookbook. Write for a copy today from Ellen Myer, AIA Headquarters, 1735 New York Ave. N.W., Washington, D.C. 20006.

### Deaths

F. E. BERGER, Champaign, Ill.  
 PAUL DAMBERG, Eveleth, Minn.  
 N. DAVID DAUMIT, Silver Spring, Md.  
 UPTON C. EWING, Coral Gables, Fla.  
 MORTIMER J. MURPHY SR., Buffalo  
 ARTHUR N. SHELDON, Cranston, R.I.  
 GARRETT VAN PELT, FAIA, Montecito, Calif.  
 KENNETH C. WELCH, FAIA, Grand Rapids, Mich.  
 MAXWELL H. WHITE, Cleveland

## Newslines

**Hunter A. Hogan Jr.**, of Norfolk, Va., has been elected president of the Urban Land Institute, headquartered in Washington, D.C. Hogan is vice president of Goodman-Segar-Hogan, Inc., which, with its subsidiaries, specializes in property management, chain store leasing and shopping center development.

**The Women's Auxiliary** of the New York Chapter AIA recently conducted a tour of the United Nations International School to raise money for its scholarship fund. A special tribute was paid to the just completed building's architects: Wallace K. Harrison, FAIA; Max Abramovitz, FAIA; and Michael M. Harris, FAIA. In their honor, a special scholarship was presented to the school. Honorary chairmen for the event, the public's first and only opportunity to tour the building, were Mayor and Mrs. John V. Lindsay of New York City and Mr. and Mrs. Thomas F. Galvin. Galvin is president of the New York Chapter AIA. Since its founding in 1958, the auxiliary has raised in excess of \$140,000 for scholarship funds.

**The New York Society of Architects** has just issued its 60th annual *Manual of New York City Building Codes and Laws*. The 1973-74 edition contains additions and revisions of over 100 pages. It is the only

complete up-to-date code book (now in two volumes) that contains nearly all of the other important city construction codes and ordinances in addition to the new building code amended to March 3, 1973. The cost of the manual is \$20 (tax \$1.40). It may be requested by mail, for an additional cost of \$1.75 for handling, from the society, 101 Park Ave., New York, N.Y. 10017.

**Betty Silver, Hon. AIA**, who is executive director of the North Carolina Chapter AIA, was selected recently as "Tar Heel of the Week." A chapter member reports that "very few women" are selected for this honor. Mrs. Silver, who received a citation at the AIA convention in San Francisco, was the subject of a news feature in the Raleigh, N.C., *News and Observer*. Reporter Ernie Wood, in writing of her many activities, achievements and talents, summarized: "Some people just couldn't bring it all together in a meaningful way at all. With her, it's only natural."

**Use of the metric system** of measurement is increasing in the US. The National Bureau of Standards has issued a plastic pocket card that slips easily into a wallet and contains the minimal data for metric conversion. One side gives the factors for converting from customary to metric units of length, area, volume, mass (weight)

and temperature. The other side gives the corresponding conversion factors for going from metric to customary. The cost is 10 cents each with a 25 percent discount on orders of 100 or more. Order prepaid from the US Printing Office, Washington, D.C. 20402 as SD Catalog No. C13.10:365.

**John S. Bolles, FAIA**, of San Francisco represented the US at the Industrial Planning Institute's seminar in Vienna on the factory of the future and industry's role in society. He has served on the IPI advisory committee since its inception.

**The highest award** that the Construction Specifications Institute can bestow on a firm or organization was presented to an AIA-related organization, Production Systems for Architects and Engineers, Inc., at its convention in June. The award is given for "distinguished achievement for construction standards."

**Safety glazing** is the topic considered in the April/May/June issue of *Architectural Aluminum Certification Quarterly*. It contains an AAMA certified products directory as well as an alphabetical list of manufacturers having AAMA certified products listed in the issue. Write to AAMA, 410 N. Michigan Ave., Chicago, Ill. 60611 for a free copy. □



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(B) Applications are invited for the Senior Lectureship from graduates in Architecture who have a particular interest in the History of Architecture, Architectural Design and associated project work, or Architectural Technology (including Building Construction). Applicants should state their particular interests in these fields. Eligibility for registration with the S.A. Council of Architects will be an advantage.

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