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Convention '74: An Architecture Based On Human Needs

"I have a vision for urban America summarized best by the basic assertion that our country's greatness will be judged by the extent that our actions enable every person the opportunity to live a humane and dignified life," said Los Angeles Mayor Thomas Bradley in the keynote



address that opened the AIA annual convention in Washington, D.C., on May 20. Thus, he set the theme of the convention: A Humane Architecture.

The three host chapters—Washington Metropolitan, Baltimore and Potomac Valley—gave the 4,769 registrants (of whom 1,748 were corporate members) an unusual opportunity to explore the resources of the nation's capital and the historic port of Baltimore as appropriate settings for the convention's theme. The tours that the chapters had arranged ranged from visits to the nearby new towns of Reston, Va., and Columbia, Md., to an examination of Washington's subway system, now under construction. Less instructive, perhaps, but certainly contributing to convention conviviality, were the chapters' social events, such as the Pension Building ball (*right*) and the "red velvet swing" at the Garrett-Jacobs mansion in Baltimore.

Robert Calhoun Smith, AIA, the host chapters' chairman, had prophesied that this would be "the convention of choice" (*see* April, page 6). Indeed, there was

nearly always a choice in the program that had been arranged by the convention committee, chaired by Jeh V. Johnson, AIA. The structure of the program was such that those in attendance came together as a body only for the opening session on May 20 and for the first general theme session on May 21. Three other theme sessions were scheduled, but they coincided with Marketplace of New Ideas seminars, giving conventioners a choice among the theme sessions and such topics as architectural education, design/build projects, value analysis engineering and architecture for criminal justice.

The first general theme session on "A Humane Architecture" was moderated by Robinson F. Barker, chairman of the board of PPG Industries. He urged architects not to let crash solutions to the energy shortage leave a legacy of "inhumane structures." The three panelists—John Eberhard, AIA, president of the AIA Research Corporation; Theodore Liebman, chief architect of the New York State Urban Design Corporation; and Judith E. R. Roeder, AIA, who is associated with the San Francisco firm of Stone, Marracini & Patterson, urged more basic research into the effects of the physical environment on human behavior and greater use of such information by design professionals. Closing speaker Eberhard said that "our understanding of how buildings affect people or how human needs can be translated into building requirements is constantly going in and out of focus."



Other theme sessions, moderated by the panelists, focused on "Urban Design and Human Behavior," "People and Buildings" and "Humane Project Design." Several of the participants in these discussions were environmental psychologists, who stressed the need for architects to accept research as necessary to the profession. Michael Brill, professor in the School of Architecture and Design at the State University of New York at Buffalo, said that every building should be treated as a "mechanism for testing hypotheses." He suggested that architects keep accurate records of the progress of the building and then "go back in five years to see if the assumptions you made were borne out."

Panelist Louis Sauer, FAIA, said that there are three incentives for the architect to engage in research into human behavior: esthetic, economic and legal. Concerning the legal incentive, Sauer said that should the architect be sued, "research data will help him defend his design decisions by providing an accurate picture of the 'state of the art' when the building was designed."

In another theme session, John Zeisel, a sociologist at the Harvard University Graduate School of Design, declared that the architect should use the insights and information of environmental psychologists as much as they would those of any other consultant. If an architect is building a theater and calls for the services of an acoustical consultant, he asked, do we feel the result will be any the worse for it?

The same relationship should exist between the environmental psychologist and the architect, he said.

One of the convention's conversation pieces was the white vinyl pyramid that had been constructed by architectural students on the Mall near the Washington Monument. Its designers, Jerry Compton and Brian Burke from Southern California Institute of Architecture, wanted to construct a lightweight structure to study the psychological effect on people of that kind of pyramidal form. The 40-foot high white pyramid was one of 12 structures erected by the students, including geodesic domes, inflatable buildings and play structures.

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going on from page 4

Activities of the Association of Student Chapters/AIA were coordinated by Daniel Sze of Howard University and Robert Mackie of Catholic University. ASC seminars were held in conjunction with the Marketplace of New Ideas, giving conventioners yet another "choice."

Interspersed throughout the convention, that closed on May 23, were such "constants" as business sessions, meetings of delegates, presentations of awards and other honors, the investiture of fellows and the annual ball. A uniting presence through most of the activities was Institute President Archibald C. Rogers, FAIA.

One of the honored guests of the AIA was Georgui M. Orlov, Hon. FAIA, of the Soviet Union, who is president of the International Union of Architects. He said, "Like music, architecture is a universal language of mankind. Architecture lives and speaks not only when songs and legends disappear and keep silent, it speaks in spite of any language barrier. That is why architectural masterpieces of past and present give us one more gratifying occasion to understand, to learn and to value each other."

DeMoll, McGinty, Botsai, Bradley And Smith Elected

Louis de Moll, FAIA, board chairman of the Philadelphia firm of Ballinger, Architects & Engineers, was elected first vice president of the Institute by delegates to the 1974 convention. In contested races for the other three vice presidential posts, the delegates reelected John M. McGinty, AIA, principal in the McGinty Partnership and the Crane Design Group in Houston, and elected Elmer E. Botsai, FAIA, a partner in the San Francisco firm of Botsai, Overstreet Associates, and Carl L. Bradley, FAIA, vice president of Archonics Corp., with offices in Fort Wayne and Terre Haute, Ind. In another contested election, Hilliard T. Smith, FAIA, of Lake Worth, Fla., currently serving as AIA secretary, was reelected to the post. The newly elected officers will assume their responsibilities in December.

The delegates also approved a number of bylaw changes, including a significant adjustment of the dues structure. The proposal, developed by the dues structure committee, provided that "1) AIA budgeting of expenditures from dues income in each future year be limited to the amount collected in 1974 with a reflection of the cumulative Consumer Price Index (CPI) and membership increase factors; 2) that a higher proportion of total dues income be derived from supplemental dues in lieu of regular dues; 3) that an effort be made to reduce and maintain

regular dues at the very lowest possible level; and 4) that every effort should be made to structure the supplemental dues in such a manner that all members pay on an equitable basis."

The aim, says President Archibald C. Rogers, FAIA, is to correct past inequities in the dues paid by firms of equal size but different structures. Linking dues increases to the CPI will tend to keep AIA programs and services stable because revenues will keep pace with inflation. Future increases in dues to fund programs or services will require the approval of the membership at future conventions.

AIA Treasurer Joseph Tuchman believes that there will be an increase in total dues revenues as inequities in the present supplemental dues system are corrected, but says that dues reductions cannot be predicted until the new bylaw will have been in effect for at least a year.

In other convention business:

- A bylaw change was approved which states that if a member is under charges of unprofessional conduct, his membership shall not be terminated so long as said charges are pending, unless the secretary of the AIA finds that termination is in the best interest of the Institute.
- A resolution was passed in support of the Board's guidelines for members who make contributions to political parties, candidates for public office or political issues, in which it is stated that "every architect making a political contribution shall do so publicly in his own name, and as an individual citizen." It was also resolved that the AIA support the "concept of public funding of political campaigns" and that component organizations of the AIA work for local public disclosure laws.
- A resolution was passed to expedite a man hour data bank program.
- A report was heard from Leo A. Daly, FAIA, chairman of the AIA Task Force on Energy Conservation, in which he called for innovative and creative concepts in energy conservation. A published report titled "Energy and the Built Environment: A Gap in Current Strategies" has been distributed for study and discussion by AIA members. Daly said that an AIA energy steering committee had been formed which will report directly to the AIA president. Chairman of the committee is John M. McGinty.

Board Establishes Inquiry Committee

Prior to the official opening of the AIA convention, the Institute's Board of Directors in an unprecedented action voted to establish within the AIA a national committee to investigate allegations of professional misconduct. The national inquiry committee of 10 to 50 members appointed by the Board can bring charges of

unprofessional conduct, if investigations of allegations warrant, before the AIA's National Judicial Board, the appropriate state registration board and/or appropriate legal authorities.

A panel of three to five members selected from the committee will investigate specific charges on an ad hoc basis. Within its scope will be matters brought to its attention, by complaint or otherwise, that appear to involve unprofessional conduct or violations of the AIA's Standards of Ethical Practice, such as illegal political contributions, failure to conform to registration laws or violations of criminal statutes committed in relation to the practice of architecture. If the panel determines that grounds for complaint exist, the inquiry committee will act as complainant in instituting proceedings.

The impartial inquiry committee, with authority to act as complainant, will provide an alternative to the present procedure that relies upon an individual to bring charges. Insofar as possible, the panel appointed in each case will be drawn from AIA members who live and practice outside the geographical area of the accused.

On May 29 AIA President Archibald C. Rogers, FAIA, named F. Carter Williams, FAIA, of Raleigh, N. C. as chairman of the national inquiry committee.

Board Statement On Materials Shortages

On May 17, the AIA Board of Directors approved the following policy statement on energy related material shortages, prepared by the Commission on Professional Practice:

"Associated with the 1973-74 fuel shortage and energy crisis, there have been material shortages, product changes and delivery delays which have frequently created hardships for contractors and subcontractors as well as often stretching the owner's capital outlays to the very limit of his capacity to pay and well beyond his contemplated budget. While the situation should ease up with the lifting of the Arab oil embargo, there is still no apparent immediate across-the-board relief to all these related problems. Relying on the position taken by several Institute committees which have reviewed the problem, it is the Board's considered opinion that rather than permanently alter any of the documents of recommended contractual procedures to accommodate the escalation, that certain practical suggestions be made. If the situation is made known to the contractor at the time of negotiation, such suggestions should help our clients and contractors in this present period of uncertainty. In special cases, it may be neces-

sary to add appropriate language to supplement the documents.

- "Materials or equipment known to be in short supply should be avoided in design or specifications. If materials or equipment become unavailable during construction or if delay in delivery will critically impede job progress, the designer should make every effort to find an acceptable substitute, with any contract adjustment—up or down—made accordingly.
- "Early purchase and delivery of materials and equipment should be encouraged even though not immediately needed. These should be placed in a storage site approved by the owner, who, in turn, should make payment as provided in our contract documents on account of the stored items and defray in whole or in part any storage or extra handling charges.
- "Completion dates should be established based on delivery time of major items needed in the construction process. If liquidated damages are a contract consideration, bona fide delays in manufacturing schedules or shipment should be considered as warranting an extension of time.
- "If negotiated contracts are entered into and there is a guaranteed maximum cost, this cost should be based on standard price indices of specific, listed materials and quoted prices for major equipment, each as of the date of the contract. The owner would agree to modify the guaranteed maximum cost if there were appreciable cost changes for any such listed materials or equipment.
- "In general, we do not believe that increased labor costs due to wage changes is a warranted cost consideration when discussing energy-crisis-related escalation. There may be occasions when a project is extended well beyond the original completion date and perhaps penalizes the contractor and his subcontractors with a genuinely unanticipated wage increase. Normally, however, contractors are aware of the date of future wage negotiations and are in a position to estimate the potential increase at the time the contract is entered into.
- "The Board urges architects to proceed cautiously in the evaluation of energy-crisis and materials-shortage related claims and that full data and disclosure be made available by the contractor to the architect so that he may be sure that the contractor has exerted his best efforts and exhausted the potential market in attempting to avert any cost increase. No relief should be provided for normal construction contingencies nor first-dollar protection for minor, shortage-connected price increases. For this reason, it is recommended that escalatory clauses be avoided in contracts and that the means provided in Articles 8 and 12 of the General Conditions for changes in the work or extensions of time be liberally interpreted to cover this present situation."

Surveying The Role of Women In the Profession

At the 1973 convention, the Institute was directed to "take action to integrate women into all aspects of the profession as full participants," to make a study of women in the profession and to report the results to the 1974 convention.

Subsequently, the commission on professional practice established a subcommittee of the personnel practices committee to study the subject of equal opportunity for women in architecture, and Judith Edelman, AIA, was named head of the subcommittee.

She told the 1974 convention that the report titled "Women in Architecture" had been finished in spite of "nearly overwhelming odds." The data in the report was obtained from a questionnaire sent to 1,600 women, including "virtually every registered architect and as many non-registered women architects as could be identified within the time and budget limits." A questionnaire to a random sample of 1,100 registered male architects was used as a control.

The report concludes that there is "dramatic evidence . . . now before us substantiating the allegations of discrimination against women architects." For example, the average salary for full-time employment is \$14,500 for women as opposed to \$24,300 for men.

Ms. Edelman said that the group's findings indicate that women comprise only 1.2 percent of registered architects; that women in the profession receive substantially lower pay for the same work than men; and that more women have advanced degrees in architecture (13.8 percent of the women have a master's degree in architecture as opposed to 3.8 percent of the men).

The report states that statistics do not support the appearance of a "dramatic" increase in the number of women studying architecture. There has been an increase, however, that is "small but steady," with the largest numbers of women architectural students concentrated in relatively few schools. Ms. Edelman said that more than 8 percent of the students currently enrolled in schools of architecture are women. The subcommittee calls for an investigation of admission policies.

In conclusion, the subcommittee asks for a continuing study of women in the profession, with staff and funding made available. It emphasizes also that the Institute "must develop significant and effective programs to improve the status of women in the profession."

Ms. Edelman urged the convention to affirm a meaningful program of action by the AIA and its components. She also

recommended a resolution supporting the proposed Equal Rights Amendment to the Constitution, which was passed after spirited debate. Ironically, opposition was headed by a woman architect, who urged defeat of the resolution, asserting that she had never encountered discrimination in 20 years of architectural education and practice.

Architectural Secretaries Convene

The Architectural Secretaries Association held its fifth annual convention in Washington, D.C., on May 18-23, electing Virginia M. Hansen, associated with the Seattle architectural firm of Durham, Anderson, Freed Co., as its new president. President-elect is Maryanne Damari, employed by the Boulder, Colo., firm headed by Hobart D. Wagener, FAIA.

The theme of the 1974 ASA convention was "Program for Progress," and the 42 conventioners and their guests attended workshops and listened to a number of speakers, including Stephen Klos, executive director of the Institute for Human Potential; Muriel Campaglia, administrator of the AIA department of public relations; Jo Ann Langford, past president of the ASA Houston chapter; Elliott Carroll, FAIA, executive assistant to the Architect of the Capitol; Hugh Newell Jacobsen, FAIA; Stuart Rose, director of AIA continuing education programs; Robert L. Durham, FAIA; and David L. Braden, FAIA.

The ASA has grown from a small band of architectural secretaries in Miami, who came together in the early 1960s to discuss mutual problems, to a national organization with 21 chapters in various states, including Hawaii and Alaska.

Formed out of a concern by architectural secretaries for their own professionalism, ASA aims to "advance and promote the educational and professional standards of nontechnical architectural employees; to encourage and promote the exchange of ideas and education between employers and nontechnical employees; and to cooperate with civic organizations whose undertakings are of vital community concern." The ASA is a nonprofit, nondiscriminatory and nonunion organization.

ASA's future objectives include the development of national continuing education workshops, working closely with AIA committees to improve personnel and administrative practices; the establishment of curriculums in institutions of higher education for the training of architectural secretaries; the development of a program of certification; and the creation of programs to fit the needs of individual ASA members.

The ASA wants the architectural sec-
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PPG: a Concern for the Future



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retary to become an aid to the architect in his administrative responsibilities, giving him more time for other decision-making tasks. In this connection, the organization has been working on the possible publication of a handbook. Recently, the AIA committee on office practice agreed to assist by preparing a bibliographical list of references for use by ASA members.

Terry L. Peck, an Institute staff member, acts as liaison for ASA with the AIA. She will send information to anyone who wishes to become a member of ASA or to establish a local ASA chapter. Write ASA, AIA Headquarters, 1735 New York Ave. N.W., Washington, D.C. 20006.

Times Acknowledges Error on Urbahn

On June 6, the *New York Times* published a statement declaring that an error had been made in an article by architectural critic Paul Goldberger in its May 21 issue in which it was reported that the Manhattan-based firm of Max O. Urbahn Associates, Inc., "donated \$14,750 to the Nassau County Democratic party shortly before receiving the commission to design the Nassau County office buildings." The correction in the newspaper states that it was "mistakenly reported" that the firm "made political contributions of \$14,750 to the Nassau County Democratic party in exchange for the commission to design Nassau County office buildings. Further examination into the matter indicates that no contributions have been made by Mr. Urbahn that were in any way related to contracts for Nassau County or any other public building."

Continuing Education Floats from Hawaii

"Continuing Education Goes Afloat" will give architects a chance to attend workshops on a cruise from Honolulu to San Francisco. The SS Mariposa will depart from Honolulu, August 23, arriving in San Francisco on the 28th and sailing on to Los Angeles after a day in San Francisco.

The program, arranged by the AIA continuing education department, will consist of a number of workshops on such topics as marketing architectural services, organizational management of firms, improvement of negotiating skills and relationships with clients.

For those who want to tour Hawaii before sailing home on the Mariposa, there are special island exploring opportunities at special rates.

For information about programs and prices, write to Stuart Rose, AIA Continuing Education, 1735 New York Ave. N.W., Washington, D.C. 20006.

Architects Win Honors for Homes In Awards Program

Sixteen architect-designed homes and multifamily housing projects out of more than 400 entries have won honors in the 1974 Homes for Better Living Awards program. The program, initiated 19 years ago to "inspire excellence in originality of architectural design and use of building materials," is sponsored by the AIA in cooperation with the magazines *House & Home* and *American Home*.

In the category of custom-designed houses, awards of merit went to Booth & Nagle, Chicago; Freedman/Clements/Rumpel, Jacksonville, Fla.; Myron Goldfinger, AIA, New York City; Huygens & Tappe Inc., Boston; William Kessler & Associates Inc., Grosse Pointe, Mich.; Stanley Tigerman & Associates, Chicago; and Robert Whitton, Coconut Grove, Fla.

First honor awards for multifamily housing were won by Anderson Notter Associates Inc., Boston, and Donald Sandy Jr. & James Babcock, San Francisco. Awards of merit in this category were presented to Design Five Maine Inc., Cambridge, Mass.; Louis Sauer Associates, Philadelphia; Kaplan & McLaughlin, San Francisco; Schleicher-Soper Architects, Syracuse, N.Y.; Werner Seligmann & Associates, Cortland, N.Y.; and Daniel Solomon, AIA, San Francisco.

In the built-for-sale house category, an award of merit was won by Robert E. Jones & Edwin K. Hom, La Jolla, Calif.

The custom-house jury was comprised of Hugh Newell Jacobsen, FAIA, chairman; Francis Gassner, FAIA; Frank Tomsick, AIA; William Morgan, AIA; and Evan Frances, architecture and design editor, *American Home*. The multifamily/built-for-sale jury was chaired by A. Robert Fisher, AIA. Other members were John W. Moutoussamy, AIA; Charles H. Pawley, AIA; Jack Craycroft, AIA; Russell V. Baltis Jr., a builder in North Kansas City, Mo.; Ralph Jackson, architectural student at the Harvard University Graduate School of Design; June Vollman, associate editor, *House & Home*.

Architectural Students Help Tornado Victims

When early spring tornados moved through the Cincinnati area, bringing widespread destruction of homes and businesses, students and faculty of the University of Cincinnati's departments of architecture and community planning immediately went to work to help the Red Cross. They conducted a house-by-house survey of disaster-stricken neighborhoods and within two days had completed an

inspection of more than 800 homes and small businesses that had been destroyed and another 350 that had sustained major damage. It was a necessary first step to launch a Red Cross family assistance program for the more than 2,000 families affected by the devastation.

A Red Cross spokesman commended the students for their reliability and speed.



He said that the "spirit of helping and professionalism which the students displayed was noted by all who came in contact with them, and they brought great credit to themselves and to the university they represented."

Restoration Project For Sullivan Designs

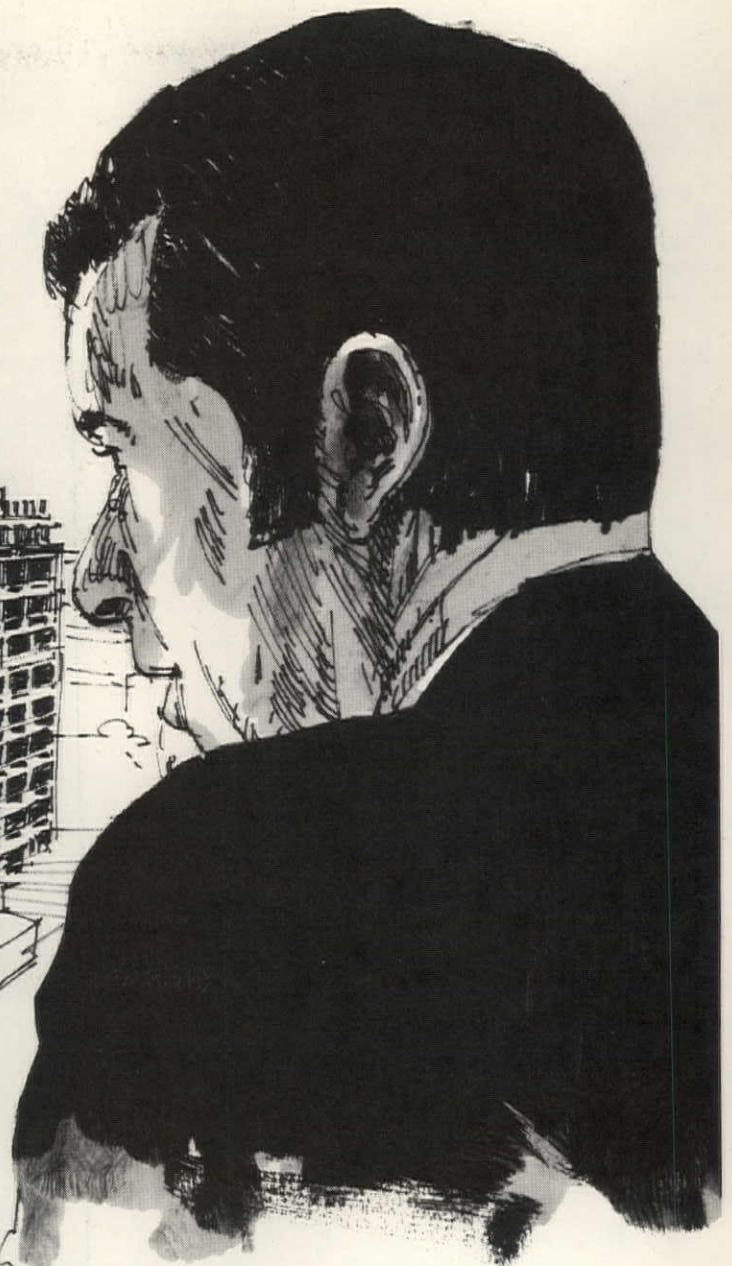
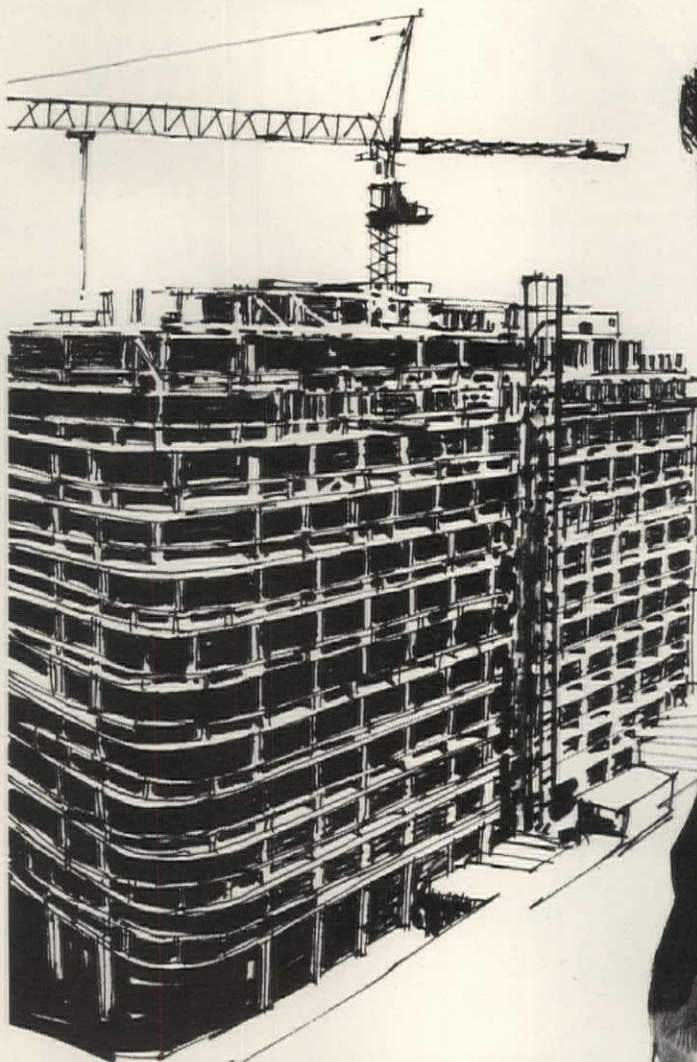
The Art Institute of Chicago has received a contribution of \$520,000 from the Walter E. Heller Foundation to finance the reconstruction and renovation of the trading room and the entrance arch designed by Louis Sullivan for the original Chicago Stock Exchange Building. The landmark was demolished in 1972, and its site is now occupied by the Heller International Building.

The restoration project will be done by John Vinci, Chicago architect, who will work from photographs, sketches and measurements to restore the trading room to its original state when built in 1894. The room will be reconstructed as a lounge and reception area in the Institute's new Columbus Drive addition, and the arch will be located near the new east entrance.

Moratorium Proposed On Campaign Gifts

The Board of Directors of the New Jersey Society of Architects/AIA has requested that a voluntary moratorium be placed on political campaign contributions by its

continued on page 16



How do you select an electrical contractor?

NECA study reveals opinions of design professionals.

NECA, the National Electrical Contractors Association, recently completed a study among key decision makers on the building team to determine what characteristics they look for in selecting or recommending electrical contractors for new construction and modernization projects.

Most participants agreed: Competence is the single most important characteristic looked for in professional electrical contractors. Closely related qualifications include integrity, reliability, efficiency, quality of work, financial

position, caliber of work force and equipment, and ability to coordinate with other construction craft groups. All these qualities are found in professional electrical contractors. Advantages?

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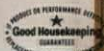
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- **Plan drawings** of refuse room requirements. You see just how much space each compactor needs for easy operation. Use the drawings in your own plans.
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INTERNATIONAL DYNETICS

going on from page 12

members until "proper legislation" is enacted which will provide for public funding of political campaigns. The stricture applies in federal, state or local political jurisdictions and is aimed at both financial contributions and nonmonetary services rendered to candidates.

Donald J. Gartzar, AIA, president of the society, says that the board recognizes that all members of society "have an obligation to participate in good government" and that this necessitates the election of qualified candidates who bring their views to public attention, thus requiring funding and campaign assistance. Nonetheless, the board eschews recent events bearing on campaign contributions and has determined that architects should voluntarily remove themselves from future possible conflicts. Gartzar expressed the hope that the resolution would "encourage corrective measures as soon as possible."

Citizen Action Group Formed for the Arts

"It is time someone articulated and acted on the concern we share about the constant plight of our finest arts organizations, the impermanence of our architectural heritage, the deterioration of America's cities, the lack of beauty and order and amenities in our man-made environment," said John B. Hightower, president of the Associated Councils of the Arts, when he announced the formation of a new citizen action group called Advocates for the Arts. Established under the aegis of the ACA, the constituency of citizens will disseminate information on precedent-setting court cases, take legal action when required, research legislation, maintain an advocacy library, testify before Congress and engage in any public issue that affects the arts.

The group, whose acting chairman is David Rockefeller Jr., will work to increase financial support for the arts from federal, state and local legislatures; to strengthen the case for better architecture through zoning incentives; to help in fundraising drives for the arts in major cities. It also will provide individual artists with current information on such matters as copyright protection, tax laws, health plans and funding sources.

A number of well-known personalities have joined the group, including R. Buckminster Fuller, Aaron Copland and Paul Newman. ACA urges interested persons to send in a tax-deductible contribution of \$15 or more for the group's activities. A quarterly newsletter will keep contributors informed about the economic, public and legal actions undertaken by the group. Further information may be obtained from the ACA, 1564 Broadway, New York, N.Y. 10036. *continued on page 19*

Research Corp. Studies Computerized Codes

The AIA Research Corporation has received a grant from the National Science Foundation's Research Applied to National Needs Program to develop a master plan for developing computer-based systems for building codes and their administration. The corporation is being assisted by Gary Stonebraker, president of the Advanced Planning Research Corporation, and Calvin Optiz, who is associated with the Boston architectural firm of Goody, Clancy & Associates.

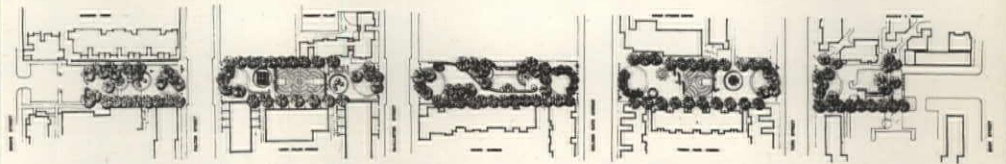
The research will focus on the development of "alternative strategies to achieve the most promising computer applications" in such areas as the use of the computer as a tool to develop performance requirements in energy conservation, noise abatement, structural design, etc.; to provide an alternative to lengthy code reviews; to devise computer-based administrative and management systems and to coordinate information systems in the building process.

Concrete Makes Way

It isn't often that concrete is conquered by grass, but four blocks of San Francisco's Buchanan Street are being ripped up to

make way for a community street park. When finished in the next few months, the park will have grassy knolls and trees, as well as benches, sliders, swings and a basketball court.

In 1971, the San Francisco Redevelopment Agency retained Sasaki, Walker Associates, Inc., to develop a master plan



for the four-block area. SWA wanted it to be a grass roots effort, and it commissioned neighborhood youths as consultants to investigate the Bay Area to find out what recreational amenities could be included in the park. Photographs taken by the young people became a planning tool. The \$440,000 park is a cooperative achievement of federal and local agencies and community groups.

Interior Designer Standards

The National Council for Interior Design has taken a major step toward the establishment of uniform standards for professional interior designers with its first qualification examination held in April at 20 testing centers across the nation. The examination is a prerequisite to professional membership in the American Insti-

tute of Interior Designers and the National Society of Interior Designers. It will be used as well for those members who are qualifying as interior designers in the Interior Design Educators Council, Industrial Design Society of America, Institute of Store Planners and National Home Fashions League.

AIA Creates New Post, Adds Members to Staff

Robert Traynham Coles, AIA, has been appointed to the newly created position of deputy vice president for minority affairs. He will be responsible for the introduction of innovative programs throughout the AIA in order to make it more responsive to the needs of a rapidly changing urban society. President of his own Buffalo firm, which specializes in architecture and urban design, Coles will divide his time between his practice and his work for the AIA. Coles, who is president and member of the board of directors of the Community Planning Assistance Center of Western New York, has taught at the University of Kansas, Hampton Institute, State Univer-

continued on page 64

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Home by Techbuilt Inc., N. Dartmouth, Mass.;
Architect: Fred Della Paolera; Cabot's Bleaching
Oil on cedar siding and fence.



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Estimators reduce Change-Orders?

An interview with Senior Partner Lawrence McIntire.

Q. What, in your opinion, are some of the causes of change orders?

A. I think the prime culprits are insufficient time *allowed* and *spent* in coordinating drawings and specs and, of course, poor cost control in the first place.

Q. Specifically, how would you eliminate change orders?

A. They can't, of course, be eliminated. But *first*, I'd see that all items requiring details were properly detailed. *Second*, I'd make sure that A&E disciplines were coordinated with each other. *Third*, be certain that drawings and specs were coordinated so there were no misinterpretations of the designers' intent. *Last*, have detailed cost estimates prepared at each stage of drawing development to ensure that the project remained within budget, *before* the job is bid.

Q. What do you think are the best ways to reduce the dollar value of change orders once they're established?

A. I'd begin with *well-defined change order documents*. Then I'd require *independent, quantitative cost estimates*—showing all plus and minus labor and material costs, with realistic prices reflecting a true value of the change.

Q. I realize it's the A&E responsibility to lessen the need for change orders. But is an Estimator qualified to help?

A. Most definitely. Next to a Contractor—who shouldn't be the one to find errors resulting in change orders—I think

an Estimator is the most likely one to discover discrepancies in the drawings.

Q. Why is that?

A. Because the Estimator "builds" the job on paper. He must cross-reference sections and elevations with plans, utilize schedules, and refer to specs.

Q. Isn't the Job Captain qualified to do that?

A. Yes, but Job Captains *check* drawings. Estimators *use* them. And the *Estimator* is the one who sees the drawings *after* the Architect and *before* the Builder.

Q. How serious can this change order business be?

A. Our experience indicates an average of 5-10% of the original contract. But I've seen them run as high as 49%!

Q. How about some "for instances" where you've saved clients money?

A. Well, on a recent job involving \$6 million worth of change orders, we helped save our client over 30% at the negotiating table.

Q. But why make detailed estimates before going out for bids? Why not just negotiate the inevitable change orders?

A. You're playing a game that no Contractor has ever lost. It's far better to make changes on *your* drawings from *our* estimate. That way the owner gets *full* credit. It's the difference between *prevention* and *cure*.

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"We helped save our client over 30% at the negotiating table."



"I'd require independent, quantitative cost estimates reflecting a true value."



"It's the difference between prevention and cure."

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AIA JOURNAL

“Urban America today is at the crossroads—a profound juncture at which the historical and current strengths of our cities are threatened by critical problems that call into question the very humaneness of our cities. We must take pride in our accomplishments, and never be fearful or evasive of the problems before us.

“ We can take pride in recognizing that our cities are living museums of great civic architecture and planning, but we must share the blame for the human degradation of slums, deteriorated buildings and abandoned housing.

“ We can take pride in our great metropolitan institutes of learning, but shame in the inhumanity of our many financially distressed public schools and the accompanying problems of violence, truancy, drop-outs, and, still too often, segregation. . . .

“ Growing with our unprecedented affluence has been a tendency to become a disposable society—use something for a while and then throw it away. . . . You can even see this trend in our cities. When deterioration and blight sets in, there is a tendency to pick up and move out, instead of facing up to the challenge of revitalizing our cities. We have reached the point where we must ask ourselves if we can continue this method of quick use and rapid disposal. I am convinced we cannot afford the tradition of throw away cities.” Mayor Thomas Bradley, 1974 convention keynote speaker.

“A Humane

“Your 1974 convention theme is a natural expression of the growing concern within your profession to find the means to make architecture more deliberately responsive to its user-clients. . . .

“ We are told that architects with one set of social and cultural values often plan living spaces for people with quite another. The result is that there are actually two architectural clients: the paying client and the resident client. The paying client is usually the one with whom the architect deals, but the resident client is the one who will ultimately work or live in the building, and whose preferences are ignored. . . .

“ Given the undisputed importance of our buildings to a humane existence, it is little wonder that many thoughtful architects are responding to levels of concern other than purely esthetic and intuitive considerations. A growing interest within the architectural profession in the relationship between human behavior and environment is one measure of this concern.” Robinson F. Barker, moderator of the convention theme session.

“I have first suggested that science, or more specifically the scientific method, has limited application to the kinds of knowledge, or wisdom, that we need to design a better and more humane physical environment. I also have suggested that architectural insights of the kind

Architecture”

that produce an occasional masterpiece are too random a collection to constitute wisdom in themselves. I would argue that it is not wise to force open one eye—scientific knowledge—only to close the other—intuition or insight.”—John P. Eberhard, speaker, convention theme session.

“It is a commonly held truism that architecture reflects society. I do not believe this. Our architecture reflects the establishment version of society, and like the establishment, it responds to change slowly. A humane environment is one in which the needs of all segments of society are most fully satisfied. An establishment architecture cannot design such an environment. . . .

“ In order to create environments for the rest of society, architects must know more about these groups, and about how spatial characteristics affect their activities and lifestyles. Organized, systematic research about space and behavior is essential to develop this knowledge, and will be useful in designing more responsively for the establishment, too. With this new information, architects, urban designers and planners are slowly becoming more involved in determining human needs and fulfilling them spatially, and are working with social scientists in developing the research. . . .

“ The architectural profession must move toward user participation in the design process if it is to create a responsive and human environment.”—Judith E. R. Roeder, speaker, convention theme session.

Using the Social Sciences To Help Make Buildings Both Responsive and Humane

To whom is the architect to turn for help in responding to the increasing volume of exhortations that he seek a better fit between his buildings and their users?

To explore the social sciences as one such resource, AIA late last year sponsored a small but intensive conference involving four social scientists and four architects. The conference was based upon the premise that, however gradually, the two disciplines were coming closer together in their concerns.

A newly published report on the conference by Don Conway, its moderator and AIA director of research, cited the "vigorous renaissance of interest on the part of the social sciences in the relationship between human behavior and attitudes and the physical environment" that has occurred during the past 10 years.

At the same time, says the report, "there has been a major shift within the architectural profession and schools of architecture which reflects the general concern for social issues that has pervaded all professions in the United States since the 1960s. . . . Many students and younger members of the profession now view architecture as a social art with long-term and possibly profound impact on human behavior, rather than a fine art whose principal concern is style."

The three-day conference had dual objectives, according to the report: first, "to make explicit the nature of social science work relative to the man-made physical environment and to discuss its implications for architectural design; and second, to devise a process model that would show practicing architects the points in the design process at which social scientists might be used and to define the nature of the collaboration between architect and social scientist."

The participants included, from the social sciences, Dr. Robert Bechtel of the Environmental Research and Development Foundation in Kansas City; Dr. Edward Ostrander of Cornell's department of environmental design and analysis; Dr. Robert Sommer of the department of psychology at the University of California, Davis; and Dr. John Zeisel of Harvard's graduate school of design.

The architects were chosen to repre-

sent varying scales and modes of practice. They came from firms with five, 10, 75, and 160 employees, respectively, focusing on housing, office buildings, hospitals and a broad range of industrial and educational buildings.

They were Louis Sauer, FAIA, of Philadelphia; George Hartman, AIA, of Hartman-Cox, Washington, D.C.; George Agron, AIA, of Stone, Marracini & Patterson, San Francisco; and Shelton Peed, AIA, I. M. Pei & Partners, New York City.

The social scientists at the conference represented, in the aggregate, nearly 40 years of active consulting work with architects, innumerable articles, research papers and three books on the influence of environment upon its inhabitants.

The four architects had less history of involvement with social scientists. In fact, while all clearly welcomed the injection of more information about human need into the design process, they were not uniformly convinced that the social sciences offered a practical resource.

"I want to make the physical environment more supportive of life," said Sauer at one point. "I feel responsibility. I feel inadequate as well."

Yet at another point Sauer said, "The architect is accountable to produce a building for the public health, welfare and safety. That's why we are registered as architects. It doesn't say behavior. It says public health, welfare and safety."

"Now, the extent that these people (the social scientists) feel they have something to say about public health, welfare and safety it behooves us as architects to listen" since architects are held accountable for these things.

Responded Agron: "I am self accountable as well as legally accountable. . . . I am responsible, not by law at this time, but by the fact that I am putting people in closed boxes of some sort or other. I am going to do something about their lives about which I have no clear expectation."

"And if I am doing that to them, I had better know what I am doing, how I am doing it and how I can ameliorate it."

Specifically, Agron said, "I need better ways of gathering information; better methods of evaluation and of validation and review after the fact. I need better

means of projecting rates of change and scopes of change."

Hartman had some questions about the capacity of the social sciences to fulfill these needs for the architect, and asked them in relation to a specific project, a commission to design a large office building for a prestigious law firm.

Hartman said he felt a need to find out more about "the way they are going to use it or ought to use it," and asked the conferees, "Is this something that social scientists can help us with?" Hartman said he would need the information in three months and could pay a relatively modest consulting fee for it.

Zeisel responded: "Two types of information come to mind when I think of solving a problem. One is the available information; the other one, information that we don't have as yet."

"There happens to be a great deal done on office design and the uses of offices, including two books. First thing, let me get to those, translate them into useful information and help you evaluate it."

Interjected Hartman: "I'm not interested in researching office buildings as such. I'm interested in a specific building for a particular law firm."

Zeisel: "There are certain problems that are common to many offices, law offices included. Assembling this is just the first step."

"Second, either simultaneously or sequentially, is to go to the users of law offices, some newly designed and some older, to learn from their experiences. The third aspect is dealing directly with the client and finding out what types of needs may be specific to him."

Hartman: "What you have outlined here is exactly what I do anyway. What I'm fishing for is whether it is better to retain you to help me do it. I can't see quite why you will be able to do it better than I do. I rather like doing this; I'm not anxious to sub it out."

Sauer, to Hartman: "His intuitions are totally different from yours."

Zeisel: "And based on a totally different background, different education, different theory, a different mind set and way of thinking about a problem."

Sommer: "Social scientists have means

A conference explores specific ways of injecting their knowledge into the process of design.

of getting information that are more valid, that is, that fit reality better, than lots of other people's. In certain situations it is very efficient to call upon them, much more efficient than trying to go out and get the information yourselves."

And Bechtel: "Most often information for programming buildings is collected by talking with the clients or potential client users. This is precisely the area where social science can be of greatest help.

"The social scientist can provide standardized techniques for arriving at valid and reliable data that do not rely on anyone's opinions. . . . Generally, the social scientist can collect more and better data faster than the nonsocial scientist because he is trained to do so. This has become a highly skilled specialty."

Says the conference report, "It has become important for architects to find the kind of information they need in order to design more responsive environments. At the same time, architects have to find a way to integrate this information into their contractual obligations to their clients.

"There is also the problem of making social science findings compatible with their personal and professional obligations as well. The already complex nature of day-to-day architectural practice makes the inclusion of this new concern for user needs a difficult task and one which some architects resist simply because it upsets the way they do business."

The body of the conference was given over to seeking specific ways of facilitating this task and injecting the social scientist, and the knowledge and techniques he can bring, into the design process.

The conferees broke into three groups to work on design of the "process model," suggesting points at which the injection could be helpful and the modes that it could take.

After additional group discussion the three designs were synthesized into the single model shown in outline on pages 26 and 27. The conference report (entitled "Social Science and Design" and available for \$2.50 from AIA headquarters) describes the original three designs as well as the final synthesis and cautions that even it "is not a final product."

The model, it acknowledges, "is based on limited numbers of attempts at collaboration between architects and social scientists. It is fully expected that as more architects and social scientists work together, new points of collaboration and new dimensions to this process model will be added."

The report also includes this more fundamental caution: "An issue frequently raised at the conference was that of prediction of human behavior. There is a tendency by architects to feel that they can ask the social scientist to predict the behavioral outcome for any environmental situation. With the exception of a few well-studied man/environment relationships, this is not the case.

"Thus, an architect working with a social scientist for the first time should recognize that it would be inappropriate to pose a question such as, 'If I do such-and-such in this building, how will people react to it?' Since the study of man/environment relations is a new field, it is not possible to respond to these kinds of minute behavior predictions.

"In presenting the process model, we have shown a method of defining design problems in terms of human requirements and for collecting data relative to specific design decisions to be made by the architect. The intent of this model is to show a way in which a body of knowledge about human behavior, relative to the man-made physical environment, can be accumulated."

There was perhaps no more emphatic point of agreement at the conference than the importance of postconstruction evaluation as part of this accumulation—and, in effect, as part of the programming and preprogramming of subsequent projects.

Said Sommer: "No professional can afford not to systematically look at the results of his work. That is unprofessional."

Said Sauer: "If I don't have a memory of what I have done, I keep repeating the same mistakes. I'm saying that the profession does not have a memory."

Said Bechtel: "Evaluation of the design after it is lived in can be the single most valuable lesson for the architect and an important element in building his firm's capability.

"The process of evaluation is the testing of whether the building performs as it was intended to perform. A building cannot be evaluated until it has acquired its habitual patterns of behavior. People looking at it for the first time are not good subjects for evaluative testing.

"In other words, it is a performance measure. It should not be attempted for at least six months after occupancy, and a year is better. . . .

"Continuous evaluation of buildings over time is the best method known for the architect to judge his own performance and to increase his skills. It enables him to build on each consecutive project by knowing what went wrong and what worked best. A systematic evaluation scheme permits him to get out of the 'continually re-inventing the wheel' cycle. . . .

"You begin to discover a few things and all of a sudden you get a new insight and the changes keep continuing. I don't see us reaching any kind of end point, any final 'best' way that a school or a house should be designed.

"Because as people get closer and closer to their own needs the needs themselves start changing. It is rather like the medical profession—you discover germs and you start taking care of the germs, then the germs begin to develop resistance and you have a whole new ball game."

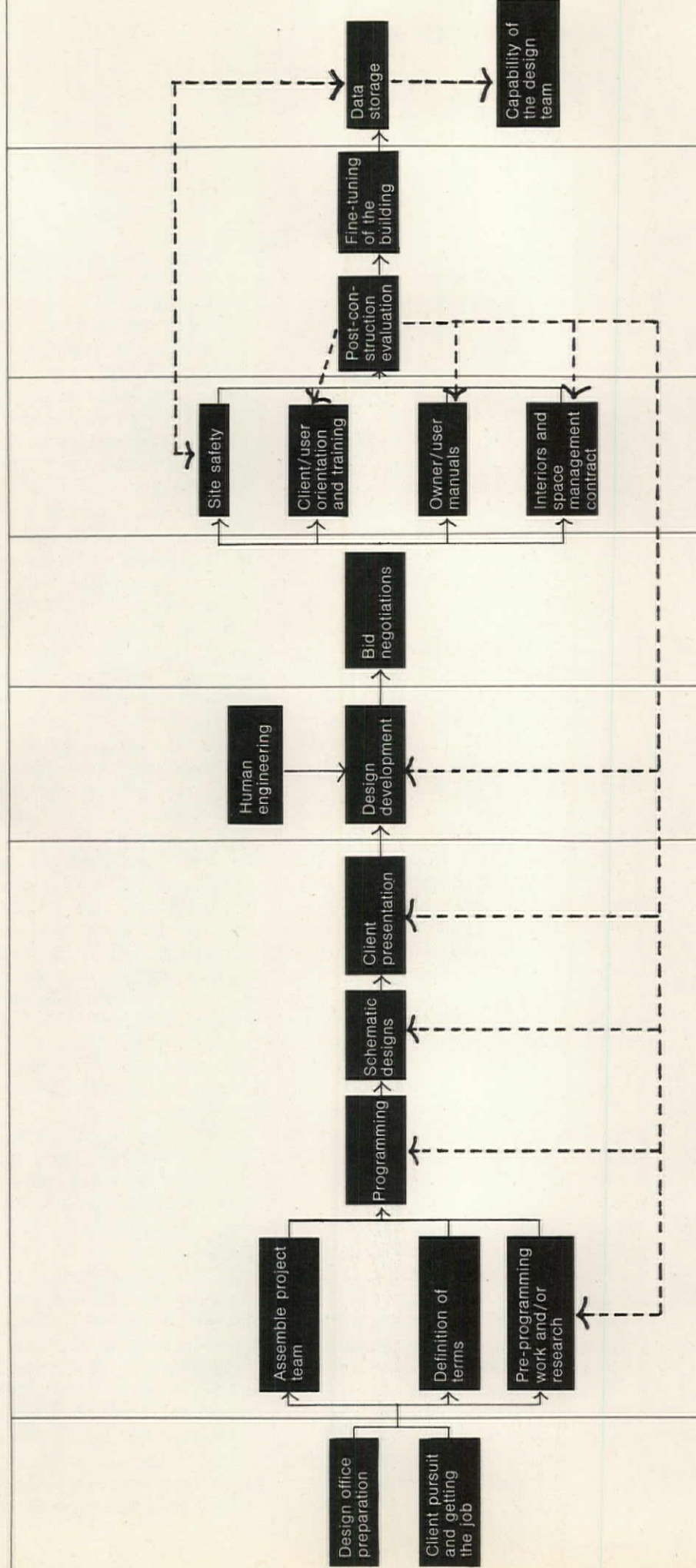
Yet, as the conference report notes, the architect must "design buildings at a specific point in time with the realization that their uses and users will change in the future.

"The designer's dilemma, then, is whether to design a universal 'loft space' that can adapt to any user and any use, or to design for a close fit between the known building and its known use and users.

"While this dilemma went unresolved in the discussions, it did emphasize the fact that architects, by the nature of their professional role, are forced into making predictions about future use and users of the buildings they design." The report might have added that the discussions also made clear that architects need a sounder informational base for the making of such predictions in the very visible and permanent form of buildings. *Donald Canty*

Process Model for Architect-Social Scientist Collaboration

PRE-JOB PHASE SCHEMATIC DESIGN PHASE DESIGN DEVELOPMENT PHASE WORKING DRAWINGS AND BID PHASE CONSTRUCTION AND PRE-OCCUPANCY PHASE OCCUPANCY PHASE FUTURE AND OTHER PROJECTS



RESEARCH REPORTS

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OWNER/USER MANUALS

INTERIOR DESIGN SPACE MANAGEMENT PROGRAM

POST-CONSTRUCTION EVALUATION REPORTS

PROJECT DOCUMENTS PROGRAMS AND POST-CONSTRUCTION EVALUATION REPORTS

Design office preparation.

A series of pre-job activities intended to better equip a design office to work with a social scientist. Activities consist of training seminars, library development, "networking" or establishing contact with other offices or social scientists.

Client pursuit and getting the job.

Activities consist of proposal writing with special reference by the social scientist on the behavior/user section, initial or early client contact by architect and social scientist — "psyching out" the client, identifying additional social scientist consultants; dry run review of client presentation; and architect and social scientist proposal presentation to potential client.

Assemble project team.

Early definition of social science problems to round out the usual design team of architects, structural, mechanical engineers, etc. Architect/social scientist contract is probably negotiated at this point. Roles of the team members and scope of activities are defined at this point.

Definition of terms.

Identification and explanation of design philosophy, design team and client values are identified and compared, criteria for project's success are identified and made explicit.

Pre-programming work and/or research.

Experience of architectural office and social scientist is reviewed in terms of preliminary design problems statement. Priorities and strategies for architectural program are established, relevant literature is reviewed, issues to be addressed and ignored are identified. Design problem is "negotiated" between architect, client, and social scientist. Relevant research from same or similar building types is collected. Programming methodology is determined at this stage. Data analysis methods and strategies for programming are determined.

Programming

Client/user/organizational needs and wants are determined. Behavior issues not identified by the client are made explicit. Interviews, questionnaires, behavior observation, simulation, and gaming techniques used as required to arrive at final program documents. Program documents reviewed with client/user. Early design problem statement reviewed, expanded, discarded in response to final program.

Schematic designs.

Social-behavioral issues and problems are incorporated into design concepts. Activity clusters translated into physical form, physical form and concepts are compared to behavioral program and alternative design concepts are generated. Schematic design concepts are reviewed before presentation to client and additional programming/research items identified and collected as needed to firm up schematic design concept.

Client/user orientation and training.

Social scientist participation in presentation of schematic design to the client can reinforce and explain the organizational and administrative issues inherent in the design concept. Presentation of the social and behavior concepts of schematic design may carry more complete explanation and credibility by social scientist participation in the presentation.

Design development phase.

Decisions about hardware details and special requirements are monitored by the social scientist to assure conformance with the social and behavioral aspects of the design concept. Human engineering and intricate user/need requirements for hardware items may be introduced at this point.

Bid negotiations.

Social scientist team members assist in making trade-off decisions during bid negotiations in order to preserve or strengthen the social-behavioral aspects of the design concept.

Site safety.

Possible social scientist involvement of a human engineering nature to insure worker safety and smooth flow of communication teams during the building process.

Interiors and space management contract.

Social scientist analysis of organizational space requirements and space management policies provides insights that increase the probability of architectural firm getting the interiors, layout and furnishings contract.

Client/user orientation and training.

Training sessions for key client/user personnel can be conducted to insure understanding of design concept and space use possibilities and design intentions. Additional orientation and training to mechanical equipment and detail features at this point can serve to optimize user efficiency and satisfaction with the building.

Owner/user manuals.

These serve as additional orientation and training devices to insure and reinforce owner/user understanding of design concepts, space use potentials, and space management policies. Existence of manuals provides for change in up-date as buildings change over time and as new users come into the building.

Post-construction evaluation.

Social scientist and architect data collection probably towards the end of one year guarantee period. Main purpose is to provide data for "fine tuning" building to owner/user needs and new behavior patterns that have developed in response to the new building. Second purpose is to aid the architect design team in its own development and to provide "feed forward" data for subsequent design projects.

Fine-tuning of the building.

Recognizes the change in user or organizational behavior patterns that results from the new building and corrects deficiencies that stem from original program weakness and/or the difficulties of the design/build process. Extent of building alterations will vary with nature of user or organizational change and strength of original program.

Capability of the design team.

Is strengthened by insuring systematic and accessible storage of information gained from post-construction evaluation and other stages of the process model. Specific task of feed forward into programming into future projects must be assigned to an individual in the design office.

A Residential Complex Whose Form Followed Findings About Its Users' Wants and Needs

The small buildings at right represent the application of some often preached but less often practiced ideas about achieving a fit between architecture and its ultimate users.

Their design was based on a systematic effort to ascertain the needs and desires of the prospective users, in this case elderly individuals and couples, through the very direct means of asking them. And now the project has gone through the first of a series of postconstruction user evaluations that will provide both the architects and the client, a local public housing authority, with even firmer data to apply to similar projects in the future.

The project is Kottinger Place, a 50-unit development of housing for the elderly in Pleasanton, Calif., on the southeastern edge of the San Francisco Bay Area. It was designed by the Berkeley firm of Hirshen, Gammill, Trumbo & Cook.

Kottinger Place has won awards for its architectural quality, but perhaps more important to the designers are the words of one resident whose comments were cited as representative in the evaluation report. She said: "I love my little mini-house. I have a delightful view. I can go out on to the front porch and sit in the summer. I can fit six people, my family, in my living room. The bathroom is convenient and interesting. The kitchen isn't large but it's handy and convenient, and the closets are more than adequate."

Things like adequate closets may not seem the stuff of which architecture is made, but they are the kind of small things that make a large difference in the everyday lives of a building's users.

The predesign interviews were conducted by architect Barbara Cook, who was programming consultant on the project and also is conducting the postconstruction evaluation. The interviews yielded some overall characterizations of the user group: "The elderly you will be designing for are very tough. They show an exceptional ability to survive; they are determined to make the most of each day." But the interviews also yielded some very specific clues about design.

Of course, the actual users-to-be of the buildings could not be identified in advance. So the interviews were conducted

among residents of nearby housing who are similar in age, income and other characteristics. Among the findings:

When offered choices among diagrammatic site plans, the interviewees invariably chose schemes in which dwelling units were broken up rather than in apartmentlike rows. They had no strong feelings about exterior design but, spending some 90 percent of their time within their dwellings, they treasured views out the windows.

They responded positively to design elements that would extend their own "territory" to the outdoors, notably individual porches and gardens. In all, they placed a high premium on both privacy and security, but also wanted the project to have a sense of neighborhood.

In terms of the relationship of the project to the outside community, they valued closeness to shopping and, while not necessarily wanting to bar children and teenagers from the project completely, clearly preferred to keep them at a distance. "When I was young I made a lot of noise, now I want things quiet. Let kids have their chance to make noise; keep them apart."

Some, but surprisingly few, of the findings related to the physical limitations of elderly persons: curving walkways could be a hazard, at least one living room window should be low enough to see out while seated, kitchen counters and cabinets should be at lower-than-usual heights.

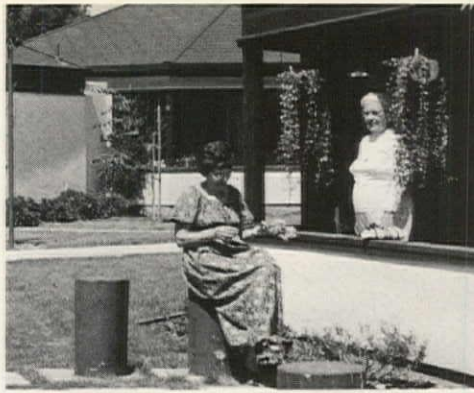
More of the findings related to lifestyle: "Having a separate bedroom is probably the most highly prized commodity in an elderly unit. It is common knowledge at one retirement home that one woman renounced widowhood and her efficiency for marriage and a one-bedroom unit." The high value placed on having a bedroom was related to the fact that many of the interviewees previously had been homeowners and found it hard to conceive of a "home" without one.

Also, "the elderly dote on making their units attractive, yet they have little money to spend doing it. A bedroom is one of the cheapest rooms to make pretty."

The site of Kottinger Place was an 8½-acre tract, adjacent to a park and







convenient to shopping, part of which had been the site of a wartime housing project scheduled for demolition. The new housing was placed on three and one half acres and the other five were developed into a park with the aid of the city and a Department of Housing and Urban Development open-space grant. The park contains a totlot and playground, kept separate from the housing.

Dwelling units are in clusters of two or three, giving them a homelike scale and character. Each unit has a large individual porch and private garden. A system of pedestrian paths (with bollards for an occasional rest while walking) leads to a community building and adjacent common garden.

These amenities were achieved within the stringencies of HUD low-income housing regulations. The housing authority funded the extra programming effort, the project was bid at a propitious time, and some savings resulted from use of the wartime housing's utilities.

Kottinger Place was completed last year and the postconstruction interviews were conducted after residents had occupied their units for three to six months. Others are planned over the next two years.

The initial evaluation report finds that Kottinger Place has struck the desired balance between privacy and a sense of neighborhood. Residents spoke of "their neighborhood" in relation to the project rather than the surrounding residential area and all of those interviewed "mentioned favorably the easygoing companionship they were finding there," while none complained of either too much or too little privacy.

The report gives considerable credit for the achievement of this balance to the windows that give each unit a variety of views of the project and its parklike grounds, and to the individual porches. It likens the porches to the residents' "individual calling cards," and says that they "lend a sense of friendliness to the project even if no one is out on them."

The gardens, given great emphasis in the design (landscape planner was Max Schardt), are appreciated but not used so much as might have been anticipated. The report flags for future evaluation the

hypothesis that "just having a variety of choices is as important to the elderly as acting on the choices."

There were other things as well that did not turn out exactly as might have been predicted from the predesign interviews. Despite the expressed fondness for separate bedrooms, the mix of units wound up two to one in favor of efficiencies, and the residents do not seem to mind.

The design of the efficiencies allows bedroom areas to be easily screened from living areas (although not all residents do so). And the difference in space between efficiencies and one-bedroom units is minimal: 525 square feet as compared to 580. Whatever the reason, the residents "did not express the longing for a separate bedroom that was expected," and one even expressed relief at having gotten an efficiency.

The residents were asked by the evaluators, "If you wanted to describe this home in a letter to a friend, what would you say?" The replies, according to the evaluation report, were generally "euphoric" and tended to take the form of a listing of everything about the units. The report suggests that this reaction may have reflected the fact that the residents were still in a "honeymoon period" with their new dwellings.

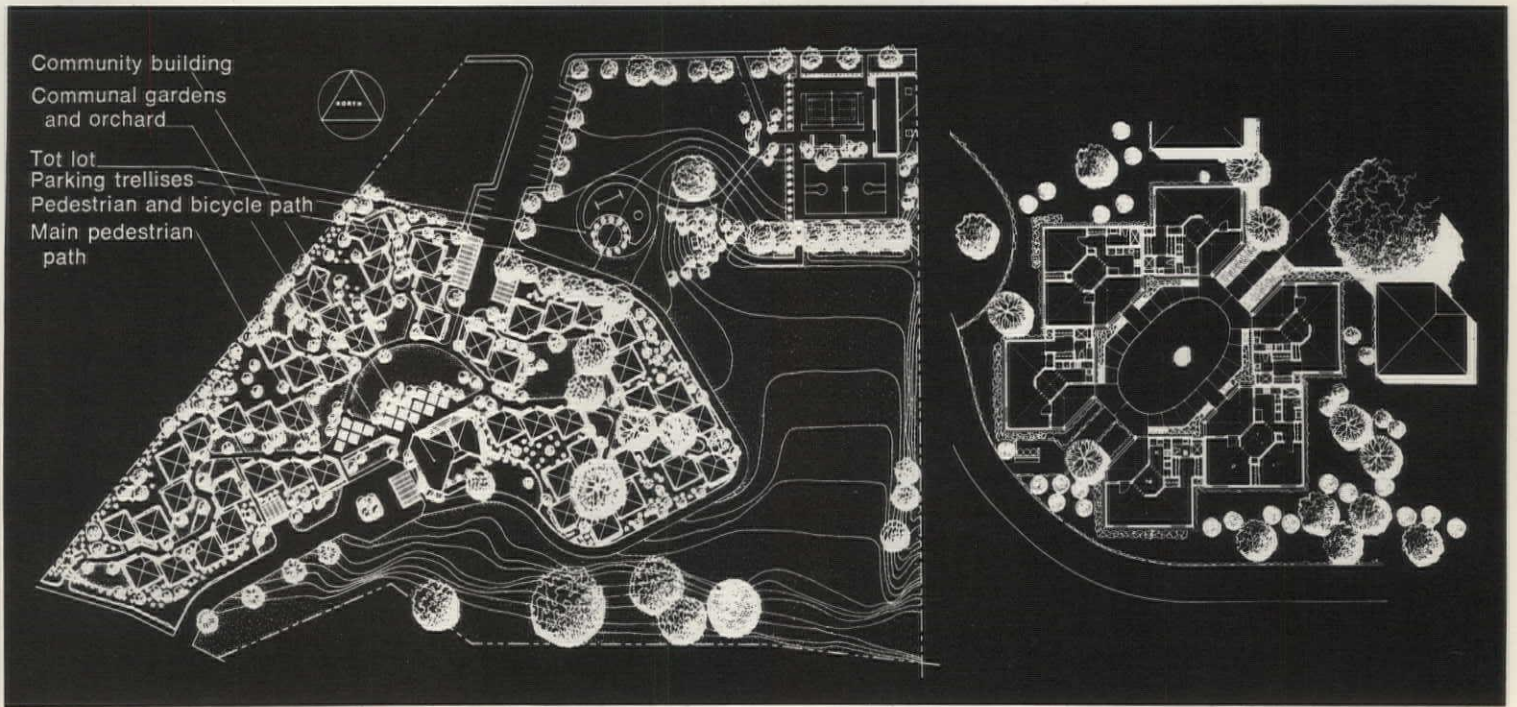
There were some complaints nonetheless. The predesign interviews had indicated that lockable screen doors would be appreciated, but they could not be provided and, sure enough, they are missed both for the ventilation they would provide and "to minimize the feeling of being hemmed in on hot days."

There were frequent complaints that the draperies furnished with the units did not sufficiently block the sun, and some residents felt that both porches and windows were too exposed to the frequently hot Pleasanton sun.

Still, the evaluation report reflects a genuine fondness for Kottinger Place among its residents. Asked how they generally described their new dwellings, most used terms such as "home," "my little house," "dollhouse." Said one, "It's compact like an apartment, but the way it feels inside makes it a house." D.C.



Postconstruction inter-views found the elderly residents enjoying both privacy and a distinct sense of neighborhood.



Texas' Big Thicket: The Saving of a Unique Ecological Phenomenon

Patrick B. Davis Jr.

A unique ecological phenomenon called the Big Thicket lies a few miles northeast of the sprawling metropolis of Houston. Once it encompassed over two million acres of land stretching across the eastern portion of Texas. Now its last remaining 100,000 acres are threatened by the chain-saw, the bulldozer and a slow-moving Congress, despite the efforts of a wide array of conservationists and organizations, including The American Institute of Architects. The visitor has a feeling of great urgency when he enters the area: Every other vehicle on the highway seems to be headed for a sawmill.

Efforts to preserve the Thicket date back to 1927 when conservationists sought to save 440,000 acres, but the Depression and World War II brought these early endeavors to a halt. In the mid-1960s, conservationists and loggers were once again at odds. Thicket defenders agreed generally on a 100,000-acre preserve, but logging interests argued that 35,000 acres would be sufficient to halt the slow death of the Thicket.

In 1970, a bill which provided for a 100,000-acre park, sponsored by Texas Senator Ralph Yarborough, passed the Senate, but the House failed to endorse similar legislation. A renewed effort to save the Thicket resulted in a House-passed bill in December 1973 that calls for an 84,500 acre preserve. The compromise bill passed by the House was a disappointment to conservationists, since it did not provide for an important environmental corridor along the Big Sandy and Village creeks, waterways that are vital to the Thicket's survival. Finally, late last month, the Senate passed legislation that added the Big Sandy-Village Creek Unit in Harden County to the original 12 units that would compose the Big Thicket National Preserve. The Senate ratified bill also amended the House bill by deleting the "legislative taking" provision in favor of a normal acquisitions policy. The amended bill, which contains some new language supported by the AIA, has been returned to the House for passage.

Further action that is necessary to

provide for proper preservation of the area should include a donation by the State of Texas, which presumably owns the creek beds, to the Big Thicket National Preserve. It is also important that a program for sensible ecological land-use planning be developed for the area.

Big Thicket is the ecological crossroads of North America, where both temperate and subtropical plants and animals—with a strong infusion of species from the dry, treeless West—live in harmony. It is astonishing that such a diversity of plants and animals can co-exist in one ecosystem and that they all flourish in such great size and abundance. Imagine growing orchids, tumbleweed and cactus in a backyard; better yet, think of roadrunners, alligators, mesquite and yucca in close proximity with cypress, water tupela and the famous Texas armadillo.

The Thicket has its share of the more exotic animals: cougars, panthers, jaguars, pumas, alligators—and even an occasional bear is sighted. Most of these animals, unfortunately, are very near local extinction, and none will survive if the constant efforts of bulldozer and poacher are allowed to continue. There are also a variety of less unusual species of mammals roaming the Thicket: the coyote, mink and fox.

Over a third of the species of birds known to exist in the United States are found in the Thicket. More than 300 species may be sighted, and at least 100 are year-round residents. The dense tangle is a safe stopping-place for migratory birds. Some people believe that even the ivory-billed woodpecker, which once ranged from the Gulf of Mexico east to North Carolina and north to Indiana and now presumed to be extinct by many ornithologists, may have found its last possible refuge in the Thicket.

Although Texas is not a place where large trees are usually found, the Thicket boasts of more than 100 species, including the crepe myrtle, black hickory, longleaf pine, Chinese tallowtree and sugar maple.

Wild and lawless as any portion of the great West, the Thicket has served as a hiding place for escaped slaves, outlaws and Civil War draft dodgers. In the 1830s, Sam Houston, commander-in-chief of Texas forces in the battles with Mexico,

planned to hide his army in the Thicket if his encounter with Santa Ana failed.

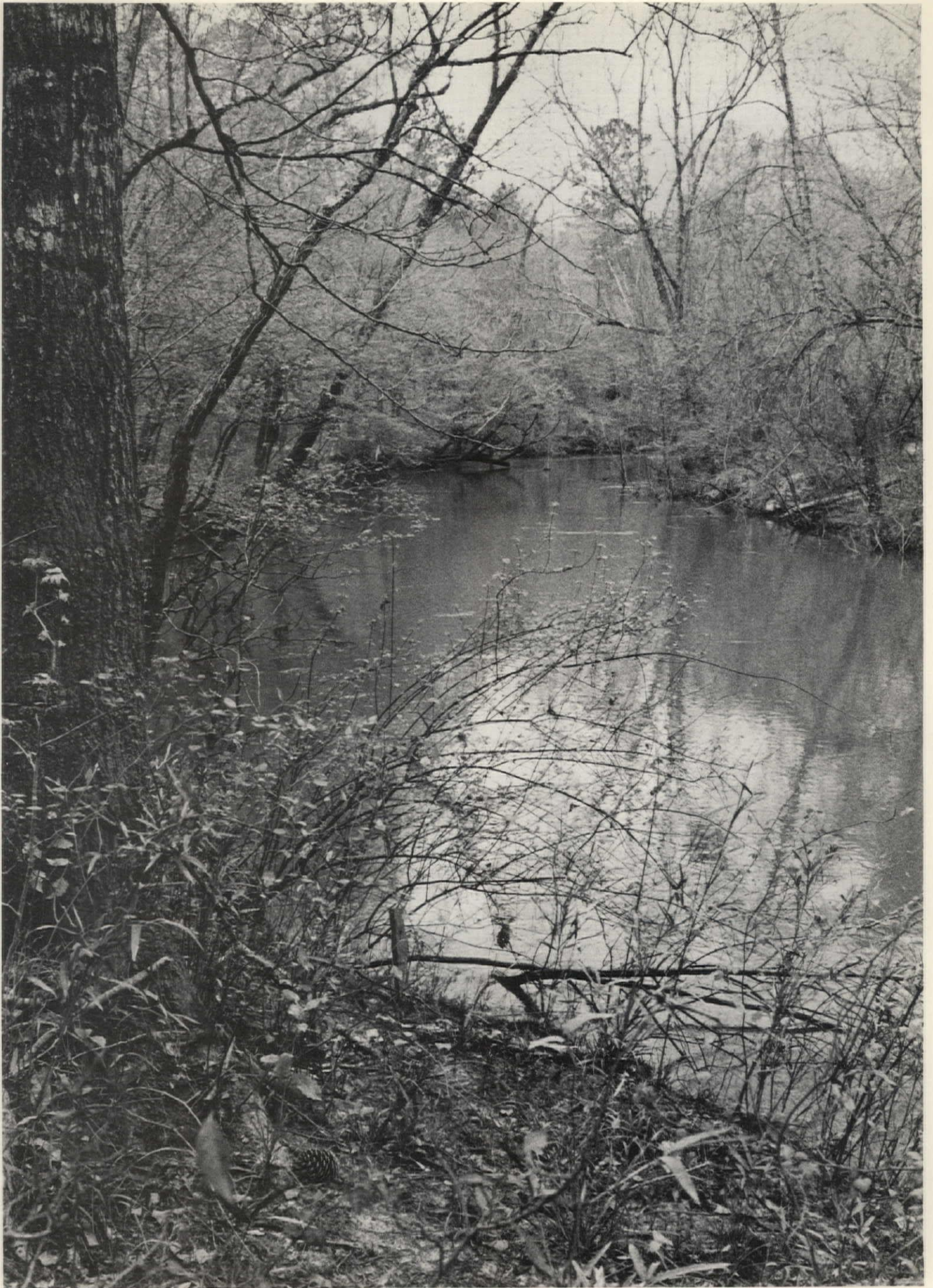
Old timers can tell hundreds of tales about the Thicket. During the 1930s, a bank robber and murderer named Red Goldman hid out in the Thicket for months, driving around in a stolen taxicab until finally a sheriff's posse shot him in a corner. Visitors to the area in the '50s sometimes encountered a nude, hairy man with a long beard (the original streaker?) who carried a pistol in each hand and threatened anyone who came after him.

A trip to the Thicket is to go back in time for at least 50 years. Many residents still live in log cabins built by their pioneer ancestors, and farmers can be seen turning the land with mule and ploughshare. Some people have never ventured outside the Thicket, but now young people are growing up and moving away to find jobs in cities, and the population is declining.

The Thicket and its defenders struggle to keep the beauty and mystery, but vacation-style subdivisions, are springing up at an alarming rate on land once set aside for a national park, and the logging, agricultural and oil interests are contributing to the Thicket's demise. Logging leaves a sterile pine monoculture and clogged creek beds and waterways. Although an oil boom in the Thicket lasted only 30 years, the petroleum industry has left an indelible mark with countless pipelines and deserted derricks crisscrossing the area. Oil and salt seepage into creeks and marshes have killed thousands of cypress and destroyed the nesting and breeding places of waterfowl.

Big Thicket provides an ideal situation for an environmental learning center. Building facilities for the center might be located on the site of the old Saratoga High School, now in use as the Big Thicket Museum. An information center for visitors, the museum contains many specimens of plant and animal life and freaks of nature common to the Thicket. Remaining buildings on the site might be rehabilitated and turned into laboratories and dormitories. Very quickly the old school could begin to serve as a center for learning about the mysteries of this living ecological laboratory. □

Mr. Davis is president of the Association of Student Chapters/AIA.





**Threats to the Thicket's
diverse ecosystem have
come from oil seekers,
loggers and developers.**



Plants and animals of the temperate, subtropical and arid zones co-exist in the Big Thicket side by side.





The Accomplished and Ingenious Architects of the Animal World

David Hancocks

Just one of the important differences between us and the other animals on this planet is that we have the ability to design complex structures for predetermined purposes. If that makes us feel superior, then perhaps we should remind ourselves of another fact: Long before our ancestors had even enough intelligence to hold broad-shaped leaves over their heads as shelter from a rainstorm, other animal species were already accomplished at constructing protection for themselves, their possessions and their offspring.

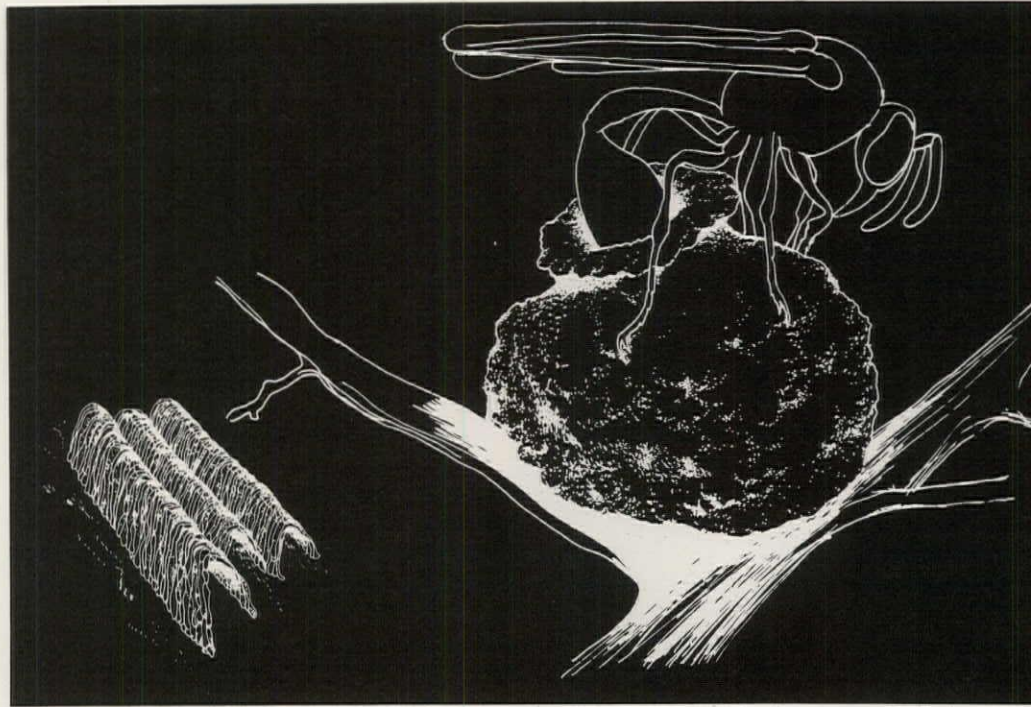
Technological advances suggest that man has apparently far surpassed the capabilities of these other animals, but a closer examination suggests that in very important ways we have not matched their achievements. We can receive both encouragement and also sound advice from the animal builders.

The benefits to be derived from an analysis of animal architecture are in part a realization of the improvisation, ingenuity and beauty of form which are so often in evidence, but also—and perhaps most important—a recognition of their motivations for building.

We will not find, for example, any animal wasting its time and talents on building simply for pomp and prestige. Even the vain displays of the bower birds are designed for the serious purpose of attracting a mate. We will not find examples of waste of precious building materials and labor. If a beaver adds an extra layer of mud to his lodge, it will be for additional insulation, not to try to make it bigger than his neighbor's. And no colony of bees would ever set out to build some apian version of Pruitt-Igoe because they themselves would have to live in it.

Rather, we would find that every species builds for the sake of its survival. This is puzzlingly different from many of our own efforts. Is not the extent to which we have so recklessly abused our re-

Mr. Hancocks, an architect, was recently appointed director of the British Wildlife Sanctuary (Ferne Park, Wiltshire, England). A specialist in zoological architecture, he is the author of *Animals and Architecture* and *Master Builders of the Animal World*.



The potter wasp makes delicate clay flasks to protect her larvae, collecting water in her crop to soften the dry earth. The solitary mud-dauber wasp builds long semi-tubular structures (left). Each compartment contains an egg.

sources the sort of behavior we say we might expect from animals? But it is *human beings* who will be alternately shivering and sweltering in the airconditioned glass skyscrapers if the energy crisis lives up to expectations.

It is obvious that we still have much to learn from the lessons of economy in nature, and because we are social animals perhaps we should take a closer look at the activities of other species which live in communities. Some of the most dramatic parallels (both good and bad) between the organizations of human society and that of animals can be found in the social insects: wasps, bees, ants and termites. Like us, they live in organized communities protected and pervaded by law and order. They have developed sophisticated methods of communication, which in the case of the bees can justifiably be called a language. They are dedicated to hygiene for reasons of survival; and some are masters of agriculture. And, although there is a temptation to skim over a wide range of examples of animal builders, I have chosen to ex-

amine here in some detail the works of but two of the social insects: the termites and the honeybees.

The termites are the most ancient of social insects. Their original ancestors probably developed social communities through the habit of burrowing in rotting timber, where they would be in confined proximity. At some time, they then developed the habit of eating each other's faeces, which would contain undigested nutritive particles. Mutual feeding and grooming easily evolved, helping to bind the groups into true colonies.

There is a remarkable and complex variety of nest structures among the six termite families, and the type of nest produced by any one species tends to be dictated by their type of food: Wood eaters make nests of reconstituted wood, known as *carton*, which is a pulp of chewed wood fibers mixed with a gland secretion; soil feeders build with their own excreta; those termites that cultivate gardens tend to build mainly with cement and saliva.

The largest nests are built by an African termite of the genus *Macrotermes*.

'It is obvious that we still have much to learn from the lessons of economy in nature.'

Their nest begins as an underground chamber where they develop a fungus garden around the royal cell. As the population, the gardens and the nest all begin to grow, the structure slowly swells above the ground, eventually forming miniature mountains up to 20 feet high.

Those termites that have developed the ability to grow fungus foods have become the largest and most complex groups. The fungi only grow successfully in a very limited range of conditions—so limited that man has been unable to grow some of them in laboratories. Because of their large populations, they also have the problem of keeping the air purified. Humidity control inside the nest is also critical, especially for those in desert areas. In any case, it has to be kept at well over 90 percent. Some species in the Sahara survive by digging down to the water table, sometimes going 120 feet below it. This allows moisture to evaporate into the nest. The termites also carry damp clay from their mines into the interior of the nest.

The construction of the nest walls assists this control of humidity, especially with mound nests where the dense material of the structure prevents evaporation and is covered with a cemented layer of sand and clay impervious to moisture. Water vapor in the nest is trapped in an intricate layout of galleries.



Diagrammatic cross section of a nest of a colony of African termites. The microclimatic measurements are: A 84° F., 3.0% CO₂; B 80°, 2.7%; C 76°, 0.8%; D 86°, 2.7%.

The domed nest of one Asiatic species, built typically of extremely thick walls, is composed entirely of earthen material at the surface, but this gradually changes in content to a mixture of earth and excrement until the inner structure of the walls is built almost entirely of fecal pellets. This inner zone, containing the highest proportion of organic materials, absorbs the greatest amount of moisture. The consequent unequal absorption rate of the nest structure ensures correct conditions at the center, preventing the accumulation of moisture in the outer layers of the wall, where it could be lost through evaporation.

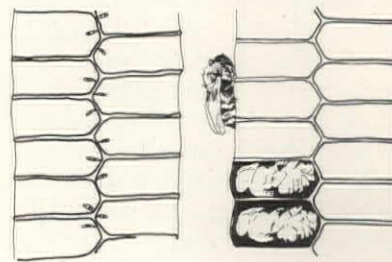
Another problem which termites have had to solve in their nest construction is that of dispersal of the accumulated body heat of the colony and the carbon dioxide given off by the fungus gardens. Occasionally, ventilation holes are opened in the nest walls to allow the gases to escape; some nests contain an elaborate system of air ducts. These start as fairly large openings at the top of the nest, directly above the nest chamber, and subdivide into smaller branches as they reach the outer walls, before joining again and running down to the base of the nest chamber. As the capillary ducts run close to the outside of the walls, carbon dioxide is given off and oxygen absorbed, the whole structure thereby acting as a lung.

Hygiene is an important consideration for the termites because of their crowded nests. Their dead are eaten by the workers, and partially digested excreta is passed from individual to individual until every digestible particle has been used. Whatever remains is incorporated into the building materials, becoming part of the walls. Some wood-eating species excavate numerous repositories for dumping the fecal pellets, although one species makes openings in the nest wall so that the pellets can be thrown outside. These openings are kept closed by the soldiers, who block the exits with their large heads, or they may be sealed off with partitions of carton.

The way in which termites build is as amazing as the ingenious structures they create. It seems that nest construction is carried out by a series of "releasers," in

much the same way that birds build their nests when patterns of behavior, triggered off in a conditioned sequence, are released either by external stimuli or physiological changes within the animal.

The termites' powerful instinct for building is released by changes in external conditions. At first, they seem only to build at random, but as some form of exploratory structure evolves from their activities, it acts both as a guide and a continuing stimulus. The particles of building materials are built up to form pillars, which then stimulate a change in the design pattern so that the insects begin to



A section through the bees' comb (left) shows the cells set on either side of the midrib. Each cell contains a newly laid egg. The cells (right) contain unpigmented pupae. A recently emerged worker bee is on the left.

build horizontally. Eventually, arches are constructed between the pillars; these are extended to form a roof. The air duct system develops as the nest structure is built up, due to the extreme sensitivity of these animals to air movements. Convection currents set up by the shape of the developing nest act as an invisible scaffold, and the termites build around these air movements, preserving them in solid casings. Also, though blind, termites are sensitive to light and build to seal it out, plugging any points where light (or drafts) may enter. By reacting to specific stimuli, each stage of the construction progresses in an orderly sequence.

The building abilities of all social insects have evolved to become articulate expressions of their communal way of life. The honeycombed nests of the bees, for example, are among the most efficient and well-arranged structures found on this

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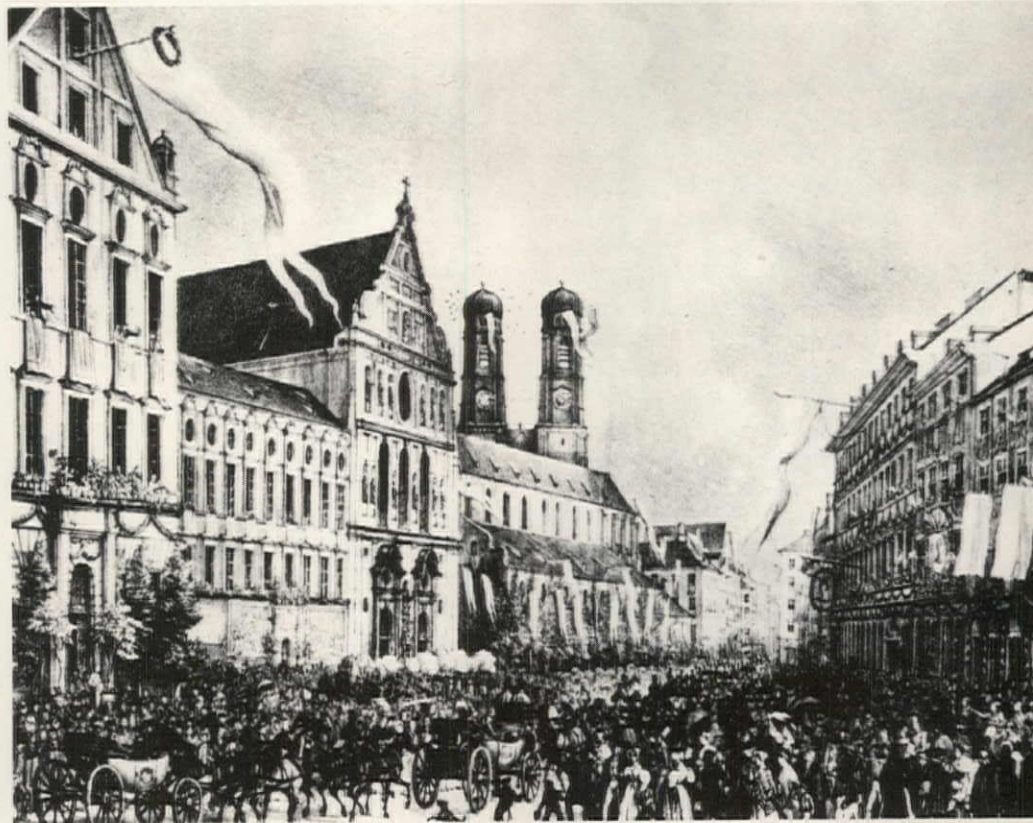
Munich Uses the Building Of a Subway to Clear Its Old Town of Autos

"After building a new subway under its main city square and shopping streets, Munich did not let automobiles back into the area but created a magnificent pedestrian zone instead. Munich brought under control the transportation and commercial forces which had been eroding the good qualities of its old town and recreated an automobile-free center of exceptional vitality and beauty. This accomplishment merits recognition by those concerned with urban community life."

The pedestrian network (Fussgängerbereich) in Munich's old town has been awarded the third R. S. Reynolds Memorial Award for Community Architecture. The jury (I. M. Pei, FAIA, chairman; C. William Brubaker, FAIA; and Henry Steinhardt, AIA) admits a bias in favor of "efforts in the rebuilding of center cities" in making the award, asserting that "there is no task before us that is more difficult and more urgent and in which we have had less success." The jury calls Munich's pedestrian zone a "triumphant example of the European built-in sense of conservation which rallied the necessary public and private support toward a common endeavor of community rebuilding."

The jury's decision was made as a result of firsthand visits to seven urban developments in this country and abroad, pared from a list of more than 20 examples of significant achievement in community architecture, and on the basis of consultations with knowledgeable persons familiar with each of them. The jury reserved its highest commendation for the Munich project, stating that "through thoughtful design, it has succeeded better than all others in the effort to restore life and beauty to the heart of old cities."

A small 9th-century village preceded the establishment of the city of Munich in the 12th century. Its old town, typically medieval, is filled with meandering narrow and irregular streets. Originally intended for pedestrians only, of course, the old town bowed to "progress" early in the 20th century when streetcars cut through it. Its decline was hastened by a railroad station beyond its west edge, where department stores sprung up, taking away much of the ancient area's commercial life. Then came more modern times when



automobiles took over, resulting in widened streets and the elimination of some sidewalks.

Widespread devastation of Munich by bombings in World War II gave the city fathers an opportunity to think of new planning concepts. In the 1950s, proposals were made about how to improve the lot of the pedestrian. Then, in the '60s, Mayor Hans J. Vogel assumed a strong leadership in promoting the development and acceptance of a general concept plan for Munich. The city council approved the idea of creating a pedestrian zone that would combat the deterioration and enrich the old town. Professor Herbert Jensen was invited by the mayor to develop a plan. He proposed a scheme that would eliminate automobiles; although his plan was not adopted, he did succeed in influencing the thinking of much of Munich's citizenry, and the idea was vigorously debated in the press.

Meanwhile, a small pedestrian enclave was developed around the Hofbrauhaus that served as a pilot area for future planning. Also, new suburban shopping cen-

ters were drawing life away from the central city, and a committee of 80 downtown businessmen worked with the city planners and endorsed a pedestrian mall.

After the city council voted for a pedestrian mall, a competition was announced in 1967 for an "appearance plan" to include the restoration of the historic area. Basic to the concept was the determination of the city fathers to exclude private motor traffic from the central area; to construct an underground rapid transit system; and to create traffic-free zones where urban living could be enjoyed.

The competition was won by architect Bernhard Winkler, who received the cooperation of third-place winner Siegfried Meschederu, an employee of the city of Munich, in developing a design. Their plan, approved in 1969, closely relates the pedestrian mall to a new ring road around the old town, including loop and radial expressways, and to the new subway system.

The first action was to remove streetcars from the old town. Meanwhile, the subway system that was planned for com-

The resulting pedestrian network is winner of the 1974 Reynolds award for community architecture.



pletion in time for the 1972 Munich Olympics proceeded. Two subway lines cross below the Marienplatz, the city's main square and the focal point of the pedestrian zone. Escalators go down to an underground shopping center and then to subway platforms. The result is efficient modern transportation on a medieval site.

After subway construction was finished, former streets were replaced with paving to provide a pedestrian mall. The mall, with its many side streets and arcades, lies between two former city gates and is aligned with two wider thoroughfares and the Marienplatz, creating an identifiable space 2,800 feet in length. Filled with people day and night on weekdays and weekends, the mall is a colorful place for relaxing, lounging, shopping, meeting people. The wide variety of spaces within the zone ranges from a large area in the front of the new city hall to the medieval-scaled narrow streets.

Open spaces are paved in patterns created by natural and cast stone, designed with the comfort of the human foot in mind. Street lighting enhances the build-

ings, and the architecture of successive cultures from medieval to modern is an esthetic backdrop for the drama of the place. Fountains form a framework. Flowers, sidewalk cafes, shops, kiosks, waste receptacles, signs, awnings—all are designed to please and all are related subtly and happily to the area's traditional setting. The Reynolds jury summarizes: "By enlisting the relatively simple and economical idea of creating a zone for pedestrians, and maintaining a high standard of design throughout, Munich has created an exciting and attractive new heart for its old city center."

The jury points out 10 lessons that may be learned from the Munich experience:

- "Need must be recognized. The public must understand the problems and know something of the opportunities if desire for a better environment is to be generated.
- "An old downtown area can be revitalized. Although some American cities are distressed by the lack of people in downtown streets at all hours, Munich shows us how to make the city attractive

to many people and, therefore, busy day and night.

- "After desire and hope, a master plan is required. With initiative by government and with support from business and citizens generally, talented design professionals can create a comprehensive and comprehensible plan to guide action.
- "Urban vitality and spirit depend on the presence of many people working and playing. Handsome architecture alone, thoughtful planning alone or sound engineering alone won't create a lively and humanistic city. Munich demonstrates the importance of orchestrating many disciplines to create a better environment.
- "The old city can be preserved while building the new. Preservation motives include enjoyment of the cultural heritage, historical continuity, architectural richness in form and texture and practical recognition that some older structures can enjoy new functions and new life. Generally, Munich street patterns and blocks were preserved but updated with some streets changed to pedestrian ways. Midblock passages and street arcades

Among the lessons of the Munich mall: 'The little shops and eating places don't have to be lost.'

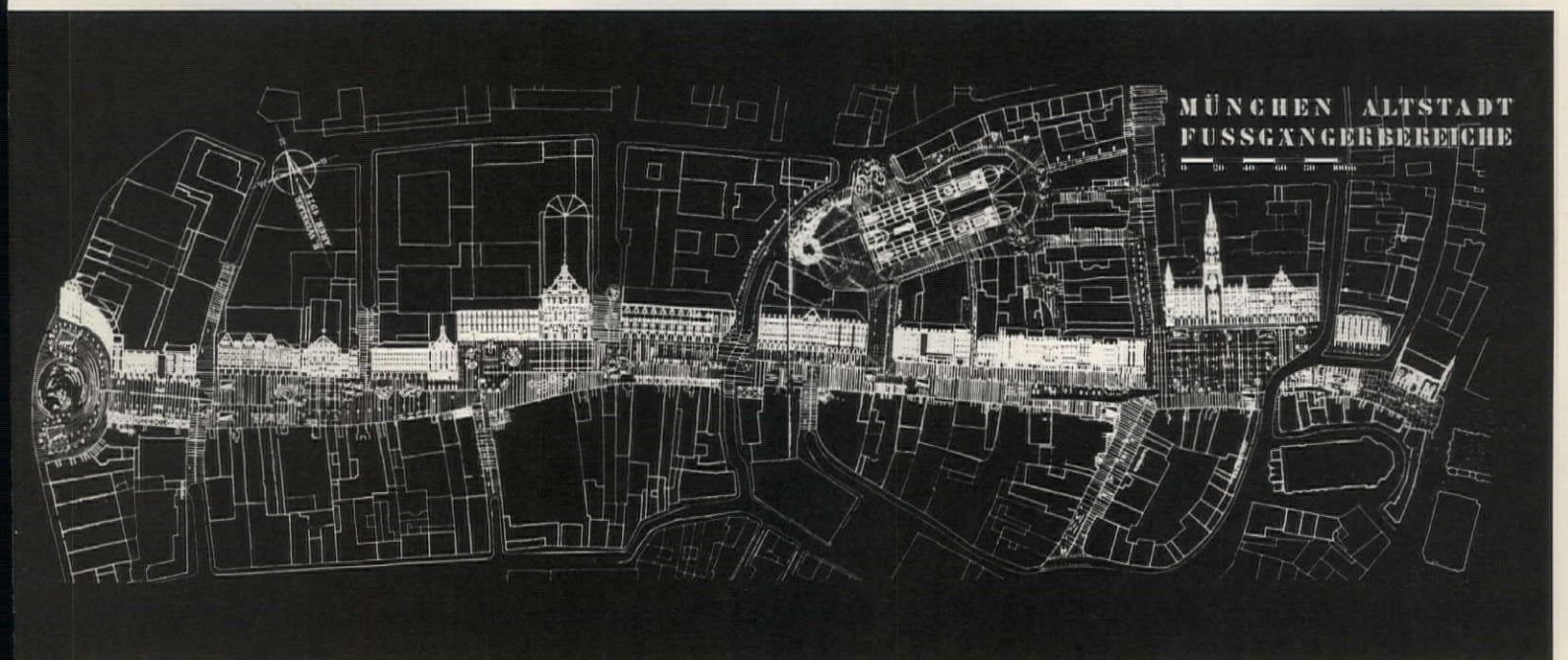


were cut into existing blocks. Many fine old structures were preserved and new functions were given to some buildings. Some new buildings were erected. As a mild criticism, however, the quality of the new architecture in Munich's old town is not outstanding.

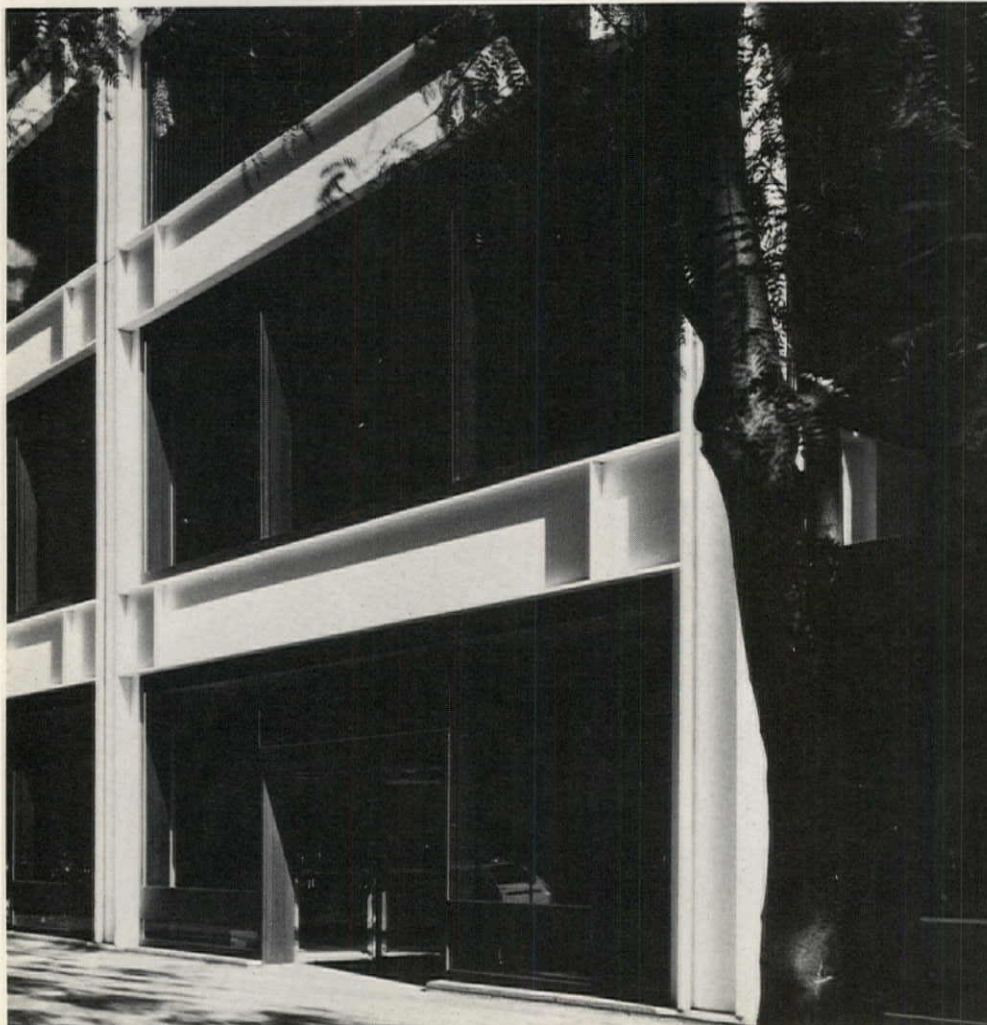
- "The heart of the city can function, and people can be happy without automobiles overpowering every street. Munich chased out the invading vehicles from its center to recreate a pedestrian enclave.
- "The small shops, tradesmen and little eating places don't need to be lost. When a downtown is being revitalized, we sometimes see those small businesses which enliven a business district replaced by chain stores. Unfortunately, in the Fussgängerbereich there is some evidence of such pressures caused by rising land values, but the strong purpose of the city government seems to be holding these forces in check.
- "The planning of infrastructure is very important. The pedestrian zone could not have been created without concurrent development of a new subway system, reducing the need for automobiles; a new highway system, eliminating through traffic from the old town; and a new parking policy that allows fewer cars inside the old town.
- "A special event can be a useful catalyst to get things going. Munich's 1972 Olympics created a deadline for completion of the subway—an essential coordinated action for achieving the pedestrian zone.
- "Proud accomplishments take time and are the product of the efforts of many individuals and organizations. The need was identified in Munich 20 years ago; the desire was generated ten years ago. Concerned citizens, politicians, businessmen, planners, engineers and architects were essential to the creation of the successful, lively and beautiful pedestrian zone."

In a 1972 Munich publication titled *Fussgängerbereiche in der Altstadt*, city planner Uli Zech called the pedestrian mall Munich's "parlor" for citizens and guests. Perhaps the American term "living room" is an even better name for this lively urban place. *Mary E. Osman.*





The Reynolds Memorial Award Goes to an Atypical 'Spec' Office Building



"A common type of building in all of our cities" which was "uncommonly designed" is recipient of the 1974 R. S. Reynolds memorial award for distinguished architecture using aluminum.

The building is 88 Pine Street, Manhattan, designed by James Ingo Freed, AIA, associate partner in the firm of I. M. Pei & Partners. It was built as an investment by Orient Overseas Associates—it is, in a word, a "spec" building of a kind that seldom adds more than bulk and rentable space to the city.

88 Pine is anything but bulky. Its aluminum cladding is coated white, and gleams against the dark towers rising from the East River. Windows extend the full width of the 28-foot structural bay. Each bay contains three abutted sheets of glass uninterrupted by mullions.

Jury for the award was S. Scott Ferebee Jr., FAIA, immediate past president of the Institute, chairman; Cloetheil Woodward Smith, FAIA, of Washington, D.C.; and Hannes Westermann of Braunschweig, West Germany, 1973 recipient of the award.

Jury comment: "This is not only a handsomely designed urban building, it is a type of structure that rarely receives the care and attention that this one obviously was given by a master designer. . . . It is elegant, straightforward and clean, respects and honors its structure and uses aluminum as a handsome, appropriate and beautifully detailed material."

Credits go as well to the following who were associated with the project: structural engineers—Office of James Ruderman; mechanical engineers—Cosentini Associates; graphics—Michael R. Abramson; contractor—Diesel Construction.

A third Reynolds award, for architectural students, went this year to Richard Seedorf of University of Illinois, Urbana.

The winning design was for a lightweight modular housing system, intended for use in both single-family and multi-family vacation housing. The design incorporates a windmill for a water pump and solar reflecting panels for heating water.

Honorable mentions went to Chris Rooney of Ohio State University and Henry Hildebrandt of Kent State University. □



When an Architect Acts as Co-developer Of a New Community

Earl Swensson, FAIA

A new town called the Roosevelt Community is now under construction on what was once 220 acres of farmland in central Illinois on the southern edge of Springfield. The project meets exacting standards of design, but what makes it really interesting as a case study is its development as a joint venture including architects as developers.

Our firm of Earl Swensson Architects is the master planner of the community; its subsidiary, Investment Property Services, Inc. (IPS) is the joint venturer with the Roosevelt National Development Corporation, a subsidiary of the Roosevelt National Investment Co. of Springfield. The three are working together on several specific projects within the total community development program. The architectural team is responsible for the design of several projects and also for the overall coordination of those not directly designed by the firm.

Two other architectural firms, with their own development corporations, are building the community's greenbelt residential area. Surely, this must be a first in the architectural profession: two development companies building speculative housing in a community planned and developed by yet another development company, and all three subsidiaries of architectural firms.

The multiple roles in the joint venture by Earl Swensson Architects are not unique in architectural practice, of course, but the close team effort and the shared responsibility of major team members are worth attention. To assume that an investment company which owns well-located acreage can be joined overnight with an architectural firm that has a subsidiary development corporation is to disregard the realities and complexities of a joint venture. This is particularly true when the goal is to build a total new community within a five-year time-frame.

The key to any successful joint effort lies in the thoroughness of an investigation of the "other guy" before a commitment is made. What do I mean by "investi-

gation?" Credit checks? Reputation? Financial status? Yes, all these and more. It's also essential to know the other partner's business philosophy and ethical standards, his key personnel and their attitudes and his response to your own philosophy and goals.

It was almost a full year from the time I first met the vice president of the Roosevelt National Development Corporation that an agreement was signed. The more we learned about the corporation, its outstanding business reputation, its philosophy and personnel and its reasons for wanting to develop the land it had acquired, the more we realized how fortunate we were to be involved with them.

I was impressed, for example, with Gerald D. Oliver, president of the corporation and of its parent, the Roosevelt National Investment Co. His own words convey his attitude: "The development of a unique community that offers almost unlimited possibilities was and still is very attractive. And, of course, it is worthwhile. There is a certain feeling of accomplishment in seeing the various pieces of the planned unit development fit together into a whole which is much greater than the sum of the individual parts. We are very proud to be a part of a project which has lasting value and meaning to people."

Perhaps it is in order to give here some background information on the firm of Earl Swensson Architects. I founded the firm in 1961. Very soon, we were involved in planning and architectural services for multimillion dollar projects on large acreages throughout the eastern part of the country. The firm found itself in the middle of zoning controversies, utility and traffic requirements, neighborhood sociocultural studies and demands from mortgage brokers and insurance companies. By 1970, the firm had designed over 100 projects in at least 13 states, not counting those that had been developed as prototypes for the fast food industry.

This experience in serving developers brought home two facts: First, the creation of a building project for a market is a difficult but rewarding challenge and, if well done, has a reasonable financial return; second, the very skills that professional designers possess are essential to

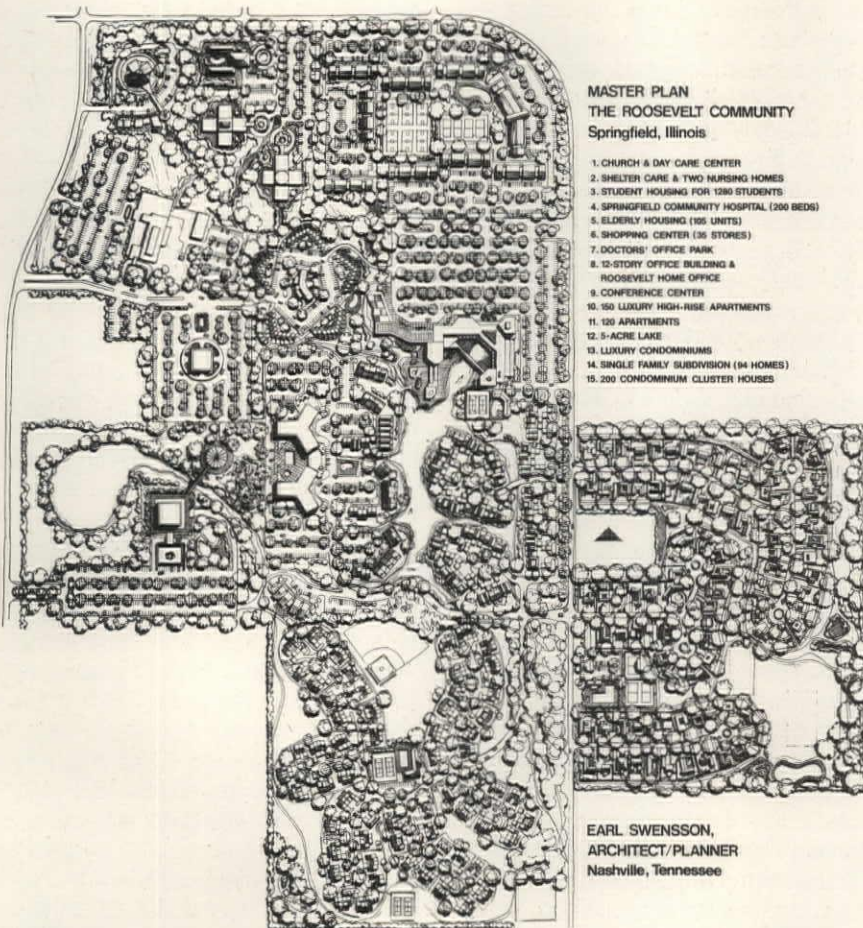
any successful development. We found, however, that we could not apply these skills effectively unless we were totally involved in a project—from land ownership to marketing.

Therefore, with encouragement from many directions, we decided to form a development corporation as a wholly owned subsidiary of our architectural firm. We have some definite "prejudices" about the way IPS approaches development projects:

- The project must be an exciting design challenge; no run-of-the-mill project will be considered.
- The location, land price and potential market must be such that a reasonable profit can be achieved with a few years.
- The selection of joint venture partners is most critical. As few partners as possible per project should be involved, and they must be involved financially. We insist that one member of the other venture group have authority to act; we, in turn, designate one of our group with the same authority within given bounds.
- The degree of involvement must be total. We will not become involved in any venture that does not have a management board where we are fully represented. We are not an architectural firm looking for a "piece of the action" for a fee. If we cannot have a leadership role, we will not be involved at all.
- Planning is the cornerstone of our development operation. Costly inefficiencies result from insufficient planning.
- Reputation for excellence in concept, execution and financial soundness are major concerns.

After a formal agreement was signed by IPS and Roosevelt National, we established specific criteria for the new community. We determined that people should have alternative choices in the designs of the homes and that there should be a lasting quality of design, construction and maintenance. We also agreed that the project would be completed within five years and that the joint venture group would not be restrictive but that after completion of a comprehensive planned unit development plan, it would seek out buyers of land for development that would conform to the plan.

Mr. Swensson is board chairman of the Nashville, Tenn., architectural firm that bears his name.



Having established the goals in non-physical and financial terms, we began in earnest our master plan/marketing study. IPS began an independent market study; at the same time, Earl Swensson Architects started on an in-depth inventory of site characteristics, zoning and utility regulations. Collins & Rice, Inc., civil engineers in Springfield, were retained and became part of our team of planners, advising us on land conservation techniques and realistic utility line patterns to consider. For example, it was Dean Collins of the engineering firm who convinced us that the creation of a large lake was both a desirable and feasible land use.

The team, now increased to four separate organizations working together, reviewed in detail a well-conceived and comprehensive master plan for 4,800 acres that was developed by a group of landowners several years previously. As our project was part of this acreage, we were eager to work with established concepts. Also, we were required to work within the framework of a comprehensive planned unit development ordinance that the city of Springfield had passed in a far-sighted scheme for regional planning.

Gradually, a concept began to emerge. We had traveled throughout the country becoming acquainted with new town projects, and now we were on the verge of creating a community on a cornfield in middle America that would offer a total community experience. We had checked to be sure that we could provide the so-called amenities and still expect a profit from the project. We were determined that this was one community that would favor the walker. In the final plan, therefore, we have a walkway and bike trail system that wanders throughout the entire 220 acres without touching a street. We also considered the community as a park—a place to enjoy moving in. We sited ponds, a five-acre lake, islands, forested areas, formal gardens, recreational facilities and leisure settings as carefully as if the project were, indeed, a park.

Within a period of less than five months from the time the joint venture was signed to the approval of the master plan by the city's board of zoning, we had created on paper a \$50-million project that would



become a community of 10,000 people, of which 3,800 would be residents.

Briefly, the community will include:

- A single-family subdivision of 94 homes sited on 40 acres of rolling land, surrounded by greenbelts, walkways, bike trails and an open play field, with a pond, swimming pool and tennis court facilities.
- A condominium subdivision (now under construction) of six neighborhoods totaling 200 cluster residences on about 36 acres, with its own tennis clubhouse and swimming pool facilities.
- Luxury condominiums of 90 units on more than 20 acres of man-built islands, with private roads, bridges and parkways.
- Garden and medium-rise apartments totaling 120 units on 18 acres, clustered around the lake, with inlets for boating.
- A shopping/civic center of 150,000 net square footage on a 15-acre setting at the edge of the five-acre man-made lake.
- A 200-bed nursing home facility set among trees on six acres.
- A 200-bed community/regional hospital and a doctors' office park on 22 acres of lawn.
- A church/day care center of 700-seat capacity on a seven-acre corner lot.
- A village for the elderly in the middle of the community with easy access to all facilities for 150 residents, with both one-story cottages and a medium-rise apartment building on five acres.
- A 12-story, 120,000 gross square foot home office building for the Roosevelt National Insurance Co., with a three-acre reflection pond and a separate facility for cultural activities.
- A garden apartment complex of 180 units on 18 acres, designed to accommodate young adults, including students from nearby universities.

We are carefully controlling all the visual relationships. For example, the larger structures, such as the hospital and the highrise office building, are located in parklike settings. Utility lines are underground, and graphics must meet an exacting standard. The central body of the site is the five-acre lake that ties the projects together to form the total community. The streets that feed off the public thoroughfares are dead-ended into each project for the sake of privacy, and only emergency

vehicles and pedestrian walkways and bikeways penetrate the complex.

We believe that the master plan provides an answer to subdivision sprawl and all the problems that it creates. It also makes sense financially. Theoretically, we could have projected a much greater density and land cost use, but we would have sacrificed a quality of environment on which we all agreed. Such a decision is not easy to make because the name of the game in the development business is profit—the more the better.

Once the master plan was established, it was time to move on to its execution. The original joint venturers decided which projects they wished to develop and that the hospital, doctors' clinic, church, nursing home and individual residences would be developed by others. It was agreed that our group's first joint venture would be the development of the cluster condominiums. During the spring of 1973, we finished the detailed zoning and utility plans, and by the end of June, tentative agreements had been made with other interested developers.

A nationally known proprietary hospital corporation decided to build and manage the 200-bed medical/surgical hospital and the doctors' clinic. Our architectural firm was retained to design the project, and the hospital is now under construction. The church site has been acquired by a religious denomination, preliminary plans have been approved and construction will begin this summer.

Development corporations of two architectural firms, as mentioned earlier, are building greenbelt residences. One of the development corporations is Kosmos, Inc., established by Lauchner, Maslauski, & Litvan. I asked William Maslauski, AIA, why his firm ventured into the development field. His answer in part: "Since the architectural firm of Lauchner, Maslauski & Litvan has developed an intense awareness of the need for the improvement of the residential urban landscape and the active involvement of the design professional in sharing this new living environment, it has initiated a new concept in the Springfield area for the development and construction of architect-designed residences. In order to assist in

the execution of its goals, the firm encouraged the formation of Kosmos, Inc., a corporation dedicated to the construction of professionally designed residences which can be made available to the public at competitive prices."

Edward Sweetnam, owner of Edward Sweetnam Associates, an architectural firm in St. Louis, and president of Group 3, the other development corporation in the Roosevelt Community, says: "An individual architect, expanding his talents to include development and building, is still today somewhat unusual. Perhaps even more unusual is the architect/developer/builder joining with a mortgage banker to produce single-family residences."

We have benefited from the association with Kosmos and Group 3 in the design of housing for a total community. And what of our own joint venture in the development of the cluster condominiums? The marketing in the first phase has been so successful that we are starting the second phase before we finish the first.

In our relationships with other development corporations, the one thing that we did not want to overlook was the necessity for design control of individual structures within a neighborhood. It was agreed that as master planner of the community, I would personally approve all the projects. Full responsibility was placed in one individual for flexibility and to avoid design control "by committee."

In practice, this rather dictatorial one-man design control has worked well. The developers of the projects, being architects, have been as keenly interested in the overall project design objectives as we have. Also, the developers whom we invited into the project were those whose design philosophies had our approval. By reviewing the preliminaries and then having a face-to-face conference over a cup of coffee in my office, we have been able to achieve the objectives that we sought as master planners without dominating the design of other architects.

In summary, I am convinced that the architectural profession can and must be totally involved in the complicated but rewarding job of building a better tomorrow. But a final warning: To become involved means to care and to give. □

A Classification System for Architectural Personnel

Roger W. Boe, AIA

Throughout the profession, employers and employees are finding new relationships. The role of the employee as it once was, the draftsman-apprentice to the master architect, is gone. Every architectural employee is an important and integral part of his employer's operation. Therefore, it is important that the architectural employer consider proper employee classification and its relationship to professional practice.

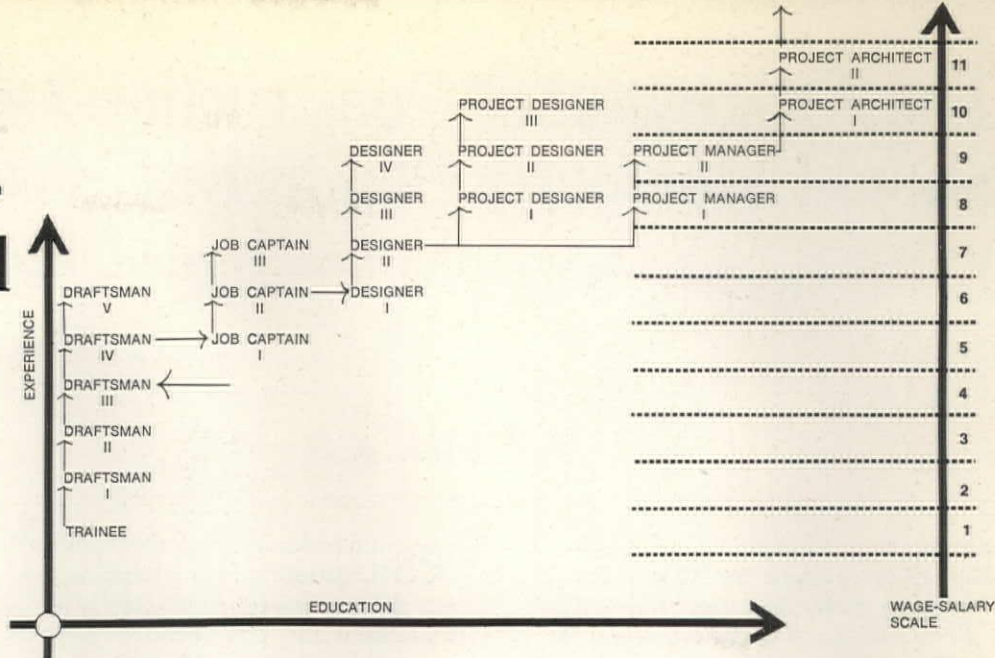
How an architect classifies his employees, how positions and functions are described, if at all, is the embodiment of his attitude toward his employees and will eventually be reflected in their attitude toward him. At a minimum, each individual and position within even the smallest organization must be defined in terms of 1) function, 2) responsibility, 3) authority and 4) compensation. A properly constructed system of classification and description can be a big factor in reducing turnover, encouraging promotional opportunity and providing the employee with a point of reference for himself within the office and the profession.

Conversely, in an office where no classification system exists, the employer faces problems. How does an employer with no system evaluate performance expectations? How does an employee prepare for an expanded role when he may not be completely sure what his role is?

Any system for describing positions and classifying people obviously must satisfy the needs of the specific office in which it is to be implemented. However, there are some basic factors that any such system must address:

- The system must account for both the nature and function of each employee. It must show who s/he is, what s/he needs to know, what s/he does, at what level s/he is expected to perform and how s/he relates to others in the organization.
- The system must provide for a parallel wage and salary system that defines compensation as it relates to specific positions.

Mr. Boe is assistant director of the architectural division of the Warren, Mich., firm of Ellis/Naeyaert Associates, Inc., and a member of the national AIA Personnel Practices Committee.



- The system should account for the need to give special recognition or "status" to an employee who contributes beyond what his position calls for. The most common method of doing this is by the use of a special title such as "senior" or "specialist."

- The system must provide for an outline of criteria so that a path is established with respect to an employee's desire for advancement. By way of a good position description an employee will know what is required of him to qualify for a new position and what promotional opportunities lie ahead.

- The system should define the positions of authority and leadership within the organization. It should tell the employee who is his boss and who is his boss's boss. Similarly, if he is a leader or is expected to be, it should tell him from where he derives his authority and who is responsible to him.

The diagram above describes a system designed to incorporate all of these elements. It describes employees' functions by titles which are currently used in reasonably similar ways by many architectural offices. In terms of the nature of the employee, the system provides for a difference in entering level based on education, as opposed to current practice under which university and high school graduates alike often enter as draftsmen.

It provides a clearly defined ladder by which employees can advance with experience or through meritorious service, expressed in Roman numerals appended to the titles. The number of steps on the ladder can be increased according to the requirements and size of the office.

Compensation is on a separate scale, rather than being tied directly to functional positions. Thus the same compensation rate can be used for several positions and adjusted without having to alter or distort the basic classifications.

The system as described has several inherent advantages not found in most systems in general use. First, it provides for

a series of elements that can be used to adjust, expand or alter the office organization as may be required without altering the basic system. It provides a format for a path of vertical mobility within a function category and can, if properly structured, provide for lateral mobility.

Perhaps paramount to the national goals of the profession, it also provides the basis for a consistent national system of employee classification.

As was pointed out earlier, the employee group is undergoing changes along with the profession. Like the greater part of the American labor force, the architectural employee is becoming more and more mobile.

Where it has always been normal for architectural employees to move from office to office, now the movement readily occurs from city to city and state to state. At the same time, the increasing size of projects, the necessity for associations and joint ventures and the role of the architect in industry (i.e., architects who hire architects) is fostering the necessity for closer interprofessional relationships.

These factors combine to make it both necessary and desirable to have a system of uniform position description and classification for the profession. The system described above has this capability.

A professionwide system would provide the compatibility necessary for the establishment of employment pooling, temporary placement, man-hour data banks and consistent wage and benefit standards needed by the profession but not totally possible under current widely varying practices.

Although it may not be practical for most offices to convert to a system such as has been proposed, it would be possible for firms to develop parallel systems under established guidelines until eventually a uniformity of systems will exist. While this uniformity may not be critical to the individual firm at this time, it may well be a major element in the future success of the profession. □

The Arbitration of Construction Disputes: Should Multiparty Claims Be Consolidated?

Jerome Reiss

Among the revisions found in the January, 1974, edition of the AIA Standard Owner/Architect Agreement Form, B141, was the addition of the two sentences in Article 11 underlined below.

"11/1 All claims, disputes and other matters in question between the parties to this Agreement, arising out of, or relating to this Agreement or the breach thereof, shall be decided by arbitration in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then obtaining unless the parties mutually agree otherwise. No arbitration, arising out of, or relating to this Agreement, shall include, by consolidation, joinder or in any other manner, any additional party not a party to this Agreement except by written consent containing a specific reference to this Agreement and signed by all the parties hereto. Any consent to arbitration involving an additional party or parties shall not constitute consent to arbitration of any party not named or described therein. This Agreement to arbitrate and any agreement to arbitrate with an additional party or parties duly consented to by the parties hereto shall be specifically enforceable under the prevailing arbitration law."

These sentences have generated much debate among members of the Construction Industry Arbitration Committee of the American Arbitration Association. The association, in its publication "News and Views," recently published the opposite views of two attorneys on multiparty claims. Because of the importance of the issue, and the necessity for architects to understand the implications of joinder and consolidation upon their potential liability, the two articles are reprinted here with the association's permission.

Yes Modern man has sought a shortcut to justice through arbitration, but he has not always been successful. It was Aristotle who once said, in his "Nicomachean Ethics," that a dispute requires a judge, because to go to a judge is "to ask for justice." He did not mean, however, that one must go to a formal court to achieve justice. Arbitration can attain that end, since arbitrators are like judges, provided that important lessons learned in the judicial process over hundreds of years are not ignored. One of those lessons is the need for third-party proceedings (this is one in which A sues B who, in turn, brings C into the same proceedings as a third-party defendant on the grounds that if there is any liability as claimed by A, it is really the fault of C).

At the present time, arbitration and third-party proceedings act like the two poles of a magnet. They repel each other—but only by administrative choice. The Construction Industry Arbitration Rules, Section 3, expressly provide that:

"When parties agree to arbitrate under these Rules, or when they provide for arbitration by the American Arbitration Association, hereinafter called AAA, and an arbitration is initiated hereunder, they thereby constitute AAA the administrator of the arbitration."

While the language in the rules makes no specific mention of joining two arbitrations administratively, it seems clear that power is vested in AAA administrators to permit third-party arbitrations where all parties are covered by a contract provision calling for arbitration of all disputes. Indeed, one court recently held that the AAA has the authority to permit third-party proceedings where there are common issues of law and fact and the administrator deems it appropriate. The court sounded one word of caution by noting that the administrator's determination remained subject to judicial review. Never-

theless, the AAA will not exercise its authority to join arbitrations administratively and, therefore, has raised grave problems for the construction industry.

The owner of a construction project normally contracts separately with his architect and his general contractor. The architect is retained to design the project and act as the owner's representative during its construction. The general contractor is hired to build the project, but he normally performs only a small part of the work with his own forces. Most of the work is done by different specialty subcontractors under separate contracts with the general contractor. Therefore, the problems which arise during construction generally affect three, or more, of these parties. For example, if design deficiencies result in changes to the work, the subcontractor wants additional compensation from the general contractor. The latter, in turn, wants the money from the owner. In some cases, the owner will claim to be an innocent victim of the designer's mistake and seek to have the architect pay those costs. Clearly, although separate contracts are involved, there exist common issues of law and fact which should be heard in a single arbitration. The alternative is to have separate arbitrations with their concomitant expense and possible conflicting results. Recognizing this problem and the philosophy of arbitration, one judge was constrained to write:

"There is nothing in the contract, nor in the rules of the American Arbitration Association, which prohibits or excludes the simultaneous arbitration of controversies which present the identical factual

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Carl M. Sapers

question. Whether or not the two arbitrations should proceed separately or together, seems to me a question which should be governed by considerations of justice and convenience. I can perceive no justification for requiring that very same question to be litigated twice before separate forums. To require the arbitrations to proceed separately would present the possibility of conflicting determinations of the same question. Such a result would be manifestly unjust; it has been found to be unsatisfactory in actions at law; there is no reason why it should be permitted to exist in the more informal arbitration proceedings." (Judge Shientag, in *Prima Products, Inc., versus Aquella Products, Inc.*, had a dissenting opinion.)

It is well settled in New York today that a court has the power to order consolidation of two arbitrations where there are common issues of law and fact. To avoid needless expense, and in keeping with existing policy of any initial demand for arbitration, the AAA should accept a request to bring into the arbitration a third party respondent, provided that an arbitration agreement exists between the parties. If the administrative consolidation is improper, the third party can always seek to stay from a court. To continue the present policy, on the other hand, will not only defeat the ends of justice, but will also force parties in the construction industry to return to the courts to solve their problems. □

No An architect, seeking to recover the balance of his fee, files a demand for arbitration against the owner pursuant to the contract containing the standard construction industry arbitration clause. The owner, feeling himself aggrieved by a leaky roof and an unsatisfactory HVAC system, defends and cross-claims. In connection with the cross-claim he "impleads" the general contractor, who in turn "impleads" his roofing sub and his HVAC sub. The architect protests his head-to-head confrontation with the owner being transformed into a three-ring circus. AAA's policy (its current official position) is that, absent specific authorization for multiparty arbitration in the arbitration clause of each contract, the association will not order a multiparty arbitration without the assent of *all* parties.

If the questions is appealed to the courts, the policy of the association is likely to be upheld and the architect will be permitted to proceed against the owner, with the other parties banished. Massachusetts, a month ago, joined Michigan and New Jersey in either ordering a severance or refusing to order a consolidation in multiparty arbitration cases. Both the Massachusetts and Michigan rulings are under the Uniform Arbitration Act.

The New York courts would apparently order the consolidated proceeding. Many believe that the New York cases are based on the pre-1962 New York Civil Practice Act, which treated arbitration as a "special proceeding" and permitted the courts to consolidate special proceedings "whenever it can be done without prejudice to a substantial right."

We representatives of architects and engineers applaud the current view of the law and deplore New York decisions. But that is only incidental to the real burden of this paper, which is that multiparty proceedings are a substantial blow to the already parlous condition of the architect as litigator.

Arbitration, as everyone knows, is an

economical, efficient and expeditious method of resolving disputes. Multiparty disputes, supported as "convenient," are to the opposing party uneconomical, inefficient and slow. True indeed; from the owner's viewpoint it is better to have it all out at once with his architect and contractor than to be forced to two separate proceedings. But the architect can complain justifiably that in the case at the beginning of this paper there are—instead of two—five counsel and five parties involved in setting hearing dates, choosing arbitrators, testifying and cross-examining and arguing exceptions and motions. The architect selects arbitration in order to have a speedy hearing, before knowledgeable arbitrators agreeable to him and the owner, and in accordance with rules designed to expedite the resolution of disputes. Each party raises his own issues, cross-examines the other parties' witnesses and has a voice in the scheduling of adjourned sessions. The expectation of an expeditious hearing is frustrated.

If arbitrators are well qualified to resolve practical, technical disputes in the construction industry, they are singularly ill prepared to deal with the procedural and burden of proof issues and the problem of keeping separate the various responsibilities and evidence of meeting those responsibilities of several parties, in multiparty disputes. If a party wants the advantage (if he sees it so) of multiparty litigation, let him contract for the courts, not arbitration.

I have raised the difficult problem of keeping separate the various responsibilities. Here, from the architect's viewpoint, is the tactical reason for opposing multiparty litigation, and it deserves careful elaboration.

The designer undertakes to exercise his professional skill without negligence. If he

Mr. Sapers is an attorney with the Boston firm of Hill & Barlow.

Consolidation throws all contending parties into a 'gladiatorial pit' together.

does so, he is not liable for faults in the construction resulting from defects in his plans, as his undertaking does not imply or guarantee a perfect plan or a satisfactory result. Surely, that doesn't mean, the owner protests, that an architect can duck responsibility for the leaky roof; after all, there is an implied warranty that the structure is reasonably fit for its intended purpose and that the plans are sufficient for that purpose. In most jurisdictions, the law is that the designer may design a roof that leaks without liability—provided he is non-negligent.

But the contractor is made to dance to quite a different tune. The contractor is obliged to perform his contract with no material deviations from the plans and specifications. While this harsh rule is often mitigated by finding no damage to the owner—and therefore no recovery—where the material deviation has been the substitution of one product for another of the same quality, the rule stands as the measure of the contractor's responsibility.

Now to apply the two standards to the facts of our case. The architect specified the well-known Pongee Roofing Systems, used in the region on roofs of a slightly different pitch with great success and represented in the Pongee sheet in Sweets' Catalog as successful on roofs of this pitch as well. Pongee might have worked, too, had the roofing sub adhered absolutely to the specs; but a reasonable man would judge a system a failure if it had no tolerance for error.

In an owner/contractor/architect arbitration, the owner stands in the posture of a stakeholder: His roof leaks; let those gentlemen on the other side of the table sort out who is responsible. If the roof in fact leaks, the owner can't lose. The architect argues that the contractor failed to

adhere to the specs; the contractor argues that the Pongee Roofing System won't work and the specs are defective. Each proves the owner's case against the other.

If my view of the law is correct, there is a strong likelihood that an able court, carefully sorting out the duties of all parties, would find that the owner must bear the loss. After all, the architect's choice of Pongee was hardly negligent if you concede that an architectural office is not a testing laboratory, and the contractor's performance in fact didn't deviate materially from the specs. But the result is inconceivable in an owner/contractor/architect arbitration where, in my experience, the issue is always whether the fault lay in the specs or in the contractor's performance.

Taking on the owner singly, the architect has three advantages. First, he does not have the contractor trying to save his own life by drowning the architect. Second, the architect does not have to argue that his and the contractor's obligations are asymmetrical. (Symmetrical obligations would for these purposes mean that both architect and general contractor have assumed responsibility to design in the one case and construct in the other, a leak-proof roof.) Third, the panel is psychologically better prepared to grant the architect's argument about the extent of his obligation if they are not simultaneously foreclosing the owner's right to recover against the contractor.

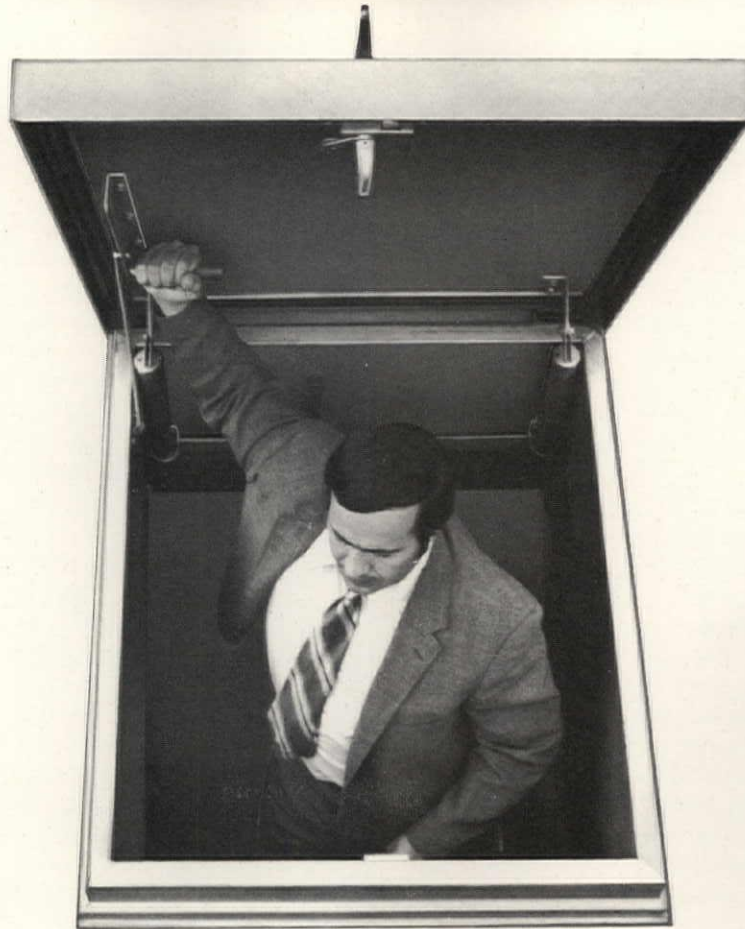
No doubt a well-informed owner will, for all the reasons set out above, seek multiparty arbitration. His argument will be that such proceedings avoid wasteful duplication. But that proposition is grounded on wasteful duplication. But that proposition is grounded on the erroneous view that the obligations of architect and general contractor are symmetrical and that—the leaky roof proved—each of them must show that he is not at fault. In fact, the case against the architect should involve proof of his negligence in the roof design, while the case against the contractor should involve proof that

he deviated in a material way from the specs. In my experience, the two paths of proof have very little in common, and two separate proceedings do not risk substantial duplication.

This is a necessary point to make, for it is altogether a different matter where a party's liability is derivative. For example, a good case for multiparty arbitration is made out where it is owner against architect against structural engineer, over a structural defect. Assuming no special clauses in the respective contracts, the structural engineer has the same obligation to the architect relative to the structural design that the architect has to the owner. If the design was negligent, then, on the same evidence, the owner should recover from the architect and the architect from the structural engineer. In similar fashion, a multiparty arbitration may make sense where it is owner against general contractor against subcontractor, over a defect in the performance of the subtrade work.

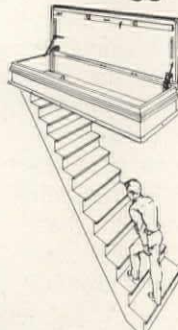
Just a word more to the disgruntled owner who has read to this point: There is more to this issue than maneuvering for tactical advantage. The best protection for an owner is an independent architect faithfully representing his interest during construction. If the owner insists on a remedial process (i.e., multiparty arbitration) in which his architect and the general contractor are thrown into the gladiatorial pit together, the architect may spend more time protecting himself than vigorously defending the owner's interest. If the owner insists that in time of trouble he will treat his professional adviser like any other vendor of goods and services, he may jeopardize independent professional advice earlier, when trouble could have been averted. □

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'Construction of the honeycomb is a social phenomenon controlled by communications between queen and subjects.'

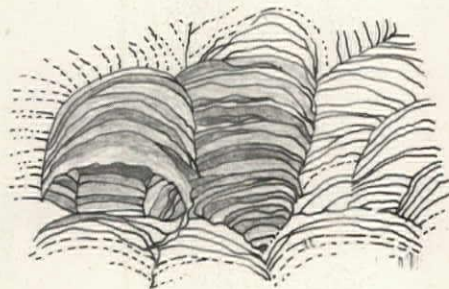
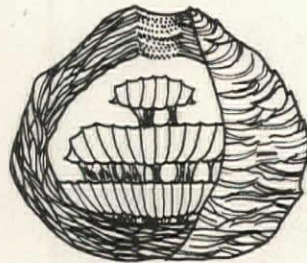
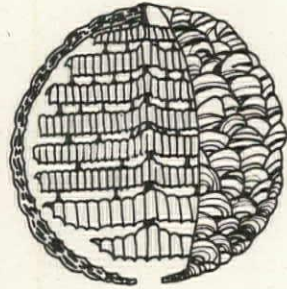
animal builders from page 39

planet. In 1638, Dutch colonists introduced the honeybee to North America. These insects then set off west to colonize the continent long before the first pioneers. In the wild, bees seek shelter in a natural cavity, such as a hollow tree, and there they make nests by hanging combs, some for honey or pollen, others for the larvae.

There is a distinct and functional arrangement in the way the combs are utilized, which is paralleled by the regulated division of labor among the bees. One special and compact three-dimensional area is used as the nursery. The pollen adjacent to this area is stored for the nurse-bees, who have to feed on it to produce the vitamin-rich bee milk for the developing brood. This functional arrangement of the cells is also evidenced by the way the queen lays her eggs. She works concentrically from a central area; thus, all brood groups are in one section, ensuring that the nurse-bees are able to care for them in a regular pattern. Beyond the pollen storage area of the nurses, the bees store their honey.

The nurse-bees tend the brood; the worker-bees forage abroad for pollen, nectar and water; and the queen lays eggs like a machine, up to 2,000 a day. But it is the house-bees that keep the hive operating. They pack and store the pollen and nectar into the cells, sealing them over with wax; keep the hive clean by removing debris and dead colleagues; clean out each cell before the queen lays the egg inside; and carry out the critical functions of temperature and humidity control.

Operating in teams distributed around the hive, the house-bees fan their wings to divert air currents in the most advantageous directions. The temperature can fall to below 60 degrees before it begins to affect the bees' activities, but the optimum temperature at the nursery must not fluctuate more than two degrees from 95 degrees. Humidity is also controlled, and in the nursery it is maintained between 35 and 45 percent. Excess water vapor tends to be removed by normal ventilation, but in hot, dry conditions full airconditioning has to be switched on. The workers then bring droplets of water back to the hive, and these are smeared over the combs.



Top, section through the nests of two European wasps and bottom, a close-up view of the external "shells" made up of individual strips of wood pulp.

Evaporation helps to chill the air and increase the general water vapor content.

Construction of the honeycomb is a social phenomenon and is controlled by communication between the queen and her subjects. The first step in constructing new combs involves setting out a string of wax on the ceiling as a guideline. This is then extended downwards as a midrib, and the cells are added to each side as work progresses. The shape of the cell is determined by the fact that in any collection of equal size circles, each one is in contact with six of its neighbors. When any lateral pressure is applied to such a collection, either from within or without, they will be naturally converted into regular hexagons. Thus, the bees' cells begin as a layer of cylinders that become

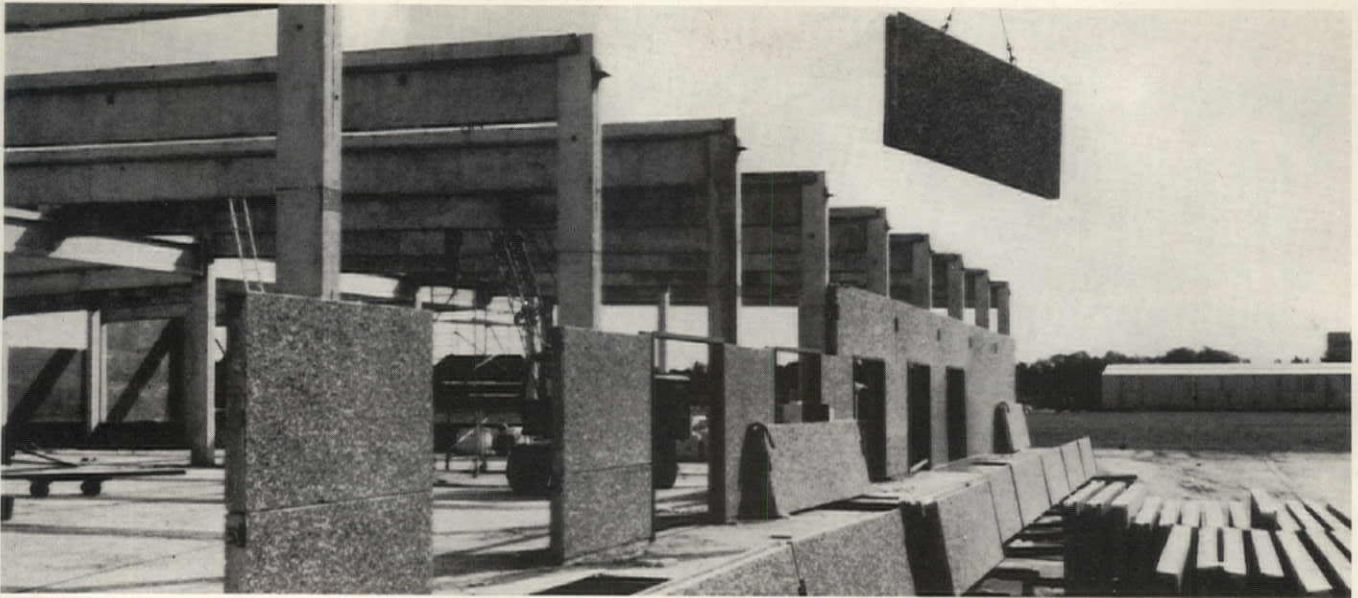
pressed together and deform into hexagonal prisms. The cells are built back to back but are placed directly opposite each other, and the base of any one cell is in contact with three other cell bases. Just as the walls of the cells are distorted into hexagons, so the base of each cell, which begins as a hemispherical basin, becomes compressed by opposing forces and is fashioned into a shallow pyramid.

Cell construction is carried out by the house-bees. Each individual house-bee is capable of carrying out each action in building a cell, yet, none ever goes through the steps in an uninterrupted sequence. She will also never build one complete cell unit. She may begin a new cell, with wax from her glands, then move to work on another cell which is in the final stages of construction, perhaps using wax from an old cell, or she may spend some time planning and polishing the inside of a new cell. This is because the program of work is determined not by the bees' physiological state but by the changing requirements of the colony as a whole.

In the same way that the termites build their nest with a programmed series of releasers, so also the colony of the honeybees is regulated and develops as an orderly, balanced society.

These controlling forces can be found in the building behavior of all animals, and this may suggest that an animal merely acts as a conditioned machine, incapable of conscious expression. Certainly, it is true that much of an animal's activity consists of stereotyped reflexes and innate actions, but not all of their behavior is simply automatic. They often clearly exhibit ways in which they have learned from experience and display behavior which involves an acute awareness of the physical relationship of things and a calculated response to a given set of conditions.

Certainly in the sphere of building activities, perhaps more than any other, animals consistently show powers of reasoning, ingenuity and adaptation, producing structures of elegance and precision. If they can do this and do it so skillfully with their limited abilities and equipment, and can learn to build *with*, not *against*, nature—then there is hope for us. □



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Budgets, Bonds and Ballots. Philip K. Piele and John Stuart Hall. Lexington, Mass.: Lexington Books, 1973. 224 pp. \$14.50.

During the continuous new look at the skills and knowledge required by the architect in today's society, much has been written about the necessity of his matching needs to dollars and befriending bankers to get buildings built. Little has been published, however, about understanding and wooing the voter on public finance issues—a skill increasingly in demand for both the public administrator and his architect.

Budgets, Bonds and Ballots by Piele and Hall (available from Lexington Books, D. C. Heath & Co., 125 Spring St., Lexington, Mass. 02173) suggests a number of directions which can result in positive voter response to money issues, without being a simplistic how-to-do-it manual.

The book is based on 10 years of research on voting habits in school finance elections. It not only points out certain facts of life about the small percentage of issues that pass but also identifies reasons for the failures. The authors conclude, for example, that careful analysis of the local voter profile—and fitting the nature of the campaign to that profile—can go a long way toward assuring the success of the issue.

On the other hand, researchers found that volumes of publicity and feverish campaign activity can “escalate the intensity of community conflict,” alienate segments of the voting population and result in defeat at the polls.

The book, though essentially pessimistic about a reversal of the trend toward defeat of public money issues, is a good primer for those who are trying to turn the tide of rejection in their communities for the benefit of their public projects.

Don Lutes, FAIA

Spokane Sketchbook. Seattle: University of Washington Press, 1974. 96 pp. \$7.95.

This handsome book should be very popular with visitors to Spokane's Expo '74. Drawings and “architectural observations” are supplied by architects Roland Colliander, David Evans, John Reming-

ton and Jim Waymire; the text is by Thomas Stave, formerly on the staff of the Spokane Public Library, now a graduate student at the University of Washington.

There are sketches and comments about Spokane's architectural landmarks, ranging from beautiful old mansions to contemporary highrises. Attention is given as well to Spokane's setting and environment, including such things as the Ponderosa pines, ducks along the riverbank, Indian encampments and even the world's last hard-carved, self-enclosed carousel, which has been restored to take a place on the site of Expo '74. There are maps as well to show the city's development over the years and one of a city loop drive of about 30 miles.

Urban Spaces. David Kenneth Specter. Greenwich, Conn.: New York Graphic Society, 1974. 144 pp. \$15.

It's evident that David Kenneth Specter, AIA, loves cities. He uses his camera to show that urban pedestrian spaces can be humane and pleasurable. He covers many of the world's cities to show how such elements as graphics, lighting, cafes, arcades, street furniture, pavements, ornamentation, fountains and reflecting pools, surface textures, etc., can give the city the



power to delight, surprise and appeal. A final section on “Directions” looks at recent projects in waterfront use, incentive zoning, pedestrian streets and covered pedestrian spaces.

Walter McQuade, FAIA, sums it all up in a foreword to the book. He writes that “when the civic spirit is willing, and there is enough talent among the bureaucracy, there may yet be hope for the pedestrian, with businesslike solutions to this urban problem. It is certainly not the largest

problem of our cities, but it is pleasant to see some possibilities for improvement. Many a model can be found in this book, accumulated from the author's purposeful wanderings with a camera, but also needed are hard thinking, hard bargaining and plenty of elbow time on a drafting board.”

The book is a delight to read, and the photographs are outstanding.

Taming the Last Frontier: A Prescription for the Urban Crisis. C. W. Griffin. New York: Pitman Publishing Co., 1974. 260 pp. \$8.95.

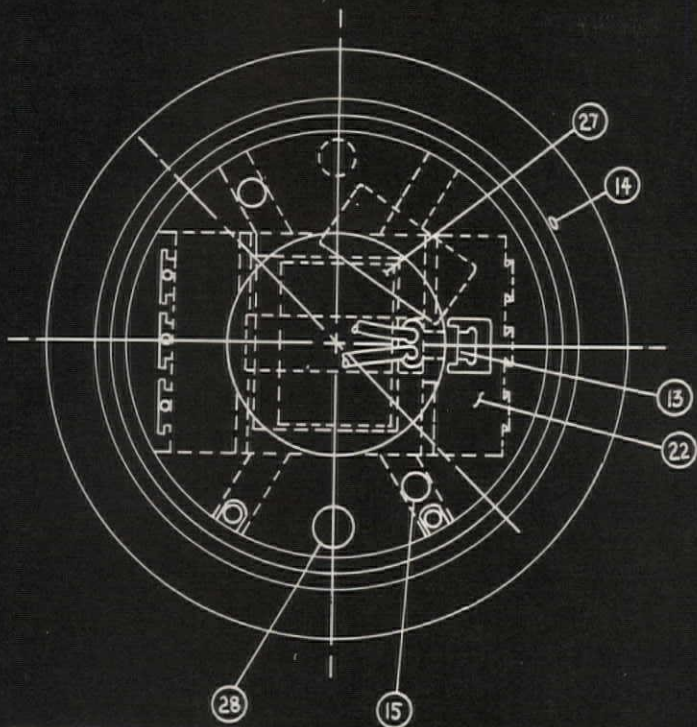
In the words of our Commander-in-Chief, the “hour of crisis” has passed for our cities and gasoline. What we have left are “problems.” For those of us who are less facile in interpreting economic data, the Constitution and tax laws, the crisis not only remains but in many dimensions worsens.

This book is an excellent introduction for the beginner and a refresher course for the old war horse on the environmental crisis. The “last frontier” which Griffin proposes to tame is the great institutions, primarily private corporations, whose irresponsibility can only be matched by that of the Administration and the Congress. Major subjects included are air and water pollution, population growth, metropolitan governmental anarchy and the politics of control versus chaos.

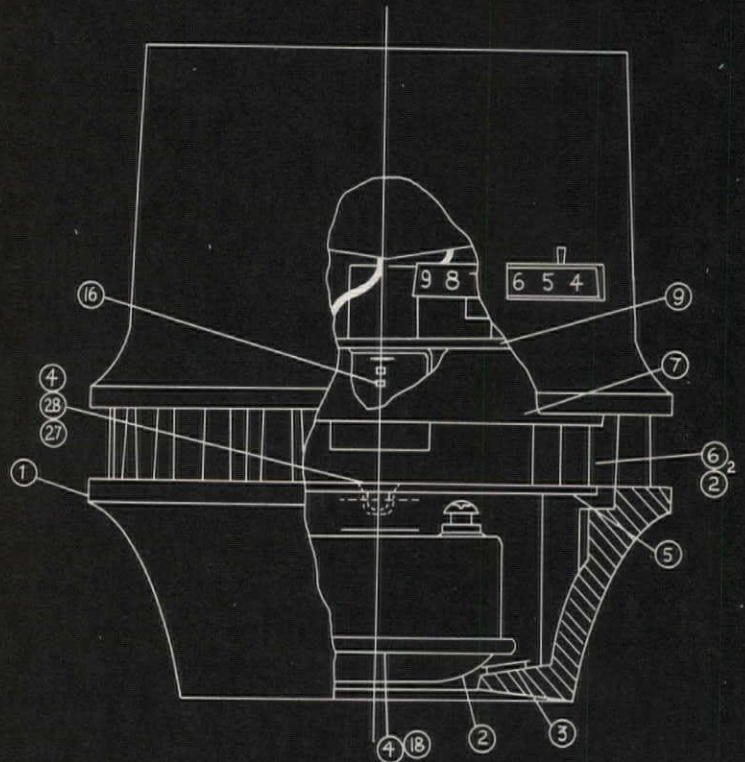
This very well written book can best be described as a manual for environmental citizenship. It is so effective that I think that I'll immediately write a nasty letter to Exxon—or maybe I should start with General Motors—dammit, I think that I'll just start taking the bus! *Michael B. Barker, Administrator, AIA Environment and Design Department*

Lighting Design in Buildings. John Boud. Stevenage, Herts, England: Peregrinus (distributed by International Scholarly Book Services, Inc., P.O. Box 4347, Portland, Ore.), 1973. 178 pp. \$13.

Boud's book is one of those civilized, personal statements that we've come to expect from certain English professionals. Informed without being didactic, written



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in the first person but without a lot of intrusive ego, this book on lighting takes you from beginning to end via suggestions and caveats, and leaves you with such a sense of Boud's devotion to good lighting that you can almost touch it.

This enthusiasm is quite insidious; it isn't laid on with great solemn manifestos about performance, the environment, the integration of systems and the rest that we have come to expect from illuminating elders. Nor is it chock-a-block with weighty rules, formulas, thou-shalts and thou-shalt-nots.

It is, as I said, a civilized text about lighting. It covers criteria (illumination, glare, brightness balance, color, modeling, variety, flexibility, cost and maintenance) in one part; lighting equipment in the next; lighting as one part of an overall approach to building services in a third; and lighting of common building types in a fourth. The author gives the pros and cons (e.g., the use of daylight; incandescent versus discharge sources; the various systematic lighting design approaches brought forth now and again by lighting people), but you can usually tell where he stands.

Agree or disagree, the main facts are there.

What isn't covered in detail in the text is referred to in an exhaustive (and, ultimately, exhausting) bibliography. In other words, just when Boud begins to warm to his task, he stops and refers you for more information to reference 2.96, or whatever. Still, this does help him to avoid the clutter of too much technical detail in the text, so he can keep up the flow.

Predictably, as fits a lighting designer in an English firm of architects, he sits rather in the middle of our own spectrum of IES-finite-standards versus Bill Lam-design freedom.

He doesn't feel that all the elements of good lighting design should be—or even can be—stated numerically. He writes on the general assumption—true in his part of the world, though not yet in ours—that the *acuity* (or precision of seeing) features of lighting must be seen quite differently from the *amenity* (or visual comfort) features. He says what he thinks about design by the numbers:

"Outside the purely functional requirements of (freight) yards or standardized factory interiors, any system of lighting design that stresses calculation has questionable priorities. Numbers are useful in establishing, say, the range of loadings within which one is working, or checking that a luminance relationship is more or less as one anticipates; the sums are essentially marginal, an aid to design but not its central thread. The designer must be confident enough in his handling of the calculation techniques that have been developed to treat them as servants, not masters."

This is a fine book for architects and

engineers, and should be read by all building officials, so long as they are not distracted by such passing Anglicisms as fittings (for luminaires) and by the metric names and numbers. The photographs are many and good, but unhappily not related to the text. A glossary clears up jargon, and the reading list, as I said, is exhaustive. *Stephen A. Kliment, AIA*

Human Factors Taxonomy: A Guide to User-Oriented Architectural Services.

John E. Harrigan and Wesley S. Ward, AIA. San Luis Obispo, Calif.: California Polytechnic State University, School of Architecture, 1973. 30 pp. \$1.30.

The challenge addressed in this monograph is: How can the architectural office develop behavioral analytic capabilities, use this ability to strengthen specific components of the architectural program and demonstrate to the client the value of this service? The publication is designed to help architects make three basic decisions regarding the appropriate scale for characterizing user expectations and requirements, the basic programmatic concerns to which behavioral analyses may be linked and the specific informational objectives that a designer should pursue.

The authors suggest answers to questions centered around a human factors taxonomy which specifies 27 informational objectives.

Mail orders for \$1.30 per manual may be sent to El Corral Bookstore, California Polytechnic University, San Luis Obispo, Calif. 93407. *Don Conway, AIA, Director, AIA Research Programs*

The Quarterly Journal of the Library of Congress, October 1972. Washington, D.C.: U.S. Government Printing Office, 1973. 65 cents.

The firm of Smithmeyer & Pelz won a competition in 1873 for the design of the Library of Congress, but conflicting opinions in the House and Senate resulted in a reopening of the competition in 1874. After 13 years of debate, John L. Smithmeyer was appointed architect, and Congress approved a design based on the original 1873 plan. Smithmeyer was dismissed two years later, and Paul J. Pelz was appointed architect. Pelz was replaced in 1892 by Edward P. Casey.

The building opened to the public on a rainy day in November 1897. It may have been appropriate for the day to be unpleasant climatically, for the structure's history had indeed been stormy, as this exceedingly interesting issue shows.

John Y. Cole is author of an article on "Smithmeyer & Pelz: Embattled Architects of the Library of Congress." He tells about the controversy which plagued the architects. The long struggle was made worse by an indecisive Congress, and the building's completion was the result of a

"myriad of compromise among politicians, librarians and architects."

If the architect of today thinks that he has a hard time, he might find comfort in the affairs of poor Smithmeyer. After his dismissal, the only way he could make a living was to endorse commercial products. When he died, Pelz had to borrow \$172 to bury him. Pelz had his troubles, too. He tried to collect \$108,564.63 awarded him by the Court of Claims in 1906, but he was unsuccessful. A bill was introduced in 1913 to pay Pelz and the estate of Smithmeyer an amount due for "services in designing and building the Library of Congress," but Pelz died in 1918 without the money appropriated.

The magazine also has an article by Helen-Anne Hilker on "Monument of Civilization: Diary of a Building" in which she traces the day-to-day progress at the construction site, based largely on a construction journal kept by Bernard R. Green, superintendent in charge of construction from April 1888 to completion in 1897. Cole also contributes a chronology of the main building from 1871 to 1965. And there's an album of photos.

Overstreet: An Urban Street Development System. Harry Mayerovitch. Montreal: Harvest House Ltd., 1973. 103 pp. \$7.50.

Even the best of cities today are hazardous, noisy, dirty and overcrowded, says the author. In the past, streets were used for access to buildings and for spaces for assembly and recreation. This worked out fairly well until the automobile took over and sprawl distorted the shape of the city. Mayerovitch, who is a Canadian architect, presents here what he thinks is the solution to the whole thing: a system called "overstreet," which involves the erection of a platform over the street and superimposing upon it the equivalent of the flanking buildings.

He believes that the system could be implemented without unacceptable changes in political or legal structures and that it could be introduced into existing cities in a manner compatible with city forms and building techniques.

Mayerovitch discusses in detail the relationship of overstreet to such topics as block sizes, street pattern and topography, hillside sites and parking. He explains how the system would use less land and reduce the costs of public services and city operations, giving attention to sewers, garbage collection, street lighting, mail deliveries, street graphics and even police protection.

In a section on architectural design, the author explains that overstreet would enhance historic buildings, with units swinging around important landmarks or monuments and vistas. He tells how buildings of varying heights would become a harmonious whole and how intersections

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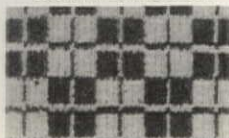
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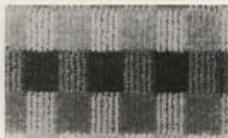
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ABSTRACTIONS



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would serve a unifying function. The principle, he says, would adapt itself to many building types: offices, schools, apartments. He believes that the system opens the way for many building methods, "orthodox and advanced, simple and sophisticated."

To apply the principle of overstreet to specific situations, Mayerovitch makes a study of a hillside site in Jerusalem and of a high-density area in Montreal. In conclusion, he advocates overstreet as a practical method for city building with an inseparable intertwining of structures and green spaces. The book is provocative.

The Aspen Papers: Twenty Years of Design Theory from the International Design Conference in Aspen. Edited and with commentary by Reyner Banham. New York: Praeger, 1974. 224 pp. \$13.50.

With perceptive comments—and perhaps judicious editing—Reyner Banham weaves a number of essays into a whole so that this anthology is one that the discriminating reader will enjoy. Contributors include such design luminaries as Nikolaus Pevsner, Arthur Drexler, Moshe Safdie, Christopher Alexander and Banham himself. Also included are essays by leaders in other fields, such as film-maker John Houseman, composer John Cage and political scientist Jivan Tabibian. Architects may particularly enjoy essays by

Paul Rudolph on "The Six Determinants of Architectural Form," by Misha Black on "The Designer and the Client" and by René Dubos on "The Spirit of Design—Period."

The Notebooks and Drawings of Louis I. Kahn. 2nd edition. Edited by Richard Saul Wurman and Eugene Feldman. Cambridge, Mass.: MIT Press, 1973. 76 pp. \$17.50.

This handsome book of drawings by Louis Kahn will please all who admire this architect's work. The first section covers sketches made during European travels, reproduced in actual size; the second consists of early sketches and renderings of Kahn's "buildings and visions." The accompanying text is based on Kahn's unpublished speeches over a three-year period before 1962, the date of the first edition of the book.

Studio Dictionary of Design and Decoration. New York: Viking Press, 1973. 541 pp. \$28.50.

Copiously illustrated, this dictionary of design and decoration contains more than 2,000 entries. The user can find information on such subjects as periods and styles of design in all parts of the world; types of furniture, glass, china, fabrics; building materials; and handcrafts. A number of well known American architects are included. The book is planned

as a general reference for those who want brief information in a hurry.

An introduction is provided by Robert Harling, an editor of the British edition of *House & Garden*. The reference work was compiled by him and the editors of *House & Garden* in England.

Homes and Home Building, VII. Washington, D.C.: National Housing Center Library, 1974. Unpaged. No price given.

This index to the periodical literature on housing, homebuilding and related fields cites some 4,000 articles selected from about 300 magazines, including the *AIA JOURNAL*. It cumulates the articles published in 1973, placing emphasis upon "professional literature for the homebuilder and the housing industry." The first annual cumulative index, published in 1967, was well received, and the National Housing Center Library has continued to provide this annual service ever since. The index is of great help to architectural librarians and their patrons.

Plastics and Architecture. Arthur Quarmby. New York: Praeger, 1974. 208 pp. \$20.

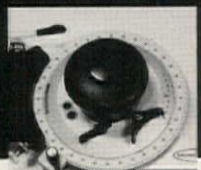
The plastics industry was really born, says British architect Quarmby, in 1862 when Alexander Parkes exhibited a new material which he called Parkesine at the second Great Exhibition in London. Others may have had similar ideas, but it was Parkes who started a company to

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produce this "substance as hard as horn but as flexible as leather, capable of being cast or stamped, painted, dyed or carved."

Quarmby, who has the greatest admiration for plastics as a building material, begins his book with a history of the discovery of various kinds of plastics. From there he goes on to a chapter on materials technology to give the reader a basic understanding of the structures and properties of plastics. He really warms to his subject in the chapters on spatial enclosures, component construction, sculptural applications and prospective work.

The book is well illustrated and interestingly written. The author chides architects for not making use of the tools of the 20th century. He writes that the "increasing sophistication of the plastics industry is producing materials and fabrication technologies which, if properly deployed, could revolutionize" building.

Building Construction Cost Data, 1974.

Duxbury, Mass.: R. S. Means Co., 1974. 292 pp. \$9.50.

Now in its 32nd year of publication, this annual provides average unit prices on a wide variety of building construction items for use in preparing engineering estimates. It includes over 14,000 unit prices. It may be bought directly from R. S. Means Co., Inc., P.O. Box G, Duxbury, Mass. 02332.

Structural Concrete Elements. E. W. Bennett. London: Chapman & Hall (distributed by Halsted Press, New York), 1973. 314 pp. \$16.50.

Many separate books on reinforced and prestressed concrete, says Bennett, have "created the erroneous impression of a basic distinction between the principles underlying the two forms of construction." The aim of the book is to teach future generations of engineers that there is a unity of all types of structural concrete elements. The first part of the book discusses the mechanics of structural concrete elements; the second is an introduction to design calculations.

Award Winning Architecture/USA.

Edited by Herbert Lieberman. Philadelphia: Artists/USA, Inc., 1973. 207 pp. \$25.

Collected here in one volume are photographs and brief descriptions of buildings that won design awards in 1972. All the awards programs were under the sponsorship of the AIA and its component organizations. The buildings are arranged by type: education and religious; residential; government, public and medical; recreation; office and commercial; and historical restoration. The book opens with an alphabetical listing of the structures and concludes with an index of the award-winning architects. Orders may be placed with Publications Marketing, AIA Headquarters.

LETTERS

Practice Aids: The recent articles on the production aspects of an architect's profession (Practice Aids 18 and 19, Jan. and Mar. '74) were enjoyable, but long overdue. Production consumes at least 50 percent of our fees, and yet the basis of our production systems is the same as it was 50 years ago.

It is unfortunate that we cannot devise a more efficient system than the painstakingly slow pictorial and unsophisticated means that Task Force #1 suggests in the January article titled "Uniform System for Working Drawings."

It was refreshing to see the article by Donald E. Jarvis, FAIA, titled "Integrating: An Experiment in Production" in the March issue. I agree with his conclusion that "there must be a better way."

*Charles B. Hook, AIA
School of Architecture
Washington University
St. Louis*

Architectural Competitions: The February '73 issue contained an interesting and provocative article by George F. Andrews on "Architectural Competitions in Scandinavia." He is aware that competitions promote excellence in architecture, recognize the designer and yet are seldom used in this country.

I regret that Andrews did not extend his consideration to other countries than those in Scandinavia. In places where this vehicle has been widely used, numerous governmental, commercial, educational and other types of buildings have resulted. Such important landmarks, to name only a few, as the Stockholm City Hall (Ragnar Östberg), the Toronto City Hall (Viljo Revell) and the Sydney Opera House (Jorn Utzon) have been created as a result of architectural competitions.

One of the most interesting worldwide architectural competitions was for the design of a governmental complex, including the presidential palace, in Kaunas, Lithuania, shortly before the occupation of that country by USSR forces. Unfortunately, due to the turmoil of World War II, most of the submissions were destroyed. I was among the unlucky participants who were informed that all the entries were lost. All the winners happened to be from different countries. The Latvian winner of the competition, Nicholas Woyta, is an architect who now resides in Munich and is still participating successfully in some of West Germany's competitions.

The subject of architectural competitions came to my mind again recently as the result of one conducted here in Colorado for the design of the State Judicial/Heritage Center Complex—a building for the State Supreme Court and the Court

of Appeals, entwined with the premises of the state historical museum.

This AIA-approved competition was the closed one-stage type, limited to six competitors selected from a score of applicants. The applicants submitted to the selection body résumés and brochures of past work and accomplishments, and they underwent personal interviews with the selection body. The jury, chaired by Pietro Belluschi, FAIA, selected as the winner the Denver architectural firm of Rogers, Nagel, Langhart. According to the rules of the competition, RNL is commissioned to proceed with the project.

The other competitors were awarded a fixed compensation of \$8,000 each. It is to be noted that the requirements (at least individual interpretations of them) seemed to stress that the participating architects spend \$20,000 and more in preparation of entries, with about half this amount spent on the make-up of a model. Of course, there was a winner, but all the others are apparently losers financially.

Such requirements for a competition place a special handicap on younger architects who are not yet established and bring to the fore the question of how the financial burden can be lessened.

Since all architectural competitions are basically a quest for finding only the best ideas to meet a particular architectural design problem, they should not include detailing akin to definitive production documents. Anyway, the winner has to translate the winning idea for actual construction after the competition is over. Therefore, it seems to me that any competition of ideas requires the participant to submit only the basics to demonstrate a proposed concept, for example, an exterior perspective, location on site, traffic patterns, plans, some important schematic sections, etc., accompanied by a statement regarding the technical and other pertinent data that may be required for construction. This would eliminate any necessity of showing and presenting nonessential details or particulars, as well as a model.

Architectural competitions and their relationship to the practice of architecture are completely overlooked or ignored as irrelevant by many architects. Professional organizations of architects have neglected to present and to propagate the idea of architectural competitions to the broader public and, thereby, to those who are seeking the help of the profession in the fulfillment of the objectives for the construction of a desired edifice or complex.

*V. V. Zebauers, Architect/Consultant
Denver*

American practice with respect to architectural competitions has developed quite differently from European practice over the last century, and it is clear that competitions are considerably more frequent abroad than in this country. Although we

have no precise figures, we know, however, that competitions were much more prevalent in this country 50 years ago and that the AIA was much concerned over unbridled competition abuse. These abuses generally took the form of free preliminary design as a requisite for architectural commissions, and many clients were evidently quite ruthless. It was to afford the architect a measure of protection that the Institute, over time, developed our present ethical standards and rules of competition, which may have inhibited widespread use of the competition.

Zebauers' point of view with respect to the complexity of presentation common to the competition process is a good one, but both the sponsor's demands and the competitor's drive to win conspire against simple presentation and tend to produce the financial loss to which he refers.

As a matter of interest, many people feel that for reasons such as these that fewer competitions—not more—would be a good thing. *Colden Florance, AIA Chairman, AIA Architectural Design Competition Committee*

Architects and Funeral Directors: The article by Dolores Norley titled "Design as Nonverbal Language" in the August issue is inflammatory, to say the least. Perhaps it was her intent to make it so. Nevertheless, her comparison when she says, "Architects and funeral directors have the same impact on most of us," does great injustice to many well-meaning architects who are responsive to human needs. In contrast to funeral directors, no one compels anyone to avail himself of an architect's services.

I have been practicing architecture since 1950 and find that it is usually the client who doesn't know how to define his specific needs. Ambiguities and generalities are commonplace. She asks, "If your clients don't see these needs, do you make an effort to educate them?" This sounds fine, but in practice the client usually responds, "I know best what I need, and I pay for the services that I demand."

What architects need are some concrete suggestions and knowledge as to how to achieve humane architecture. Perhaps Mrs. Norley could do a great service if she tried to define the specific needs of her field in "quantitative terms." I recognize and sympathize with her pleas. Health facilities could be better and progress will come when quantitative data give us the opportunity to achieve better designs.

*Richard Lopacki, Architect
Falls Church, Va.*

Of course, my article was supposed to be inflammatory. That's the only way nonprofessionals can get the attention of professionals, ordinarily. Similar to the way that farmers hit mules on the head. Makes a few more stubborn, but for the most part

it makes them take notice, if only for a little while.

Mr. Lopacki says that no one is compelled to use architects. On the contrary, they have been used by custom or law where they have done the most harm: helping to set up the kind of legal specifications for state or federally funded buildings which now have dimensions not always appropriate to the intended use. When humans are housed in them, they absorb the impersonality of the design.

He says that I could do a service by defining needs in quantitative terms. Not so. They don't exist. The attempt to define *specialized* needs simply leads to more delineation and human labeling, which are the evils to be avoided.

At some dozen architectural seminars, I have heard highly poetic sounding and utterly nonsensical dissertations on the effects of sonic, color, textural and other dimensions of design in relation to handicapped people. Misguided ego trips.

Design for retarded people, for mentally ill people, for prisoners and all the others we who are so terribly normal regard as deviants—that design must be normalized. What is right for us is right for them. That's the whole message.

*Dolores Norley
West Palm Beach, Fla.*

RUDAT in Phoenix: When the good men of RUDAT came to Phoenix (*see Mar.*, page 22), they made only one classic error in their otherwise thoughtful plan. They looped the metropolitan area with a highway which, if built, will inevitably attract commercial development as such projects historically have done.

Unfortunately, the team came to Taliesin West only after the results of their intensive labors were being printed, and they doubtless did not consider that one byproduct of their loop would be degradation of the desert environment around Frank Lloyd Wright's masterpiece.

*Charles Montooth
Frank Lloyd Wright Foundation
Taliesin West
Scottsdale, Ariz.*

Degradation of the desert around Taliesin West, unfortunately, has begun. The team observed this by air early in our visit. We feel that the future quality of the desert environment depends on a contained, predictable plan for the valley. The perimeter landscaped parkway, following natural and man-made transition features, was that ring of containment. The quality of its design, final alignment and adjacent development restrictions are decisions which the people of metro Phoenix must make, using the guidelines set out in our report to the community.

*Lawrence P. Melillo, AIA
Chairman, Phoenix RUDAT
Louisville, Ky.*

EVENTS

June 24-26: Construction Specifications Institute Convention, Portland, Ore.

June 27: Federated National Standards System Conference, Marriott Motor Hotel, Newton, Mass. Contact: American National Standards Institute, 1430 Broadway, New York, N.Y. 10018.

July 1: Postmark deadline, Department of Housing and Urban Development's Biennial Awards Program for Design Excellence. Contact: HUD, Awards Program, Room 8212, Washington, D.C. 20410.

July 8-12: Airconditioning Design-Controls Program, University of Wisconsin, Milwaukee.

July 10-12: Environmental Impact Statements and Public Participation Program, Graduate School of Design, Harvard University, Cambridge, Mass.

July 13-19: Management of Design and Planning Firms Program, Graduate School of Design, Harvard University, Cambridge, Mass.

July 14-18: Illuminating Engineering Society Conference, Braniff Place, New Orleans.

July 15: Postmark deadline, Aluminum Building Products Design Awards Program. Contact: Architectural Aluminum Manufacturers Association, 410 N. Michigan Ave., Chicago, Ill. 60611.

July 19: Postmark deadline, Prestressed Concrete Institute Awards Program. Contact: PCI, 20 N. Wacker Drive, Chicago, Ill. 60606.

July 21-26: Improving Indoor Air Quality Conference, Franklin Pierce College, Rindge, N.H. Contact: Engineering Foundation, 345 E. 47 St., New York, N.Y. 10017.

July 28-31: New Directions in Criminal Justice Planning and Architecture, Sheraton-Chicago Hotel, Chicago. Contact: National Clearinghouse for Criminal Justice Planning and Architecture, 505 E. Green St., Champaign, Ill. 61820.

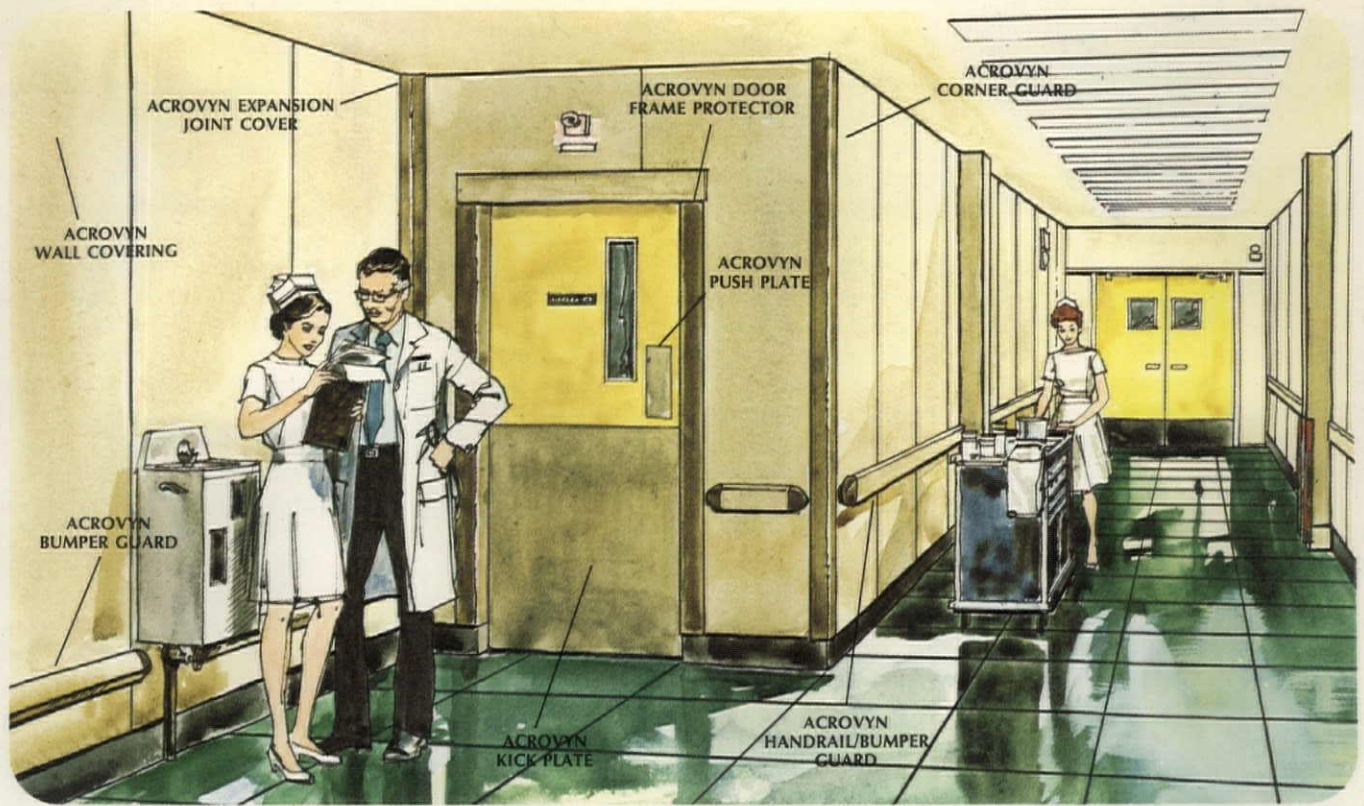
Aug. 5-15: Principles of Construction Specifications Writing Course, University of Wisconsin, Madison, Wis.

Aug. 8-10: Mid-Summer Conference, Michigan Society of Architects, Grand Hotel, Mackinac Island, Mich.

Aug. 18-24: International Federation for Housing and Planning Congress, Vienna. Contact: IFHP Secretariat General, 43 Wassenaarseweg, The Hague, The Netherlands.

Aug. 27-Sept. 1: Architecture and Urban Planning in Finland Seminar, Helsinki, Finland. Contact: Esko Miettinen, Museokatu 25 C 37, Helsinki, Finland.

Sept. 1: Postmark deadline, Burlington House Awards Program. Contact: Burlington House Awards, Burlington House, 1345 Avenue of the Americas, New York, N.Y. 10019.



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GOING ON

going on from page 19

sity College at Buffalo and the Boston Architectural Center.

Former free-lance writer and editor Peter H. Share has been named associate editor of the AIA JOURNAL. Previously he was managing editor of Praeger Publishers and an editor with Delacorte Press/Dell Books, both of New York City.

Bess Balchen, who was associated with the AIA JOURNAL for seven years, most recently as its managing editor, has resigned to become director of publications for the Institute of Traffic Engineers and editor of its magazine, *Traffic Engineering*. She begins her duties with the metropolitan Washington, D. C.-based organization this month.

Erratum

Colden Florance, AIA, author of the article on the Potomac River in the May issue, was incorrectly identified as an associate partner and director of planning in the Washington firm of Keyes, Lethbridge & Condon. He is a partner in the firm. We deeply regret our error.—Ed.

NSPE Cites 10 Top Engineering Feats For 1973

The National Society of Professional Engineers has cited an airport, a water control facility and a sludge disposal plant among the 10 top outstanding engineering achievements of 1973. The winners were selected from 31 nominations by NSPE's state societies and local chapters.

One of the winners—the Dallas/Fort Worth Regional Airport (architects: Hellmuth, Obata & Kassabaum, Inc., and Brodsky, Hopf & Adler; see Sept. '70, page 35)—is currently the world's largest airport, covering a more extensive area than the island of Manhattan. Another winner, the Sims Bayou Sludge Disposal Plant, developed by the Raymond Division of Combustion Engineering for the city of Houston, provides water pollution abatement and total recycling of a waste product. Also cited is Inland Steel's No. 1 Slab Caster and Water Control Facility in East Chicago, Ind., which uses a new continuous casting technology to transform molten metal into steel slab product in a direct line process.

Other engineering achievements include the Earth Resources Technology Satellite program (see Feb., page 15), which is controlled by a ground data handling system facility located at NASA/Goddard

Space Flight Center; the Brookfield-LaGrange rock tunnel project, designed by De Leuw Cather & Co. for the Metropolitan Sanitary District of greater Chicago as a prototype for all new rock tunnel design.

Also cited are the Dworshak dam and reservoir project in Idaho, the largest concrete dam ever built by the Army Corps of Engineers; the neuromuscular assist device developed by Medtronic, Inc., of Minneapolis as a new method for treatment for patients with the "footdrop" condition sometimes occurring after a stroke; the Atchafalaya floodway crossing called "Swamp Expressway" on an 18-mile section of Interstate between Lafayette and Baton Rouge, La.; a sulphur dioxide removal system, whose basic concept was developed by the Louisville Gas & Electric Co. and Combustion Engineering; and an automatic monitoring and control system of the Philadelphia Electric Co., which permits more adequate supervision of a rapidly expanding power system and provides maximum reliability of service to people living in the Delaware Valley.

Students Seek Funds To Document Ornament

The Association of Student Chapters/AIA is seeking sources of funds for a bi-centennial program that will both document architectural ornamentation and educate architectural students in the value of ornamentation.

Late in 1973, the group received a grant from the National Endowment for the Arts and the Minnesota State Arts Council to prepare an index of the American Terra Cotta Company's collection of records, drawings and molds, now located at the Northwest Architectural Archives, University of Minnesota. In 1966, the company had ended 85 years of production, and it was a result of the ASC/AIA efforts that the extensive collection was secured for the archives.

For the bicentennial, the students hope to establish the American Terra Cotta Program, stressing architectural ornamentation, with emphasis upon the ideals of Louis Henri Sullivan. Materials on terra cotta are scattered, and it is anticipated that the index, when completed, will help research scholars.

The program also proposes an initial summer institute for the study of terra cotta both as a building material and as an art form. Students, faculty and interested individuals will come together for a three-months' period of intensive study. They will make a documentary and photographic study of terra cotta, will recast from original molds and will experiment with new casting ideas.

More information about the project

may be obtained from Statler Gilfillen, Director, American Terra Cotta Program, 2079 W. Fifth Ave., Columbus, Ohio 43212.

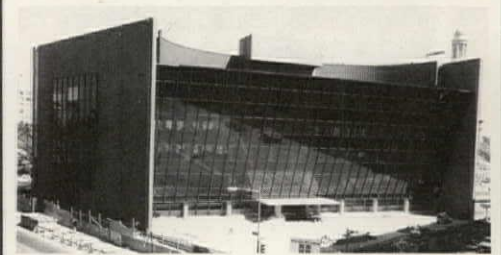
Rome Prize Fellowships

The Board of Directors of the American Academy in Rome has awarded 11 Rome Prize Fellowships for 1974-75. The fellowships, open to all citizens of the U.S., aim to encourage young American artists and scholars by enabling them to pursue their interests independently in Rome.

Winner in architecture is Peter W. Carl of Lexington, Ky., who earned a master's degree in architecture from Princeton University. In the environmental design category, the winner is Robert E. Jensen of New York City, who was graduated in architecture from the University of Nebraska and who has an M.A. degree from Cornell University.

New Home for Home Builders

The National Association of Home Builders recently had a housewarming at its new headquarters building located at 15th St. and Massachusetts Ave. N.W., in Washington, D.C. Designed by Vincent Kling & Partners, the building has been praised by architectural critics for the manner in which a difficult site problem was solved by a trapezoidal structure. The



focal point of the 146,000 square-foot building is the lobby with a specially designed exhibit that tells the story of the housing industry. The formal dedication will take place in July; the housewarming was scheduled to coincide with NAHB spring board and builders meeting. □

Deaths

William B. Cobb, Northbrook, Ill.
Harry Taylor Gherardi, Princeton, N.J.
Monroe S. Haak, Lancaster, Pa.
Dixon B. Kellogg, Detroit
Arne J. Kontturi, Lantana, Fla.
Robert H. Maybin, Tallahassee, Fla.
James T. Mitchell, Jasper, Tenn.
Hugh G. Peacock, Minneapolis
Hardie Phillip, FAIA, Las Vegas, Nev.
Charles W. Pollitt, Philadelphia
Walter L. Rapp, Cincinnati
John J. Rietz, Steubenville, Ohio
Frederick D. Rink, Norwood, N.J.
Carroll H. Tiffany, Medford, Mass.

Newslines

Charles Luckman, FAIA, of Los Angeles was named "Man of the Year" by the Los Angeles Area Chamber of Commerce. He was recently reappointed by Governor Ronald Reagan of California to his third consecutive term as trustee of the California State Universities and Colleges.

The American Concrete Institute has elected Chester P. Siess as its president. He is head of the Department of Civil Engineering, University of Illinois, Urbana/Champaign.

A new award, sponsored by the National Society of Interior Designers and the American Institute of Interior Designers, has been established. The annual award will be given to designers and/or manufacturers for design excellence of new products in the contract field. One of the initial categories will emphasize new concepts in interior systems.

To assist firms in the reduction of energy consumption, the National Industrial Energy Council has published a kit called "How to Profit by Conserving Energy." The kit offers a form that can be used to measure the energy that enters and leaves a plant during a given period and to calculate a product's energy content. For a

free copy, write Industrial Kit, Office of Energy Programs, Department of Commerce, Washington, D.C. 20230.

Women in Architecture is the title of an annotated bibliography and guide to sources of information recently issued by the Council of Planning Librarians. The AIA JOURNAL is among the magazines referenced in the extensive bibliography, which was compiled by Carolyn N. Johnson. A copy may be obtained for \$2.50 from the CPL, P.O. Box 229, Monticello, Ill. 61856.

The Environmental Protection Agency has published a booklet called "Guidance for Facilities Planning" that is designed to help states and municipalities conduct the planning necessary to obtain federal grants for the construction of publicly owned waste treatment works. A copy may be obtained from the EPA Office of Water Programs, Water Planning Division (AW-454), Waterside Mall, Washington, D.C. 20460. There is no charge.

The first new community to be developed by a private nonprofit corporation with the aid of a loan guaranteed by the Department of Housing and Urban Development's Community Development Corporation is on a 1,740-acre site eight miles northwest of Columbia, S.C. The com-

munity is being built by the Harbison Development Corp., formed by the United Presbyterian Church. At the end of a 20-year development period, it is anticipated that the new town will have a population of 23,000.

A land reclamation program in Fulton County, Ill., has been named as the outstanding civil engineering achievement of 1974 by the American Society of Civil Engineers. The \$45-million project converts organic waste products into liquid fertilizer to enrich strip-mined land. It was developed by the Metropolitan Sanitary District of Chicago.

Rossetti/Associates, an architectural firm in Detroit, has been presented with the Annual Achievement Award of the Concrete Improvement Board, which is given in recognition of "outstanding achievements in the field of construction and technology."

A team of architects for the first time has won the Brunner Prize of the National Institute of Arts and Letters, given annually to an architect who has made a contribution to architecture as an art. This year's winners are Hugh Hardy, AIA; Malcolm Holzman, AIA; and Norman Pfeiffer, AIA, partners in the Manhattan firm of Hardy, Holzman & Pfeiffer. □

POSITION OPENING

DIRECTOR OF PRACTICE PROGRAMS

A major staff position with the AIA Headquarters in Washington, DC, involves executive administration of one of the four divisions of the Department of Professional Practice. The Director is responsible for the activities which relate directly to architectural office practice. Among these are contracts, documents development, editor of the Handbook of Professional Practice, liaison with contractors and subcontractors on construction documents coordination, liaison work with the American Arbitration Association, and to serve as Staff Executive for AIA national committees on Personnel Practice and Documents Review.

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