AIA JOURNAL

FEBRUARY 1973

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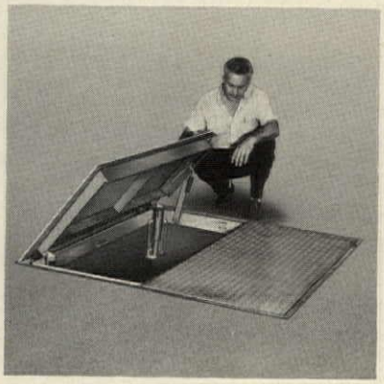

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"He loves to spend your money because his fee is a percentage."

The truth is that architects today will often negotiate a *fixed fee* before they begin work. But the architect who did Cities Service Oil's headquarters in Tulsa was working for the traditional percentage. He found a way to use the outer walls as a truss, thus reducing the cost of the building by $1,000,000 and–incidentally–clipping a sizable sum off his own fee!

"His estimate is an under-estimate."

The truth is that despite the dizzying impact of inflation, architects' estimates have proved to be surprisingly realistic. A random sampling of 25 architectural projects in North Carolina last year showed that final construction costs were $3,195,843 *under* the architects' original estimates. And there's no reason to believe that North Carolina's architects are any shrewder than the rest.

"He cares more about the way it looks than the way it works."

Ten businessmen who've dealt with architects recently have taken the trouble to demolish *this* myth. They describe how their architects gave them buildings that work in ways they would never have thought of themselves, and we've put their stories into a booklet. We'll send you a copy, free: Just drop a card to American Institute of Architects, 1785 Massachusetts Avenue, N.W., Washington, D.C. 20036. (It happens to be a good-looking booklet, as well.)

AIA JOURNAL

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DEPARTMENTS

COVER: San Diego Stadium by Frank L. Hope & Associates. Photograph by Julius Shulman (*see* p. 26).

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VOL. 59, NO. 2

Weathering Steel blends corporate headquarters into harmonious wooded setting

A wooded valley with a meandering stream is the setting for National Liberty Corporation's new headquarters building on a 92-acre tract near historic Valley Forge, Pennsylvania.

A prime consideration was to maintain and enhance the esthetic values of the site to present an attractive corporate image while creating an optimum working environment.

The architectural firm of Vincent G. Kling & Partners recommended a structural steel framing system, with exterior columns and spandrels fabricated from Bethlehem Mayari R Weathering Steel (ASTM 242, Type 1). Their choice blends the structure with its wooded setting as the bare steel weathers to a rich dark brown and develops a self-protecting, natural oxide coating.

Location and design of the structure fitted into a master plan for further development of the site. The initial construction phase provided a 4-story building encompassing 135,000 gross sq ft of office space to accommodate some 750 employees of the insurance firm. Executive, marketing, operations, and computer functions share the structure.

The result is a unified, functionally efficient building, strikingly adapted to its environment. Maximum growth flexibility is provided for without weakening the unity of the initial structure.

The building measures 360 by 92 ft. Its central bay is 52-ft wide, framed on either side by two 20-ft bays. The structure spans a small stream crossing the site, and connects the two major building segments with an area which may be used for either circulation corridors or office space.

Bethlehem provided approximately 700 tons of A36 grade structural steel for the building framework, as well as 400 tons of Weathering Steel for the exterior columns, spandrels, grating, and window frames. Steel framing is versatile, economical, and adaptable. It provides large column-free office areas so highly prized by building tenants. Want more information on steel-framing? Put in a call to our sales engineer at the Bethlehem sales office nearest you. Bethlehem Steel Corporation, Bethlehem, PA 18016.

BETHLEHEM STEEL

Weathering Steel gratings at each floor level, between the exterior walls and the sun screen, facilitate washing the bronze-tinted insulating glass.

The lobby is located at ground level in the central bay of the headquarters building, midway between the first and second floors, providing easy access to front offices.

Owner: National Liberty Corporation; architect: Vincent G. Kling & Partners, partner-in-charge, Jonathan Naylor, AIA; project architect: Helmut Krohnemann; structural engineer: Allabach & Rennis, Inc.; fabricator/erector: Belmont Industries, Inc., and Keystone Wire and Iron Company; general contractor: L. F. Driscoll Company. Exterior columns, spandrels, and window frames are Bethlehem Mayari R Weathering Steel (ASTM A242, Type 1) which will weather to a rich dark brown, further blending the structure with its wooded surroundings.

The central section of National Liberty Corporation's new headquarters bridges a valley and a small stream crossing the site. An artificial lake further enhances the landscaping while an existing adjacent wooded area is maintained intact.

Comment and Opinion

To the White House from the AIA: Because of the significance of the President's moratorium on housing (*see* Outlook), this column is devoted to the letter written by Institute President S. Scott Ferebee Jr., FAIA, to Mr. Nixon on January 12:

"The American Institute of Architects wishes to express its grave concern over the recently announced decision of the Administration to place a temporary hold on new commitments for the production of housing for low and moderate income families. We urge your reconsideration of this decision.

"We believe this action, along with related ones stopping new commitments for water, sewer and open space projects, can prove to be catastrophic in terms of both human need and economic stability. Just when the pledge of your Administration, and that of the Congress, to provide a decent house in a suitable living environment for all Americans seemed closest to realization, thousands of low and moderate income families will be denied this opportunity. Although we fully recognize the need for holding federal expenditures to reasonable limits, we do not feel that the burden of budget reduction should fall on that segment of society most in need of assistance and hope.

"We are also convinced that this action can undermine the very solid foundation your Administration has placed under the economy in the past few months. A sudden cutoff of assisted housing production will undoubtedly produce grave consequences in terms of jobs and the prosperity of an important segment of the economy.

"We are aware that the present system of assistance to the production of low and moderate income housing has come under serious criticism and that abuses have occurred. We believe, however, that these criticisms have been exaggerated and tend to obscure the very positive contributions these programs have made to a better housed America.

"Undoubtedly, some rethinking and redirection of these programs is in order. In fact, the AIA is now undertaking a major study of the nation's housing picture. From this study, we plan to recommend a National Housing Policy as an adjunct to our recently completed National Policy on Urban Growth, which has received favorable reaction from the press and from a number of government officials at state and metropolitan levels. In this connection, we are most willing to share the results of our studies with the government and, further, would like to offer our assistance to the Administration in any reevaluation that it might undertake.

"But we wish to reemphasize that the need for reevaluation does not justify stopping existing programs dead in their tracks, particularly since no clear alternative has been identified by either the Administration or the Congress.

"Secretary Romney has said that there are enough obligated funds in the pipeline to maintain assisted housing production at a reasonable level for up to 18 months, while alternative solutions are being sought. The fallacy of this argument is that, due to the lengthy lead time required in most government subsidized housing programs, when the present pipeline is exhausted, it will take another 18 months to restore needed levels of housing production. The nation and those in need of housing can ill afford the resulting production lag.

"In 1968 the Congress solemnly pledged the country to the elimination of substandard housing in the current decade through the production of 26 million new or rehabilitated housing units including 6 million subsidized units. We feel that this housing goal is as valid and important today as when it was enunciated.

"Mr. President, we are confident that you and your Administration will take bold and imaginative action to deal with the housing needs that led to this commitment. In the meantime, we respectfully request and urge reconsideration of the present moratorium. If budget reductions are needed, let's accomplish them in ways that will not injure those Americans least able to bear the brunt of their effects.

"Again, may I offer the assistance of The American Institute of Architects in the development of a meaningful and innovative National Housing Policy."

To which all anyone can add is amen! ROBERT E. KOEHLER

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Outlook

Architects Join Homebuilders in Protesting Administration Housing Moratorium

A definite chill that was caused by far more than Houston's unseasonal weather permeated the 29th annual convention/exposition of the National Association of Home Builders despite a record-breaking attendance of about 57,000 persons and the presence of nearly 500 exhibitors, again making it the largest show in its history.

For rumors which had run rampant prior to the January 7 opening were confirmed by Secretary George Romney of the Department of Housing and Urban Development in the Astrohall itself when he told the homebuilders that the Administration was declaring an 18-month moratorium on federally assisted housing programs.

Even before Romney spoke in Houston, NAHB President Stanley Waranch said that if the programs were cut back, results would be "disastrous" for lower income families who need new homes and apartments.

Waranch also argued that, if the cutbacks were carried out, then the homebuilding industry would be back in a "cyclical situation," and its long-term ability to meet the nation's goal of building 26 million homes and apartments during the 1970s would be seriously weakened.

And, also before the Houston sessions, Waranch, who operates in the Norfolk/Virginia Beach area, had requested a meeting with President Nixon "at the earliest possible time" to discuss the reported impending stoppage of major federal housing programs.

Following the conclusion of the NAHB convention, the AIA expressed "grave concern" over the decision of the Administration to put a temporary hold on subsidies for new housing construction and development.

"We believe this action . . . can prove catastrophic in terms of both human need and economic stability," Institute President S. Scott Ferebee Jr., FAIA, said in a letter to Mr. Nixon (*see* Comment and Opinion for the full contents).

Ferebee offered the assistance of the AIA in developing a "meaningful and innovative national housing policy," urging the President to reconsider the decision on the moratorium.

Romney, on the other hand, speaking for the Administration, told the homebuilders that subsidized housing starts would continue at an annual rate of 250,000 for the next 18 months, despite a temporary halt in approving new commitments. He said that starts in 1973 "will exceed 2 million units for the third year in a row."

The Secretary declared that in the decisions on the housing problems "the time has come to pause, to reevaluate and to seek out better ways. But you can count on this: Where HUD has made commitments to builders, sponsors and local governments, we're going to keep those commitments. We, of course, will honor recent public housing operating subsidy commitments as well."

Appearing on the same program, Senator John Sparkman (D-Ala.), however, took strong exception to Romney's remarks. The chairman of the Senate Committee on Banking, Housing and Urban Affairs declared that the Office of Management and Budget's "meat-axe proposal" to cut back on federal housing programs was only the latest example in a series of disputes over spending power between the executive and legislative branches going back many years.

Senator Sparkman said that if the Administration persisted in cutting back housing programs "we will have hearings and will request that they come forward with a justification of their position and an answer on the alternative plan they expect to institute to meet the statutory requirements under the national housing goals law. Perhaps the new theorists in the White House have some yet undisclosed new system for housing the lower income people. If so, we look forward to hearing about it," he added.

While the moratorium and speeches by a number of other leaders from both houses of Congress and the Administration, including John B. Connally, former Secretary of the Treasury and former governor of Texas, held much of the limelight, the five-day convention provided more than 80 seminars, workshops and demonstrations. Among them was a program presented by the AIA Housing Committee on two successive afternoons. A summary of the remarks of the three architects on the panel, moderated by Robert E. Elkington, FAIA, of St. Louis, appears in this issue on page 41.

George C. Martin, whose business is based in Louisville, was elected president of the 67,800-member organization.

The AIA Is on the Move!

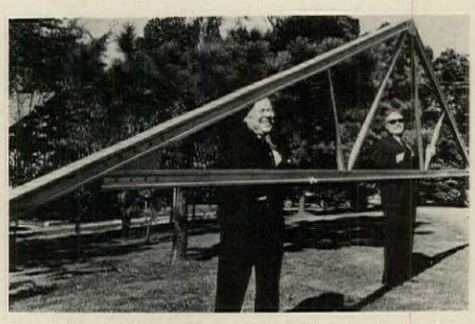
After March 12, the Institute will occupy its new headquarters building just back of the Octagon House on New York Avenue here in the nation's capital. The weekend before that date, we'll be in the process of moving and unpacking. But any time thereafter, we hope that many members of the Institute from all parts of the nation will drop in to see us and to look over our new quarters. The mailing address will again be 1735 New York Ave. N.W., Washington, D.C. 20006. The new telephone number will be (202) 785-7300.

As Much Recycled Materials as Possible Will Be Used in Reynolds Metals House

Reynolds Metals Company is in the process of building the first home ever to be constructed from recycled materials. The aim is to demonstrate the feasibility of using recycled materials in residential construction. The house is the design of Robert H. Clark, AIA, of the Richmond, Va., firm of Carlton, Taylor & Clark. It will be constructed in Ednam Forest, Western Henrico County, near Richmond.

The trilevel, four-bedroom house will use recycled aluminum for its siding, rain-carrying equipment, soffit and fascia, windows and ductwork. Reynolds will introduce also a new structural system called "Reynoframe," in which all structural members in the house, including floor joists and trusses, will be made of recycled aluminum.

The home will also have its subflooring and sheathing materials made of recycled newspapers. Finely ground glass from bottle fragments will be a part of the exterior brick and spun glass insulation. Even the foundation will contain reclaimed products.



Reynolds (left) and Sam Kornblau, whose firm will build the recycled house, lift an aluminum roof truss, part of the framing system.

"The emphasis in solid waste has shifted from disposal to resource recovery," says David P. Reynolds, executive vice president and general manager of the corporation, "and this latest concept in the recycling of valuable natural resources is but a further step toward a total solution to the solid waste problem." His firm pioneered the concept of recycling on a massive scale in 1967 when it introduced an aluminum can recycling program now used in 39 states.

Federal Legislation of Concern to A/Es Will Be Discussed at March Conference

The sixth annual AIA/Consulting Engineers Council Public Affairs Conference will be held in Washington, D.C., at the Mayflower Hotel on March 19-20. Convening in the first weeks of the 93rd Congress, participants will have an opportunity to consider the two organizations' legislative objectives and programs as they affect architects and engineers.

The 1973 AIA/CEC conference will feature again a full day of briefings on legislative matters by Congressional leaders which will be followed by a government officials' reception at the Smithsonian Institution and a day of personal visits by architects and

engineers with their own senators and representatives.

For a look at the way the conference went in 1972, turn to page 32, which will let readers know why Earl W. Henderson Jr., AIA, of Springfield, Ill., will be a participant again this year. More information about the 1973 conference may be obtained from Thomas Bennett, director of Congressional Relations, at AIA Headquarters.

Electric Utility Design Achievement Will Be Honored in Awards Program

The American Public Power Association will recognize the best in design of electric power facilities of local public power systems in its third biennial Awards Program for Utility Design. Entries will be accepted through March 1.

Participants in the awards program with the APPA are the AIA, the American Institute of Planners, the American Society of Civil Engineers and the American Society of Landscape Architects. Each of the participating organizations designates one juror for the panel which determines the award winners.

The awards will be given to members of the APPA and to their consultants in planning, design and construction in five categories: electric generating stations, transmission lines and structures, distribution lines and structures, substations and electric utility buildings. Entries may be submitted only by members of the APPA. Further information may be obtained from James C. Webster, APPA, 2600 Virginia Ave. N.W., Washington, D.C. 20037.

AR-9 Holds Unstructured Conference, Attendees Discuss Mutual Problems

AR-9, the AIA Architects/Researchers Conference held in Chicago in November, was not a usual conference: No agenda existed beforehand; no one lectured. Instead, about 75 participants, with researchers much in the majority, sat around in small groups and talked. Some people hated it, but most of them, as the evaluation sheets showed afterward, thought it was pretty good.

The conference objectives were to get architects and researchers together, to give them a chance to explain their projects and points of view and to match up people whose needs and interests coincided. Beyond this, Don Conway, AIA, who is the Institute's research director and the conference organizer, hoped to find out two things: if the much discussed communications gap really exists between researchers and practitioners and if the unstructured conference format would be an effective way to transfer information from one group to another.

The conference staff was assembled by Professor John H. Suehr of Michigan State University, a psychologist trained in group dynamics. Participants, with the help of the staff, made up the conference as they went along.

The first day was spent mainly on various activities designed to help participants to understand one another. On the second day, small discussion groups were formed on

such topics as postconstruction evaluation, design of buildings for special groups like the elderly and use of the imagination in a working situation. The last was called a "fantasy workshop" and was popular.

As a way of transferring information, the conference was only partially successful. Most participants expressed the opinion that it had been hard to get down to brass tacks. They wanted more structured means of finding out what others are doing and how they are doing it.

Believing that no communications problem exists, many participants thought that too much time was spent on the first day's activities. Conway qualifies this judgment somewhat. He says: "At least on this face-to-face level there's no trouble communicating. But the fact that so few practitioners showed up and that their concerns were so different from those of researchers shows that there is a gap. Architects just don't seem to know what's going on in research, or that research can help them."

In terms of personal satisfaction, however, the participants were enthusiastic about the conference. "Made you think," said one person. And, an often repeated phrase was that "the interaction was great." Mentioned as plusses were the people present, their ideas, their enthusiasm, the fact that participants set their own directions and that no formal papers were read.

Federal Architectural Designs Honored, GSA Commends Winners for Excellence

The General Services Administration has established an awards program whose purpose is to foster public recognition of distinguished architectural accomplishments in federal construction. The first biennial design awards program of the GSA recently honored those architects responsible for designing 15 federal construction projects around the nation. "The new structures," comments Arthur F. Sampson, head of GSA, "clearly respond to President Nixon's directive for excellence in federal design."

The four honor award winners are:

- Federal Correctional Center and parking facility, Chicago (architects: Harry Weese & Associates)
- National Air and Space Museum of the Smithsonian Institution, Washington, D.C. (architects: Hellmuth, Obata & Kassabaum)
- South Portal Site Building, Washington, D.C. (architects: Marcel Breuer & Associates and Nolan, Swinburne & Associates)
- US Tax Court, Washington, D.C. (architects: Victor A. Lundy and Lyles, Bissett, Carlisle & Wolfe)

Winners of awards of merit are:

- Bioscience Laboratory, Department of Agriculture, Beltsville, Md. (architects: RTKL, Inc.)
- Social Security Administration District Office, Pontiac, Mich. (architects: Tarapata/MacMahon/Paulsen Corp.)
- Bird Banding Recorder Center, Department of the Interior, Laurel, Md. (architects: Meyer, Ayers & Saint Stewart Inc.)
- Border Inspection Station, Calexico, Calif. (architects: Bryant, Jehle & Associates)

continued on page 52

Architectural Continuity

by NICHOLAS H. HOLMES JR., AIA
Chairman
AIA Committee on Historic Resources

Old homes restored to new life in Savannah, Georgia, give the city a continuity with the past.

It would seem natural that the architect should be interested in the preservation of examples of the medium in which he works. Indeed, during the early years of the AIA this was very true. Just a decade after its formation, the Institute had papers on preservation presented at its national convention. The first action was taken in 1890 with the formation of the Committee on Conservation of Public Architecture, the ancestor of today's Committee on Historic Resources.

This affection between the architect of the present and the buildings of the past continued on through the first third of the 20th century. Then came the '40s and '50s and the big boom in building, accompanied by an even bigger slump in the preservation movement.

Many practicing architects were trained after the demise of the Beaux Arts tradition and had received little schooling in the background of American architecture. If a building was old or eclectic, it was bad and deserved consignment into outer darkness. The ensuing massacre was appalling, and the number of fine examples of early American architecture that were defaced, denatured or destroyed are countless. By the early '50s, however, numbers of architects within the AIA realized that the unrestrained vandalism of our architectural patrimony must stop, and the Committee on Historic Buildings was reconstituted. The '60s saw a nation, shocked by its own unconcern for its past, demanding passage of the Historic Preservation Act of 1966.

This act has as its goal preservation through the expansion of the National Register of Historic Places. It utilizes the well-known and effective "carrot and stick" augmentation. If a building, site or district is on the register, it is eligible for federal assistance. Conversely, no federal funding is available to any program that endangers such a listed place. The modus operandi created by the government was a network of state commissions headed by state liaison officers.

About this same time the AIA's committee responsible for such things was rechristened the Committee on Historic Resources, the change indicating the broadening interest of the group. A state preservation coordinator was appointed in each state to work with and assist the state liaison officer. The post was charged with working with local preservation officers and with representing the Institute in both local and state matters. This is the bare bones of the AIA's involvement in preservation.

The next questions are: Is it working? What is it doing? At the national level, the committee has written a chapter, "The Architect as a Preservationist," in the *Architect's Handbook of Architectural Practice* and is now drafting a "Preservation Code Appendix." We are working toward the creation of a system within which the committee can respond rapidly to requests from local advocates of preservation. We will try to change the fact that less than 2 percent of the architectural schools require courses in the history of regional architecture. We have created and now subsidize and administer the Workshop Architectural Preservation program which consists of conferences held at various schools and involves the students, the faculty and the adjacent community.

Results are good at the state level. We have some weak spots where the state preservation coordinators are not performing at an optimum efficiency, but it is warming to read of the accomplishments of some of our fellows who are winning preservation battles. And at the local level some great things are happening. Here we have people serving doggedly on landmark commissions and review boards. They are truly in the front line and in the interest of the community are willing to go and joust in the mercantile world of the developer—and possibly lose clients thereby. Their work is done without fee and usually with a sacrifice of office time, evenings and weekends.

The big unanswered question is why: why the time sacrificed, why the forces of "progress" alienated, why the entrepreneur denied, why the developer curtailed, why the agonizing fights with city hall, why the loss of friends and colleagues, why the effort?

Well, we are trying to salvage some of the grace and beauty that once made the American city a pleasant and desirable place to live because it is our belief that the good architecture of the past is the only base upon which our cities can be rebuilt successfully. Why does Savannah still have a healthy downtown? Why is Charleston still lively? Why is the core of New Orleans still thriving? It is because people still have downtown in each of these cities. And why? Because the fabric of the city has not been destroyed but preserved; not frozen, mind you, but preserved so that there is architectural continuity present and visible.

In 1972 President Nixon signed into law the surplus property act which permits free transfer to the states or cities where they are located of surplus historic federal buildings. Now local communities will be better able to preserve historic structures, using them as active facilities that will help raise the necessary revenues to keep the buildings properly maintained. This will help the AIA Committee on Historic Resources to continue its efforts toward making architectural continuity a reality. □

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Trends in the Design Process

How does the practicing architect respond to the increasingly diverse and complex problems entailed in the design of our technologically impacted environment? To find out, an architect from a large Seattle firm traveled around the nation, visiting 15 offices* that shared with him their observations, making it possible for him to set forth the following evaluation.

by DONALD A. WINKELMANN, AIA

A theme that keeps reappearing in virtually all architectural magazines today is that the continuous flux and expansion of the state of technology is creating a changing world to which the architectural profession must respond if it is to be meaningful at all, or even survive.

Teams of industrialists and builders are relating architectural products to technology, systems analysis and management consultation, thereby reducing the architect's percentage of the volume of building. This the architect will have difficulty recapturing. And, paradoxically, although more buildings will be constructed within the next 10 years in the United States than the total number built in the whole history of the country, the new structures will be increasingly complex and will demand all the resources the profession can command if it is to build them.

Unless the architect rapidly addresses himself to this challenge, he may be in a state of shock and not able to respond at all, a phenomenon pungently described by Alvin Toffler in *Future Shock*.

A developing technology entails change. As large numbers of new tools emerge and create possibilities that never existed, additional cyclical developments take place. Thus not only are new possibilities for human action created but the mix of options available to human action is immeasurably increased. When change becomes that pervasive, it has impact on our sensibilities, values and ideas; on industry, government and education; on our social and individual patterns and identities; and finally on the character and form of our physical environment.

These forces of change require a new organization of human effort to realize and exploit them—implying reidenti-

* Building Systems Development, Inc., San Francisco; Caudill Rowlett Scott, Houston; Gruen Associates, Los Angeles; Hellmuth, Obata & Kassabaum, Inc., St. Louis; Vincent G. Kling & Partners, Philadelphia; McCue Boone Tomsick, San Francisco; C. F. Murphy Associates, Chicago; I. M. Pei & Partners, New York City; Perry, Dean & Stewart, Boston; RTKL, Inc., Baltimore; Skidmore, Owings & Merrill, Chicago; Smith, Hinchman & Grylls Associates, Inc., Detroit; The Architects Collaborative Inc., Cambridge, Mass.; Max O. Urbahn Associates, Inc., New York City; Welton Becket & Associates, Los Angeles.

fication and new priorities of human values—as well as society's responding with expectation and readiness to deal with them. Emmanuel G. Mesthene, author of *Technological Change: Impact on Man and Society,* believes this kind of response to be the mark of a truly Herculean age.

The fundamental task, then, of the architectural design profession within a society that responds to technological impact is to identify and determine the priorities of human values and, with these values in mind, adapt to the expectation of change and deal positively with it. The question is: Is the architectural profession responding?

We obtained an overview of the attitudes of a group of today's architectural design practitioners by researching and analyzing 1) design leadership; 2) design methodology; and 3) design hardware and software. Design, as defined here, is that process which scientifically and/or intuitively controls and arrives at an original and optimum physical solution to the sum of the true physical and economic needs of a particular set of circumstances at a given time, and initiates change in the total environment.

Design Leadership

The organization of architectural design leadership is essentially a process and status grouping. In the offices we observed, the status grouping in the architectural design process is autocratic or democratic; i.e., the team is structured either autocratically or democratically. Although the interpretations of these design processes are as varied as the designers themselves, these are the two basic approaches.

Traditionally, architectural design leadership has been autocratic. The concept of the prima donna designer has been reinforced by the great modern masters — Wright, Mies and Corbusier — and more recently by architects such as Paul Rudolph, Philip Johnson and Louis Kahn. Indeed, architectural journals, critics, writers and historians continue to discuss these autocratic design leaders.

In more than half of the offices studied, design leadership is essentially autocratic. The leader is usually a partner in the firm. He commands and initiates or delegates all design to others selected or trained by him; these others support him as master form-giver, philosopher, mentor and critic. He tends to attract and hire those talented individuals who support him and fire those who do not; he builds his own

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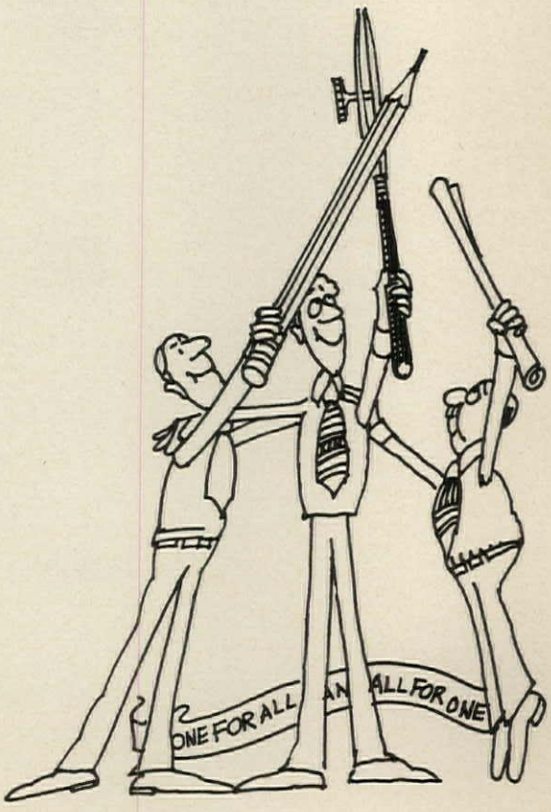
Mr. Winkelmann is a partner in the firm of Naramore Bain Brady & Johanson, Seattle, and has been principal designer for many projects. Sketches by Irwin Caplan.



hierarchical team by strength of will, talent, conviction and fortitude. All design decisions are generated by the force of his will, whether he personally makes the decision or not.

The autocratic designer operates singularly within an office or he may be one of several in a larger office, each of whom leads his own hierarchical team. In the latter case the autocratic leader is virtually independent and creates his own hierarchy within the office. Problems relative to firm management are shared with the other leaders but design is independently conceived and operated. In some cases each leader has an identifiable image and product based on a building type while meeting the others on common grounds of objectivity, understanding of technology and mutual respect. In other cases, where the autocratic design leader has singular authority, he is supported by the entire top management of the firm on the assumption that several design leaders will end to compete in a destructive manner.

Other forms of autocratic design management are observed in the "director of design," "studio head" or "division head" roles. But these concepts tend to be oriented more toward the management of design rather than the generation of architectural form. These directors or heads may select autocratic type designers who operate under their authority, but more frequently they direct democratic design team efforts and are flexible regarding the formal outcome of the design.

Some offices have both autocratic and democratic design leaders; or some designers provide autocratic leadership on some jobs and democratic leadership on others. Also, perhaps uniquely in the architectural profession, a subtle variation of the autocratic process is found in several of the firms visited. A designer may choose to allow the various subsystems (the design of which is headed by the team professionals) to actually "design" the building and let the building and all the related forces resolve into what it "wants" to become. With a firm hand he only guides these forces generally into what becomes acceptable form to him. This approach is much different from that of the autocratic designer who is able to control all these forces and bend them to the form he wills. The former approach develops a more generalized and flexible form image; the latter, one that is stronger and more personal.

In all cases the success of the design depends largely on the supportive force of the organization as well as on the individual talents.

The democratic leadership process, since the postwar years, has become increasingly prevalent in architectural practice as well as in other design fields. This is evident in the offices studied, where such leadership is often used or encouraged. Walter Gropius recognized the importance of the cooperative effort of many talents as buildings became larger and more complex and as the profession expanded to provide the additional services needed. He set the historical precedent for the democratic design approach within the profession.

In the democratic design leadership process, as found in the firms studied, all decisions are made through team discussion, encouraged and assisted by a leader. The group's goals and the alternative procedure from which choices can be made are identified. The leader is objective or fact-minded in praise or in criticism; as a regular group member he contributes more in spirit than in actual work. He usually does not individually direct or generate architectural form. Diversity of talent or architectural philosophy is regarded as a positive force in the team's efforts since no one individual can provide all the answers. The client may also frequently be a part of the democratic team process. But the goal realization and action must be common and voluntary. Achieving voluntary coordination is found to be the most important yet most difficult problem for a democratic design team leader. For example, he may find himself confronted with a team member who is a talented and autocratically oriented designer. Key people in the team are selected on the basis of their ability to serve as coordinating agents. This is effectively done by separating tasks, the conclusions of which are coordinated by the group and particularly by the leader of the group.

Communications form a major consideration in the democratic design process. Without a clear framework of communication, frustrations, lower performance, anxieties and a tense no-confidence atmosphere may develop. In general, the design proceeds best when the democratic group designs a project which has a condensed work schedule and a tight budget which limits or dictates design choice, and when the group occupies a common space and meetings occur regularly and frequently.

It is obvious that one man alone cannot design today's complex structures; but it is equally obvious that one man acting with autocratic control over a team and initiating design response can successfully direct the design of these structures, or that a democratic team can direct successful design. One method supports the individual ego and emphasizes the individual design quality and character of a firm; the other places emphasis on the collective ego and on the firm's variable expressions of design character. Both concepts exist as viable processes in the profession.

Which process is most responsive to the architectural profession's dilemma? We do know that autocratic design leadership has historical precedence and that the democratic team is a more recent response to architectural complexity. Many of the firms studied continue to develop the latter approach. Could a further question be one of survival? If the autocratic design leader should die, is his strength and phil-

osophy properly served and interpreted by his followers? Has he provided *the* final philosophic answer to architectural form? Has his philosophy been receptive to new developments?

The answer seems to lie not in the either/or but in appropriate solutions to varying circumstances. Generally, however, with the increased specialization of knowledge and the growing need for facilities and equipment, the design professional can no longer accumulate the resources necessary to perform his functions independently. He needs the resources of the entire organization to fully utilize his professional knowledge and skill. He depends on a body of complementary, linked professionals, each ultimately dependent on individual talent.

Finally, it was observed within the firms interviewed that the success of the architectural product may be independent of autocratic or democratic processes: The tenor of the firms' top managements regarding design seems to have great impact on the final success. This may be due in part to psychological factors; moreover, management scientists have demonstrated that titular or symbolic heads of firms who may not have convictions in a given area will be ineffective or inadvertently create a weakness in that area in terms of group performance. This may explain the opposite phenomenon of the strong design firm having a strong designer as the titular or symbolic head of the firm, in which case the "management" of the firm is held by another partner and architect skilled in those responsibilities.

It appears that the titular or symbolic head, or heads, of the firm must give more than lip support to the designers; he must identify with them and support them enthusiastically in all aspects of their work. He cannot provide laissez-faire leadership; his convictions must be for absolute commitment to excellence in the architectural product above all other objectives for the firm. Without this, the talented designers in the firm experience frustration and struggle unsuccessfully against forces in the organization that only much research and the help of management specialists can identify and define. Recognizing this factor in the design process may be most important in accomplishing excellence of design.

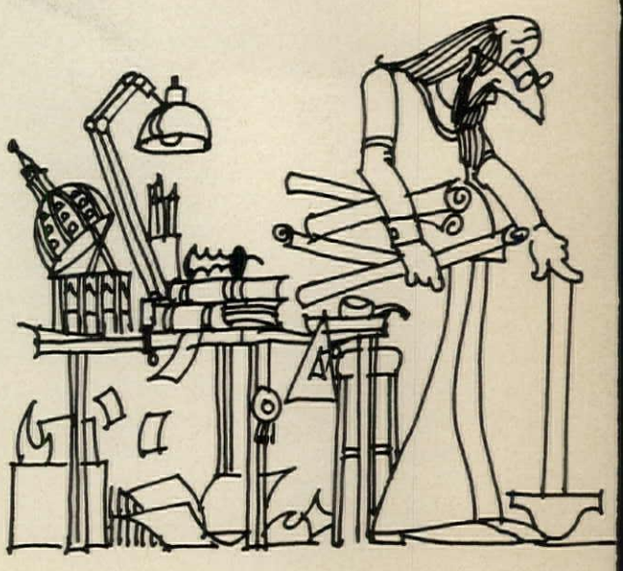
Design Methodology

Traditional procedures for designing the physical environment are becoming more and more unsatisfactory. The slowness of individual response to new problems and the high cost of trial and error are typical of the uncertainties of the traditional, intuitive approaches to design. To correct this approach and its lack of response to society's needs, increasing numbers of methodologists and educators are responding to the challenge of developing better methods. No single correct plan of design action exists; yet, all that do exist address themselves to the inadequecy of the present techniques and suggest ways that may lead to a higher level of achievement.

The problem is to devise a methodology or methodologies which will speed the designer's thought processes and make them more complete. Contrary to wide speculation, the objective of the new methodologies is not to replace human creativity, especially in the artistic sense, but to reinforce it with objectivity, scientific probing and rational explanation from data based on sound research embracing the total order of a design problem. Human creativity is still evident in the combined action of many disciplines, each concentrating on a part of the problem. Through the methodologies the team sees the isolated problems as interconnected and mutually dependent.

The movement toward new methods in architectural design is almost exclusively the work of design methodologists and educators. J. Christopher Jones and Bruce Archer in Great Britain and Christopher Alexander and Horst Rittle in the US were the pioneers in the 1950s and '60s. A major international meeting of design methodologists was consolidated in London in 1962, and the Design Methods Group was formed during the International Design and Planning Seminars at the University of Waterloo in Canada in 1966. These groups, plus numerous seminars and papers, form the nucleus of present design methodology, out of which have evolved several major theories. A detailed presentation of design methodologies is given in *Emerging Methods in Environmental Design and Planning,* edited by Gary T. Moore (MIT Press), and in *Design Methods — Seeds of Human Futures* by J. Christopher Jones (Wiley-Interscience, a division of John Wiley & Sons Ltd.).

At the present time, no one theory seems to have followers among the architectural practitioners interviewed, which indicates that design methodology is still in a preparadigmatic state. The numerous new theories which have evolved are unfamiliar to most practitioners; they do not know which to use or how to apply it; they require an expert to advise and direct. They do not, however, question the validity of the



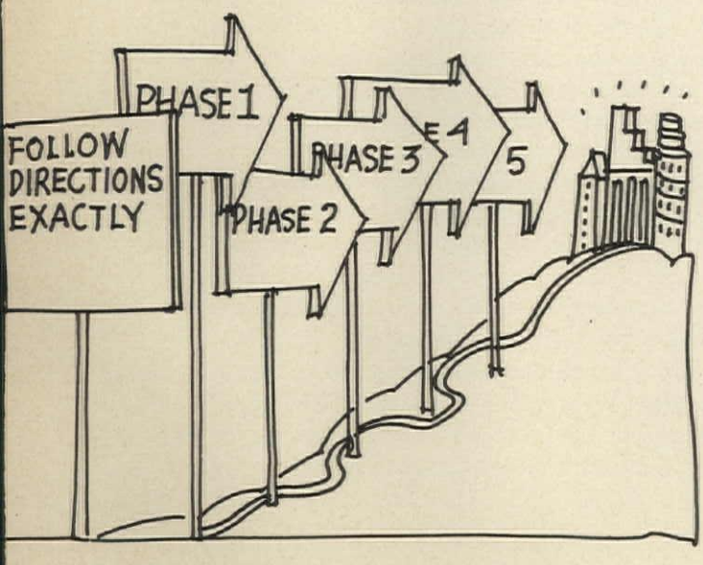
theories. In his approach to choosing design methods, as described in his book, Jones suggests how to overcome that difficulty.

The practitioner is not trained to deal with techniques other than the intuitive and empirical methods; he relies on experience, memory and imagination. Draftsmanship is inevitable for him, and he labors through endless cycles of modifications and remodifications and trial and error before the design is resolved. He may make scale models as well as scale drawings to test what he envisions, exactly as Michelangelo did centuries ago in designing the dome of St. Peter's. Moreover, the practitioner is hesitant to adhere to theories that have not been tested.

Here, then, is the dilemma — and the paradox. The theorist must test his views before they can be affected; the practitioner is doubtful of their use and cannot afford to test them. Further, the architect must make a profit to continue to practice; and since the new techniques of design must be implemented and taught in the office, the trial of a new technique on a given design job very likely would eliminate the profit on that job. This the architect cannot afford, particularly since he is not assured that such overhead expense will be justified by a successful result or that the theory tested will have future applicability.

Thus the practitioner tends to adhere to his traditional methods. In his more complex design roles he is aware of the limitations; he cannot at the same time employ and analyze the alternatives, nor can he immediately incorporate in his solutions both technological and societal changes.

Resolution of this dilemma/paradox is essential. Cooperative efforts are required between the theorist and the practitioner, but in practical application little seems to have been done. It is apparent that a major responsibility in this task could be assumed in a concerted effort by theorists and educational institutions together with practitioners, through The American Institute of Architects, to test the theories in practice and the methods of implementing them in the design office.



The very largest offices interviewed tend to be more aware of the sophisticated design methodologies and, in a limited way, have experienced with these tools on some projects. These experiments have not, however, resulted in enthusiasm or adherence.

In general, the design methodologies which are used in the offices interviewed are supportive of traditional methods which have become more refined and show immediate results in profit and quality products; the practitioner is strengthening conventional design methods by identifying and formalizing the kind of thinking that a skillful traditional designer usually has kept to himself.

As observed in the offices studied, the professional practitioner is developing sophisticated techniques of programming in response to the increased complexity of the buildings he constructs. The programming effort proceeds with the traditional methods of data gathering, supported by broadly expanded checklists, questionnaires and interview techniques, which may include brainstorming sessions with the client.

If the practitioner does not undertake this programming himself, he demands a professional program from his clients, particularly if they are large organizations. In these ways he not only finds the pathways to more efficient and profitable designs but he also develops design products more responsive to his clients' and society's needs. He approaches the design problem as scientifically as possible by clarifying and defining the problem, by developing sound, rational criteria and by stating the objectives before analysis and synthesis of design takes place.

Many of the practitioners interviewed are developing a systematic approach to design, a comprehensive schema which orders the various facets of the design process. Defining the working process and profiling a hierarchy of designing parameters in a working sequential order are new demands in the profession. Traditionally, the architect has allowed the working process to flow generally as described in the contract documents from the schematic design phase to construction. Within the office the ways of handling design work flow have varied, as have the degrees of success. As problems have become more complex, this flexible approach has become alarmingly unprofitable and increasingly susceptible to error. To control management of the design process is impossible without detailed definition of the process itself.

When design process tasks are absolutely defined and ordered sequentially, and the traditional "office manual" is thus expanded in great detail, decision making may occur in

a rational order. Simultaneously, manpower assignments may be readily given and budget hours for specific tasks quickly assigned and related to profit. Further, it is possible to record the process and recycle the information as required for the present project, or as reference for other projects, and to use this information system to train a new designer or manager. And with such a system the practitioner is able to prepare for computer applications to the design process.

This sequential definition of the architect's method of working is not simplistic. The pioneering work of Philip A. Corkill and Robert F. Guenter of the University of Nebraska and of Holster, Sanders, Stout and Wright in their document "Modus Operandi" (Department of Architecture, Texas A&M University) and others is exemplary of the effort required to accomplish such a systematic working structure. Indeed, many of the offices interviewed continue this work, analyzing their own design processes and relating them to organization management.

Most of the practitioners visited are developing skills pertaining to the critical path scheduling methods. The CPM's graphic presentation of the design process or sequence over time is an invaluable tool in scheduling the work of many specialists and in condensing the time available, thus increasing profit for the client and the architect.

Several of the firms observed are developing user-evaluation research techniques for feedback in the design process. The architect is no longer content to review completed projects with esthetic satisfaction or criticism only; he analyzes his work with a scientist's objectivity and evaluates its success in terms of use and impact on the environment. He recognizes that he may not be able to complete his research; society has not clearly organized the hierarchical values upon which evaluations must be made. But he does accumulate information which can be stored and recycled objectively for the positive improvement of the design of future projects. With this process, the architect also forces the designer, the critic or the obstructionist to be objectively aware that all human action has an inevitable environmental impact that must be scientifically evaluated; it must be based on society's hierarchically ordered values rather than an individual's values before any criticism can be meaningful.

Finally, most of the architectural practitioners interviewed are developing sophisticated, methodological in-house learning resources in response to the construction industry's technological information explosion. The contemporary architect recognizes the need for accurate, quickly obtained and up-to-date information, which can favorably influence his output. *The Uniform Construction Index,* published in 1972 in the US and Canada, is exemplary of this trend (AIA JOURNAL, Nov. '72, "Today's Answer to Data Filing").

Such an information system requires the full-time services of a professional librarian who has a thorough knowledge of the architect's needs. Data sources must continuously be evaluated for their applicability. The library includes systematic storage of professional journals containing articles and photographs of exemplary work of other architects in addition to a variety of books and technological handbooks on various aspects of architecture; it includes usable records of the firm's work, with user evaluations of completed buildings, all of which can be instantly retrieved for a recycling process in new projects. The total work of the firm is thus stored: research, feasibility studies, brochures, photographs, renderings and other presentation work, and a record of the entire design process. Much of this is done today through microfilm, microfiche or slide storage.

The rapid proliferation of technological information requires methods of referral and retrieval which were not important even a few years ago. Many offices are developing detailed in-house information manuals which contain maximum information on special building types and prototypes, product use and experience data, and cost information. To be effective, these manuals are regularly brought up to date by the librarian. In one case observed, information matrices are developed which incorporate constantly updated cost control data, with detailed programming of building finishes as well as electrical and mechanical variables. This makes simultaneous cost-estimating and programming possible.

Computer Hardware and Software

It has been predicted that computer hardware and the accompanying software programs will change the architectural design process as much as structural steel and reinforced concrete have changed the design of buildings. On the other hand, it has often been assumed that the computer in architecture can never replace human intuition and sympathy and can never occupy a significant place in the architectural design process. The viewpoint which would exclude the computer from the design process may be overlooking it as a tool which will respond to human values if those values are defined and written into the terms of the programs. Indeed, it has been demonstrated that "cold, inert" scientific data from social and behavioral scientists may also include vast quantities of valuable research information about human nature which may be readily infused with technological acumen in the computer programming process. These human values may be identified scientifically, and they support the intuitive process.

The computer is able to store, recall, edit and modify information in two-or three-dimensional form, and also in alphanumeric form. It relays this information rapidly on hard copy. In this way, computer-aided design emphasizes interaction between man and machine, which extends the range of human capacity to deal with problems of complexity and un-

certainty. Since his time is freed from long-term drudgery, the designer is able to accelerate his decision-making process and spend his time more profitably in creative activities.

The computer does not dominate the act of form generation; the architect will never completely design a building with the computer. It relays to the designer a body of comprehensive knowledge in a usable way and enables him to manipulate and analyze many alternatives at once and respond more quickly to changes in program requirements.

The computer has demonstrated applications that are relevant to every phase of the plan/design/build process in the architectural profession. These applications are basically office financial management, project control information, contract documents and project design. Office financial management, which includes accounting, budget, profit management and cost control, has the most logical and widest application. Project control information, which includes construction management, budgeting and estimating, critical path method scheduling, job information storage and retrieval and completion schedules, has greater possible application but this software is presently in the developmental stage. Automated application of the computer to the contract documents (drafting and specification writing) has not yet been proved to be justified in cost except in large repetitive-type projects. These applications have been dealt with intensively elsewhere.

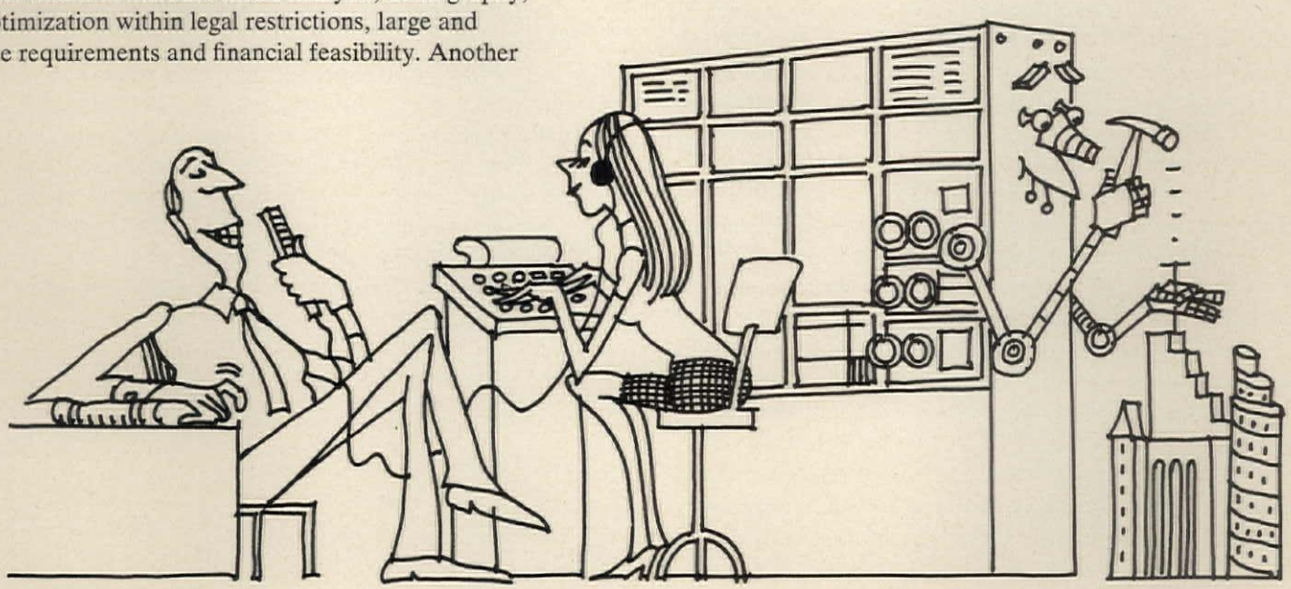
We consider here primarily the use of the computer in the process of architectural design and review such application in the offices interviewed. The computer is capable of integrating with all areas of the design process, including architectural programming, conceptual design and design development.

Architectural programming is costly to adapt to computer application and, in the firms studied, is limited in use. It is cost-effective only on large, complex projects. One example is the planning of a large shopping center where the required data intermix includes traffic analysis, demography, land use optimization within legal restrictions, large and varied space requirements and financial feasibility. Another example of its use is in the practice of repetitive work such as large medical or laboratory facilities. In general, however, it was found that computer-assisted architectural programming is done only if the firm's work is repetitive to a large degree and if the scope of services also includes in-house engineering and a considerable volume of planning work, in which case the computer programming becomes cost-effective.

Some of the offices interviewed have applied the computer to the conceptual and design development phases. One firm, most of whose work comprises medical facilities, makes extensive and apparently successful use of computer programs which determine space needs and optimized space allocation, and generate graphic retrieval of standards or prototype designs, including perspectives. No cost/benefit ratios are available, however, to determine if the computer hardware and software costs are justified. In another firm, the computer is used for planning of future developments, such as that of an existing college campus whose long-range needs are analyzed and documented. Traffic networks, parking problems and adjacent land use changes are communicated to the designer by the computer. In other firms, computer programs have been developed to include interior furnishings and equipment, vertical transportation systems and module analysis for systems building components. Space allocation programs are also being developed. These diagram alternatives for space requirements with consideration of the hierarchical value of these spaces.

Several of the firms with in-house hardware have developed space and economic programs for income-producing structures such as highrise office buildings. These programs rapidly reflect cost and return ratios by analysis and selection of all the architectural subsystems.

Also, in many of the firms visited the computer is used to create perspectives and simulation drawings. Plans, eleva-



tions and other detail studies are developed with the computer, but costs for these applications have proved to be equal to or greater than the manual techniques.

One smaller firm, convinced that computer applications to the design process are inevitable, has organized the design process methodologically for future computer adaptations of its work.

In only one of the firms visited have computers been integrated comprehensively into the design system. This is primarily so because of the high cost of the hardware and software required and because the sophisticated data input requires that rare computer programming specialist who should also be an architect. Nor have cost/benefit ratios been determined. Although these data are not yet available we may assume that the computer benefits the firm, otherwise it would not be used.

As revealed by the examples found in the course of this survey, the computer has made inroads into the design process in various ways. Architects are currently using computers and can be expected to use them to an even greater extent in the future.

We know that computers can be applied in the design process, but the profession has been slow to respond partly because of the value placed on traditional techniques and partly because of unfamiliarity with the computer as well as the architect's traditional educational process. But most important, few offices can afford such application, and most clients are reluctant to accept billing for these services. In addition, computer application to the design process is new. The high-risk trial-and-error factor still prevails.

Further, when the architect considers computer use in his design process, he has a bewildering number of choices and combinations from which to choose. For example, among all the software programs commercially available, numerous versions of one design process may be obtained. The practitioner is also faced with an overwhelming number of options in hardware purchases. He may 1) select to use a service bureau which, to be successful, must be oriented to a design firm; 2) share computer facilities with several other firms, which may have cost benefits but also the possible disadvantage of sharing software with competing firms; 3) have a typewriter or minicomputer tied to large time-sharing installations; 4) purchase in-house hardware; or 5) purchase or form a service bureau to do his work and that of other professionals.

Nevertheless, in varying ways many of the firms interviewed have taken bold and daring steps into the computerized design process, somehow knowing that the forms of the future will evolve out of a larger systems context, based on a more responsive technology that no single person or group of professionals will be able to assimilate without the aid of a special tool. These firms are aware that in the near future it will become increasingly difficult to rely exclusively on traditional design techniques to compete with automated procedures which will create lower costs, greater speed of output and increased quality.

Still another way the architect may respond to today's technological forces is by expansion of design resource capabilities through in-house special services, through contracts with related professionals or through separate companies offering special services but acquired and owned by the architect. Examples of the special services which expand design resource capability are urban and regional planning, including ecological factors; graphics, interior and landscape design; information systems analysis; financial and management consulting; land development, real estate and market research; operations analysis; and special engineering services offered by acoustic, electrical, mechanical and traffic specialists.

These special services, which are also indicative of a response by the profession to the technological complexity of our society, differ in one major respect from the previous discussion: The architect developing or defining his design leadership systems and methodologies, or experimenting with computer applications to the design process, is doing this type of research primarily as an overhead expense, whereas the expanded special services he may provide can be billed directly to the client.

This self-imposed research and development effort demonstrates a professional responsibility of a very high order. The objective is excellence of the architectural product. It may be argued that some of these designers' responses are too conservative or that they are not effective or responsive enough to the dynamics of a changing world. But the information researched and related here indicates the architect's response at this time, which is necessarily limited because the greater part of it is expenditure out of generally limited financial resources. The architect realizes that his growth and transition into the technological future will come about not by just solving day-to-day problems but by exploiting the opportunities that are clearly a part of the future. Perhaps this also indicates that the profession, in order to have a greater impact within a changing and dynamic technological society, must discard the traditional cloaks of self-styled individualism and competition and respond to the calling of the profession as a whole, working for mutual professional growth and, ultimately, survival.

Never before have the architect's special abilities required such a response. His sensibilities enable him to perceive that the improper technological approach could destroy man's environment. The architect is in the unique position of having the ability to incorporate in man's gigantic technological advances a reverence for the nature of his whole universe and bring to it a special order and beauty. In this way, once again, the architect may connect with the past heroic generations of architecture. □

In September of 1971 four architects from the Soviet Union visited this country as the first exchange delegation of practitioners between the USSR and the US (AIA JOURNAL, Jan. '72). In October of 1972 a delegation of four American architects, led by the then Institute First Vice President S. Scott Ferebee Jr., FAIA, made a return visit to the USSR, during which they had conversations with numerous architects in various settings. From these conversations is presented here a composite view of the architectural profession and practice in the USSR.

Practice—Russian Style

by JOHN M. McGINTY, AIA

A debate—years long—whether to build a modern addition to a historic government center is resolved by a decision to go ahead. Some architects lament but others are quick to participate, justifying their compromised position by the rhetorical "If I don't do it someone else will, and probably worse." The finished result is both expensive and esthetically disastrous.

A cabinet level meeting with design and construction leaders is called to discuss means of improving the present quality of craftsmanship in the building industry. The issues are complex; escalating demand and costs are forcing an increased priority on speed and expediency. The architects' authority to enforce performance is limited by the traditional professional noninvolvement in the construction itself, while the contractors' role is expanding due to the clients' increasing dependence on their managerial skills in project delivery. And there is a shortage of skilled manual labor caused by increased education levels and burgeoning job demand in the white-collar section.

If these items sound familiar it is a sign of a shrinking world, for they are datelined Moscow, USSR. The practice of architecture in the Soviet Union does indeed share many common problems and interests with our own in the United States. The significant differences, as our delegation discovered, are not so much due to the architects (with whom we quickly developed real empathy) but to the differences in the social and economic systems under which we operate. Some of these differences are drastic.

There is a Russian saying to the effect that whenever there is a period of silence around a usually boisterous Russian table of food and drink "an architect is born." I never did really understand that proverb but at least it might explain the shortage of architects. At any rate, at age 6 the now born architect enters primary school for a period of 10 years. In some non-Russian speaking republics an extra year is added to compensate for the difficulties of bilingual education. This period

Council for Mutual Economic Assistance Complex, Moscow

roughly corresponds to that of our own elementary and secondary school system. During these years career choices are made, based on academic performance, aptitude and various other social and cultural pressures that the student might feel.

The Soviet propaganda mill puts out a rather dense smoke screen at this point. According to this, each individual altruistically seeks the highest and best application of his talents for the good of society, without thought of status, economic gain or other bourgeoise motives. In the Soviet system, scientific aptitude testing probably does figure more heavily than it does in our schools, and since all jobs pay more or less the same wages, economic consideration would be an unlikely determinant of a student's career. However, social status and a stimulating and personally satisfying work environment are as big a carrot to Soviet as to American youth. A career in architecture certainly offers one of the top possibilities in these respects there as here, and with less competition from other fields such as law and business, which as we know them are not to be found on the Soviet menu.

After high school, the prospective architect enters a school or department of architecture, usually in a university. There is one school in Moscow, probably the top architectural school in the country, which is an independent academy, not connected to a university. Students compete and are selected for admission to this and to other schools based on scholastics and aptitude, with the top prospects having their choice.

The university curriculum is a five-year program beginning with a heavy dose of academic courses in history, science, language and math which evolves over the period into a later emphasis on architecture, principally design. The model curriculum is not unlike that experienced by most Americans in the '40s and '50s, complete with charcoal sketching and washes of the classical orders. Design problems progress from simple, basic design in the early years to more sophisticated and expansive programs for the fourth and fifth years. Little innovation in either curriculum or teaching methodology was evident in the undergraduate school we visited.

Upon graduation, the student may continue into graduate school, which offers opportunities for specialization leading to a career in research. In these graduate programs there is apparently some quite serious and substantive work being done, particularly in the field of computer applications. Also, a great deal of effort is being expended in the areas of historic preservation, development of tourism and recreational prototypes and research into climatological determinants for housing design. Except for historic preservation, however, little of this research has yet found its way into extensive field application.

If the option is practice, the graduate must choose between several of the numerous "institutions" (also referred to as workshops) which are the governmental organs for professional practice. Again, there is competition in recruitment among these institutions for the top students. Certain "frontier" areas such as Siberia offer more money and perhaps greater freedom and responsibility to the young architect, whereas the larger and more prominent central institutions in Moscow and Leningrad offer greater prestige.

Hotel Viru, Tallinn

The average starting salary for graduates is around 150 to 200 rubles per month, which equates to about the same figure in dollars in buying power if not in the official exchange rate. It is not as bad as it seems, however, as the Soviet citizen doesn't have nearly the need for money that his American counterpart faces. He pays no taxes, needs no insurance, has virtually free housing, medical care and day care, and has no opportunity or incentive for savings or investments. All his salary actually furnishes him is food, recreation, clothes and consumer goods (which are scarce anyway). In addition, most Soviet families have two breadwinners, so the 300 rubles per month combined income provides a reasonable standard of living, at least on Soviet terms. In the course of his career, an architect might reach a level of 500 rubles per month depending on his success in competitions, affiliations with universities, etc., plus his spouse's income, which is usually equivalent. As one practitioner stated to our delegation: "One really wouldn't know how to spend much more than that in our system."

Upward mobility within the Soviet system of practice depends on factors similar to those that might be found in the US civil service. Technical and intellectual competence certainly count, along with the usual bureaucratic merit badges for loyalty, dependability and productivity. Creative geniuses, prophets, lonely artists and entrepreneurial types are apt to be smothered and channeled out of the advancement mainstream.

Perhaps the best way to understand how the practice institutions work, both internally and in relation to one another, is to

Lenin Square, Tashkent

examine a particular example, in this case the city of Tallinn, capital of the Republic of Estonia. Tallinn is a city small enough to be comprehensible, yet large enough (approximately 400,000 people) to have numerous major and significant building projects underway. Estonia is a small republic, but typical of most in that it has an intense local nationalism and a distinctive cultural heritage.

The chief architect of Tallinn is Dmitri Bruns, who, incidentally, was one of the Soviet delegates to the US in 1971. The position he holds is both political and professional. His office is a department of the city government and as head, Bruns holds a position on the city council. His staff is responsible for development and enforcement of the city's master plan. Enforcement is total inasmuch as all land is state owned and before a project can be built, Bruns must issue a land use permit. If the project does not comply with the plan, there is no permit and hence no project. Bruns' office also is responsible for approving building plans, establishing program parameters and utility linkups, but it does no building design work per se.

The design is done by several other institutions which are organized around building type specialties. Foremost of these is the Institution of Estonian Projects, a 700-member shop headed by Mart Port, a colorful, personable, "hard-nosed pro" of considerable ability and talent. His institution specializes in major civic projects throughout the republic such as hotels, schools, government buildings, offices and the like.

Other institutions include Estonian Industrial Projects; the Estonian Agricultural Project whose work, as the name implies, is primarily rural; and the Institution for Commercial Services which designs restaurants, stores and smaller buildings outside the capital. In addition there is the Estonian Project for Collective Farms which does nongovernmental work for the agricultural and fishing co-ops. This project covers a wide range and large quantity of work in Estonia as these co-ops are responsible for building their own housing, schools, civic and industrial buildings. One fisheries collective we visited had over 20,000 members, was quite prosperous and had several millions in construction projects on the boards and underway.

As you might suspect, the organization of architectural institutions in Moscow is more complex. The State Committee on Civil Construction and Architecture, GOSSTROY, is at cabinet level; its head or chairman is also an assistant prime minister. GOSSTROY deals with all phases of construction, including heavy engineering. Under it is a subcommittee for civil architecture headed by an engineer. Seventeen different institutions of specialization in design and research such as health facilities, town planning, recreation, housing, etc., are directly responsible to the cabinet through GOSSTROY and the subcommittee. These institutions practice both in Moscow and throughout the nation and also provide research assistance to local institutions such as that headed by Port.

Besides this state organization, the city government of Moscow has an architectural arm parallel to that of Bruns in Tallinn. In this department is one of the most prestigious and influential offices in the USSR, headed by Alexander Pocoxin who has authored many of the largest projects in the city. Although he is responsible to GOSSTROY and its architectural subcommittee in matters of technical and professional nature,

his line of authority runs directly to the mayor of Moscow on matters of business and policy.

To track a project through this system, one should begin with the client. That is always the government in the Soviet Union, but this, like our government, has many jurisdictional levels and operational subdivisions. Decisions to build are usually made by these subdivisions, although major projects in Moscow often involve high-level participation. One such project that we visited was the development of the "Ring of Tourism" around Moscow. It is a grand scheme to restore and develop, à la Williamsburg, Virginia, a series of historic old towns in the Russian countryside. Its author, Mark Arturovitch Orlov, told us that the decision to proceed was actually made by Premier Kosygin personally, but this is obviously not the rule. And the Kremlin Palace of Congresses was the subject of high-level debate for a number of years before it was built.

More typically, a government agency such as Intourist will decide, say, to build a hotel. It will do the programming and budgeting and then proceed to select an architect. There is a surprising amount of competition among various institutions at this point.

Central institutions from Moscow will vie with local firms such as the Institution for Estonian Projects if the hotel is to be built in Tallinn. Points of contention might include claims of greater technical competence (from Moscow) versus claims of a more sympathetic regional understanding of design (from Tallinn). On major projects, there seems to be a trend toward design competitions with cash prizes and the commission going to the winner. Eventually, in some manner, the client makes a decision. In some respects, Soviet counterparts of the well-known American techniques of influence-peddling and political muscle must enter the picture, but fee cutting or bidding definitely do not. There is a state fee schedule that results in an average fee of about 6 or 7 percent of budgeted construction costs, although it is paid on a lump sum basis.

Once an institution is selected, the project proceeds through the shop in a familiar way. Since most of the Soviet offices are large, job captains and project designers are selected from among the institute's staff. There seems to be an obvious willingness to recognize and credit these project authors. Until a few years ago only the institute's name would appear on a plaque on the building whereas now the names of the individual authors are given. Most of our building tours were led by these people rather than the chiefs, but the latter always showed up for dinner, however.

Production efficiency and intra-office budgeting is of some interest to these institutions. "Profits" made by getting a job out under the budget are distributed as incentive bonuses to key employees.

Construction supervision is usually handled by a special committee of the Office of Chief Architect, with authority and responsibility not unlike that spelled out in The American Institute of Architects' General Conditions. There is, however, an important distinction evident in the poor quality of most modern Soviet construction. Their contractors are state agencies organized on a parallel track to that of the design offices. While the architects might have adequate contractual authority over the work, they lack the power of the purse strings. They can direct corrections in the work to be made but they cannot withhold payments or, more important, they cannot write a contractor or manufacturer out of future specifications. They are faced with a monopoly, and a government-owned one at that. They cannot even "do business with the other phone company." Free enterprise might be expensive but it does result in better quality construction.

One illustrative case history is worth telling at this point. When our delegation arrived in Tallinn, we were quartered in the new Hotel Viru. This is an imposing highrise, designed by Port, but similar to buildings we had seen in Moscow, Tbilsi and Tashkent, at least at a distance. Upon entering it took us a while to fully understand what our eyes immediately perceived to be a unique quality.

The joints in the brick floor lined up; the doors fit in their jambs; elevators worked; hardware was handsome and operable and lighting and plumbing fixtures were of recognizable Scandinavian origin. Something was indeed different, and later that evening our hosts confessed. Hotel Viru had been built by a Finnish contractor.

Seems that when Bruns and Port were ready to start construction on the hotel, the Estonian construction agency was working at full capacity on housing projects. To divert resources to the hotel would slow down the much-needed apartment complexes. Besides, neighboring Finland was about to enter an election campaign; the Finnish Communist Party, in political trouble, was in need of a patronage plum for campaign purposes; and the Estonian Communist Party had an understandable interest in the elections. All of this added up to an absolutely unique decision to award the construction contract to a foreign builder.

They did get a fine hotel out of the bargain, but for the Estonians the results were mixed. The 700 Finns who came over the border to build the hotel were not particularly sensitive and obedient to local laws and customs of social conduct. In addition, they made off with 130 of the most beautiful Estonian girls, legally carrying them home to Finland as brides. And the Finnish Communists lost the election anyway.

Some of the peripheral aspects of life as a Soviet architect are the most interesting if not the most significant impressions we gained. For instance, an architect (along with a few other "creative" types) receives a bonus space allowance for his flat, supposedly to give him more room for thinking. This is a real benefit to a family in a country that is currently striving to achieve a norm of 18 square meters per person of housing space, and where the current average is 10.

Mr. McGinty, a partner in the Houston firm of The McGinty Partnership, was a member of the delegation of US architects to the Soviet Union last fall.

Railway Terminal Square, Tbilisi

There are approximately 10,000 architects and related professionals and technicians in Moscow and perhaps 10 times that number throughout the country. They are an incestuous lot. They not only work together, they play together in architects' retreats or *dachas* owned by the local unions, they travel together on tours, they share special health clubs and clinics for everyday medical care—they even marry each other. Virtually every architect we met was so connected, although the spouse often worked in a different institution.

Much of this social activity centers around and is sponsored by the Union of Soviet Architects, the counterpart of the AIA, and its local chapters. Membership in the union is optional but seems to carry professional prestige. Most qualified architects belong. The small dues are based on the individual's salary; numerous benefits are available to members, not the least of which is yet another housing allowance bonus. The union also handles foreign relations, including US delegations, and does an admirable job at that. Their advocacy before the councils of government on behalf of architects is more directed toward matters of benefits and working conditions than toward any real, substantive environmental issues. Our queries along these lines were met with the comment that lobbying such as the AIA does here on behalf of conservation, land use and the like is unnecessary in the USSR as such matters are already dealt with adequately by the omniscient and ever-loving government. However, the union apparently does a pretty good job in its chosen field. Six weeks paid vacation per year and a five-day, 40-hour work week with the edges rounded off are the current Soviet norm.

The Soviet architects are a most pleasant and interesting group of individuals. They are turned on by good design, are interested in the new technologies and are sincerely concerned and proud of their cultural past, which, incidentally, is more varied and diverse across their nation than any of us had imagined. Undoubtedly, any of the leaders that we met there would be as successful by any measure in any system.

To an American, the Soviet lifestyle would probably seem unbearably gray and monotonous, lacking the excitement and adventure inherent in our freewheeling competitive society. But Soviet architects, several of whom have visited the US and all of whom are at least superficially informed about it, do not see it that way. They recognize the technical excellence and quality of our products, including our architecture; they admire many of our accomplishments in science and the arts; and they marvel at the energy, aggressiveness and spirit of our people. But they also see our problems, and to paraphrase a current pop record, what I heard them saying was in essence that "I couldn't live like that."

They see their system as providing, above all, security. They enjoy the separation of their vocation from any pressures on their personal welfare and see this fact as an opportunity for intellectual independence. They are apparently willing to swap out a limit on upside potential in order to minimize downside risk. And, I couldn't live like that.

As a profession, they have not yet begun to move out into the world of social concerns and larger environmental issues as a logical expansion of architectural interest as we seem to have done in the last 10 years. Questions about population growth and the energy crisis were met with little recognition of relevance to architecture. They still seem to be enjoying the age of design heroes, and suffering somewhat from the Fountainhead syndrome. But their competence in and philosophical dependence on scientific methodology is pushing them our way; that is, unless we leave on the counter-revolutionary road to intuitiveness and spiritualism before they get there.

Perhaps the most important conclusion one could reach is that Soviet and American architects are a lot alike at the individual everyday working level. The Soviets largely excel in fields (for instance such as research, historic preservation and at least in the implementation of planning) which work well in a system of centralized power, fields of endeavor that are most susceptible to the application of bureaucratic power, flowing from the top down. In other types of architectural problems such as housing, urban design and innovation in building, they do not do as well because there is no room in their system for grassroots improvisation and experimentation and, above all, there is no market place for the testing of ideas. Maybe we should joint venture this next era. □

Introducing Shadows

by JULIUS SHULMAN

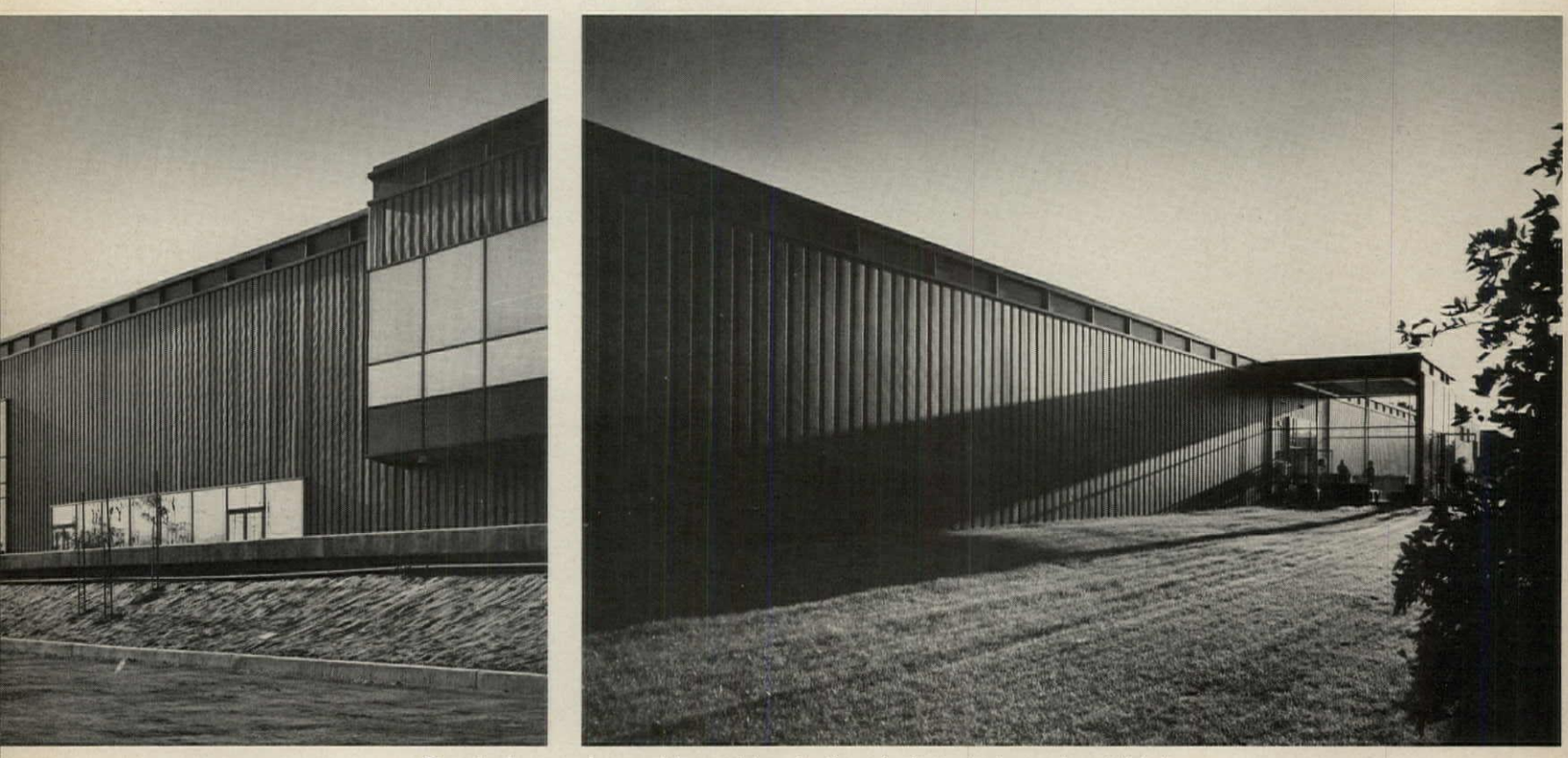
Shadows have always been sources of mystery, vagueness, drama and dimension. In architecture, and particularly its photography, the shadow provides us with a means of delineating form and scale. It is a valuable tool in the expression of architecture, but a tool so fleeting that even the architectural photographer, whose subjects are purportedly static, must move as swiftly as the highest-speed sports photographer.

We subconsciously think of shadows as "long," sweeping elements in a photographic presentation. But it is not the length or the breadth of a shadow that concerns us. It is its performance in contributing to a photograph's dimensional/delineating properties. These properties must be recognized in the photography of interiors as well, for conflicting shadows from too many lights can wipe out an interior designer's subtle use of forms, colors and textures.

The time of day for a picture-taking session must be selected with utmost thoughtfulness. There are no positive or fixed rules to follow.

Shadows can be used, even controlled, to the extent that a photograph will produce exactly the desired image. For the viewer of a photograph, objectivity is normally the intent. However, the astute photographer can function as a catalyst by his adroit camera performance. The subtle introduction of a shadow into an area creates a dimension which in reality plunges the viewer into the specific quality of a design theme, as shown on these and the following pages. □

Mr. Shulman, Los Angeles-based architectural photographer, was the recipient of The American Institute of Architects' architectural photography award in 1969.



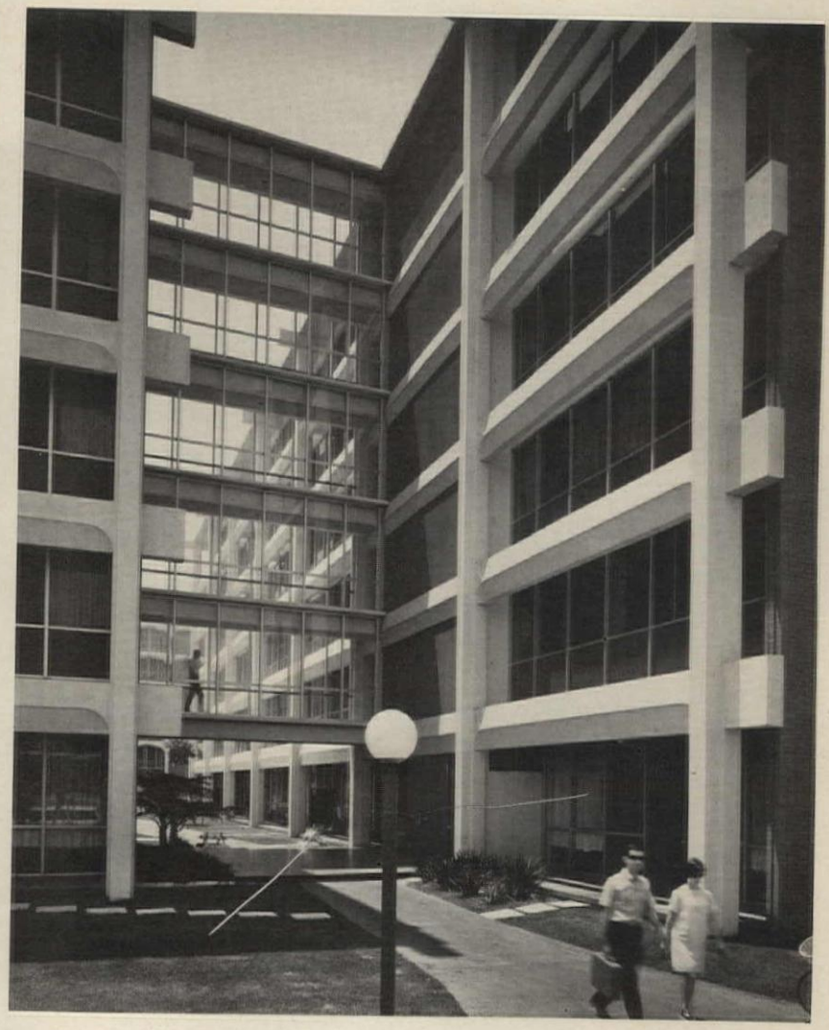
The shadow can be used to provide a feeling of minute textures almost fabric-like in quality or it can be long and sweeping. The Teledyne Systems Company in Northridge, California, is photographed just seconds before the sun moved from its south axis to the north (left). The north side of the building is taken just before the sun set into a grove of trees to the northwest (right). Cesar Pelli, AIA, director of design; A. J. H. Lumsden, AIA, assistant director of design.

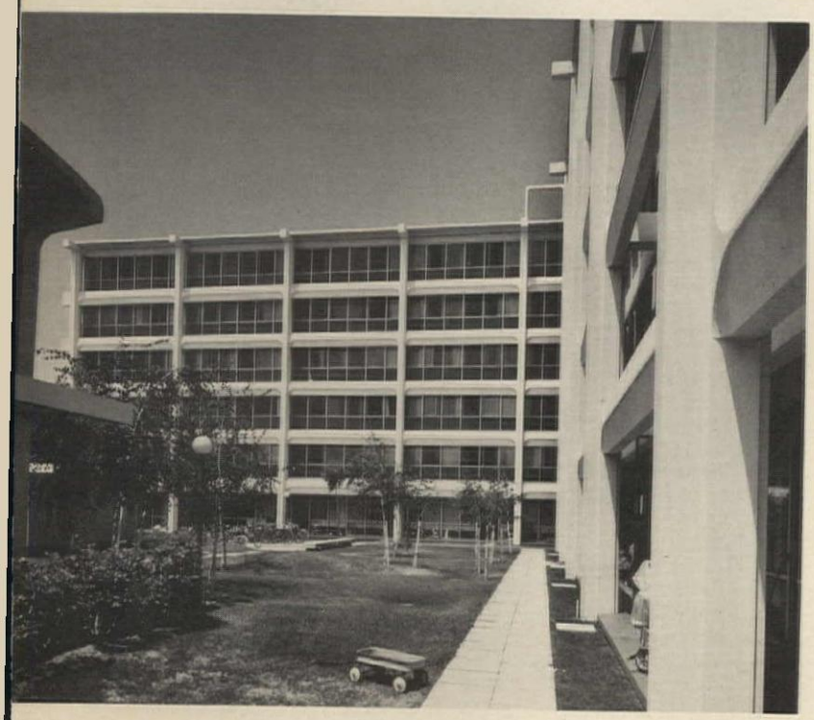
At first glance the two photographs of the Whittier Municipal Courts Building in Whittier, California, appear alike, but see what happens with the introduction of subtle shadow (left). In photo below, it is almost as if a delicate shading has been sprayed behind each column to delineate it. The shadow can establish an element of recall, i.e., the embodiment of structure and form in the mind's eye through the timing of the photograph. The right moment of clicking the shutter can be a matter of seconds, for the sun moves swiftly, and the shadow in a cleft of a structural element gives the magic touch. Maurice H. Fleishman & Associates.

Only the ends of the cantilevered concrete tiers of the San Diego Stadium in San Diego, California, are illuminated (above and cover). Earlier in the day when the sun penetrated the areas beneath the tiers, the drama and projection of the concrete was lost. Frank L. Hope & Associates.

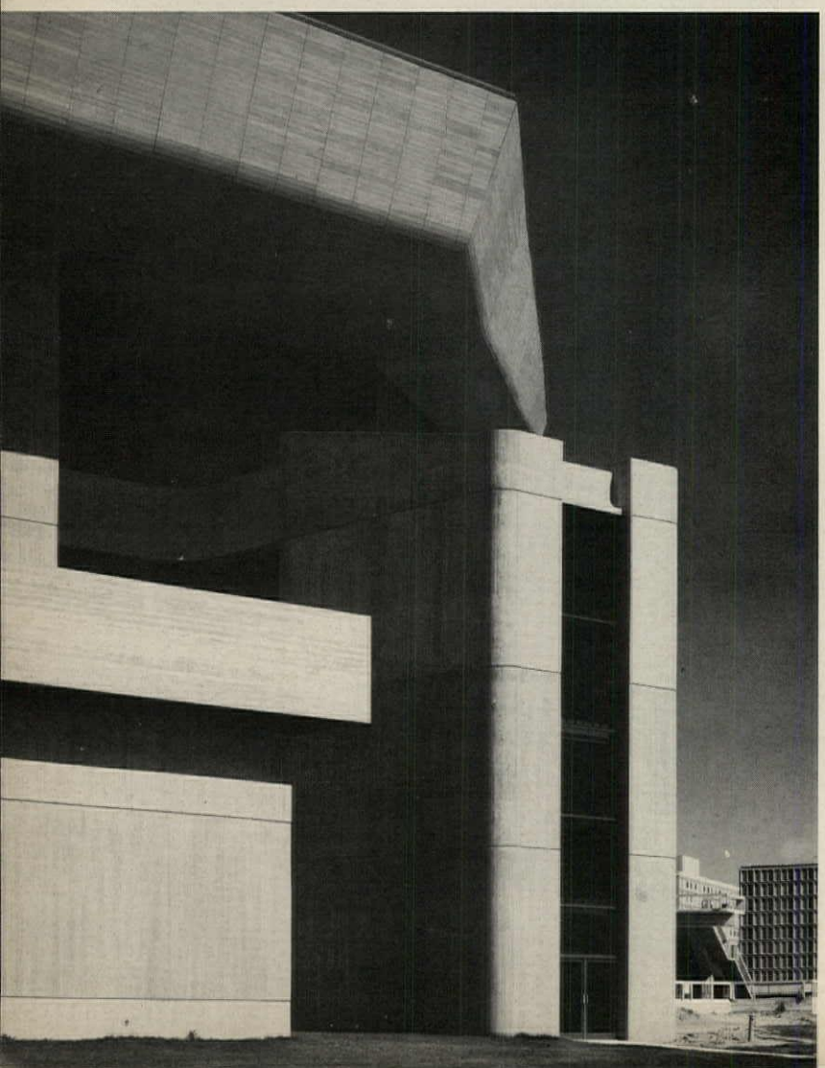
The Wichita Public Library in Wichita, Kansas, also illustrates the tremendous sensitivity of shadow perception. The areas of the structure shown face east and north. This required very early exposure at a time of the year when the sun rises in the northeast. This early morning sunlight and shadow effect is most subtle and requires that the photographer get to the scene early enough to prepare a program, leaving nothing to chance. Every nuance, every infinitely small detail is controlled, as a close study of the photograph will reveal. Schaefer, Schirmer & Associates, P.A.

The elegance of the structural system is portrayed in the Lynn Institution for Savings in Lynn, Massachusetts, by the low afternoon sun, which clearly defines each facet of the system. Fifteen minutes later the sun set behind a building across the street. One hour earlier it would have been too high, casting shadows which would have wiped out some of the more refined details. In other words, this is the moment, and the photographer must be ready for it. Huygens & Tappé Inc.





The beams of the Married Students Housing at the University of Southern California, Los Angeles, have a forming detail which casts a thin horizontal shadow (above left). When the sun is higher in the sky, the same thin shadow is projected across the entire lower segment of the beam (above right). Although the thin shadow is the writer's preference, structural people would prefer the other view. Both shadows are present with the long shadow on the beam in the foreground (bottom). Richard Dorman, FAIA.



In the morning, only the soffit is in the shadow of the C. Y. Stevens Theatre in the Iowa State University Cultural Center in Ames, with full sunlight on the pylons on either side of the structure (top). The delineation of the almost floating roof design is clearly defined. The lights and darks, the very essence of the design composition, are even more pronounced by the darkness of the glass and the almost black soffit. The opposite side of the building was taken in the early part of the afternoon, again with a full shadow of the overhang but with the pylons in full sun (center). All the elements of the design composition which add to the dimensional depth of the scene are in shadow, leaving the highlighted areas to project forward so as to infuse a dimensional proportion to the scene (bottom). Here again, there is no specific shadow but a fullness of mass of lights and darks. Again, the shadow is not clearly definable but used to provide maximum texture on the vertical concrete elements and on the stairway (across page). These scenes, in other words, are intended to demonstrate what flexible thinking must occur on the part of the photographer as he follows the sun around the building, in this case from early morning to late evening. Crites & McConnell.

An Architect Goes to Washington

Again this year, architects and engineers are invited by the AIA/CEC to attend the Public Affairs Conference in the nation's capital so they can get acquainted with leaders on Capitol Hill, as well as with each other. Both veterans and novices from the two professions stand to gain from the meetings.

Why does Earl W. Henderson Jr., AIA, plan to come to Washington to attend the Public Affairs Conference on March 19-20? "To get acquainted, first of all," Henderson explains, "to get to know more legislators and to get to know those better whom I already know."

It's not as if Henderson will be a first-time visitor to the Washington scene: He goes there regularly, in fact, every three months or so, looking at these trips as an important part of his practice. "Somebody has to be liaison between his community and the Congress, and the architect is a natural," he says.

In the so-called AIA/CEC conference—all of which stands for The American Institute of Architects/Consulting Engineers Council—Henderson sees yet another opportunity—aside from his own efforts—to cement already existing relations and lay foundations for others. It was just for these reasons that the AIA/CEC conferences were started, states Thomas Bennett, who is director of Congressional Relations at the Institute. The two organizations, with so many legislative issues in common, decided to join forces in an effort to develop closer bonds between A/Es and the Congress.

The AIA/CEC relationship has distinct advantages for several reasons, points out Bennett. Among them: better attendance at the conferences, which again has more impact on Congress and makes it easier to draw speakers from Capitol Hill; no duplication of staff effort, which makes it more economical for both organizations. And the joint effort is also a stimulus for increased cooperation between the two professions.

A couple of years back the conference attracted around 600 A/Es from all over the country. The framework of the 1972 meeting Henderson attended is typical: breakfast with colleagues; opening of workshop seminar by the AIA or CEC president followed by speeches by congressmen. Henderson had the choice of hearing, among others, the late House Majority Leader Hale Boggs and Minority Leader Gerald Ford speak on "The Major Issues As Seen from Capitol Hill," Congressman Jim Wright (D-Tex.) on "Fighting Red Tape in Government," and Congressman Marvin Esch (R-Mich.) on "The Occupational Safety and Health Act."

Lunch gave a chance to mingle and was followed by other speakers. "I listened to the topics closest to my heart and practice,"

Henderson making a point during the land use seminar.

Visiting with Senator Adlai E. Stevenson III (D-Ill.) in his office.

Thanking Congressman Lloyd Meeds (D-Wash.) after the seminar.

Reminiscing with National Park Service officials Dr. Ernest A. Connally and Thomas F. Flynn Jr.

says Henderson, "which happen to be urban development and preservation." He had been briefed before arrival on the issues to be discussed: The AIA Congressional Relations office had sent him a kit containing all details of the meeting with a list of bills and their sponsors, backgrounds of the bills and the recommendations of the AIA/CEC, as well as a Capitol Hill directory and a copy of the Congressional Handbook with a complete listing of committees.

In the evening Henderson and other participants rubbed shoulders with legislators and other officials at a congressional reception and in the morning, after a briefing (this by either an AIA or CEC officer), they were off to spend the day on Capitol Hill visiting senators and congressmen. If they so desired, they could attend the House Government Operations Committee hearing on architectural/engineering procurement legislation.

The same topics generally that were discussed at the seminars were brought up again during the personal meetings. "This is a great way to get to know what's actually happening," says Henderson. "The news you get in the papers just isn't enough to learn about programs and activities that go on. Too often the architects in small towns —and they are the majority—sit back without knowing what's taking place under their noses, then people come from the outside and zoom, the city takes off. However, if anyone thinks he'll hit bonanza through these conferences, forget it. The important thing is to learn how government functions, politically and socially. After all, we work within a system and that system lies in Washington. With ties to Capitol Hill not only can you do more for your community but there is, of course, also the possibility that it may do your firm some good."

Henderson, whose firm Ferry & Henderson, Inc., is in Springfield, Illinois, and most recently opened an office in Chicago, hit bonanza of sorts for his community through his work in Washington when legislation came through to establish the Lincoln Home National Site in Springfield, the first and so far only national historic site in Illinois.

This came about only through tireless efforts by Henderson, who by now had learned his way around Washington. During the AIA/CEC conference, he had a chance to visit with three other prime movers of the Lincoln Home project: Representative Roy A. Taylor (D-N.C.), Chairman, Subcommittee on Natural Parks and Recreation of the Interior and Insular Affairs Committee; Dr. Ernest A. Connally, Associate Director, Professional Services, National Park Service; and Thomas F. Flynn Jr., Deputy Director, National Park Service.

This year's AIA/CEC conference, says Bennett, will have among its principal subjects the outlook for housing and land use legislation; the impact of the energy crisis; transportation and the highway trust fund; and implications of the Occupational Safety and Health Act. □

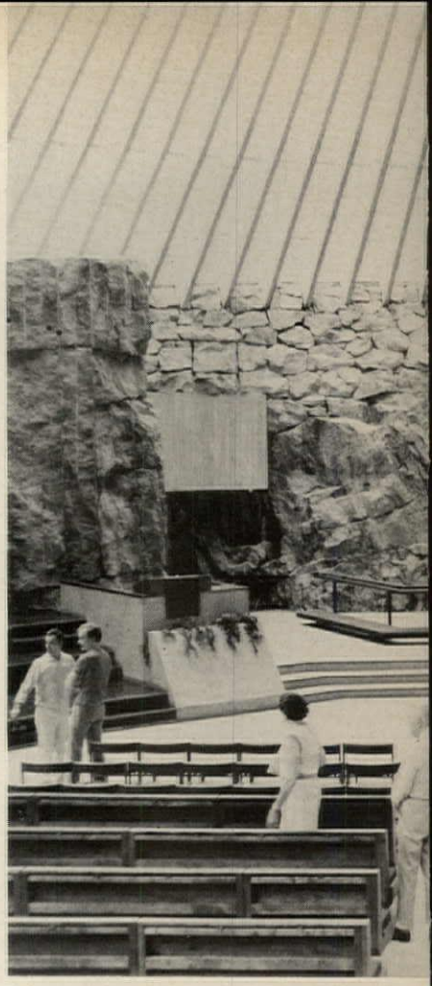
Discussing legislation with Congressman Roy A. Taylor (D-N.C.).

Chatting with Architect of the Capitol, George M. White, FAIA.

Leaving the Rayburn Building with the representative from his own district, Paul Findley (R-Ill.).

Architectural Competitions in Scandinavia

by GEORGE F. ANDREWS



The AIA *Code for Architectural Design Competitions* has been developed as a guide for the conduct and approval of competitions in order that AIA members may participate. But the AIA Committee on Architectural Design Competitions has little occasion to approve national open competitions. Recently there have been only five to ten approved competitions per year, and most of these have been by invitation or have been geographically limited. The situation is different in the Scandinavian countries where the system is heartily endorsed by architects and the general public alike. Some minor changes may be in order there, but even so competitions are considered most successful ventures. Nearly every community, large or small, boasts about a structure which was a competition winner.

It would be safe to say that the average American practitioner has no expectations of entering a single competition during his entire career. With one or two notable exceptions—Eero Saarinen comes to mind—younger architects have had little opportunity to establish themselves as independent practitioners on the basis of competitions. This is because the competition system, which plays a vital role in this regard in other parts of the world, has never really taken hold in this country. It is pointless to argue that the general course of events in the architectural profession in America might have been substantially altered given the same emphasis on competitions as is found in Scandinavia, but the obvious success of the competition system in that region suggests that we may have missed out on something important from the point of view of both clients and architects.

The architectural competition system as it is presently constituted in Denmark, Finland, Norway and Sweden is a venerable institution which has its roots in the latter part of the 19th century. It has existed in its present form for nearly a quarter of a century, and it is safe to say that there is scarcely a single architect of note in Scandinavia who has not only entered a number of competitions but also has won at least one major award. Careers are either made or lost on the basis of competitions, and the young practitioner who neither enters nor wins any prizes is likely to find himself doing nothing but minor remodeling jobs or small houses.

The architect in Scandinavia has a choice of four kinds of competitions to choose among:

1. Competitions open to architects in one country only, for example, Denmark. There is no registration of architects in any of the Scandinavian countries, so this means that anyone who calls himself an architect may enter.

2. Closed or invitational competitions with entrants selected by the sponsor. Normally there are four to six competitors, each of whom receives a fixed fee for his efforts.

3. Scandinavian competitions open to any architect in Denmark, Finland, Iceland, Norway or Sweden.

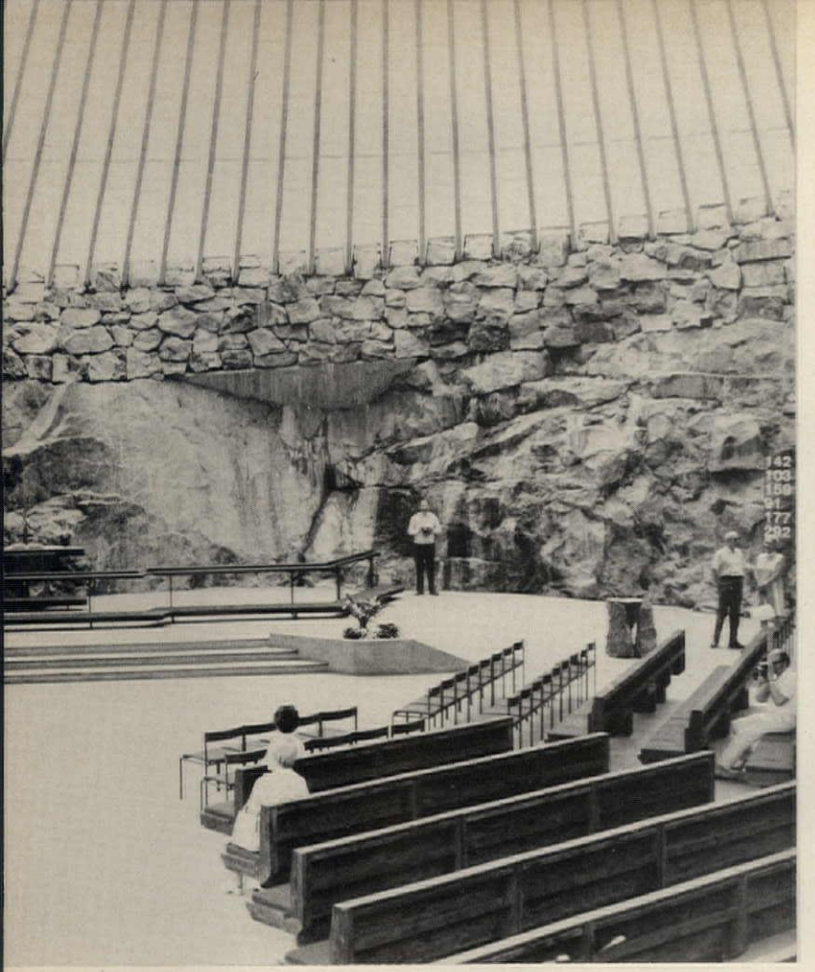
4. European or world competitions open to all architects.

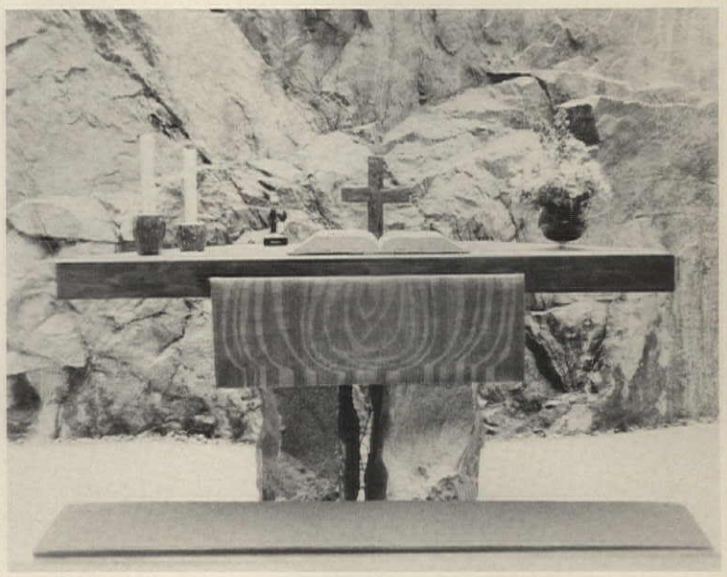
At any given moment, the Scandinavian architect has a wide range of projects to choose from. The competitions currently in progress might range from a prefabricated sauna to a town planning scheme for a new community of 50,000 people near one of the capital cities. During any given year, the competition possibilities are roughly as follows: nine to twelve open competitions in one country; four to six invited competitions; two to four Scandinavian competitions; one to three European or world competitions.

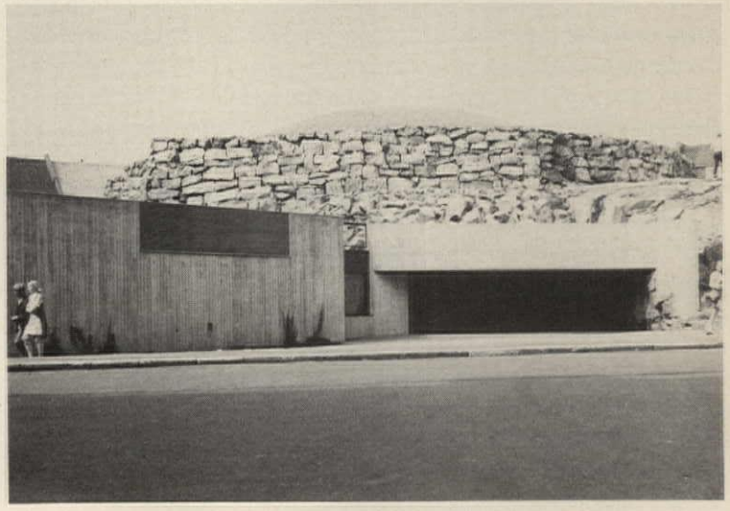
Thus, any Scandinavian architect can choose among 15 to 20 possibilities a year, while his counterpart in this country might find none at all. For example, to the best of my knowledge there have been only two competitions held in the State of Oregon during the last 20 years.

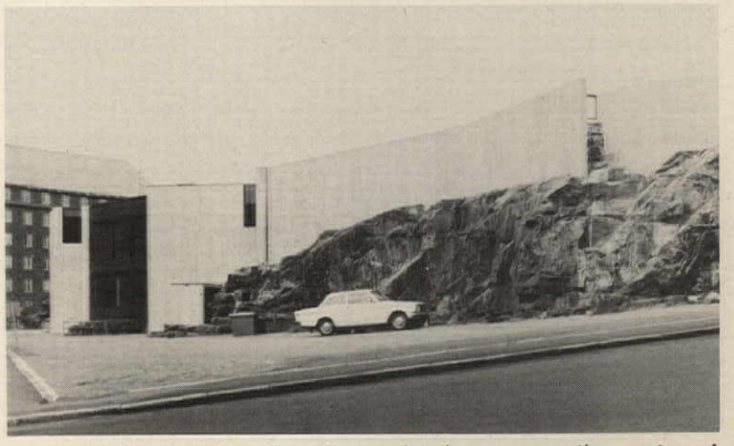
There are two categories of competitions in Scandinavia: "normal" and "idea." The former are those in which the winner of the first prize is expected to receive the commission to design and execute the project in question. Sponsors are not actually committed to proceed with the building, but they must give the commission to the winner if and when they do. Idea competitions are those in which the sponsor is looking for new ways of considering a problem or for clarification of a particularly difficult or unusual situation; no commissions are normally awarded the winners. Many large-scale housing projects or town planning schemes are of this type, in which the sponsor, generally a municipality, is seeking advice with regard to growth and development from a large section of the architectural and planning professions rather than from a single firm. This kind of competition is especially interesting because it encourages entrants to

Mr. Andrews is professor of architecture at the University of Oregon. He devoted most of a year's sabbatical leave to study the Scandinavian competition system, its effect on architects and the quality of design.









Taivallahti Church, in a densely populated area near the center of Helsinki, Finland, is dominated by a rock outcrop which competition winners Timo and Tuomo Suomalainen have made the most of. In good weather, direct sunlight enters the roof, falling on the altar wall. The main church, quarried into the rock, is used also as a concert hall.

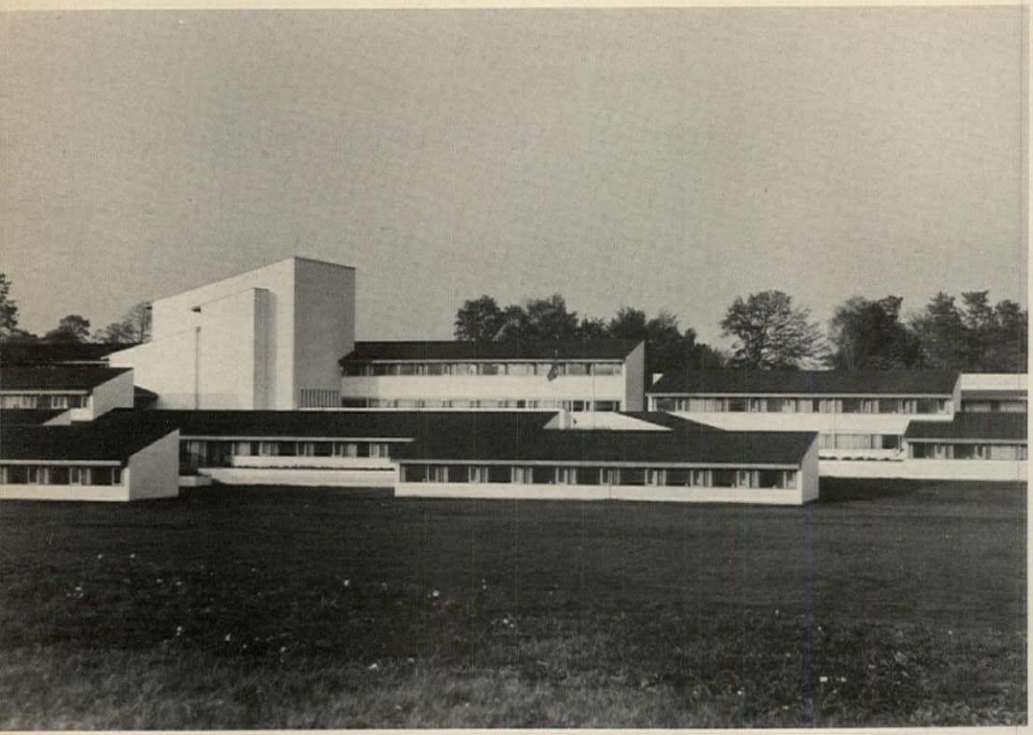
concentrate on new concepts or possibilities rather than practicalities. In a very real sense, the idea competitions serve the purpose of an open forum where thoughts can be aired visually rather than verbally.

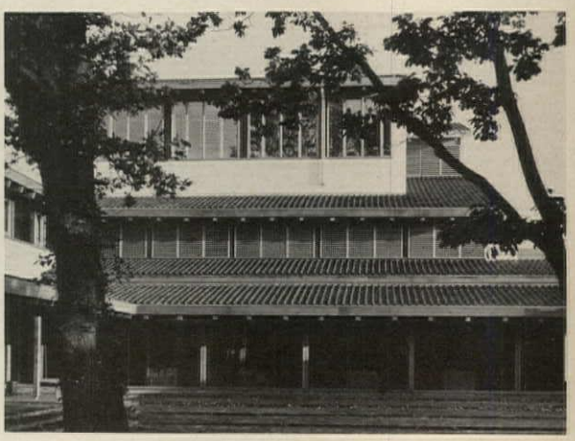
Most competitions consist of a single stage, but those with complex programs or those involving important public buildings or groups of buildings are divided into two stages with four to six competitors selected from the first stage. They are paid a specific fee to develop their projects in greater detail during the second stage. The winner of the second stage is then awarded the commission for the project.

Recently there was a competition in two stages for the design of a new university in Jyvaskyla, Finland. It is interesting to note that it seemed desirable to hold a competition even though Alvar Aalto is the architect for the present college which is being expanded into a university. The two-stage competition has many advantages from the competitor's point of view as it allows for rather simple presentations during the first stage where basic ideas are emphasized rather than elaborately detailed solutions. Clients, however, are naturally reluctant to sponsor them since it involves substantial amounts of money.

Competitions in all Scandinavian countries are controlled by the architects' societies, except for closed or invited competitions where the sponsors may insist on their own rules. As noted earlier, because there is no registration of architects, anyone may enter an open competition. As a result, architectural students submit entries as well as professionals. Perhaps it is not surprising that students often win prizes, but if they win the first prize, they are required to associate with an established architect in order to execute the project.

The professional society in each country includes a competition board with a permanent secretary who is an architect. These boards prepare all programs and select the architect jurors. Serving on a jury is an honorary position, and jurors receive no payment for their services. The programs are written





The design of L-O School, Elsinore, Denmark, is unusual in that it is by second-prize winners Ebbe and Karen Clemmensen and Jarl Heger. The main building and courtyard are entered from a larger forecourt. Residential clusters are located on the lower slopes. A townlike character is achieved by a close grouping of buildings around streets, courts and alleyways.

on the basis of firmly established rules, so there is little difference in the kind of documentation which is given to competitors from one competition to the next. The rules vary somewhat between countries, but generally they are similar. There is also a slightly different set of rules which applies only to Scandinavian or intercountry competitions.

The details of the rules are similar in many ways to those for competitions endorsed by The American Institute of Architects in this country. There is one interesting difference in the way juries are constituted in Denmark and in Finland. In Denmark, architects on the jury are always in the minority, with two architects versus three or four representatives of the sponsor who are nonprofessionals. In Finland, however, architects normally outnumber the other jury members; they have the majority vote in any case even though they may be outnumbered numerically by the balance of the jury. Both countries are convinced that its own system is best. There appear to be few occasions when the Finnish architects take advantage of their majority vote and actually overrule the balance of the jury. In some ways the Danish system seems preferable since no small part of the difficulty with competitions in the US can be charged to the fact that the particular biases of the architect jurors have frequently come into conflict with the sponsor's views of the nature of his problem.

Following the formal judging of a competition, all of the entries are exhibited publicly for a period of a week or more within the community which was involved in the competition. In addition, the entries are generally exhibited in one of the larger cities by the architectural society or by one of the architectural schools. Competitions normally receive good coverage in the newspapers, and it is not unusual to find an article and photographs of the winning project on the front pages of major newspapers in the Scandinavian capitals. Beyond this, the winning entries and other particularly interesting nonwinning entries are published in the architectural journals in each country. In Denmark, they are published in a semimonthly journal as an additional feature to the regular coverage. In Finland, Norway and Sweden, they are published in separate journals devoted exclusively to competitions. These latter journals are usually in some kind of financial difficulty due to the high cost of printing in relation to circulation, but their existence is a further indication of the importance which is attached to these competitions.

The extent to which architects in Scandinavia support the competition system is evident from the number of entries which are submitted for any major project. In Denmark, for example, it is not unusual to receive 50 to 60 entries for any substantial project, and the number may get as high as 150 as was the case recently in a competition for a planetarium in Copenhagen, sponsored by the Carlsberg Brewery. This kind of support suggests that active participation in competitions is one of the basic commitments an architect makes to his profession in Scandinavia. Many of the architects indicate that taking part in competitions is their way of maintaining a continuing educational program which has the advantage of the possibility of both direct and indirect rewards. The indirect rewards come in the form of higher standards of personal performance for noncompetition commissions.

Traditionally, certain building types have always been emphasized in competitions in Scandinavia. Public buildings such as town halls, theaters, concert halls and museums head the list, followed by churches and "prestige" or "unique" buildings of every description. During the past 10 to 15 years, however, the emphasis has shifted. At the present time, housing and town planning schemes and schools and colleges have become the dominant problem types. This condition arises out of the fact that local or regional governmental agencies, which sponsor the majority of the competitions, find that these are presently their most pressing areas of concern. Private sponsors are still interested in prestige or "image building" structures, particularly when they can be erected in highly visible urban locations.

It is my impression that the generally high level of design which is evident in new schools in Denmark is due in large measure to the fact that the postwar baby boom, which resulted in the necessity for the construction of a large number of new schools, led many communities to seek out new ideas for educational buildings through the medium of competitions. The same situation now holds true for housing and town planning schemes where suburban communities in particular have been searching for new or better ways to accommodate rapid growth and expansion. Public buildings, other than schools, are still an important source of competitions, but large-scale housing schemes occupy the center of the stage at present.

A check of all competitions held in Denmark from 1960 to 1970 shows that over 40 percent had to do with housing or town schemes that emphasized housing. It will be some time before the tangible results of these competitions become visible and even then they may be only indirectly visible as basic ideas first introduced through competitions find their way into private commissions. During this decade, the breakdown of competitions in Denmark is as follows:

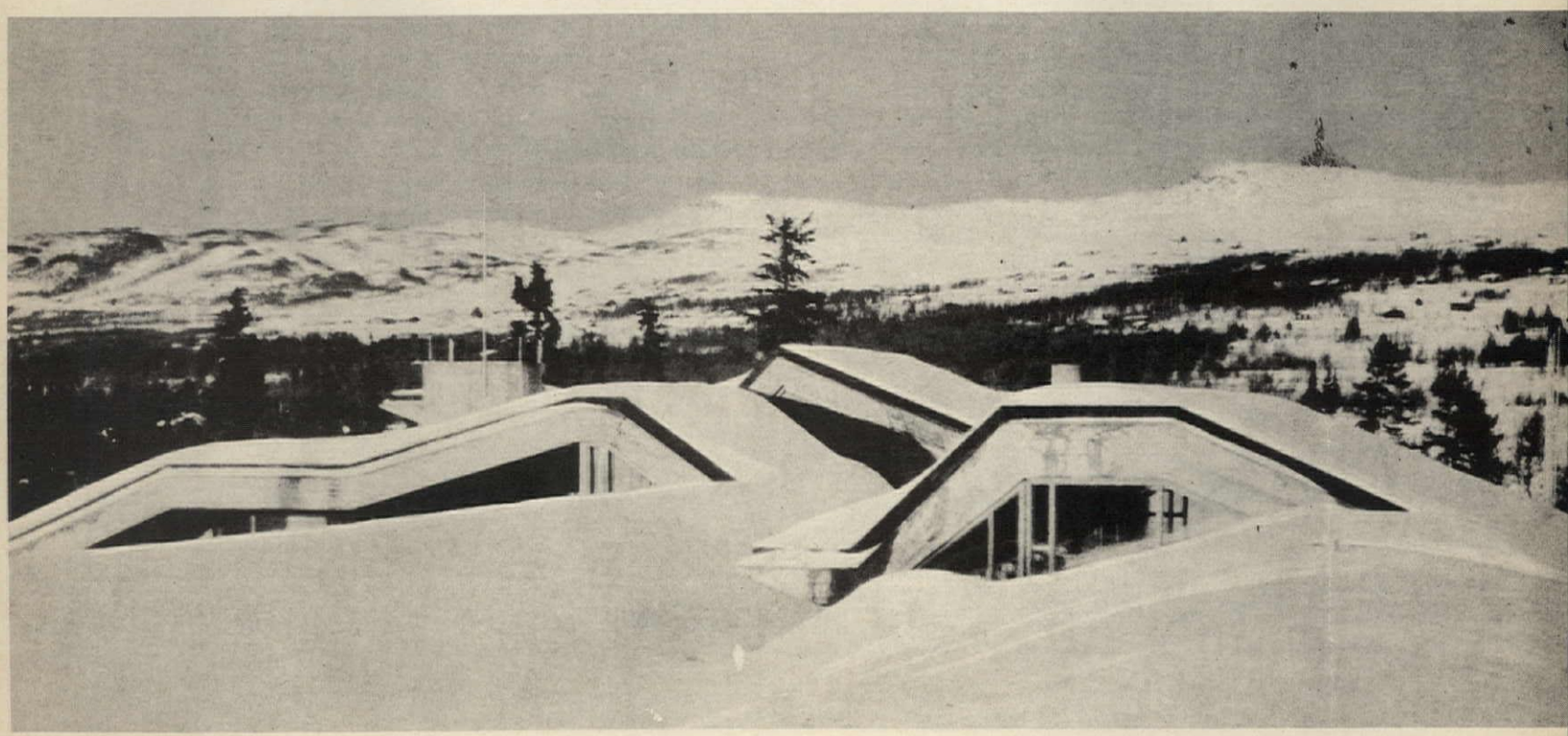
Public buildings, such as town halls, theaters, etc.	15
Housing schemes (generally large suburban areas)	17
Town planning schemes, with emphasis on housing	18
Schools, colleges, universities	16
Office buildings, banks, commercial structures	9
Churches	5
Other	12
Total	92

The above list does not include invited competitions where competitors are selected by the sponsors.

During this same decade, approximately 20 buildings were constructed in various parts of Denmark which were initiated from competitions; this includes a number of buildings for which the competitions were held during the latter part of the 1950s. The time lag between the point when competitions are held and the completion of construction averages out to something around six years, although in some cases it may be as little as two years or as much as 10. This lapse has two significant results. First, ideas which seemed fresh at the time of the competition no longer seem so novel or forward-looking after six or seven years. By this time, many of the ideas which were first advanced in a competition have found their way into the mainstream of work which has proceeded at a faster pace. Second, the time lag results in a situation where changes in the program by the client or second thoughts by the architect may produce a final product which is significantly different from the winning competition entry.

An especially interesting case of this kind is represented by the L-O School near Elsinore, Denmark. The competition for this building was held in 1959, and the first prize was awarded to Jorn Utzon. A few years later when the sponsors decided to proceed with construction, Utzon was so occupied with the Opera House in Sydney, Australia, that he suggested that the second prize winners—Ebbe and Karen Clemmensen—be given the commission. The sponsors then insisted that the Clemmensens reconsider their original entry in light of their own different

Beitostolen Health Sports Center in Norway, by Are Telje, Fredrik A. S. Torp and Knut Aasen, is designed to encourage the mentally and physically handicapped to enjoy nature. Functional and flexible, it is built to fit into the mountainous terrain. The center also educates teachers.



views of the project. The building as finally erected in 1969 bears little resemblance to the original competition entry. The point here is whether the sponsors of architectural competitions think of themselves as selecting architects or specific projects. This might vary depending on the nature of the competition as well as the care with which the original program was prepared, but any extended delay between the holding of a competition and the actual construction is likely to result in second thoughts by one party or another.

It seems fair to suggest that most of the finished buildings in Scandinavia which resulted from winning competition entries are equivalent to the kinds of buildings that receive local or regional American Institute of Architects' awards in this country. The essential difference is that in Scandinavia the awards come in advance of construction. In many ways, this seems to be a more appropriate way to receive an award since it is accompanied by a commission to execute an important building rather than a certificate to be filed away or displayed on the office wall. In winning a competition, the architect receives both recognition and commissions on the strength of demonstrated superiority on the basis of judgment by his peer group; the recognition is for things to come rather than an event from the past. A winning entry in a competition thus takes the place of a carefully prepared brochure of past work, which is one major means of obtaining commissions in this country. It has the advantage of shifting the emphasis to what might be rather than focusing on what has already happened. Under the competition system, the architect must continually attempt to renew his public reputation and stature in the profession by testing his strength against his peers in a public forum. Any failure to stand up to this kind of testing is likely to relegate him to a back seat in favor of younger or better qualified designers who succeed in meeting the challenge.

The architectural competition system continues to play a vital role for architects and the architectural profession in the Scandinavian area. It has already been pointed out that almost every architect of note in any of the Scandinavian countries has established himself early in his career on the basis of winning competitions, and most of them continue to participate in competitions throughout their careers in spite of the fact that much of the work that passes through their offices comes through normal channels. Architects of international reputation, such as Aalto in Finland or Arne Jacobsen in Denmark, are no exceptions to this rule. They support the system through frequent entries in a variety of competitions. While unqualified support of the system is not universal, the main complaints have to do with details of how the competitions are conducted or judged rather than concern for the basic concepts underlying the system. The major difficulties can be summarized as follows:

1. It is expensive to enter competitions, and costs are likely to exceed the amounts awarded as prizes. The awards have been getting larger in recent years ($5,000 to $10,000 in Denmark for first prizes), but the cost of maintaining even a medium size office, including costs stemming from nonwinning competition entries, has gone up even faster.

2. In recent years juries have tended to be swayed by overelaborate entries with the result that most winning entries are those which have been developed in considerable detail. This has the effect of shifting the emphasis from ideas or basic concepts to clever presentation techniques or practicality which nullifies one of the more important aspects of competitions. One solution to this problem would be to develop more two-stage competitions to encourage more initial entries in simpler form.

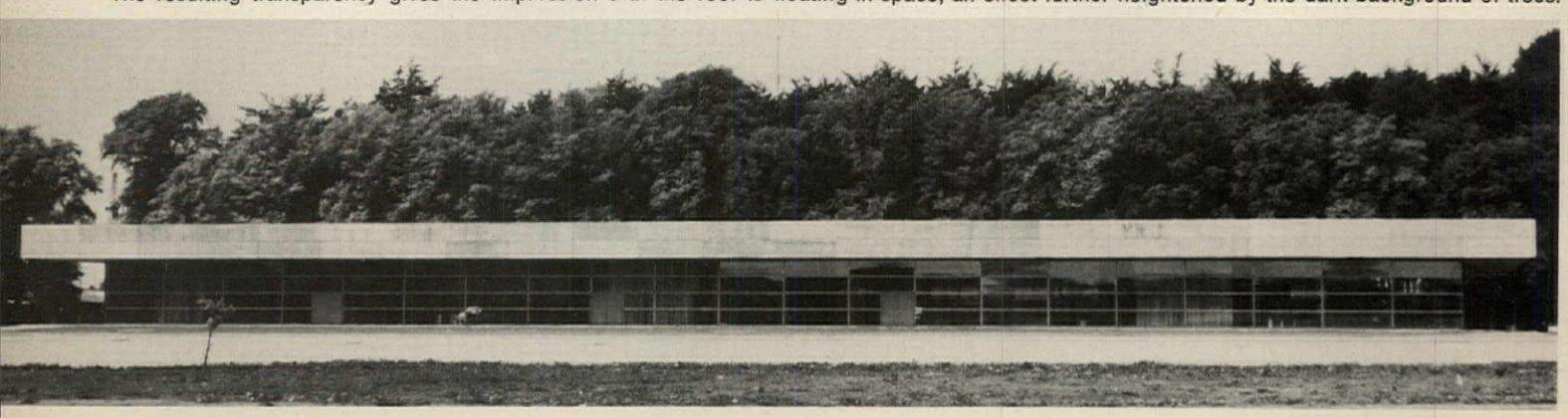
3. Some architects specialize in entering competitions which appears to give them an edge in relation to catering to the taste of particular juries. Under these circumstances, entering competitions becomes more of an abstract exercise of architectural prowess than a serious effort to deal with the sponsor's problem in social or economic terms.

4. As is the case everywhere, Scandinavian architects are concerned with the particular biases that any jury brings to a competition. It is sometimes believed that outstanding entries are passed over in favor of less worthy but better presented ones. It is not at all unusual to find that a minority report is included with the formal statement of the jury which takes exception to the majority's vote.

In spite of these concerns, most architects think that the advantages of competitions far outweigh the disadvantages. Most of them would be satisfied with minor changes in the rules in order to correct the more serious difficulties. The success of the system as it is presently constituted is due in part to the fact that most architects believe in it, and those with the greatest stature are among its most ardent supporters. It is also clear that municipalities or public bodies of all kinds who support most of the competitions believe that they are serving the best interests of the community at large by sponsoring competitions. They back up this belief by making funds available to proceed with the actual construction of winning entries.

The tangible results of competitions are highly visible in nearly every community of any size throughout Scandinavia. It is to be hoped that the present emphasis on competitions dealing with large-scale housing and town planning schemes will have a positive effect on the evolution of a new and better urban milieu during the coming decades. □

Danish architect Arne Jacobsen's winning competition entry included a sports hall, town hall and library but his revised scheme as built is only for the Sports Hall in Landskrona, Sweden. The main arena is below ground; the first floor, used for ticket and management offices, is open. The resulting transparency gives the impression that the roof is floating in space, an effect further heightened by the dark background of trees.



OSHA: Interim Alert

by ARTHUR T. KORNBLUT, AIA

An article in the AIA JOURNAL August 1972 issue explored three areas of concern for design professionals as related to the Williams-Steiger Occupational Safety and Health Act of 1970. New exploration of further sources of potential problems that can result from OSHA is made, with some recommendations for preventive procedures to reduce exposure to allegations of liability.

The Occupational Safety and Health Act creates a statutory liability on the employer for violation of the act or any of the standards adopted pursuant thereto. In the design professional's office itself, a citation can be issued by an OSHA inspector for alleged violations of the act if the architect's or engineer's employees are exposed to occupational safety or health hazards covered by OSHA standards or the general duty clause. This statutory liability—the direct liability for an OSHA violation—applies only to employers. There is no provision for any statutory liability unless an employment relationship exists in which the employer can be shown not to have provided a safe and healthful working environment for his employees.

The key aspects of an alleged OSHA violation are:

- A place of employment must exist, either a fixed place such as an office, or it can be transitory such as in a vehicle.
- An employee is exposed to an occupational safety or health hazard.
- The hazard is contemplated by an OSHA standard or by the general duty clause.

Upon receiving a citation and a notice of proposed penalty after an OSHA inspection, the violation is merely *alleged* at this point. The employer has an absolute right to contest a citation within 15 days. If the employer does not contest, the citation will become self-executing and any fines or penalties may take effect. If the employer does contest, within 15 days he must notify the Labor Department at the local OSHA area office in writing of his intent to contest. He must also notify his affected employees that he is contesting the case.

Upon receipt of a notice of contest, an OSHA judge will be assigned to hear the case and make a determination in the matter, including whether the proposed penalty is appropriate; if too high or too low, a revised penalty amount will be established. The judges appointed pursuant to the act and formerly referred to as "hearing examiners" are now called "administrative judges" or "administrative law judges."

The burden of proof is on the government to prove that a violation actually occurred. The hearings are adversary proceedings conducted in the manner of court trials and are usually held in the locality of the alleged violation. Following a determination by the OSHA judge, the case may be subject to review at the discretion of the OSH Review Commission (AIA JOURNAL, Jan., p. 48). After the final administrative decision has been reached, the employer may appeal directly to the US Court of Appeals if he is still not satisfied with the outcome.

It is emphasized that this abbreviated description of the enforcement process associated with an OSHA citation only applies to citations issued to an employer pursuant to his statutory liability for noncompliance with OSHA standards.

A second type of liability is of significant concern to architects and engineers: their potential professional liability for failure to provide adequate professional services to eliminate their client's future exposure to statutory liability for an OSHA violation. This might occur were the design professional to design some element of the project in a manner which does not comply with an OSHA standard and, upon completion of construction and after the client occupied the building, an OSHA inspector were to cite the client for failing to provide a place of employment in accordance with the standards.

The client may then seek recourse from the architect or engineer for the cost required to abate the violation and for any corrective construction in his new building. This raises the question: How can the design professional perform competent professional services and minimize his potential professional liability in view of OSHA?

The following suggestions may provide some guidance:

1. Become familiar with OSHA standards and requirements. The design professional must make a definite and substantive effort to learn about OSHA standards and how their requirements may affect the design of the project. There has been much material written on OSHA which is available from both the government and private sources. Each architectural and engineering firm should be developing a library of this material and have some means, such as subscribing to either a private or government service, for keeping it current. The standards are undergoing constant revision, and it is incumbent upon everyone affected to keep abreast of developments. Additionally, someone in the firm should be designated as the OSHA "expert" who would have the responsibility for keeping current on the subject and reading the material which is received.

2. Inform the client about OSHA. For each and every project, the design professional should advise the client in definite terms and in writing about how he believes the project will be affected by OSHA. This advice should include a judgment about the effect of OSHA on the cost of a project—both in increasing the basic cost of the building because of the need to design to meet OSHA requirements (which in many cases will be more stringent

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Mr. Kornblut is administrator of the Department of Professional Practice at AIA headquarters. This article is reprinted with the permission of Victor O. Schinnerer & Company, Inc.

than the requirements of existing local building codes) and the increased cost of the contractor's operation because of his need to comply with the standards in protecting his employees during construction. In addition, the design professional should clearly state that he does not and cannot guarantee that the building, as constructed, will comply with OSHA standards. The design professional cannot be expected to *guarantee* compliance nor does OSHA require it. The design professional, however, must make a reasonable effort to design in compliance and must exercise his best judgment in making design decisions which reflect the requirements of the standards. He should advise his client of his (the client's) potential statutory liability which can result from OSHA and document his (the design professional's) best efforts to provide services to minimize the potential for a citation.

3. Design to reflect the requirements of the standards. Just as the architect or engineer must be familiar with and design according to the requirements of the local building, fire, health, plumbing and other codes, he must do likewise with the OSHA standards. Designing so as to preclude violations is no easy task because of the voluminous material adopted by OSHA, together with its inadequate—for the design professional's purposes—indexing system, its being in a constant state of flux and its being subject to interpretation by an OSHA inspector sometime in the future. Every reasonable effort to do so must be made, however.

4. Use professional safety consultants. With complex projects or when there is concern about the extent of the effect of the OSHA standards on the design requirements, the architect or engineer should propose to the client that a professional safety consultant be retained. This consultant should be retained on the same basis that an acoustics or other special consultant would be, and paid for by the client, either as a separate charge for this additional service or by an adjustment to the basic compensation. Although safety professionals can no more guarantee compliance than can design professionals, their working familiarity with the OSHA standards can save substantial time in determining which standards apply, and their judgment in the potential application of the standards to the project can assist in making design decisions.

5. Seek consultative advice from the Occupational Safety and Health Administration. Numerous OSHA area offices have been established throughout the United States. One of their functions is to provide consultation and offer advice about the application and effect of OSHA standards. The design professional is well advised to write or visit them to request interpretations about the effect of specific standards on the design, when such effect is not clear. The personnel in the OSHA area office will not be able to provide written interpretations to serve as absolute assurances that there will be no further citations for violations. However, after the meeting, the design professional should write to the OSHA area office to confirm his understanding of what transpired at the meeting, sending a copy to the owner.

An additional note when dealing with OSHA officials is in order: Always ask to see their credentials first. The Department of Labor has issued identification cards with photographs to OSHA inspectors, and their official status should be established at the outset.

6. Follow the safety "book" during construction. The design professional should insist that the contractor honor his responsibility for safety at the construction site. The American Institute of Architects' and the National Society of Professional Engineers' general conditions specifically require the contractor to adhere to all laws and regulations which bear on the work and to be responsible for safety at the site. The OSHA standards fall within those broad requirements, and the design professional should not modify them arbitrarily or prepare supplementary conditions which unnecessarily limit their scope. In addition, the architect or engineer must specifically instruct his own field personnel to follow safety precautions while visiting the construction site. Field personnel should be issued hardhats, eye goggles or other appropriate protective equipment for use while visiting the site. With OSHA, the design professional is responsible for his own employees even when they are out of the office on official business.

7. If the client gets cited after occupying the project, don't panic. A design professional must exercise reasonable care and judgment in providing professional services, which means a level of care that an ordinarily prudent architect or engineer would have exercised under the same or similar circumstances. The law does not expect a guarantee of perfection. For the client to prove that the architect or engineer was professionally negligent for designing in a manner which resulted in an OSHA citation, he will have to prove that there was a failure to exercise due care. If the architect or engineer has kept the client fully informed about the efforts made to prevent a citation and there is adequate documentation of the background behind design decisions, the likelihood of a professional liability claim will be diminished, even if the client receives a citation. In this regard, the basis for a professional liability claim against an architect or engineer is the tort of negligence, and there is no absolute statutory liability for failing to design in accordance with OSHA requirements.

Increased effort will be required for design professionals to provide their clients with adequate services which hopefully will avoid problems with OSHA some time in the future. The making of this effort and not the avoidance of it is the best device the design professional has, both for his client and himself, for minimizing the liability which can arise. □

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1231 25th St. N.W.
Washington, D.C. 20037

Employment Safety and Health Guide
Commerce Clearing House
4025 W. Peterson Ave.
Chicago, Ill. 60646

Materials available from the AIA and NSPE:

Occupational Safety and Health Act of 1970: Law & Explanation. A booklet which explains the text of the act and each section of the law. Available from the AIA; members, $2.

The Consulting Engineer and the Occupational Safety and Health Act. A booklet which evaluates the impact of the act on consulting engineers, with a survey of relevant standards. Available from NSPE; NSPE members, $1; nonmembers, $2.

Publications on OSHA may be obtained at its various area offices or from:

Occupational Safety and Health Administration
US Department of Labor
Publications, Room 1170
1726 M St. N.W.
Washington, D.C. 20210

A Guide to Procedures of the Occupational Safety and Health Review Commission
Executive Secretary
Occupational Safety and Health Review Commission
1825 K St. N.W.
Washington, D.C. 20006

Occupational Safety and Health Standards Subscription Service
(order forms available from):
Superintendent of Documents
US Government Printing Office
Washington, D.C. 20402

What the Architect/Planner Can Do for the Builder/Developer

Three AIA members gave talks at the National Association of Home Builders' convention in Houston in January. The aim was to show how the architect/planner can play a greater role in helping the builder/developer achieve a successful project with greater profit. A condensed version of the presentations indicates how some architects have become involved in a market, too often ignored by the profession, which has a vital impact upon the daily lives of all Americans. In the planning and design process, the architect/planner can assure the builder/developer that the final client, the user, is satisfied and that disastrous mistakes in time and money have been avoided.

Abba I. Polangin, AIA, who sets the stage and describes feasibility studies that are essential early in the planning of any successful development project, is director of planning for the firm of Stottler, Stagg & Associates in Hyattsville, Maryland.

Robert W. Hayes, AIA, who is a planning consultant in San Francisco, asks some penetrating questions whose proper answers will lead the builder/developer to a knowledge of precisely what the architect/planner can do to assist him to the best advantage.

Edward H. Fickett, FAIA, who is president of his own architectural firm in Los Angeles, suggests some design avenues that are open to the builder/developer whose concern is for his company's future.

The services offered by the architect to the builder/developer at the beginning of project development are of particular significance. As the architect becomes involved earlier and earlier in the planning process, he is able to provide fundamental information that will affect the ultimate substance and character of the project to be developed. Perhaps the best way to understand this involvement is to follow the builder/developer process in evolving a project. Our purpose, then, is to describe to the builder/developer the services which can be provided by architects to enable him to evaluate his own operations and thus ascertain where these services can be of assistance.

The housing developer's central problem is to determine the feasibility of an idea and to direct its formulation into a profitable business venture. Because he is an entrepreneur and because his ideas must compete in the marketplace, he is obligated to create a good value at a reasonable price.

What are the components of a builder's profitable housing venture? They can be described in general terms as:

- market
- land
- product
- costs and labor availability
- financing
- management
- regulatory permissiveness
- profit.

The builder's idea will be directed toward the exploitation of one or more of these components. By the seat of his pants or his gut feelings, he will conceive which component can be exploited to give his venture the edge over his competition. He asks himself: Is this my bag? Can I promote this condition to my advantage? Does my track record reinforce my resources to exploit this condition? What help do I need to carry my idea through to completion? Can all the other components be managed?

If he decides to go ahead, he will assemble his team to complement his own capabilities: marketing and economic consultants, planning and design consultants, the lender, legal aid and project management and sales experts. Depending upon the complexity of the project, the necessity for detailed study, timing or a thousand other parameters, the team could be two men who do all, or it could be a half dozen firms each with expertise in a specific field of endeavor.

The essential difference in the way the builder operates now, as compared to a very few years ago, is not that he recognizes the need for in-depth study of various factors, but the way he goes about bringing these factors together. As government gets more sophisticated in its ability to control growth, protect the environment, measure the impact of development upon social and economic welfare, and as the buyer becomes more sophisticated in his demands, the fundamental composition of a project becomes sealed before in-depth studies can be made. Not only must the builder have enough facts at hand to "sell" his project to the governing bodies, but he must also make sure that he is not deluding himself into thinking that he has a feasible project when in fact he does not. With tighter governmental controls and increasing development costs, the difference in calculation between a successful project and a "bummer" becomes slim indeed. In some jurisdictions, planned unit development (PUD) schemes become sealed when initially approved, regardless of how long the build-out period is. Woe to the builder who slightly misjudged how much flood plain there was on his land when he made his zoning plea.

Unfortunately, the time when the builder needs the most study is the time when he wants to spend the least amount of money on consultants. Since he doesn't know if his land is suitable for his concept, since he can't predict the reactions of the zoning board and the citizens' review committees and since he's really not sure if his land contains the very spot where Paul Revere rode past George Washington while viewing the eighth wonder of the natural world, he is reluctant to invest a nickel before he is assured that his venture has the propensity for success.

About the only way he can proceed before he tips his hand to the world is to consult with as many people as possible who are expert in the various factors of development. Because these consultants deal in many products daily and have learned from a variety of clients, and because their training and experience have sharpened their sixth sense for determining a flaw in a plan, they can more readily determine the parameters for design. The cost of these services from the best consultants is nominal.

Therefore, the smart builder lines up his consultants at the earliest inception of a project. The architect will provide the evaluations of land, proposed product and development costs and regulatory measures that must be defined before the project can proceed. A work plan is developed which outlines the work to be accomplished and

determines the areas of responsibility of the various team members. The work flow diagram describes the interaction of the team, pinpointing the times when critical decisions have to be made, work has to be accomplished and input from outside the team is required. One architect recently described a project which had to pass through 27 different approving authorities, requiring several hundred meetings by the various members of the development team. That simple 200-unit townhouse project could not be left to happenstance.

The builder should anticipate the expense of consultant fees as they are incurred. Some consultants will provide services on the cuff for their ongoing clients on new projects for a time, but sooner or later even this time will be billed. For some projects, the consultant's fees will be the only capital investment required by the builder, and in some it will be the only asset. In merchant built housing, however, the cost of all design services rarely rises above 2 or 3 percent of the total development cost—a small investment to insure a project's success.

When the builder is entering a new market, when the market is changing or when he finds that he must diversify his product line to keep pace with changing conditions, he will generally begin with some form of market study. He will ascertain trends in economic, population and construction growth. An analysis will be prepared of the current inventory of housing, the demand for housing and comparative offerings. The architect assists in this evaluation by providing information on other currently developing projects and on attitudes held by the professional bureaucracy toward accepting new development. This basic understanding of existing conditions, sometime intuitive and subjective, can prove invaluable in reading the existing market.

Once the character of the existing market is determined, the builder begins to carve out his little niche. The specific market to be approached, the absorption rate, the product to be developed and the economic investment and return are defined. A location is picked and land is optioned.

The detailed site analysis requires professional teamwork. Architect, planner, engineer and builder must work together to develop the necessary analysis. The old questions of who leads or who coordinates are no longer valid. The answers vary with the type of project under consideration, the capabilities of the various individuals involved and the circumstances of development. The key to success, however, is in the amount of interplay between team members.

Whereas the architect/planner/engineer team will develop alternative development programs, identify construction costs and suggest choices among phasing plans, it is generally the builder's responsibility to establish the financing methods, to evaluate the options from an economic standpoint and to select the final development program.

Housing architect/planners are attempting to become more sophisticated in analytical methods. Because of the vast amount of data collected on each project and the capability of in-house computers, some firms have entered into complicated financial analysis programs based on the development variables associated with a particular project. Once basic data is obtained, it becomes relatively easy to set up a series of optimization programs which tailor the project to the builder's needs. Variance in land mix, land improvement, development and building construction costs, phasing and other inputs can be manipulated to yield a required rate of return on investment, the necessary cash flow, tax shelter, depreciation or other financial variables necessary to the success of the project. Because these models can be developed from fundamental data usually held in-house by the architect and builder, a reasonable financial package can be determined before detailed planning, engineering and architectural studies are made. By this rapid but realistic evaluation of a proposed project, enough definitive data can be obtained to outline completely the financial, physical development and marketing programs required. If everything is favorable, the builder carries his optioned land through obtaining public approvals and lending commitments. He then exercises his land option and proceeds with the development.

An initial decision, such as whether to option the property, usually involves very little money, but is a major judgment as to basic direction. As the project progresses, much more money is involved, but the magnitude of the decisions decreases. Unfortunately for many builders, the major decisions made very early in the development stage of a project have been taken too lightly because little money has been expended at that time. Usually this spells disaster at some later stage, sometimes coming only years after the development of the project. Had the builder/developer asked for proper expert advice at an early stage, he would have received an answer of appropriate quality.

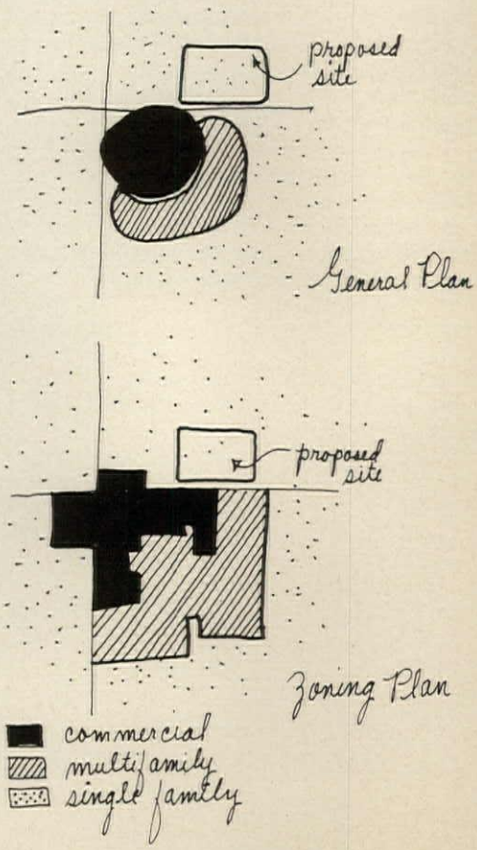
In brief, the quality and magnitude of decisions are usually inversely proportionate to the money expended on the project.

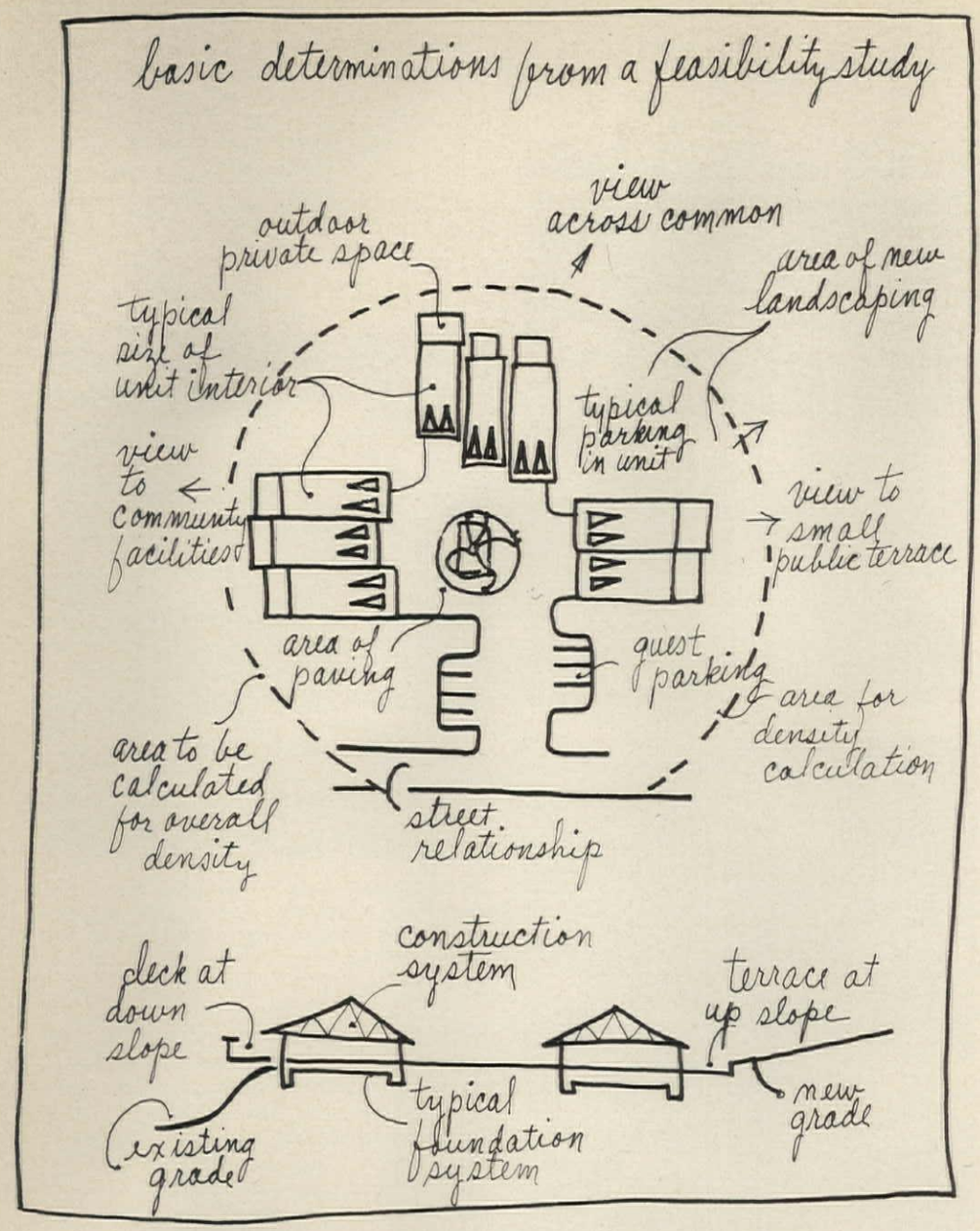
To put it another way, neither the architect nor the builder/developer really knows what to expect of each other. Neither do they know how to ask the right questions of each other. A clue to the problem might be found in the diverse characteristics of each and, further, in their lack of understanding of what each one really does.

The characteristics of the builder versus the architect are as diverse as Republican and Democrat, conservative and liberal. The builder is profit motivated, fad prone, known to imitate and is usually spontaneous and dogmatic in judgment. On the other hand, the architect is methodical, pragmatic, professionally motivated, ego-oriented and has an imagination that won't accept the same solution twice.

One might say at this point that there's no way to get these two together. Let's not give up hope too soon, however. Obviously, the two will never agree on many matters, but possibly the secret lies in how they can *use* each other to best advantage. If each knows what to expect of the other, and each has an understanding of the other's capabilities, there's a great likelihood for a successful project.

In order to attain a profitable business venture, the builder must be able to ask a series of questions of the architect at the proper time in the development process.





Let's discuss what some of the traditional questions are at the various stages of the project development: feasibility, schematics, preliminaries, construction documents, construction and sales or rentals.

The matter of project economics during the feasibility stage have been outlined earlier. In this stage, however, there is one question which is major: How does the proposed site "fit" with the future plans of the city in relation to its general plan, zoning map and political and economic problems (Figure 1)? Many a developer has proceeded in the face of overwhelming odds. He didn't ask this question at an early stage, but later, after lots of money was spent, the answer was clear. For example, his planned use of the site may have been so far removed from the city's intended use according to the general plan that there was no way the proposed development could have been accepted. His architect could have answered this question, probably before the land was even optioned.

As for information about the site in the early stage of feasibility, the most vital question usually is: What approximate density can be achieved to provide reasonable access and storage of automobiles and get the proper relationship of units to each other as well as to view, open space, etc.?

How often has the builder/developer, who has "fallen in love" with his site, accepted the real estate broker's or the zoning ordinance's calculation for density only to find the conditions impossible to meet at a later date? Almost without exception, the initial economics are worked out on this fallacious figure, charting disaster right from the option period. Several days work by the architect can determine the initial criteria with a high degree of accuracy (Figure 2).

If somehow the builder/developer gets to the schematic stage by asking the right questions and receiving appropriate professional answers, a major, and possibly most important, task is yet to come: determining the proper approach to the actual design of the project. This occurs in the schematic stage, of course, which should more appropriately be termed "idea" stage.

The crucial question is: Does the idea match the needs of the people who are to buy or rent and is it provided for the right dollar?

Some critical design questions which the builder/developer should be prepared to ask of the architect are:

- How does one approach the site? Is it initially pleasant, or is it via a parking lot?
- What type of relationship is there between units? Is there reasonable privacy?
- What is it like to look out from the unit? Are there views, are they varied, do they include vistas of one's own private open space, as well as expansive ones to far away hills or to larger open spaces?
- How are the climatic conditions taken care of: sun glare, snow removal, wind and rain?
- How does the development fit the natural terrain? Where are the trees? Is there an attempt to save trees and plants? How sensitive is the solution to the topography of the land? Is the site enhanced?
- How is the automobile problem solved? How far is it to walk to a unit? What is it like along the way?
- What about engineering factors? Where are the existing utilities? What are the soils like and what is the nature of the existing watershed? How does the solution take advantage of the existing conditions and what is the logic behind the proposed solution?

These vital questions must be answered by the architect/planner to the satisfaction of the builder, who must thoroughly understand their ramifications in regard to the prospective buyer or renter. Usually, if the builder is satisfied with the logic behind the answers, he's well along the way to understanding what the architect can do for him.

Subsequent development stages are simply a refinement of the "basics" of the schematic stage, but this does not mean that things can't go astray during any one of them. As many builders already know, a too detailed and complicated set of construction drawings can cause his construction costs to skyrocket, placing the project in financial jeopardy.

For professionals who are facing up to their responsibilities of designing today's total environment, it is imperative that newly conceived communities be designed and constructed in both a creative and controlled manner. There must be control, not to stifle or to restrict, but rather to organize the total effort and to provide the buying public with a product which satisfiies today's living needs—at a price.

Today's planning, building and merchandising demands are an exacting science. Just as density demand in a PUD is directly reflected in the final sales price, so is the economics of the development drawings. Engineering the costs *out* of a project can be

accomplished without affecting the original design. Increased density is not the only way to lower the cost of end products. Final design drawings befitting the economics of the project without loss of the impact of the original design are a result of cooperative effort.

A full understanding of the planning and building program is a solid base for a successful development. The following admonitions should be heeded:

1. Be sure that the major design and planning problems have been resolved. In the case of PUD and multifamily developments, check the basic engineering information for accuracy. Lot lines, acreage, utilities, easements, encroachments, soils engineering all relate directly to the drawings.

2. Examine thoroughly the preliminary design criteria with the construction team to save costly revisions and field construction changes.

3. Establish a schedule of required drawings, reducing drafting time by reproductive processes where possible. Time is an important ingredient to success in all projects.

4. Prepare a review and time schedule coordinated with planning and loan processing, permits and required approvals. Expediting is the order of the day. Overlapping and parallel processing with lenders, building and planning departments, etc., can be a time saver.

5. Be certain that the contract drawings are simplified documents that are easy to evaluate and construct from. A few isometrics in early drafting may keep the project on course. Vents, ducts, waste and unforeseen mechanical and electrical "termites" can wreck a good wood frame quicker than the real bugs.

The plans, or blueprints as lenders call them, must be a truly disciplined A/E effort. One eye should be on the module, whether it be 1 inch or 2 feet, and the other on the field construction technique to be used. Components must be selected for walls, roof trusses or structural systems.

The foundation must reflect footing design as well as framing. Floor plans must show framing as well as mechanical and electrical equipment. Elevations must indicate structural elements as well as finish materials.

Techniques in dimensioning differ with materials and office practices, but in each case the total plan effort should be consistent with the client's as well as the architect's typical office practices and standards. Squash the thought that exterior elevations are etchings of a sort. They should reflect important design character and intent.

Structural sections, isometrics, details, nailing schedules, calculations and the like should indicate a knowledge of field construction techniques by the draftsmen and of the structural and code requirements to be implemented by the field construction team. Structure can be exciting and expensive. Open trusses or exposed structure provide expansive scale at a low cost. Structural components need not be ugly; they can form a rhythm and pattern within or without the building envelope. Wood, steel, aluminum and various combinations of these materials are all readily available as possible components. Special design considerations await only the developer's request and sufficient quantity for production feasibility.

Details should be simple, clean, expressive and consistent throughout the development. They should allow room for expressions of the various materials that are selected for use in the project. The unlimited color, texture and scale provided by standard manufactured products can provide a background for creative structural manifestations. The more competent professionals who are thoroughly experienced in the development and design of housing can provide guidance in the possible selection of special materials to produce a merchandising sales plus. Stairways, railings, cabinets, bookcases, fireplaces and baths should be more than surfaces on which to apply or hang standard accessories. Select an array of materials from the unending supply of the old and new available. Limit the number, however, keeping in mind that it's not Heinz 57 varieties that count.

Small private exterior areas are important yet inexpensive (top left); special cast concrete block adds privacy and interest to the entrance (bottom left); simple plastic bubbles are a source of interior light (above).

Free circulation patterns, acoustical separations and changeable space relationships can reflect changing patterns of home life.

A flow of natural and artificial light, skylights, clerestories and the color control of light make for astonishing results. Expressive spatial forms, changes in ceiling heights and floor levels create varied spaces.

These are but a few of the design avenues open to the progressive builder/developer who can recognize that good design is good business.

The builder/developer must not only do his job as builder/developer/financier/gambler/magician/marketing expert, etc., but he must also know what his architect/planner can provide to complement his capabilities. Without this knowledge, he is "shooting in the dark," expecting proper answers when he doesn't have the knowledge to ask the proper questions. Until he gains this knowledge, he'll continue to make disastrous mistakes and will continue to exclude the architect/planner from the most important part of his business in housing. □

On Track with Fast-Track

by FRANCIS G. WHITCOMB, AIA
and STEPHEN A. KLIMENT, AIA

The answer is given here as to what fast-track, or the phased design and construction process, means to the architect. Where this process mainly differs from the traditional method is in the award of more than one construction contract as the design develops. Further ramifications for the architect stem from the subsequent compressed project schedule. There are 12 considerations to be kept in mind if fast-track is to work successfully.

The architect does not have to change his operation drastically to use the fast-track process. On the other hand, certain aspects of fast-track may require him to develop some additional capabilities or to bring new expertise onto the project team. These considerations fall into 12 categories:

1. Irrevocable decisions: It's expensive to change column spacings once concrete footings are in place. Fundamental to the fast-track process is early commitment to decisions, not only by the designer but also by the owner. Decisions become irrevocable, even the bad ones.

Traditionally, there is only one commitment: That is when the total contract document package, reflecting all the final decisions made on the project, is put to bid and one contract is signed. Until such a job goes to bid, nearly all decisions are subject to change, and often they *are* changed.

Under fast-track, the same decisions have to be made as with the conventional method, but commitments to decisions start very early in the process. These early commitments are cast in concrete as soon as the first construction contract is signed.

Designers and engineers who make good decisions fast will feel at home with fast-track. Those who make good decisions, but require time to weigh nuances and ramifications before committing themselves, will feel harassed, even frustrated.

2. Deferred decisions: Under conventional methods, the design team is under constant pressure. One thousand cubic yards of foundation construction cannot start until the handrails have been detailed. This unnecessary constraint to construction is removed by awarding the foundation contract as soon as that particular set of decisions has been made. Detailing handrails can wait until later.

Equipment layouts and other interior finishing decisions, for example, are usually made so far in advance of construction that by move-in time requirements have changed, the arrangement is unsatisfactory and equipment to be connected is often obsolete. A major renovation job follows within the first year to rearrange space and install the latest equipment.

Due to fast-track's overlapping of phases, these decisions and the award of these contracts can be deferred, thereby providing an opportunity for actual users of the building to participate in the decision process.

The risk of design obsolescence increases with each increase in the interval between design and construction. Deferring as many sensitive decisions as possible by fast-tracking reduces this time interval and limits potential design obsolescence.

3. Planning and scheduling: It is the construction schedule that sets the pace for the A/E schedule. All A/E decisions, owner/agency reviews and approvals and preparation of contract documents must allow the construction itself to proceed in a continuous and logical sequence.

What's new to the architect here is that detailed construction scheduling and planning are accomplished concurrently with the start of design. The A/E's work and the construction are like gears; they must mesh properly for a smooth-running project. The first step is to determine a strategy for the project. This is done by building a network diagram. *All* significant design and construction activities are identified with owner, architect and general contractor or construction manager present. These activities are arranged in the sequence that they will follow on the actual job. Division of work is outlined more completely under point 4.

The following decisions have to be made about each activity: How many days will it take to accomplish? Who is responsible for accomplishing the activity? How much money will the activity cost the client? In addition, the following items typically need to be identified: off-site fabrication, delivery and installation activities; shop drawing preparation, review and approval.

These activities are tabulated and a job schedule prepared, normally using the critical path method. The computer, if used, working with input from the network diagram developed earlier,

analyzes this data and establishes an optimum construction schedule. Start and completion dates for each activity are identified, including those activities that are critical to completing the project on schedule.

The schedule serves as a control method; therefore, job captains, construction superintendents and project managers should receive schedule information in detail. Higher levels of management need only an overview of the project. Summary bar graphs arranged by various classifications of project activity, such as foundations, shells, mechanical systems, etc., are prepared for management review. This information is typically organized in a manual which is regularly updated with current information by the architect or construction manager. The schedule can be included in the bidding documents to inform bidders when they can expect to enter the project. Extra effort spent here will help prevent project delays.

Careful attention should be given to local approving agencies which, under fast-track, must issue building permits to start construction without having a complete set of drawings and specifications to review. To preclude delays, officials should be brought in as early as possible so that they can understand what the project team is trying to accomplish and to determine what they will need to review to issue the first building permit.

4. Contracts and bid packages: One of the first decisions to be made is division of the work. How many separate contracts should be awarded and what work items should be included in each must be determined.

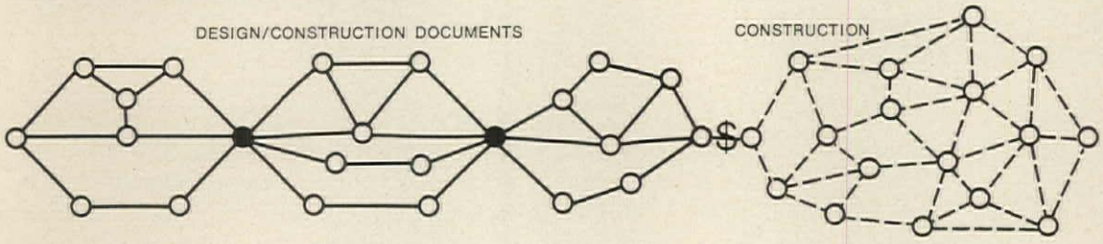
The technical specifications should be reshuffled for bid proposals. The technical specification sections normally organized in the 16-division format of the *Uniform Construction Index* have to be regrouped into construction contracts. At this point the architect and the owner should add to the team someone who knows the local construction establishment.

Usually, a general contractor (hired as a consultant) or a construction manager will advise on the most advantageous way to divide the work, taking into account:

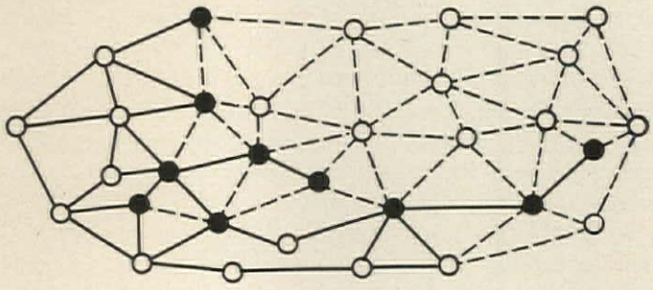
- Local trade jurisdictions. (Should through flashing in the exterior wall be in the mason's contract or the waterproofing/roofer contract?)
- Subcontractor availability and workload. (Are there any local contractors interested only in the site clearing and rough grading or should this work be combined with excavation?)
- Dollar value of the contract and bonding capacity of probable contractors. (Is the general construction portion of the work larger than the bonding capacity of local general contractors? If so, the general work items should be broken down into several contracts to increase competition and allow local contractors to bid.)
- Local construction practices. (Should taping and floating the drywall be in the painter's contract or the drywall contract?)

The owner may eventually sign as many as 10 to 20 prime construction contracts.

CONVENTIONAL PROCESS



FAST-TRACK PROCESS



● Approval

In the conventional process, all design/construction documentation procedures (solid lines) are completed before bidding and before construction activities (dash lines) can get underway. With fast-track, contracts are let and construction started as soon as appropriate approvals and bid packages (into which the total job is divided) are ready. Fast-track sharply reduces total construction time.

Packaging the contracts for bidding is a function of project size. A $4 million project might be advertised in three to five packages.

5. Bidding: The lowest cost is still the primary objective. The architect with his responsibility for bidding the project has a tougher job with multibidding. With multibidding, each trade contractor becomes a prime contractor. This is often a new role for the subs. Lack of understanding often lead to high bids.

In the interest of getting good competitive bids, the architect has to devote a lot of effort to educating the bidders so that they understand the process. A prebid conference for multibidding is probably more important than ever before. Another thing to keep in mind: The architect will have many more prebid conferences per job than he usually has.

6. General and supplementary conditions: Who provides the temporary toilets? Multibidding eliminates the umbrella of the general contractor who normally provides many general condition construction items necessary to support the many trade contractors. The architect in preparing the bidding documents needs to inform the bidders that they must supply their own temporary toilets, utilities, etc., or that they will be provided by someone else. A construction manager is often retained by the owner to provide the many support items.

Temporary heat can be a problem. The general contractor

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normally provides temporary heat during cold weather. A construction manager can do this; however, he may not want to in some instances, for example on a poured-in-place concrete building because of his exposure to liability. The contractor constructing the concrete frame could make unreasonable demands for temporary heat from the construction manager. The concrete contractor could blame a bad concrete pour on the construction manager for not keeping the temperature high enough to prevent damage. A better solution might be for the architect to specify that the concrete contractor supply his own temporary heat.

The architect should take care, in preparing the supplementary conditions to the AIA General Conditions, to establish responsibilities and changing roles associated with multibidding and construction management, if applicable.

7. Multiestimates: The day of reckoning for the architect arrives when bids come in. Does construction proceed or is it back to the boards? With multibidding, this worry is often repeated because of multiple bid openings.

In a single general construction bid, a high HVAC estimate may cancel out a low structural estimate to average the job in at the budget. In multibidding, on the other hand, each contract estimate is up for close scrutiny.

Detailed estimating of construction, contract by contract, is beyond the capability of many architects who traditionally rely on square foot costs to arrive at a probable estimate. A professional cost estimator or construction manager can assist the team here by providing detailed estimates.

8. Financial risk: The owner is asked to spend money and thus commit himself before he knows what the total price tag will be. Therefore, a significant factor to consider in fast-track is risk. When construction is started before working drawings and specifications are complete, the owner does not have a closed contract. What will be built has not yet been clearly defined; its final cost cannot, therefore, be pinned down.

One way to reduce risk is to employ systems building; preengineered manufactured building components can be costed out far more accurately than can the site-built portions of a building. Among complete building systems now readily available are structure, heating/ventilating/airconditioning, partitions, skin, ceiling/lighting systems. Another way to reduce risk is with construction management.

On some systems built projects as much as 75 percent of the price is under contract early in the design phase, a year sooner than is practical when using conventional construction methods.

A cost control program is most important. A detailed construction budget is established for each item of work and the design carefully scrutinized as it develops. Often the objectivity of a third party is advisable here. A go/no-go commitment point must be established with the owner. When enough of the bids (say 60 percent of the total budget) are in, award of the first contract can proceed. Any bids coming in over the budget on the subsequent 40 percent can be regrouped and rebid.

Multibidding allows the project team to communicate directly with each bidder and often to work out cost saving alternatives before a final contract is signed. This very useful procedure is not available under the single contract method.

Bidding each construction contract at the time it is needed on the job allows the contractor to prepare a reasonable price. He does not have to gamble on what labor and material will cost in three years.

9. Critical procurement items: Ordering elevators and switch-

BID PACKAGING

Organizing the Uniform Construction Index technical specification sections into construction contracts

1 SITE CONTRACT
- Site clearing and grading
- Excavation, fill and backfill
- Asphalt paving
- Demolition

2 STRUCTURAL CONTRACT
- Soil termite treatment
- Cast-in-place concrete
- Concrete finishes
- Structural steel
- Steel joists
- Steel deck

3 PLUMBING/HVAC CONTRACT
- Plumbing and ventilation
- Storm drainage
- Sanitary sewers
- Water distribution system
- Heating and airconditioning

4 ELECTRICAL CONTRACT
- Electrical

5 ROOFING/WATERPROOFING CONTRACT
- Sheet metal work
- Waterproofing
- Elastic flashing
- Board roof insulation
- Built-up roofing
- Thermal insulation

6 WINDOW/PANEL CONTRACT
- Glass and glazing
- Aluminum window walls
- Window wall panels

7 GENERAL CONTRACT
- Hoisting for all other contractors
- Precast concrete wall panels
- Masonry mortars
- Accessories and workmanship
- Concrete masonry
- Clay tile
- Architectural metals
- Rough carpentry
- Finish carpentry
- Millwork
- Dryboard construction
- Caulking and sealants
- Weatherstripping
- Roof hatches
- Wood doors
- Hollow metal doors
- Aluminum sliding glass doors
- Rolling slatted doors
- Painting and finishing
- Furring and lathing
- Plastering
- Suspended acoustical ceilings
- Resilient floor covering
- Ceramic tile
- Finish hardware
- Building specialities
- Acoustical insulation
- Sprayed fireproofing and insulation
- Metal toilet compartments and screens
- Chalkboard
- Metal lockers and benches

8 EQUIPMENT CONTRACT
- Walk-in freezer
- Sterilizers and associated equipment
- Medical casework, furniture steel
- Service fittings on casework
- Darkroom equipment
- Laboratory equipment
- Owner furnished equipment

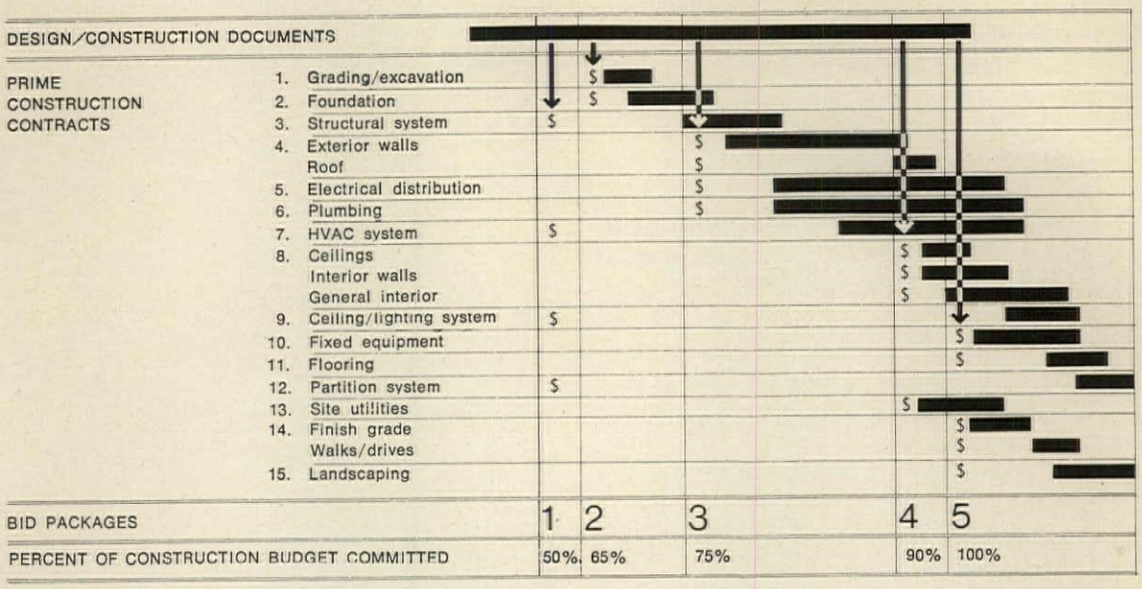
9 ELEVATOR CONTRACT
- Elevators

10 LANDSCAPE CONTRACT
- Landscaping

11 CARPETING CONTRACT
- Carpeting

TYPICAL FAST-TRACK SCHEDULE

The construction schedule sets the pace for the architect



$ = Bid package for that contract

gear is usually farthest from the architect's mind when grappling with initial design problems of siting and circulation flow. Starting construction three months after the A/E contract is signed, instead of having the usual 12- to 16-month cushion, requires that all construction items which have long fabrication and delivery times be identified and purchasing scheduled. It is especially important to establish a schedule for the preparation and review of shop drawings. These items must arrive at the job to allow construction to continue on schedule. Awarding contracts for long-lead time items may indeed be the first expenditure by the owner.

10. Owner commitment: Whether a proposed fast-track operation works out well or not is largely a function of the way in which the architect initially promotes the project. The prospective owner and client needs to be aware of the extra responsibilities he must commit himself to if fast-track is to work as promised.

The owner virtually goes into the general construction business, having contracts with many trade contractors. His continual step-by-step involvement through the entire design process is essential to keep decisions flowing.

Asking the owner to be prepared to make many decisions in short order requires the architect to plan carefully and to help the owner to plan ahead. A list of all key decisions which the owner will be required to make should be drawn up at the beginning of the project and scheduled. This will allow the owner to prepare himself and to line up his people. Also the architect must be prepared to have ready all the information that the owner will need on which to base his decisions.

The form of contract which the architect signs with the owner under fast-track is no different from conventional contracts unless the architect also provides the necessary construction management services. The American Institute of Architects is preparing an agreement form for such construction management services.

11. Maximum benefits: The fast-track process is most applicable on large projects and on building systems projects. On a $15 to $25 million project, excavation alone may take as much as three to four months. The sooner this is started, the better especially if it can be done during the dry season and when the ground is free of frost.

A large portion (50 percent) of a building systems project can be bid by manufacturers very early, i.e., the first month into the design process. The architect can prepare scope drawings and performance specifications in a relatively short period, allowing manufacturers to bid and commitments to be made. Thus, with systems building, the overlap of design and construction can be significant even on projects of $1 to $3 million. Otherwise, such a project is too small for fast-track benefits.

Design for fast-track! In his approach to the building design, the designer must take into account fast-track's potential delivery reduction time. This way he can avoid building systems and materials which require exceptionally long fabrication and delivery times. Also he should prepare the detailing of connections and product interfaces to eliminate a multiplicity of trades as this complicates division of work for multibidding.

12. Project management: It takes a good project manager to run a fast-track project. Careful planning, coordination and constant communication with all the team members is more than ever essential when design and construction are simultaneous.

The compressed work schedule eliminates the time buffer between phases. This buffer has often served to compensate for slow reaction times and poorly planned work schedules.

Detailed planning using CPM techniques gets a project team off to a good start. A list of all key decisions to be made, and who has to make them as the project unfolds, should be scheduled. Graphic techniques, such as network diagramming and summary bar charts, should be used to communicate this information to the entire team.

A number of architectural firms are discovering that the additional complexities created by fast-track are best handled by establishing a construction management division or by retaining outside construction management consultation. Construction management specializes in handling the cost and schedule control implications of fast-track in a methodical manner. It pulls together items which fast-track otherwise leaves hanging. □

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OCCUPATION (Please Check)
- ☐ A Registered Architect
- ☐ B Engineer — Structural
- ☐ C Engineer — Mechanical
- ☐ D Engineer — Electrical
- ☐ E Engineer — Other
- ☐ F Other (please specify)

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1

Project Manual Concept

In its simplest terms, the Project Manual concept is a reorganization and renaming of that familiar book of bidding forms and contract documents usually referred to as the "Specifications" or "Specs" which, along with the drawings, are the documentary basis for all construction projects. The Outline of Contents here, by James C. Hemphill Jr., FAIA, is an updating of the concept which was first published in the November 1965 AIA JOURNAL.

The Project Manual contains a great deal more than specifications. It normally includes the bidding documents, i.e., invitation, instructions, sample bid, bond and agreement forms, general and supplementary conditions and information on alternates and unit prices, in addition to the technical specifications describing the materials and performance expected in the construction. The manual also frequently contains a schedule of the drawings pertaining to the project. The book is indeed a manual of bidding requirements and contract documents.

Prior to 1960 many architects used the advertisement, instruction to bidders and specifications rather loosely. In many cases, requirements of the contract were placed in the instruction to bidders. When serious problems required resolution in court, attorneys could raise the question whether information in these documents was actually a part of the contract requirements. During the 1960s, various AIA committees working together and with other professional societies established criteria for organization of material which would include all contract requirements in the *specifications* and locate all information and material that would become void after contracts with the earlier documents. This was confirmed in the 1966 edition of the General Conditions which stated in positive terms that the contract superseded all prior negotiations and agreements.

After considerable discussion, however, it was conceded that for convenience these earlier documents, which were actually not a part of the contract, should be bound with the specifications into a Project Manual.

The material included in the Project Manual falls into two general categories: 1) those describing the requirements for bidding and 2) those that become part of the contract documents upon the signing of the construction contract. Within each of these two categories all of the familiar instructions, forms and the like are organized as outlined here.

The AIA Board of Directors in adopting this concept instructed the various committees within the Commission on Professional Practice to proceed with the detailing of consequent changes in all AIA office practice documents. All of the current Institute documents now have been edited to work with the Project Manual concept of organization.

By the use of this system, reference can be made to the four parts of a contract: 1) agreement, 2) conditions of the contract, 3) schedule of drawings and 4) specifications. All of these are in the Project Manual except the drawings, and it is recommended that a list of the drawings be included. Neither the invitation to bid, instruction to bidders or sample forms are in the contract but are bound into the Project Manual for the convenience of the bidders.

For more detailed discussion of the Project Manual, see *Architect's Handbook of Professional Practice*, chapter 14 (1972 edition). □

Outline of Contents of Project Manual

TITLE PAGE
TABLE OF CONTENTS
ADDENDA (if bound in Project Manual)

1.0 BIDDING REQUIREMENTS
The bidding requirements are bound into the Project Manual with the Contract Documents for the convenience of the bidders.

1.1 Invitation to Bid or Advertisement for Bids
- Exact title of project and its location
- Name of owner
- Name of architect
- Person to receive bids
- Place for receipt of bids
- Time for receipt of bids
- Type of bid opening
- Short description of project, scope and type of construction
- Type of contract
- Place for examining bidding documents
- Place for obtaining bidding documents
- Time bidding documents available
- Procedure for obtaining bidding documents
- Statement of what bonds will be required
- Statement on time of completion and liquidated damages, if any

1.2 Instruction to Bidders
- Qualification of bidders
- Bidder's representation
- Examination of bidding documents
- Clarification of bidder's questions
- Addenda
- Bid guarantee requirements (bid bond)
- Performance bond and labor and material payment bond
- Substitutions
- Procedure for execution of bids
- Procedure for submission of bids
- Procedure for withdrawal or modification of bids
- Procedure for opening of bids
- Conditions for rejection of bids
- Procedure for award of contract
- Submission of post-bid information
- Return of bidding documents
- Other instructions to bidders

1.3 Sample Forms
- Bid
- Bid bond
- Power-of-attorney
- Bidder's qualification questionnaire
- Agreement form
- Performance and payment bonds
- Noncollusion affidavit
- Certificates of insurance
- Consent of surety
- Application and certificate for payment
- Other sample forms.

2.0 CONTRACT DOCUMENTS

2.1 Agreement

2.2 Conditions of the Contract

2.2.1 General Conditions
- AIA Document A201

2.2.2 Supplementary Conditions
- Examination of site
- Labor standards
- Wages and hours
- Insurance requirements
- Unit prices, predetermined
- Payment to the contractor
- Time of completion
- Partial occupancy
- Bonus and penalty clause
- Liquidated damages
- Guarantees and affidavits
- Type of contract (single or separate)
- Substitution of materials

Other conditions as required

2.3 Schedule of Drawings

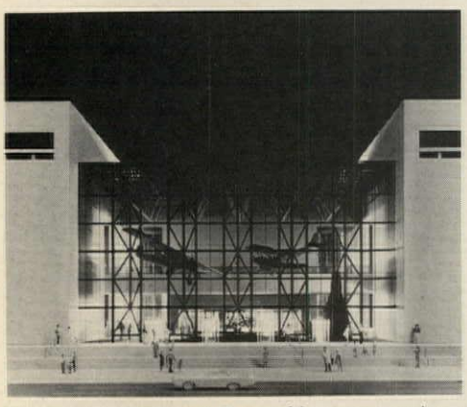
2.4 Specifications

1 General Requirements
- Allowances
- Summary of the work
- Alternates
- Submittals
  Schedules and reports
  Sample and shop drawings
- Temporary facilities
- Quality controls
- Project meetings
- Cleaning up
- Project closeout

2 Site Work
3 Concrete
4 Masonry
5 Metals
6 Wood & Plastics
7 Thermal & Moisture Protection
8 Doors & Windows
9 Finishes
10 Specialties
11 Equipment
12 Furnishings
13 Special Construction
14 Conveying Systems
15 Mechanical
16 Electrical

outlook *from page 10*

• Courthouse and Federal Building, Akron, Ohio (architects: Tuchman & Canute)
• Federal Building, Tucson, Ariz. (architects: Cain, Nelson, Wares, Cook & Associates)
• Federal Building, West Los Angeles (architects: Charles Luckman Associates Inc.)
• Federal Building, Chicago (architects:



The National Air and Space Museum creates a new dimension for the nation's capital city.

Schmidt, Garden & Erikson; Ludwig Mies van der Rohe; C. F. Murphy & Associates; and A. Epstein & Sons, Inc.)
• National Archives and Records Center, San Bruno, Calif. (architects: McCue/Boone/Tomsick)
• National Institutes of Child Health and Human Development Research Laboratory, Bethesda, Md. (architects: The Architects Collaborative).

The jury was composed of GSA's National Public Advisory Panel on Architectural Services: S. Talbott Wilson, FAIA, chairman, Houston; Kenneth C. Black, FAIA, Lansing, Mich.; William W. Caudill, FAIA, Houston; Grant Curry Jr., AIA, Pittsburgh; D. Kenneth Sargent, FAIA, Syracuse, N.Y.; and Harold T. Spitznagel, FAIA, Sioux Falls, S.D. The jury was joined by a seventh architect: Walter A. Meisen, AIA, Washington, D.C., who is GSA's assistant commissioner for construction management.

International Architectural Reciprocity Is Endorsed by Licensing Delegates

International relations among countries was strengthened when architects responsible for licensing met in Dubrovnik, Yugoslavia, in an effort to improve and equalize standards of architectural education and practice. Thirty delegates from 12 countries were in attendance at the second International Conference on Architectural Registration.

Thomas J. Sedgewick, AIA, of Flint, Mich., president of the conference, urged the participants to continue to meet as registration and licensing authorities and to strive for "true international reciprocity," concentrating upon similarities in the various processes rather than upon differences. Chairman of the program committee for the conference was William J. Geddis, FAIA, Cambridge, Mass.

Delegates from Australia, Canada, Denmark, Ireland, France, Nicaragua, Norway, Spain, Singapore, the United Kingdom, Yugoslavia and the US endorsed the concept of movement of architects between countries through the process of improved and equalized standards of education and practice. Ronald Gilling of Australia indicated that after details have been worked out, his country is prepared to sign an agreement with the US through the National Council of Architectural Registration Boards which will permit qualified architects to practice in both countries.

Innovative Solutions Praised by Jury Of Defense Department Design Awards

Winners in the first annual Department of Defense design awards program were named recently at a Pentagon ceremony. The entries were judged by AIA members William Marshall Jr., of Norfolk, Va., and William L. Ensign of Washington, D.C., and by engineers Robert Krohn and William N. Holway.

The jury commended "the meritorious support of the military departments in encouraging innovative solutions," saying that "a number of the entries transcended the stereotyped structures often resulting from overzealous application of necessary regulations and cost limitations."

The competition was divided into five categories with a first place award in each. The jury decided, however, that two projects in

The award-winning Thompson Medical Library Addition's plan is both simple and functional.

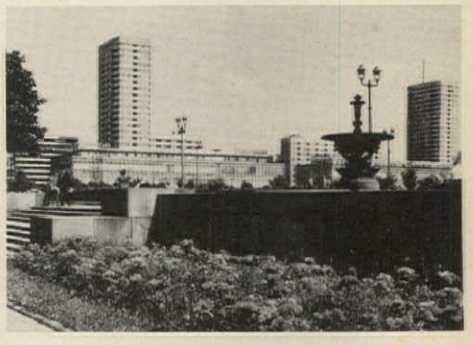
the family housing category both merited first place: family housing units at Vint Hill Farms, Va. (architects: Chapman & Miller) and housing units at the Presidio, San Francisco (architects: George Matsumoto & Associates).

In addition to receiving a first place award in the medical facilities category, the Thompson Medical Library Addition, Naval Hospital, San Diego, Calif., designed by Delawie, Macy & Henderson, also received the top award of the entire program known as the Secretary of Defense Blue Seal Award.

Winner in the architectural facilities category was the Engineering Management Building, Puget Sound Naval Shipyard, Bremerton, Wash. (architects: John Graham & Co.). In the welfare and recreational facilities division, the Main Exchange, Marine Corps Air Station, El Toro, Calif., won a first place (architects: Robert M. Thomas & Associates). Top honors in the engineering facilities category went to the Environmental Radiation Test Facility, Fort Huachuca, Ariz. (engineers: Finical & Dombrowski).

World Meetings Discuss Tall Buildings; Poland and India Are Recent Hosts

One of the first major architectural/engineering conferences to be held in Poland in recent years with significant numbers of participants from the United States and other Western countries took place in Warsaw in



Contrary to the results of studies made of other large cities, evidence shows that Warsaw's highrise apartments have little crime.

November. The Joint Committee on Tall Buildings of the American Society of Civil Engineers and the International Association for Bridge and Structural Engineering held a regional conference with 275 participants from 17 nations present.

Presented under the auspices of the ASCE, the IABSE, the Warsaw Technical University and the Polish Academy of Sciences, this was the seventh of a series of regional conferences that have been held around the world but the first since the international conference on tall buildings held at Lehigh University, Bethlehem, Pa., last August.

Highlights of the Lehigh conference were presented. Warsaw itself provided a unique situation with respect to tall buildings. Urgent housing needs following its destruction in World War II led to the construction of large apartment complexes. Warsaw's inner city now has a mix of high and low rise buildings; apartments, hotels, shops and offices are in close proximity, making the downtown areas lively at all times.

Crime is said to be low in highrise apartments. One participant at the conference said that this is because families are so pleased to have an apartment because of the housing shortage that they "take special care." Many apartments are owned coopera-

tively which stimulates "a sense of responsibility beyond that of rental."

The Joint Committee on Tall Buildings also held a regional conference in India in January. The committee, headquartered at Lehigh University, is chaired by Lynn S. Beedle. Prior conferences have taken place in France, Yugoslavia, Japan, Czechoslovakia, the Netherlands and the US. As the mayor of Warsaw said when he greeted participants to the conference, "Tall buildings are important, but perhaps even more so is the international goodwill that can come from these technological exchanges." Mexico City will be host March 7-9.

Penn Is Winner of PPG Foundation Grant For Energy Conservation in Curriculum

The University of Pennsylvania has been named the winner of the PPG Industries Foundation competition for a $25,000 grant to improve the education of architectural students in subjects related to energy conservation.

The Penn proposal calls for the development of a new and expanded curriculum and a textbook on energy conservation in buildings. The textbook and other course materials will be developed by the architectural faculty with major contributions by other faculty members of the Graduate School of Fine Arts and the university's National Center for Energy Management and Power.

Invitations to compete were directed to nine schools of architecture in large metropolitan areas. It was stipulated that engineering departments also contribute to the proposal. In addition to the grant to Penn, the foundation has offered $1,000 each to the eight other schools to cover expenses in the preparation of proposals.

Members of the jury were Robert F. Hastings, FAIA, Detroit; Gifford H. Albright, head of the Department of Architectural Engineering, Pennsylvania State University; and Sital L. Daryanani, vice president and chief mechanical engineer of Syska & Hennessy, Inc., New York City.

Excavation for Parking Levels Uses Slurry Trench Method to Drill Earth

A new machine built by a Japanese firm is being used for the first time in this country on the site of Chicago's Water Tower Plaza. The tower, designed by Loebl Schlossman Bennett & Dart in association with C. F. Murphy Associates, will be 74 stories high, combining a seven-story vertical shopping center, two floors of commercial space, a 22-story hotel, 40 floors of apartments and mechanical floors.

Because of the 40-foot depth of the parking levels below grade, ordinary forming of perimeter foundation walls would have been costly and would have made a portion of the interior site temporarily inaccessible for construction. Hence, the slurry trench method is being used. Instead of the conventional clamshell or scoop, the Japanese machine uses a battery of augers or "flights" to drill out the earth. Then blades trim the walls of the trench to near perfect flatness.

A bentonite slurry is poured in to keep the walls from caving in while the earth is drilled from the trench. As each section of the trench is completed, concrete is pumped in and the bentonite slurry is displaced by the concrete. The designers expect that the concrete will cure with little or no additional finishing, thus saving costs on walls for the underground garage.

After the foundation walls are finished, soil anchors will be drilled through the wall from the inside of the site to a point 60 feet under the right-of-way outside the foundation. These anchors will be proofloaded to 160,000 pounds and then backed off to a 120,000-pound working load. Then excavation of the site will begin.

Construction began in August and is expected to be finished in 1975.

Design Contract Awarded in Competition; Niagara Falls to Have Five-Acre Plaza

Abraham W. Geller, FAIA; Raimund J. Abraham; and Giuliano Fiorenzoli of New York City have been awarded the first prize of the design contract in the international Rainbow Center Plaza competition for the plan of a five-acre plaza that will front the Niagara Falls, N.Y., International Convention Center.

A requirement of the competition was to conceive of a weather enclosed pedestrian connection to allow convention attendees to move freely and comfortably between the convention center, the convention hotel and the commercial structures to be constructed on the opposite side of the plaza;

a $4 million budget limit was given to each entrant.

The winning design features a carving out of the plaza, leaving two islands in the center which are reached by a broad bridge. The lower level is used for wind sheltered pedestrian areas and will include restaurants, shops and summer and winter time activity areas. An amphitheater carved into the rock will seat 3,000 persons.

The second prize of $10,000 has been awarded to Dean Abbott, New York City. The Bloomfield Hills, Mich., architectural firm of Tarapata, MacMahon, Paulsen Corporation won the third prize of $7,500.

The jury, chaired by Pietro Belluschi, FAIA, Boston, included R. T. Affleck, a Canadian architect; M. Paul Friedberg, landscape architect; R. T. Schnadelbach, landscape architect; Benjamin Thompson, AIA, Cambridge, Mass.; Armand J. Castellani, chairman of the board, Niagara Frontier Service, Inc.; Seymour H. Knox, chairman emeritus, Marine Midland Bank Western; C. Richard Reese, executive vice president, Niagara International Center Ltd.; Mrs. John E. Runals, executive director of the Society for the Promotion, Unification and Redevelopment of Niagara Inc.; and Beda Zwicker, AIA, nonvoting advisor to the jury, New York City. The competition was organized and administered by Charles G. Hilgenhurst, AIA, Arlington, Mass.

The winning design's lower level, framed by carved exposed natural rock, recalls the edges of the famed Niagara. It will have multi-uses as a wind-sheltered pedestrian area.

Coordinator of Federal Graphics Named

In a message to the Associated Council of the Arts last May, President Nixon gave the National Endowment for the Arts the responsibility "for coordinating the efforts of the executive agencies to upgrade their graphics." His aim is for the federal government "to reflect new standards of excellence in all its design endeavors."

Jerome H. Perlmutter has been appointed by the Endowment as coordinator of federal graphics. Formerly publishing chief for the Department of State, he will work with federal government department administrators and designers to coordinate efforts to improve the appearance and efficiency of government graphics such as posters, signs, forms, charts and publications of all kinds.

Bright Lights at Night for Baltimore; Mayor Continues Relighting Program

"Baltimore is the first major city in the US to completely phase out all incandescent street lights," claims Mayor William Donald Schaefer, who wants his city to be "America's brightest city at night." He has conducted a two-year relighting program which calls for the conversion of about 20,000 mercury vapor street lights to high pressure sodium ones. The total allocation for the program is estimated to be about $2.4 million.

Evidently Baltimore citizens share the mayor's enthusiasm: In November the voters approved overwhelmingly a $1.2 million street lighting loan. All major roadways, shopping areas, hospitals and other special areas have been designated for brighter lights.

Baltimore's interest in lights is not new. Back in 1817 the first gas street lamp in America was placed in service in Baltimore by the newly organized and first gas company in this country. In December Mayor Schaefer dedicated a working replica of this gas light at which time he paid tribute to its developer, the artist Rembrandt Peale, who formed the pioneer gas company.

At the present time, four Baltimore neighborhood shopping centers have been converted to brighter sodium vapor lighting, and relighting projects have begun in three other shopping areas and at two hospitals. The greater portion of the downtown has already been converted from mercury to sodium vapor lights, doubling the brightness of 1,000 street lights. Sodium vapor lighting which extends from the city line on Pulaski Highway to downtown will start soon. With the single exception of the gas light on the corner of Baltimore and Holliday Streets, the 67,000 street lights in the city are now either high intensity mercury or sodium vapor. The city's aim is to "assure downtown development and public safety."

Leader in Many Professional Societies; Called 'Dean of Architects' by Peers

Russell Thorn Pancoast, FAIA, "once slept in a tent as Miami Beach's first newsboy, and later designed Florida living in its most elegant style," wrote a *Miami News* reporter recently. Born in New Jersey, Pancoast left that state in 1913 to join his pioneer resident family in Dade County, Florida.

After graduation from Cornell University, Pancoast returned to practice architecture in Florida, conducting business in three different locations. His firm grew into one of Florida's largest, designing such structures as the Miami Beach Auditorium, the Museum of Science, the Snapper Creek Lakes subdivision and the Miami Beach First National Bank Building.

Pancoast, who died on November 29 at the age of 73, was a past secretary and past president of the Florida South Chapter AIA and a past president of the Florida State Board of Architecture, on which he served for 13 years. He was a director of banks and a leader in many organizations such as the South Florida Historical Association and the Fairchild Tropical Gardens.

Prominent Architect in New Orleans, Teacher and Professional Leader

For more than half a century Moise H. Goldstein, FAIA, practiced architecture in New Orleans. He designed such local structures as the National American Bank Building, the *Times-Picayune's* Lafayette Square offices, the International Airport, Dilliard University, the Civic Center and many residences.

Goldstein, who died at the age of 90 on December 28, was one of the organizers of the Louisiana Chapter AIA, predecessor of the New Orleans Chapter. He was the state group's first president.

Before his retirement in 1961, Goldstein was a part-time lecturer and teacher at Tulane University's school of architecture. He was graduated from Tulane in 1902 and received his master's degree from the Massachusetts Institute of Technology three years later. He attended the American Academy in Rome under the auspices of MIT. A memorial fund has been established in his honor at the Tulane School of Architecture.

Deaths

CLAUDE S. ASHWORTH
Provo, Utah
HORACE E. BELSHER
Houston
EDWARD M. BURROWS
Lexington, Ky.
KENNETH A. EPPERSON
Burbank, Calif.
JOHN A. FINDLAY
Madison, Wis.
CARL G. FORSSEN
Seattle
GILBERT GARZA
San Antonio, Tex.
EUGENE J. GIBERT
New Orleans
WILLIAM V. HARBER
San Antonio, Tex.
CHARLES W. JOHNSTON
Payette, Idaho
LAVERNE H. KIRBY
Lubbock, Tex.
CHARLES Z. KLAUDER JR.
Philadelphia
FRANCIS J. LIBERATORI
Springfield, Mass.
WALLACE B. LIVESAY
Beaumont, Tex.
DAVID C. MACKIE
Tucson, Ariz.
LEONARD R. MAULDIN
Del Rio, Tex.
ADOLF L. MULLER
Brooklyn, N.Y.
FREEMAN A. PRETZINGER
Dayton, Ohio
ERNEST H. SCHMIDT
Mankato, Minn.
BARNETT SINGER
Bayonne, N.J.
WILLIAM M. WEIDEMEYER
Miami

Newslines

The Occupational Safety and Health Administration is offering a new subscription service which provides all pertinent standards, interpretations, regulations and procedures issued in loose-leaf form for a three-ring binder. The materials, with changes and additions supplied to keep the documents current, are available in five volumes; subscribers may purchase any volume depending upon their interest. The subscription rate for volume three on construction standards is $8. Complete information may be obtained from the US Department of Labor, OSHA, Washington, D.C. 20210.

Chicago's tall buildings are the subject of an exhibition recently opened in Stockholm which will travel from the Swedish capital city to other places in that country. About 80 photographs by architect Harold Nelson document the growth of the city's architecture following the great fire of 1871 to the present. Nelson, who is director of the Chicago chapter of the American Scandinavian Foundation, received grants from the Graham Foundation and the US Cultural Center in Stockholm to underwrite the exhibition.

Ronald H. Walker has been named director of the National Park Service, succeeding George Hartzog. Formerly a special assistant to President Nixon, Walker organized and directed all Presidential domestic and international travel including visits to the Soviet Union and the People's Republic of China.

Indiana limestone is treated in depth in the 1973 edition of *Indiana Limestone Handbook*. The publication contains design information, details and specifications of how to use this material in various types of building construction. It is free to architects, engineers, designers, schools and specification writers from the Indiana Limestone Institute of America, Inc., Suite 400, Stone City National Bank Building, Bedford, Ind. 47421.

Employment opportunities for women and blacks in the planning profession did not change very much in 1972 as compared with 1971, states a memo report released by the American Society of Planning Officials' Planning Advisory Service entitled *Women and Blacks in Planning: 1972*. Prepared by Lisa Yondorf, the report says that in both groups proportionate representation in planning continues to be about one-third of their proportion in the labor force (12 percent out of 37 percent for women and 3.5 percent out of 11 percent for blacks). Copies of the report may be purchased for $1 each from ASPO, 1313 E. 60th St., Chicago, Ill. 60637.

Keep America Beautiful 1972 Awards have been given to Orange, Conn.; Long Beach, Calif.; and Monroe, La., with special merit awards to Grand Prairie, Tex.; Skokie, Ill.; Highlands, N.C.; and North Hempstead, N.Y.

An estimated $8 million will be granted in 1973 under the Department of Housing and Urban Development's Historic Preservation Program. This is more than double the 1972 figure.

Thirteen recently constructed parking structures are described in a booklet recently published by the American Institute of Steel Construction, Inc. Entitled *Steel Parking Decks*, it summarizes construction costs for each parking facility. A copy may be obtained without charge from AISC, 101 Park Ave., New York, N.Y. 10017.

Basic specifications for barrier free architecture are incorporated in a 12x18-inch poster available upon request from the Paralyzed Veterans of America, 3636 16th St. N.W., Washington, D.C. 20010. The poster is intended to focus on the continuing need to consider the handicapped and the aged in the design of public buildings. The poster was designed by Peter Lassen in collaboration with Brooks Scurlock and Barry Woods. Lassen is architectural coordinator for PVA and a paraplegic Vietnam veteran.

The Associated General Contractors of America has compiled a book of "Federal Laws Relating to Employment of Labor in Construction." Copies are available for $2 each from AGC, 1957 E St. N.W., Washington, D.C. 20006. □

Books

Learning from Las Vegas. Robert Venturi, Denise Scott Brown and Steven Izenour. Cambridge: MIT Press, 1972. 189 pp. $25.

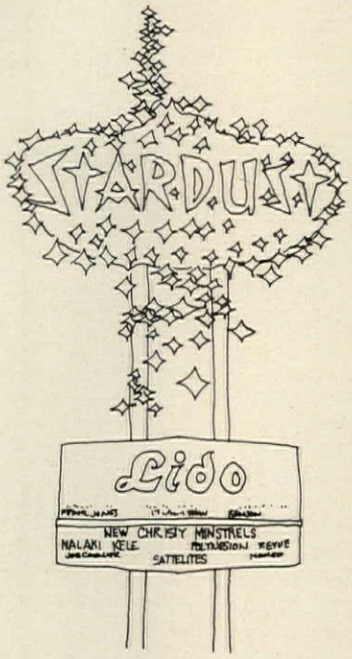
Jackpot! The Venturi group has hit it, but the rest of us can benefit as well.

Robert Venturi is a symbol. First, he is a symbol of the Venturi group which includes the authors of this book and his other partners and associates in the architectural firm of Venturi & Rauch in Philadelphia. He's also a symbol of the new freedom in architecture and may even get credit for it ultimately. If so, it will be because Venturi and his group seem to be the best self-advertisers since Wright and Le Corbusier. Publicizing their thought processes seems to be their chief art form—but maybe this was true of Corbu and Gropius also. Even before this major book was published, they had the attention and the friendship of some of the chief architectural critics. Any new book on contemporary American architecture seems to refer to their work, in spite of their having built only a few allegedly ugly buildings.

The two articles of extensive excerpts from this present book, published in *Architectural Forum* in 1971, aroused a lot of antagonism. Beyond the Venturi group's pop style P.R., however, is a seriousness that deserves attention. They are more than just another "ugly face." Prettiness is not even the point; quality of performance should be the standard here. I do think that some conventional beauty—or expected symbolic relationships—in their work would be in line with their broadest intentions. However, their "ordinary" buildings would not be looked at nor written about without their ironic antibeauty. Similarly, their words would probably not be noticed without their blatantly negative analysis of Paul Rudolph's Crawford Manor.

But now they have our attention. Behind the entertaining handouts is a no-nonsense, debunking, creative group of minds that I, at least, find personally valuable. They have awarded the courage of the printed word to many parallel ideas of mine, made me reexamine (if not change) others and, best of all, stimulated me to extend others. They seem to have read everything in print, in the air and on the wall, and put it all together for us in their own manner. They have gone beyond this to analyze and question prevailing conceptions. In a sentence, their main thrust is to champion an art of the possible.

The first of the three sections of the book is a serious study of the Las Vegas strip and the processes behind it. The main importance here is probably in the beautiful audacity of the concept with all of its implications. This idea also aroused antagonism among people to whom I talked when Venturi and Denise Scott Brown first dealt with it in the March 1968 *Architectural Forum*. The details of this current study are not always absorbing but well worth reading. There is a mass of impressions, generally without emphasis on the main points. Perhaps this tends to draw in the reader, who uses the impressions as evidence for his own inevitable conclusions, if willing. It also leaves the authors with the creative freedom of noncommitment. I am sympathetic to both of these assumed reasons for the authors' lack of strongly stated conclusions.



The main point of this first section seems to be casually tucked into the middle of a chart in the next section. It says that urban sprawl is a reality but that megastructures are only theoretically possible within our social and economic contexts. The conclusion of the reader would be that the study is justified and that we had better get to work on improving what we can. Further, if we are going to implement a body of environmental esthetics, we will need a more practical definition of one that includes all of the processes and all of the governing functions. This is an important statement that they almost make. Another is that we will need a broader image of what makes a good architect.

The second section includes the authors' comparison of Rudolph's Crawford Manor with their own Guild House. It's much more. It's one of the few discussions of architecture that I have ever wished to read a second time.

This middle section is the portion that I see as of real value to practicing architects. The authors debunk the academic concepts which are frozen into modern architecture. This should help to create a new atmosphere where we can create, guiltlessly, good buildings from possibilities that are less than sensational. This book should help to make such efforts *respectable*. The authors are calling for the inclusion of yet another function into the realm of "architecture": the possibilities and the necessities of the ordinary client, even the vulgar one. Their main contribution may be in changing the subject, architecturally, and in doing it in a most conspicuous manner. Their ideas are in print and thus a focal point for further discussion and *action*. It has happened before that the only way to better buildings is to become less of an architect in the current definition.

There is not space to go into the details of their discussion; every architect should read it for himself. I personally do not agree on their narrow use of the word "symbolism" or on their preference for fully conscious, even ironic, symbols. It is time, however, that someone talks about symbolism in buildings supposedly without any. These authors do it here in a superior way.

The details and insights in their writing are pure art. They state their own direction but say that the more directions the better. They are for including much more within our limits of acceptability. They say that it is more promising, artistically, to improve what is possible and that greater imagination is required to meet low budgets. Can anyone disagree? Yet such productions are less newsworthy, and this is the dilemma. The authors are fighting hard to be star material without having put sensational buildings in place. As mentioned earlier, they have been successful in this respect. Venturi, as a symbol of the group, has become a culture hero. As the authors suggest, culture heroes are created at the expense of others. Probably. But in this case, others can see opportunities toward greater diversity instead of *snow*-manship.

The third section of the book is devoted to planning and building designs. In a spirit of fun, it could be retitled "How to Be Smart-Ass on a Budget." It is primarily a display of the group's potential. A number of unbuilt projects are the type that they talk against, which they honestly label ducks in their terminology. With the group's continued prominence, all of their designs will be copied as symbols of success. There is much more of interest, however, in the processes behind the designs, which they freely explain. To my taste, they seem to be more interested in a new imagery and less in buildings which are delightful to use. At least this is true of their descriptions; I have not seen their buildings in reality.

They mention, as in Venturi's previous book, when the client disliked their design. This again points up their dilemma. It is the dilemma of all who are interested in a broad acceptance and application of our art. The Venturi group cannot really embrace middle

class preferences, except in their ironic manner. Otherwise, they would not be acceptable to the architectural press, Yale University or foundations who offer grants. They can deal with such preferences when vulgar such as at Las Vegas. They can also handle the articulate desires of poor black citizens as in their advocacy planning for South Philadelphia. They could not be assumed to be a part of either group, but the *middle* middle class is different.

The upper middle and upper classes can be even more obvious in cheap symbolism. Since the intellectual subclass controls such a small portion of our environment, the Venturi group's answer is irony. Empathy seems a more promising direction. Or is this idea to be out of style along with the word?

I have just violated my own rule: I shall not judge what one does not do, but rather what one does. In this regard, the Venturi group has approached every project with dedication and seriousness. Their nonduck buildings are a Renaissance type esthetic as opposed to the prevailing Gothic type articulated esthetic. It is possible to get better results thereby when means are limited. The Venturi group is right in pleading to be looked at for what they have done, not by other standards. So is anyone else.

Only one idea of many gleaned from the book could be worth the steep price of admission. For example, in the group's Thousand Oaks competition entry they used the necessary parking lots as a major conscious design element. That idea is a real winner!

JOHN BLANTON, AIA

Guidelines for a Personnel Practices Manual. Arthur T. Kornblut, AIA. Washington, D.C.: The American Institute of Architects, 1972. Unpaged. $5 members, $7 nonmembers.

The Institute continues to provide a most valuable service to the profession with the periodic issuance of professional practice guidelines.

This publication, by the administrator of the AIA Department of Professional Practice, is deserving of the attention of any practicing architect who wishes to state, restate, modify or clarify administrative professional procedures.

Much of the background material was prepared by the AIA Task Force on Employer/Employee Relations, chaired by James D. Carroll, AIA. The creation of the task force was, at least in part, triggered by the growing concern of architectural employees for recognition and participation in the process of architectural practice. The Organization of Architectural Employees had begun in San Francisco to organize individual firms in the Bay area, petitioning through the National Labor Relations Board for representation elections in architectural firms and, in turn, collective bargaining. The OAE has in the past and continues to speak for a number of architectural employees who feel that principals of firms should be more responsive to the social concerns and working conditions of their employees.

Now called the Organization of Architectural and Engineering Employees, OAE recently affiliated with the carpenters' union in northern California and is officially designated Local 2001 of the United Brotherhood of Carpenters, AFL/CIO. Similar organizations have developed in southern California and in Detroit.

I write of the OAE because of some familiarity with operations of that organization in the San Francisco Bay area, but more importantly, to make a simple point. I believe that the OAE was founded largely for two reasons. First, there is lack of recognition by some architectural principals that wages, hours and working conditions of graduate architects and young practitioners do not equal those in the sister professions or the business world in general, and the ability of these employees to voice social concerns within the framework of the profession is deserving of serious consideration. Second, the efforts of the AIA to improve the architect's competitive position have, in large measure, been unknown to employees.

The simple point is communication and understanding. These words are overworked, but nevertheless are relevant.

Many employees view the AIA as an employer-oriented social club. They are unaware of the benefits of Institute insurance programs, documents, forms, continuing education publications and seminars, Congressional lobbying, inter- and intraprofessional exchanges and so on. They are unaware of the valuable work done by local and national committees. Most of all, they do not realize that the AIA is made up of individual practicing architects: young, old,

employer and employee, who collectively determine their courses of action and the future of the profession.

My purpose in reviewing what may be news to some, history to some and nonsense to others is to suggest that, if indeed communication and understanding are the root problems in employer/employee relationships, as I believe they are, the place to begin communicating is in-house.

Any architectural firm, whether it employs one person or 500, is faced with considering personnel practices. They may be informal perhaps in a small firm, but since we deal in advance planning every day, I suggest that this same principle should be applied to personnel and accounting practices, as well as to providing for our clients' present and future needs.

Perhaps the employee who has a clear understanding of his own office practices can have a better comprehension of the profession in turn, and some incentive to become involved in the activities of the profession beyond the scope of his individual advancement within the firm.

Kornblut has provided in this manual a basic building block for both good business practice and improved employer/employee relations. The publication will serve well as a guide for firms in the process of developing an office manual and as a checklist for those with established personnel practices.

The format makes for easy reading: large type for which you shouldn't need eyeglasses. The manual is in loose-leaf form in a three-ring binder for ease of maintenance. The cover is even washable, but this book should never get that dusty. Kornblut suggests that personnel practices be reviewed at least once a year, or in specific instances such as change in organization from partnership to corporate practice.

The style is concise. The author does not attempt to detail the diverse possibilities of application in each section and only outlines the topics which should be a part of any personnel practices manual. Comments and explanations regarding most specific topics are footnoted with each section for easy reference. Although it will be necessary to spend an appreciable amount of time analyzing the contents and their applicability to a given firm, the initial review of the manual can be accomplished rather quickly. I was able to complete a first reading in less than an hour.

The organization of topics is quite logical. Beginning with personnel policy statements, Kornblut proceeds to administrative practices, office procedures, advancement within the firm, fringe benefits, professional development, miscellaneous practices and a brief appendix.

Kornblut has managed very well to separate strictly personnel practices from other equally important ones such as office standards and accounting procedures. It is my opinion that some firms may wish to expand this basic document to incorporate such other policies, practices and standards, i.e., accounting, drafting standards, etc., to provide a more comprehensive office practice manual.

The emphasis of these guidelines is toward how the employee will function within the structure of the firm. Equally important is how the firm functions with respect to its clients and consultants and what operational policies and procedures the employee is expected to follow.

The organization, style and format result in a document which should have wide applicability to firms both large and small. It is not too specific to be a burden on any firm and general enough to allow a wide range of flexibility in specific adaptation or modification and expansion. Kornblut refers in specific sections to AIA policies when applicable. This will aid the small firm in establishing references to benefit programs, such as insurance, etc., if they wish to take advantage of available AIA programs.

Most important bases with regard to personnel practices are covered, and I recommend this guideline to those who are charged with administrative and personnel responsibility within an architectural firm.

RICHARD A. DREVER JR., AIA

Development Building: The Team Approach. C. W. Griffin. Washington, D.C.: The American Institute of Architects, 1972. 130 pp. $12 members, $15 nonmembers.

The day of the one-man approach to developing real estate projects has passed. Today the projects are too large, the costs are too great and the problems are too pervasive for one man to make it alone. This is the approach that Griffin has taken for the architectural profession by showing—in an elementary way — how the development process works and how the architect can be part of that process.

Anyone interested in real estate development can learn some of the basics from the general discussion of the process, but it will take more than basics to become a developer. The chapters on economic design, land acquisition and financing offer complete and accurate guidelines to the alternatives and pitfalls of any development, and should be used only in that capacity.

Griffin has done a commendable job in touching on some of the common financing possibilities open to the developer. This should give the beginner an insight of how broad the financial world is and how, in actual practice, the developer will tailor his financing to his particular needs. Each project will have its own unique financing possibilities which may or may not be applicable to another type of development.

A major part of the book is devoted to the development problems facing the architectural profession. This seems to be well done but, as in financing, it will require the individual architect to determine what is needed for his project.

Aspects of ethics, professional liability, business considerations and the architect's role on the project development team are covered, in addition to the various approaches to real estate financing. Opportunities for applying the architect's creative talents to initiating projects are stressed, as are the potentials for better design control and increased income sources.

One fault that I find with the book is

that Griffin makes the entire process seem too simple and too easy. Real estate development is not as mysterious or complex an operation as it is often made out to be, but neither should it be taken lightly by those who don't understand what problems may arise or how to find their solutions.

I highly recommend this book to any architect who has considered getting into development building in some capacity. It will give him a broad idea of how a project gets off the ground and what is involved in getting it completed. This should certainly make him more valuable to his client.

H. T. MAULDING
President
Mortgage Bankers Association of Metropolitan Washington, D.C.

Housing Compendiums: Volume One. Annandale, Va.: Modco, Inc., 1972. 317 pp. $19.75.

This annotated bibliography contains references to nearly everything that has been published on housing during the past several years. The references range from scholarly works, to magazine articles (including some from the AIA JOURNAL), to Congressional reports, to speeches by the Secretary of the Department of Housing and Urban Development and some of his assistants as well.

Each item of housing literature identified is followed by a brief synopsis designed to give the reader a general idea of what the reference covers. The arrangement is under programs, legislation and law, finance and fiscal policy, new methods and materials, etc. The book is carefully indexed by both author and subject.

This compendium will be useful to the serious scholar; it will also be of interest to the browser who wants to know what is being written about housing these days and who wants to identify the major subjects that writers and administrators consider to be of importance.

The annotations themselves are of uneven quality. With regard to a number of books and articles he has read, this reviewer found that some of the briefs provide only a faint and vague picture of what the particular book or article is actually about.

M. CARTER MCFARLAND
Director
AIA Housing and Urban Programs

Rome of the Renaissance. Paolo Portoghesi. New York: Phaidon, 1972. 450 pp. $35.

There has been a great deal in the press recently about the problems with which Rome is confronted concerning its art and architectural treasures. Rodolfo Sieviero, head of the Delegation for the Recovery of Art Works in Italy, states that the city is "tumbling like a landslide." Other authorities have called the situation a "state of emergency" for all of Italy's artistic heritage. Milan's Cathedral is sinking into the ground; Lorenzo Ghiberti's "Doors of Paradise" on the Baptistry in Florence are being consumed by traffic fumes; the four bronze horses on St. Mark's Basilica in Venice have a "cancer" which is eating away the metal; Rome's Colosseum and other noble architectural works are the victims of automobile exhaust and industrial pollution. Both man and nature seem united in the destruction.

Thus scholarly books written in the past and in the present, while there are still evidences of Rome's grandeur remaining, are important for future generations. This one, by a professor of the history of architecture at universities in Milan and Rome, is a splendid documentation of Rome's heritage from the 16th century, covering the period of 1503 to 1564. Profusely illustrated and containing the results of research hitherto unpublished, it is a commendable work by a man who evidently loves his subject.

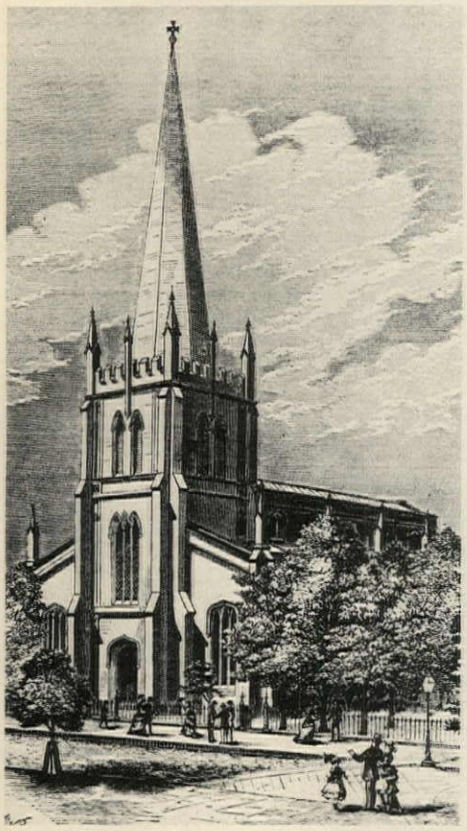
Portoghesi discusses in depth some 200 buildings of the era, including churches, palaces and museum buildings. One of the best known of them is St. Peter's Basilica on which the architect Michelangelo labored. Not only does the author give attention to all these notable structures, but he traces the development of Rome as an urban complex during a time of profound societal changes. He shows the close relationship between politics and artistic events in a time when ambitious popes changed a small market town into the capital of all Christendom, making the city also the artistic capital of Europe. They sponsored such artists as Bramante, Sangallo, Peruzzi, Raphael, Vignola, Michelangelo and a veritable army of anonymous builders.

The Italian critic Francesco De Sanctis wrote: "What I call a century is not the

ordinary measure of time, but those great stages in humanity in which new ideas appear and the face of the world is transformed." Portoghesi's book concerns the 16th century in Rome but "not in the ordinary measure of time." Its emphasis is upon the "great stages in humanity." There is objective scholarship tempered by a humanistic treatment of both Rome and its men of ideas and a regard for the social elements which permeated the era and made it one that is still fascinating to all who care about an architectural heritage. MARY E. OSMAN

New Orleans Architecture, Volume 2: The American Sector (Faubourg St. Mary). Authors and editors: Mary Louise Christovich, Roulhac Toledano, Betsy Swanson, Pat Holden; essays by Samuel Wilson Jr., Bernard Lemann. Photographs by Betsy Swanson. Gretna, La.: Pelican Publishing House, 1972. 243 pp. $17.50.

The first in this series of five projected volumes on 19th century New Orleans architecture was on the Lower Garden District (Feb. '72, p. 52). The second includes those structures remaining in old Faubourg St. Mary, presently known as the central business district. The area covered extends from Howard Avenue to Iberville Street and from the Mississippi River to Claiborne Avenue. When the entire project is completed, New Orleans will have an unparalleled architectural survey of an American city. The project is sponsored by the Friends of the Cabildo, a preservation organization, which is to be highly commended for the undertaking.



The copiously illustrated second volume contains an early history of Faubourg St. Mary, written by Samuel Wilson Jr., FAIA. He traces the origins of New Orleans, giving attention to churches, houses, markets and theaters. Here are some of the city's impressive public and private buildings. Wilson also prepared a later chapter on Julia Street's red brick row houses. A chapter by Bernard Lemann covers "City Timescape: The Shifting Scene." He points out the qualities and visual aspects that have set New Orleans apart.

A chapter by Mary Louise Christovich and Roulhac Toledano is on "Banking and Commerce." Founded in the early 18th century as a banking project, New Orleans' banking and commercial history have paralleled the development of Faubourg St. Mary. An architectural inventory of this section of the city, prepared by Betsy Swanson, Roulhac Toledano, Mary Louise Christovich and Pat Holden, is preceded by a handsome "album" of watercolor drawings in full color. There is also an inventory of architects and builders whose names are on building contracts of structures, both extant and demolished. Some distinguished names are here, as well as many names which have never appeared in print before.

A foreword by Leonard V. Huber, president of the Friends of the Cabildo, says that the production of the volume required "tedious research" by a number of people. Their work, as the book testifies, was not in vain.

Historic Deerfield: Houses and Interiors. Samuel Chamberlain and Henry N. Flynt. New York: Hastings House, 1972, 188 pp. $10.

Old Deerfield, Massachusetts, rests on a plateau in the Connecticut Valley. As the authors of this book comment, "Without making a conscious effort, it stands as a living monument, and an almost unblemished one, to the early Americans and their reassuringly civilized way of life." From the 1660s until today, Deerfield is an example of the American epic.

This is a revised and updated version of a book first published in 1952. The beautiful photographs by Samuel Chamberlain will delight all who want to know more about early American houses and their interiors. The readable text and detailed captions are based upon research by Henry N. Flynt.

Arts of the Environment. Edited by Gyorgy Kepes. New York: Braziller, 1972. 244 pp. $12.50.

"A cornered man," says editor Kepes, "is compelled to look into himself and gauge his own strengths and weaknesses. He must examine closely the nature of his relationship with his fellowman and with the world." Although technology has given 20th century man much, we have not utilized it fully or shared it wisely. We are in a corner.

Assembled here are a number of provocative essays by a group of distinguished persons who would give us a new awareness of our environment in order that we may survive.

Some of the essayists are René Dubos who talks about "The Perils of Adaptation"; Kevin Lynch who discusses "The Openness of Open Space"; and James T. Burns Jr., who would have us think more about the "Social and Psychological Implications of Megastructures." These and the other statements will give the reader food for thought for a long time.

The Growth of Cities. Edited by David Lewis. New York: Wiley-Interscience, 1971. 256 pp. $24.95.

This is an interesting smorgasbord of examples of old and new urban growth processes in many parts of the world. The editor has pulled together a great amount of information, although most of it has been seen before in other publications. Contributors include Christopher Alexander, Hans Blumenfeld, Denise Scott-Brown, Morton Hoppenfeld, C.A. Junker, Charles Moore and other urban design-oriented architects.

The piece on Thamesmead by John Craig, Alexander Pike and John A. McCarthy is particularly interesting, as well as the profusely illustrated article on "The Observations of Three Aegean Island Towns" by Constantine A. Michaelides.

The editor's intent is to examine the economic and sociological forces which shape and control the growth of cities. This objective was largely unrealized, although one can probably not expect more in 256 pages. I found the historic analysis of these subjects counterposed against some recent experiments intriguing. On the whole, the book is a valuable and logical step in the progression of urban literature. MICHAEL BARKER
Administrator
AIA Department of Environment and Design

Lawrence Halprin Notebooks, 1959-1971. Lawrence Halprin. Cambridge: MIT Press, 1972. 377 pp. $9.95.

Halprin's notebooks started about 13 years ago. He writes, "Since I am more and more away from home and office, the notebook (always at hand) makes it easier to record impressions and note down ideas at any and all times. It lets thought processes flow and find expression." He goes on to comment that he "thinks" graphically and that his thinking is influenced by his ability "to get it down where I can 'look at it' and think about it further." Thus the notebooks have not only recorded his ideas but have also generated others.

This selection (about one-twelfth of the original notebooks) will intrigue the architect. It gives an insight into the sources of Halprin's creativity and into his awareness of the entire world "as an ecological unit."

Graphically, the book is unusual and most pleasing. It is entirely in Halprin's own legible handwriting, and the drawings are freehand and beautiful.

Brown-Out: The Power Crisis in America. William Rodgers. New York: Stein & Day, 1972. 300 pp. $7.95.

"Somewhere in the United States, which produces nearly 40 percent of all the electric energy in the world, there is a loss or reduction of power almost every day, generally of short duration and with minor consequences," comments the author of this book which concentrates on the electric utilities. But, as he reminds us, sometimes a blackout of major proportions happens, and that is a crippling experience.

Rodgers accuses the electric utilities corporations of "wastefulness, self-interest and neglect of ecological considerations," that operate as privileged monopolies in an economic system that is wholly dependent upon the energy they produce. He says that US government regulatory efforts have been ineffectual and will continue to be so if current policies are continued. Unless energy is more sanely controlled, he warns, the US may "literally commit national suicide."

There is "power to change," if we so desire, he maintains. Larger numbers of citizens must be ready to demand reforms in the economic and political systems. "No utility system by itself can make changes, make repairs that will alter the national course. Theirs is not the initiative to take," he declares. What is needed is more than new sources of power; what is required is the control of the demand for the use of electric power. "Even if thermonuclear fusion is perfected as a means of creating harmlessly produced power, and even if mankind never needs to fear that there may never again be enough, its limitless use will remain a fatal evil. . . . The need to change and the power to change, like the future itself, is upon us."

First Annual NAIP Directory of Industrial Parks and Office Parks and Membership Roster. Arlington, Va.: National Association of Industrial Parks, 1972. 263 pp. $12.50.

Listed here are the industrial and office parks which meet the criteria and codes of the National Association of Industrial Parks. For each development there is concise but complete information about its size, utilities, transportation, zoning and permitted use, present tenants, etc. There are also names and addresses of NAIP members and associate members.

Mechanical and Electrical Equipment for Buildings. 5th Ed. William J. McGuinness and Benjamin Stein. New York: Wiley, 1971. 1,011 pp. $18.50.

This new edition of a standard work is updated and streamlined, focusing on significant changes in building systems. New information is included on design methods of plumbing, heating, cooling, electricity, signal systems, lighting, vertical transportation and acoustics. New chapters cover storm drainage, all-electric space conditioning, cleaning and disposal systems and total energy. Outmoded materials have been deleted.

Design in Structural Steel. Carl L. Shermer. New York: Ronald Press, 1972. 311 pp. $9.75.

Intended as a textbook, this publication's purpose is not to overwhelm the student with details but to provide him with sufficient explanatory text and illustrative examples to prepare him to cope with structural design problems at a professional level. The nine chapters cover structural steel and connectors; tension members; compression members; flexural members; plate girders, composite beams; bending and compression, lacing, torsion; connections; moment connections, splices, column bases; and loads, plastic design of frames, bracing.

Statics and Strength of Materials. Irving J. Levinson. Englewood Cliffs, N.J.: Prentice-Hall, 1971. 498 pp. $14.

"Highly readable" is the comment given on the jacket of this book authored by a professional engineer. That it is *not*. It is a technical study of statics and its role in the analysis of the strength of deformable materials and a description of the means to the analytical techniques required in the design of structural beams, torsion members, columns, machine components, etc. There are discussions of such topics as expositions by center of gravity, equilibrium, force analysis of structures, friction and moments of inertia.

Architectural Structures: An Introduction to Structural Mechanics. Henry J. Cowan. New York: American Elsevier, 1971. 400 pp. $15.75.

Intended as a textbook, this publication is concerned with such problems as choice of structure, design criteria, statics, elasticity and stress, materials, etc. The author, who has had long experience as professor of architectural science at the University of Sydney, Australia, believes that an understanding of structural behavior is possible only through a study of theory. Cowan has attempted to achieve this objective by "deriving theories in the simplest terms" and with reference to the physical behavior of structures. □

Letters

'This Long Forgotten Genius'

My article on Raymond Hood has brought in many letters for which I am grateful. Perhaps the readers of the JOURNAL will share my pleasure if I give a few quotations from some of them:

"I greatly enjoyed reading your reminiscences of Raymond Hood, and I guess that the most delightful sense I retain is his relationship with clients who trusted him."

"That is indeed a nice bit about Raymond Hood. I'd like to do as well by a couple of my early bosses and would roll over with delight on some heavenly cloud if someone were to do it for me."

"It is a most interesting and readable article. Unlike the tributes to Frank Lloyd Wright, Hood sounds like a human being."

WALTER H. KILHAM JR., FAIA
New York City

What a magnificent job that Walter H. Kilham Jr., FAIA, did with that delightful and revealing article about the great architect Raymond Hood in the September issue.

Personally, it was nostalgic in retrospect, for I had the pleasure of meeting Hood back in 1910 in Pittsburgh when he was working with Henry Hornbostel, FAIA, on the Carnegie Tech complex. It was evident in those early days of his career that he would eventually make a distinguished name for himself.

Kilham's observations are most timely, for I am quite sure that the younger generation in our profession is unfamiliar with Hood's name and the imaginative and lasting contributions that he made in the development of the modern skyscraper. Memories are shortlived in this fast-moving civilization in which we have to live.

It was a joy and inspiration to read what Kilham had to say about this long forgotten genius.

FRANCIS KEALLY, FAIA
New York City

Financial Parameters

The coverage in the November issue of the 1972 design awards for nonprofit-sponsored low and moderate income housing is needed to help stimulate quality in low income housing design. I would like to register a complaint, however.

Quality in low cost housing is achieved by good architects who successfully manipulate the financial parameters governing any specific project. There are many variables involved, not the least of which is the rent structure approved by any given Federal Housing Agency office in any given market area for any given proposed tenant pool.

Without full disclosure of these critical financial parameters, the publication of the design awards program winners becomes just another picture casebook, adding nothing to the profession's cumulative capability to contribute substantially to the quality of low and moderate income housing.

This comment is offered because I do feel that the AIA JOURNAL is making a serious attempt to serve the profession, and I hope that this data can be included as part of a project in the publication of the design awards next year.

LAURENT JEAN TORNO JR., AIA
St. Louis

Soleri Archives Enriched

Publication in the September issue of a notice about the Paolo Soleri Archives at Hayden Library, Arizona State University, has resulted in many requests for information about Soleri and for a bibliography.

Thus far we have accumulated over 200 items in the collection and are in the process of compiling a computerized index. We are so busy gathering materials and processing them that there is not time to answer each request individually. It will be some time before a comprehensive bibliography is ready for publication and dissemination. Although we hope to have a computerized bibliography workable in 1973, it will probably be an "in-house" item which is usable only with the actual collection.

Please inform your readers that we are pleased by their interest in the collection but that we regret our inability to reply to each person who writes us for information.

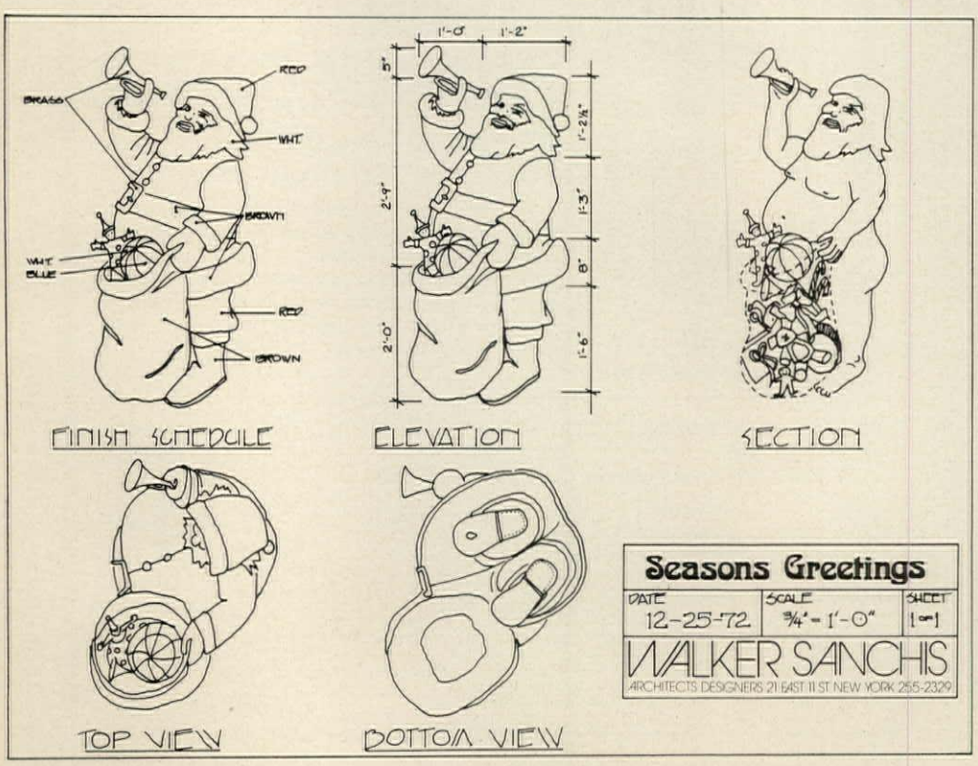
JANE C. HENNING AND LOIS SCHNEBERGER
Soleri Archivists
Howe Architecture Library
Arizona State University
Tempe, Ariz.

ED. NOTE: In view of the circumstances and the fact that we feel responsible for having deluged the library with requests for information, we will publish soon a short bibliography of recent periodical articles and books on Paolo Soleri which will be supplied us by the Soleri archivists.

Santa Claus Came to Town

With reference to the article "Season's Greetings—Professionally Speaking" in the December issue, we thought that you'd be interested in our own greetings. Our firm is Walker Sanchis in Manhattan.

KENNETH WALKER AND FRANK SANCHIS
New York City



Clarification of Credits

In the article on foundations, page 16 of the January issue, the name of Dr. Hannskarl Bandel should have appeared as joint author with that of Vincent R. Cartelli.

In the article on the conversion of the Century 21 Exposition into the Seattle Center, page 23 of the December issue, Lawrence Halprin & Associates should have been given credit as overall landscape planners for both the exposition and the center.

The JOURNAL regrets the errors which occurred due to incomplete information received.

DEVELOPMENT BUILDING: THE TEAM APPROACH

C. W. GRIFFIN

THE AMERICAN INSTITUTE OF ARCHITECTS

"The wave of the future . . ." and "survival insurance for small architectural firms," says the author, as he points out opportunities and warns of profitless hazards in project development.

Pioneering architects all over the United States are expanding architectural services into this new domain. Evolving beyond their traditional role as designers, they are entering the decision and delivery stages of building — in some cases as co-owners, in others as consultants offering new client services in the crucial decision-making processes which affect a project's ultimate success.

The complexities of land acquisition, mortgage financing, ethical implications, liability insurance — author C. W. Griffin explores them all in clear language. More than a score of illustrations show graphically how the team approach works.

This book is a large-scale road map to guide architects (and other professionals) toward successful project development. 130 pages. Retail $15.00; AIA members $12.00. **M135**

Events

AIA State and Region

Mar. 22-23: Virginia Chapter Winter Meeting, Sheraton-Fredericksburg Motor Inn, Fredericksburg, Va.

Mar. 28-30: Michigan Society of Architects Annual Convention, Olds Plaza Hotel, Lansing, Mich.

Apr. 24-26: Wisconsin Chapter Convention, Playboy Club Hotel, Lake Geneva, Wis.

National

Mar. 9-14: Associated General Contractors Convention, Hilton Hotel, San Francisco

Mar. 19-20: AIA/Consulting Engineers Council Public Affairs Conference, Mayflower Hotel, Washington, D.C.

Mar. 20-23: Seminar on Designing for Fire Safety and Hazard Control, Factory Mutual Engineering Corp., Norwood, Mass.

Mar. 29-30: National Brick Bearing Wall Conference, University of Nebraska, Lincoln, Neb.

Apr. 11-13: National Conference for the Building Team, Drake Hotel, Chicago

May 3-4: AIA Invited Attorneys Meeting, Stamford Court, San Francisco

May 5-8: National Architectural Secretaries Association Convention, the Hyatt on Union Square, San Francisco

May 7-10: AIA National Convention and Exposition, Brooks Hall, San Francisco (Hawaiian portion, May 11-15, Honolulu)

May 14-15: Washington Paint Technical Group Annual Symposium, Marriott Twin Bridges Motel, Washington, D.C.

International

Apr. 29-May 3: International Contract Furnishings and Interior Design Exhibition, National and Empire Hall, Olympia, London

May 6-9: International Council of Shopping Centers Convention, Anaheim Convention Center, Anaheim, Calif.

May 7-9: International Symposium on Urban Housing, Wayne State University, Detroit

May 13-20: Participation of the Inhabitant in His Environment Symposium, Brussels, Belgium

Awards Programs

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.

Fellowships

Mar. 22: Applications due, Rotch Travelling Scholarship for American citizens under 31 years of age whose architectural record includes study or experience of required times and degree in Massachusetts. Contact: Hugh A. Stubbins, FAIA, Secretary, Rotch Travelling Scholarships, 1033 Massachusetts Ave., Cambridge, Mass. 02138. □

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