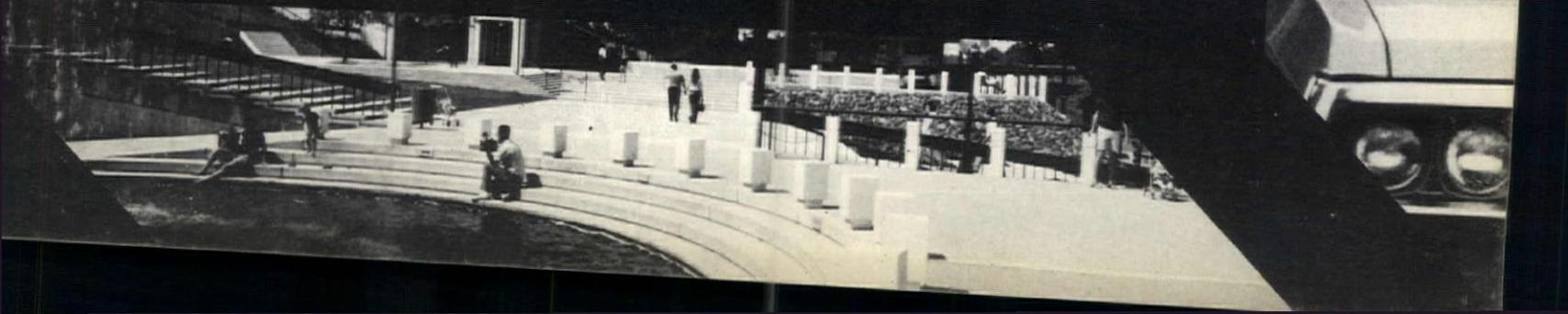
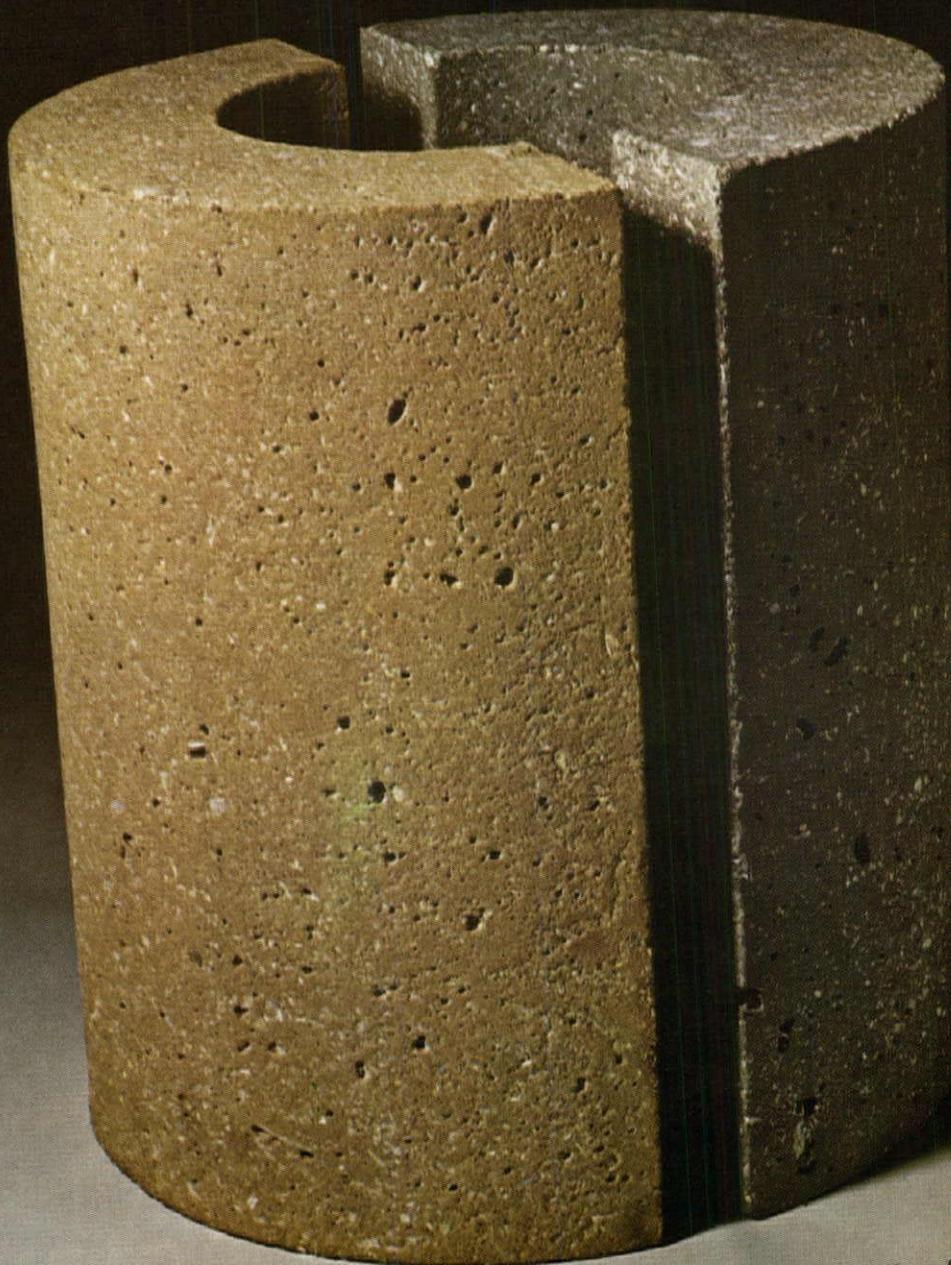




THE
HARD
CHOICES



Concrete now comes two ways,
warm and cold.



The architect is now freed from the bonds of cold gray concrete. Because Trinity Warmtone now gives you warm, tan concrete, naturally. Use local aggregates. You still get warm concrete.

Looks good without special finishing treatments. Trinity Warmtone derives its rich natural tan color from the manufacturing process. Contains no pigment. Color consistency is guaranteed. The price of Trinity Warmtone varies due to freight, but completed construction cost is less than most alternative design solutions.

Also investigate Trinity Warmtone for color consistent stucco and masonry finishes.

Write for your Trinity Warmtone information kit. Trinity Warmtone. The warmest thing in concrete today.



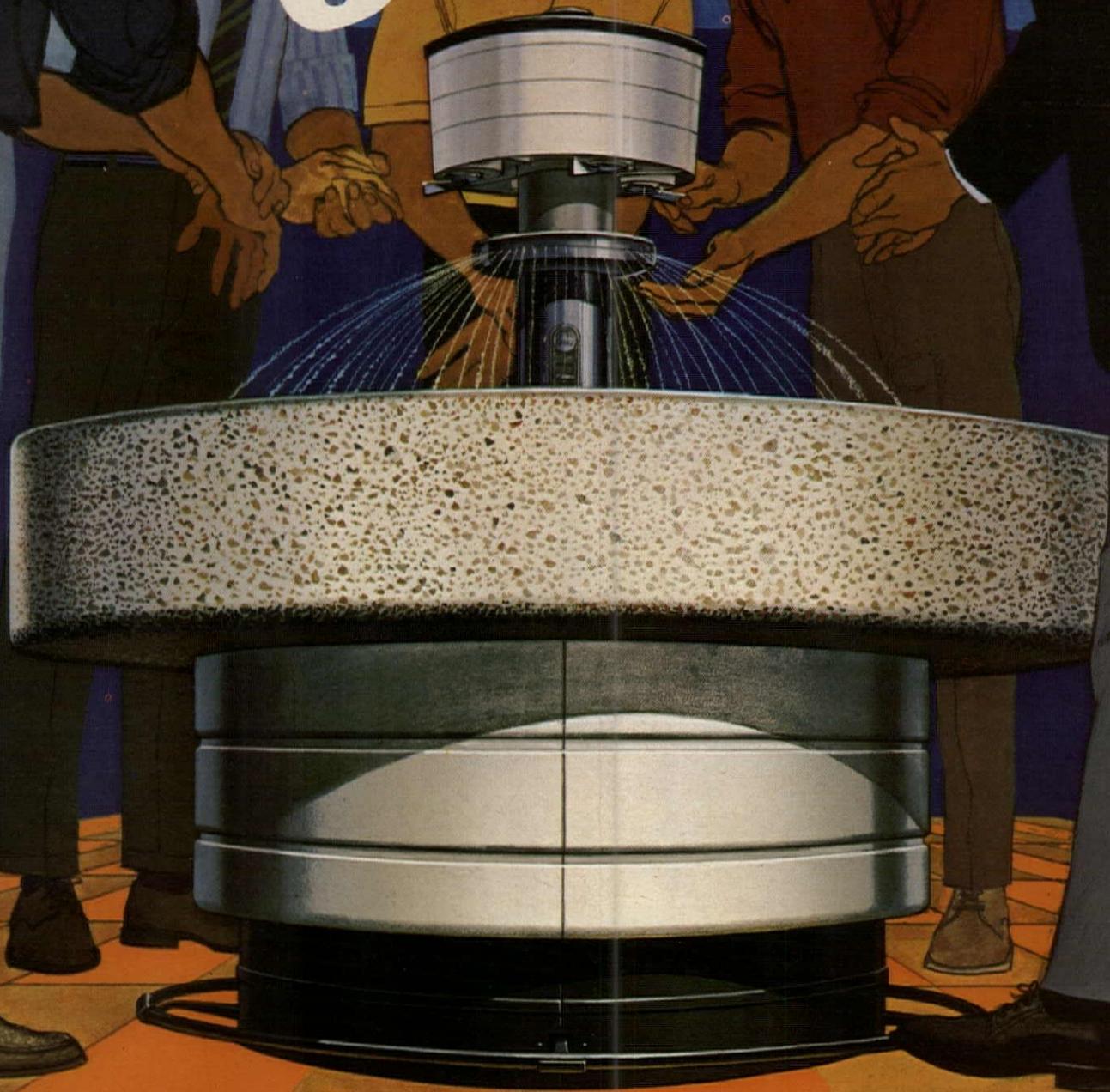
warmtone[™]

The New Cement for Creativity in Concrete.
From the People Who Make Trinity White.

Trinity Division/General Portland Cement Company
P. O. Box 2698 • Dallas, Texas 75221 • (214) 638-4700

Visit The Trinity Warmtone Exhibit / 1971 AIA Convention / Detroit

Bright idea



Wash fixtures that serve many and save money! Bradley Washfountains save an average of 25% on floor and wall space. You can choose from 54" and 36" diameter circular and semi-circular models, plus two-person Duos. So you can specify Washfountains that get maximum use out of every square inch of available space.

What's more, Washfountains serve up to 8 people with one set of plumbing connections, cutting installation costs as

much as 80%. They require practically no maintenance. And they reduce water consumption from 45% to a whopping 80%.

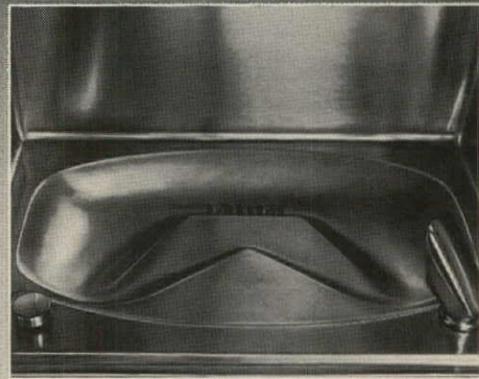
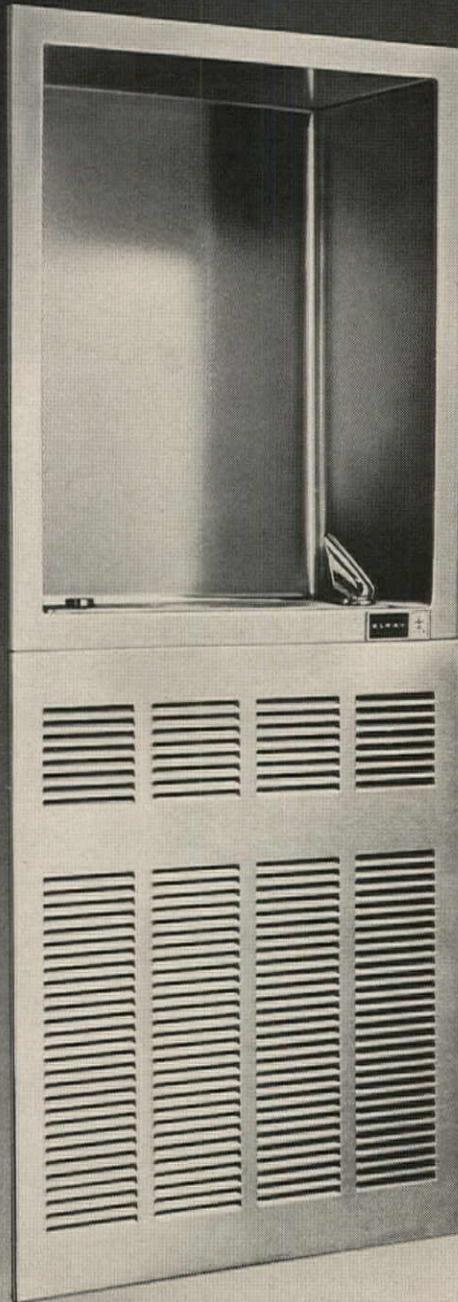
Specify Washfountains for plants, commercial buildings, schools, institutions—wherever you want to handle large groups of people economically. The more Washfountains serve, the more they save. See your Bradley representative. And write for literature. Bradley Washfountain Co., 9109 Fountain Boulevard, Menomonee Falls, Wisconsin 53051.

from Bradley!



Elkay offers problem solvers with three fully recessed stainless steel water coolers. Mounted completely flush to the wall they eliminate corridor obstructions, do not interfere with traffic. They comply fully with the hospital corridor safety requirements established by the "Hill-Burton" program. The exceptional features of Model EFR-12 are shown and described below.

from the ELKAY[®] family of firsts



Cascade design, anti-splash basin with hooded stream projector and remote control. Recess design provides ample head room.

Model EFR-12



For complete information write for Catalog No. DFC-4 or call Customer Service Dept., Area Code 312-681-1880. ELKAY MANUFACTURING COMPANY, 2700 S. Seventeenth Ave., Broadview, Ill. 60153

AIA JOURNAL

MAY 1971

The Hard Choices

Edward J. Logue	THE NEED FOR URBAN GROWTH POLICIES	18
	<i>Are we willing to make a new commitment to the American Dream, willing to make bold decisions?</i>	
Vivian W. Henderson	SO WE ALL MAY COUNT	22
	<i>Are we willing to erase racial bigotry, willing to start making affirmative use of color consciousness?</i>	
Carl H. Madden	THE COST OF A LIVABLE ENVIRONMENT	26
	<i>Are we willing to analyze what is rational, willing to create a new culture to better our world?</i>	
James I. Lammers	CONSTRUCTION MANAGER: MORE THAN A HARD-HAT JOB	31
	<i>Though fairly new on the scene, he's handled billions' worth of building and is still gaining momentum</i>	
Robert E. Koehler	WHERE THE OFFICE BECOMES A CLASSROOM	33
	<i>Practice Profile: Smith, Hinchman & Grylls Associates, Inc., a firm with new approaches to architecture</i>	
Betty Lou Custer, AIA	'MEET ME IN ST. LOUIS' — THE SECOND SUNDAY OF THE MONTH	41
	<i>You'll be surprised how many do, for occasions where three or more are not a crowd but inspiration</i>	
John W. McHugh, AIA	QUESTIONS ABOUT THE NEW EXAM	43
	<i>... asked by a practitioner, a dean and a student, and answered by an examiner and adviser to the NCARB</i>	
	MINISTUDY OF A PROJECT	46
	<i>Washington Park Courts: a public housing project designed to restore individual dignity to its families</i>	
Patricia Botond	WHAT'S IN FEDERAL CONTRACTING FOR YOU?	48
	<i>The government has a new outlook these days on A/E firms and it can only work to everyone's advantage</i>	
	SURVIVAL IN A SEA OF TRASH?	52
	<i>Boy scouts and others have better things in mind</i>	

DEPARTMENTS

Comment and Opinion	6	Letters	61
Outlook	8	Events	64
Institute Page	14	Advertisers	64
Books	56		

COVER

Adaptation of the 1971 AIA convention symbol. For some of the issues that will come up for discussion, see page 17. June 20-24, GO DETROIT.

Publisher: DUDLEY HUNT JR., FAIA; *Editor:* ROBERT E. KOEHLER, Hon. AIA; *Associate Editor:* BESS BALCHEN; *Assistant Editor:* MARY E. OSMAN; *Consulting Editor:* JAMES E. ELLISON, AIA Dept. of Education & Research; *Art Director:* SUZY THOMAS; *Sales Manager:* RICHARD J. SATOLA; *Promotion Manager:* S. CHAPIN LAWSON; *Production Manager:* GEORGE L. DANT; *Circulation:* DELPHINE ROBERTSON

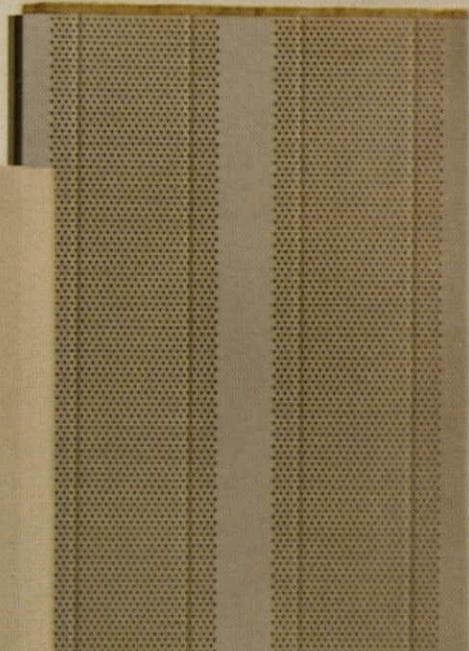
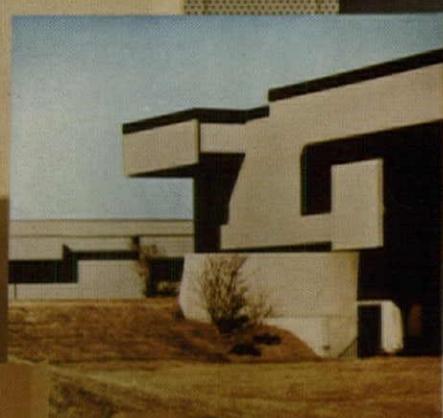
AIA JOURNAL, official magazine of The American Institute of Architects published monthly at 1785 Massachusetts Ave. N.W., Washington, D.C. 20036. Telephone: (202) 265-3113. **Subscriptions:** for those who are, by title, architects, architectural employees, and to those in architectural education (faculty and schools), and to libraries, building construction trade associations and building product manufacturers: basic rate \$5 a year, \$8 two years, \$4 to architectural students in the US, its possessions and Canada. For all others: \$10 a year in the US, its possessions and Canada; other countries to those who are, by title, architects: \$10 a year. All others outside US possessions and Canada: \$20 a year. Single copy: \$2, payable in advance. Publisher reserves the right to refuse unqualified subscriptions. **Change of address:** Give Circulation Department both old and new addresses; allow six weeks. **Second class postage paid at Washington, D.C.** Microfilm copies of this publication available from University Microfilms, 300 N. Zeeb Road, Ann Arbor, Mich. 48106. © 1971 by The American Institute of Architects. Opinions expressed by contributors are not necessarily those of the AIA.®

VOL. 55, NO. 5

New Acoustiwall™ fights noise pollution. Help your clients solve sound control problems with new Acoustiwall liner panels and familiar Acoustideck® roof-ceilings. Added cost: less than 1% of total building cost. Important? It is now. The new Walsh-Healey Act sets 90 decibels as the upper limit for plants handling federal contracts.

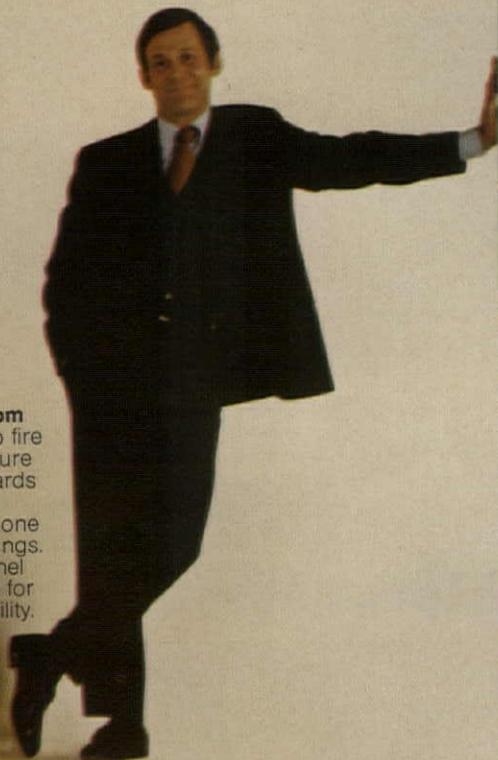
Embossed panels add interest through texture. Now Inryco offers the attractiveness of a stucco embossed painted surface to help you create interest and design distinction in buildings of all kinds. Available in aluminum.

Choice of profiles for distinctive shadow patterns. Who says walls all have to look alike? Not Inryco. The IW series offers seven distinctly different profiles in 12" widths. A common lock system lets you intermix in any combination. It's weather tight, and conceals fasteners. If the budget's tight, consider the M Series — four interesting profiles in fast-installing 30" and 36" widths.



INRYCO: MORE THAN JUST ANOTHER WALL.

To keep a fire from spreading. Inryco fire wall panels measure up to rigid standards of Underwriters' Laboratories, for one and two hour ratings. No other wall panel surpasses Inryco for fire protection ability.



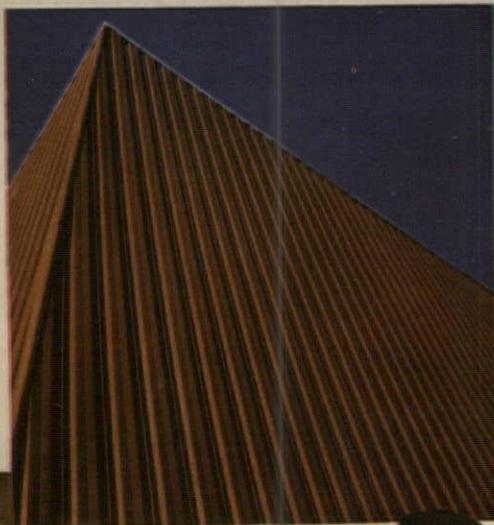
Talk it over with your Inryco wall panel man. He's a specialist, ready to help you with additional information. And he'll follow through on any inquiry you make with a prompt reply. For complete information on Inryco Wall Systems see our catalog in Sweet's Architectural File, Section 7 or write for Catalog 22-1. Inland-Ryerson Construction Products Company, 4127 West Burnham Street, Milwaukee, Wis. 53201.

INLAND
RYERSON

General Offices: Chicago, Illinois

A member of the  steel family

Long-lasting finishes in a spectrum of colors. Duofinish 500™ resists corrosive smog. Sheds dust, smoke, abrasives, airborne particles. Color stays true for 20 years or more. For extra economy, specify Duofinish™ the hard, weather-resistant surface that keeps its color 10 years and longer.



COR-TEN panels: long-lasting good looks with no maintenance. Exposed to the elements, COR-TEN weathers to a rich, deep tone that's both protective and attractive. Complements a wide variety of other finishes and materials. Panels available in 12 different profiles.

Film to protect panel surface. To guard against damage in transit and on site, you can specify Inryco MW panels with a protective plastic film that is easily removed during installation.

comment and opinion

ARCHITECTURAL SERMON ON THE MOUNT: An attempt to increase the public awareness of what architecture is all about — a major concern of The American Institute of Architects — is evident on many fronts today, but one would hardly expect it to get a big boost from a Benedictine abbey. Yet that is exactly what happened at a conference directed to the layman in the Pacific Northwest last month.

By coincidence, the sessions were being held just after *Newsweek* came off the press with its 12-page article on "New Architecture: Building for Man," featuring Moshe Safdie and Habitat-Puerto Rico on its cover, both of which were covered in the April AIA JOURNAL. A number of participants at the invitational conference were seen carrying and heard discussing that particular copy of *Newsweek*, which said on its contents page: "None of the arts is more important than architecture, and none is more violently in a state of revolutionary change. The old ideas of the 'master builder' who creates heroic monuments is gone; young architects . . . think of themselves as designing environments that reflect and assist the real lives of human beings."

And that was in essence the whole point behind the conference at Mount Angel Abbey, sitting on a hilltop at St. Benedict, Oregon. On second thought, after a visit to the truly magnificent site, overlooking a peaceful valley still dotted with farmland and sharing a view of four snow-capped mountains, perhaps the Benedictine fathers' concern about architecture should not come as a surprise at all. They have built a fine new library designed by Finland's Alvar Aalto about which one writer has noted that "as the library stacks extend out as spokes from a hub so, hopefully, will the cultured expression of artists and scholars reach out from the abbey to men of our time." Indeed, a good deal of reaching out was apparent as the Mount Angel community televised the entire conference — a Friday evening and all-day Saturday program — as a documentary for its own use and as a teaching tool for the general public. Part of the sessions were filmed by a commercial TV station in nearby Portland.

The conference looked at architecture of the past, present and future. To accommodate the former, Pietro Belluschi, FAIA, returned to Oregon to reminisce with several of the former staffers in his Portland office; and Professor Marion D. Ross of the University of Oregon reviewed the architecture of the state.

In a seminar entitled "Modern Architecture: A Statement," eight Northwest architects and one from Berkeley — Vernon DeMars, FAIA, whose firm DeMars & Wells is architect of record for the library — each presented one of his projects with the man in the street specifically in mind. The final session concerned itself with the planned environment of the future with a discussion by an architect, a regional planner, a developer, a client and the government, the last represented by Senator Mark O. Hatfield (R-Ore.).

The entire proceedings were sparked by Father Barnabas Reasoner, with the blessing of Abbot Damian Jentges — and all in keeping with the statement made by Abbot Primate Rembert Weakland upon his election to head the worldwide order: "It seems that the old Benedictine Order wants to show a newness of spirit. The beauty of the order lies in its flexibility and decentralization." All I can add to that is "amen!"

ROBERT E. KOEHLER

ACKNOWLEDGEMENTS

10—George Eisenmann
17—below, News Department, Chamber of
Commerce of US
19—above, below left, William Garnett
19—below right, Laurence Pringle
21—William Graham
23—Laurence Pringle
24—Steve Salmieri
27, 29 above—I. Burt Shavitz
29—below, Component Building Systems Ltd.
(pp. 19 through 29, courtesy New York
State Urban Development Corporation and

the New York State Office of Planning
Coordination.)
33—Balthazar Korab
34—Joe Clark
35—above, center, Lens-Art Photo
36, 37 right—Balthazar Korab
39—Ben Schnall
42—Tom Finan IV. Courtesy *St. Louis
Construction News & Review*
42—right, *Globe-Democrat*, Gary Clermont
46—Photographics Ltd.
48, 50—Mel Chamowitz

NEXT MONTH

"Man is always greater than his works," Louis I. Kahn, FAIA, once commented. This year's Gold Medalist is truly a Renaissance man: architect, musician, poet, philosopher and humanitarian. As we thought of a way to pay homage to Kahn, we discovered that the most perceptive insights into his work and character come not from the pens of critics but from his own words. We have made a selection of his writings from a book published several years ago and from photographs of some of his more recent architecture. His words are still as contemporary as the architecture — and as inspiring.

Coming out just prior to the AIA convention, the June issue also features the 1971 Honor Awards, with the architects' statements and jury comments accompanying the photographs and plans. And we take particular note of the fact that the Motor City will be our host with two articles. One deals with two new towns — one in the inner city and one 20 to 40 miles outside — which have been proposed for the Detroit region. Designed to be built at the same time and mutually reinforcing, the new towns offer a way to revive the decaying city and to contain suburban sprawl. The second presentation takes a look at the legacy of Albert Kahn, particularly appropriate in that Albert Kahn Associates, Inc., is the 1971 winner of the Architectural Firm Award.

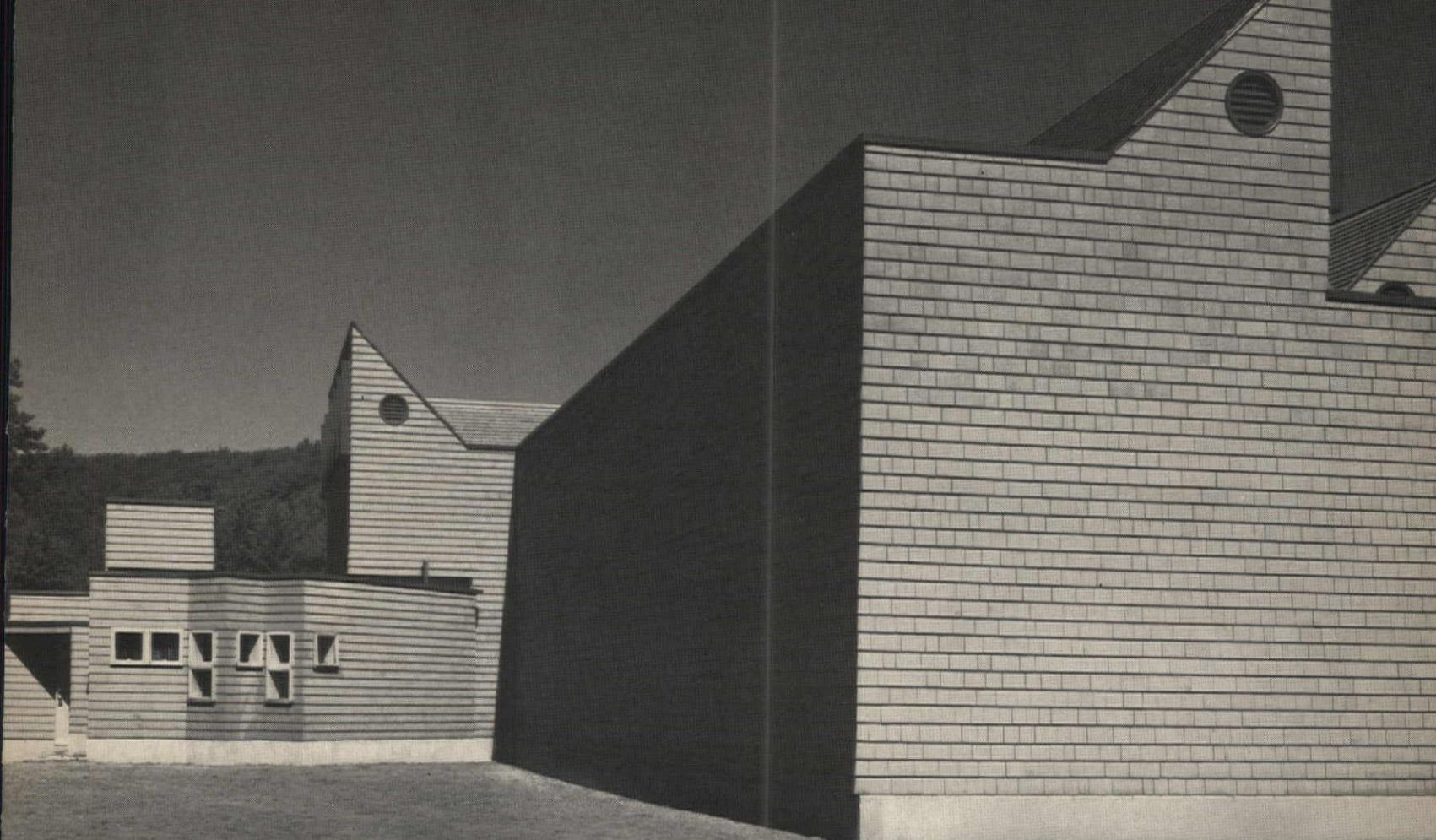
Finally, attuned to these frantic, changing times, editor/urban writer Grady Clay talks about "swarming," or the tendency to pack up into huge, loose congregations under the stimulus of grapevine or other advertising. Mobile groups seek self-discovery and declare new identities, shaking the establishment, creating unheard-of markets, finding new bases of information — all with implications for architecture.

ASIDES

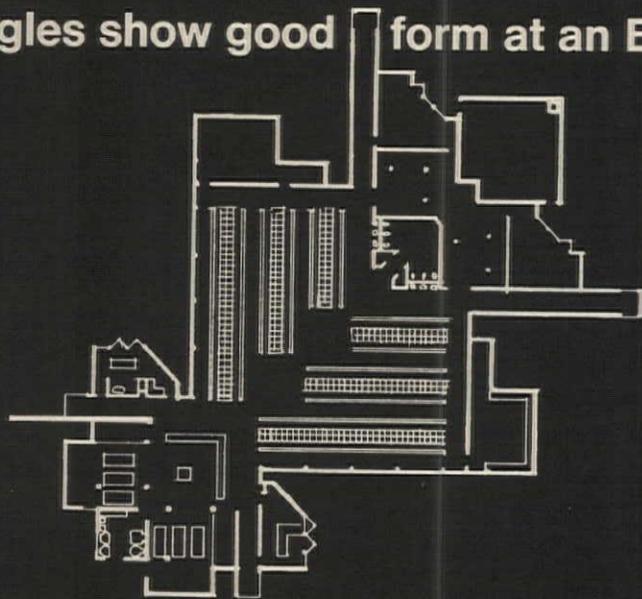
If you are among the readers who on occasion read the small print at the bottom of the contents page, just below the masthead, you have noted that microfilm copies of the AIA JOURNAL are available from University Microfilms, 300 N. Zeeb Road, Ann Arbor, Mich. 48106 (a new address to which all inquiries should be directed). The copies are provided without any advertising and go back as far as 1944, which began the current volume numbering; individual articles also can be secured.

Thus the JOURNAL is one of about 6,600 publications which participate in this service, of primary interest, of course, to librarians as a space-saving device for back volumes and for replacements if a particular issue gets dog-eared and worn from use.

In addition, this Xerox affiliate has initiated a program for the quarterly or semi-annual publication of microfiche, directed to those busy executives and scholars who wish to maintain their own files in their desks for quick and handy reference after the ink-print copy has been read. A small and handy reader completes the picture, providing what amounts to a private library collection. □



Red cedar shingles show good form at an Eastern boys' school.



Holderness School Locker Facility, Holderness, New Hampshire. Certigrade Shingles No. 1 Grade, 16" Fivex. Architects: Perry, Dean and Stewart.

Holderness School in New Hampshire needed a new locker facility. The hub for a proposed athletic complex, it had to be light, airy, cheerful. Warm but masculine. Beautiful but economical.

The result is this building whose strength of line projects strength of purpose. Whose richly textured exterior exudes character. Whose varied shapes

demand attention and generate enthusiasm.

Red cedar shingles play a big part in it. They adapt easily to the geometry of the structure. And they give warm, friendly faces to the building's many solid surfaces.

Red cedar also is eminently practical. It lasts for decades without maintenance. It is naturally insulative. And it withstands even hurricane winds.

Find out more about the versatility and enduring beauty of red cedar Certigrade shingles or Certi-Split handsplit shakes.

For details and money-saving application tips, write: 5510 White Building, Seattle, Washington 98101.

(In Canada: Suite 1500,
1055 West Hastings Street,
Vancouver 1, B.C.)



Red Cedar Shingle & Handsplit Shake Bureau

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

Resolutions Passed by Board Honor Memory of Two Men Who Died in Mid-Career

Two men associated with the concerns and purposes of the Institute were praised by the Board of Directors at its meeting recently in Los Angeles. One had been made an honorary member of the AIA; the other had addressed the 1968 convention, sparking the nationwide program of assistance to minorities.

"A sensitive and dedicated educator whose accomplishments through the past decade helped enrich the learning and living environments of thousands of college students" was the tribute paid to Dr. Anthony G. Adinolfi in a resolution passed by the board.

In 1964, Adinolfi, manager of the New York State University Construction Fund, was made an honorary member of AIA, and in 1969 the organization he headed was cited for its achievement in maintaining the highest standards of environmental quality. Adinolfi died in March at the age of 40.

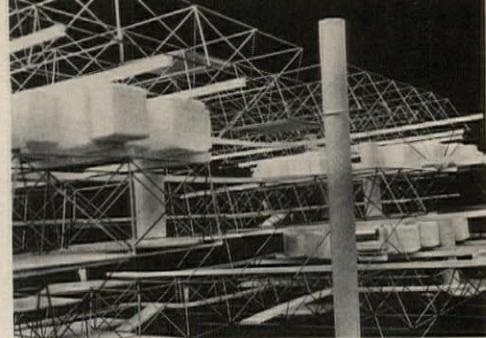
The board also mourned the death of 49-year-old Whitney Moore Young Jr., who died in March while swimming near Lagos.

"Our collective conscience was stung" by the words at the Portland convention, stated

the board resolution. In response, the AIA "undertook a program . . . conceived as a positive and practical means of enabling more members of the disadvantaged and minority groups to become involved in the practice of architecture. Our profession's 'thunderous silence' was broken."

By admonition and example, said the directors, Young "helped us to see and act upon our obligation to minorities. Now therefore be it resolved that the Institute's response to Whitney Young's challenge — the Program of Professional Responsibility to Society — be rededicated as our memorial to him. What his words inspired us to begin, his memory must now inspire us to continue."

To promote attendance of black architects at the AIA convention in Detroit in June, the Michigan Black Architects Group will host a reception in memory of the National Urban League leader. The reception will be held on Wednesday evening, June 23, at the Berry Gordy Estate. Forum panelists, clients of black architects and local dignitaries will be special guests for the occasion.



Essential community controls are preserved in the megastructure of residential units, but they could be moved if the individual desired.

Two Arkansas Students Win Reynolds Prize with 'Provocative' Concept

"Community of Choice" is the apt title of a megastructure community on stilts with movable modular houses, designed by two University of Arkansas students, Rick W. Redden of Fort Smith and Hugh L. McMillan of Little Rock. The scheme has won for them the \$5,000 national award in the 1971 annual Reynolds Aluminum Prize for Architectural Students.

The award will be made during the AIA convention in Detroit in June. The monies will be divided equally between the student team and the university.

The community, which the jury called "provocative, timely and imaginative," consists of clusters of residential and service modules nestled in a giant above-ground aluminum space frame. Computer-controlled transportation capsules would give access to all points of the community. The students said that they sought through their design to provide a new form of high density community with a maximum range of choices for the individual while preserving essential community controls.

Two \$1,000 honorable mention prizes were awarded to two graduate architectural students at the University of California in Los Angeles, G. Stanton Mason and Joseph Valerio, and to Leon Goldenberg, a student at the University of Illinois, Urbana.

Sponsored by the Reynolds Metals Company and administered by the AIA, the prize is offered annually for "the best original architectural design in which creative use of aluminum is an important factor."

This year's jury was chaired by John Desmond, FAIA, Hammond, La.; George Anselevicius, AIA, dean of the School of Architecture, Washington University, St. Louis; and William E. Blurock, FAIA, Corona Del Mar, Calif., were jury members. Joe Y. Eng, a graduate student at the University of California, Berkeley, and a recipient of the 1970 national prize, was student observer.

Building Team and Systems Focal Point Of Conference/Exposition in Detroit

"The architect five to ten years from now will not be turning out working drawings and specifications but will be conceptualizing design packages and performance specs so manufacturers can produce systems and subsys-

continued on page 10

Chase, Manhattan Will Enhance Bank Plaza with Sculpture by France's Dubuffet



Skidmore, Owings & Merrill, designers of the bank, specified space for a public sculpture.

For 10 years, the Chase Manhattan Bank in New York's financial district has been looking for an appropriate piece of sculpture to adorn the large plaza surrounding the bank's 60-story corporate headquarters.

Recently, David Rockefeller, chairman of the board, announced that the search is over and that renowned French artist Jean Dubuffet has been commissioned to execute a 40-foot-high sculpture.

The work is a grouping of four stylized tree shapes with a skin of fiberglass and a plastic resin like the hull of a boat over a steel framework. The outside is finished with polyurethane paint in a linear pattern of black lines on a white ground. The sculpture, a gift

to the bank and to New York's downtown community by Rockefeller, will require 18 months to fabricate in sections in Dubuffet's studio near Paris.

Called "Group of Four Trees," the work will stand on the south side of the 2½-acre plaza which also provides the setting for a sculpture garden by Isamu Noguchi.

Marshall, Virginian Active in Government Affairs, Replaces White on AIA Board

Norfolk, Virginia, architect William Marshall Jr., AIA, was elected a national vice president of the Institute at the recent meeting in Los Angeles of the Board of Directors.

Marshall is currently chairman of the AIA Government Affairs Steering Committee. He has served as vice chairman of the AIA Federal Agencies Committee and in 1969 was president of the Virginia Chapter AIA. For the past six years, he has been a member of the Mayor's Citizens Advisory Committee of Norfolk. His architectural practice was established in Norfolk in 1949; today he has offices also in Washington, D.C., Richmond, Omaha and Athens, Greece. In 1965, his firm submitted the prize-winning design for the creation of a new city in Libya.

Marshall will fill the unexpired term of George M. White, AIA, who recently was named Architect of the Capitol (*see AIA JOURNAL*, Feb., pp. 6 and 8).



Peace-of-mind secrets revealed

Let's face it. Everyone worries about lockset security these days . . . whether he runs a plant, a school, an office building or any other building that must be kept under lock and key.

And if you are among those worriers, chances are you're insecure about two potential cracks in your security armor, namely key control and pick resistance of your locksets.

On both counts, the Sargent Maximum Security System offers reassuring news.

Take key control. The exclusive Sargent Maximum Security System key operates the lock cylinder by raising three rows of overlapping pins to a precise "shear" line. The key, unlike any ordinary key, has carefully milled depressions along its length rather than the typical serrations on its edge. Result: ordinary key cutting

machines cannot duplicate this key, and you remain in control.

Now look at pick resistance. With three rows of pins, as shown in the cut-away cylinder above, instead of just one, the Sargent Maximum Security System cylinder all but defies

picking or raking.

And the chance of any one key operating another lock cylinder by accident just doesn't exist. That's because there are 24,500 unduplicated key combinations available in any one system at even the master key level.

Look at it this way: when the Sargent Maximum Security System goes in, surreptitious entry is locked out. For full details, write to Sargent & Company, 100 Sargent Drive, New Haven, Conn. 06509 • Ontario, Canada. Member Producers' Council.



SARGENT®

A complete line of architectural hardware

tems according to specific need," prophesies Institute President Robert F. Hastings, FAIA.

In a joint statement issued by Hastings and Producers' Council President Robert B. Darling, plans for a major national conference and exposition to serve the nonresidential construction market were announced. They explained the action as a positive move to accommodate the changes occurring in the construction process and to provide an annual gathering place for all members of the building team.

Initially, the conference and exposition will be held in conjunction with the AIA convention in Detroit, June 21-25, with the conference running a portion of the first two days. Over 150 exhibits are planned, focusing on a special, carefully screened section on systems hardware in nonresidential construction. This year the conference will deal with subjects such as construction management, single design/construct and turnkey construction, performance specifications, systems and interface problems, labor and other areas of management affecting the building team.

With one eye on a rapidly changing construction industry and the other on the emergence of the building team as a dominant influence in the construction industry of the future, architects, engineers, contractors, owners, school and hospital administrators, government officials and manufacturers are invited to attend.

Ability and Determination of Secretaries Aimed at Helping the Architect's Team

Plans are shaping up for the meeting of the Architectural Secretaries Association in Detroit to be held concurrently with the AIA convention. On Sunday, June 20, there will be a board meeting and reception. Workshops are scheduled for Monday and a business meeting for Tuesday. The plans are not to conflict with AIA activities that the girls can attend. Registration will be open to all architectural secretaries.

Organized in 1961 to advance the knowl-

edge and expertise of architectural secretaries, ASA has adopted a constitution which carries out the spirit of the AIA's decision in 1969 to approve affiliation of chapter and state organizations with ASA chapters. Terry Peck, administrative assistant in the national offices of AIA's Department of Professional Services, is in charge of liaison between the AIA and ASA.

President Erma H. Bolick of Fred Bassetti & Co. in Seattle says that ASA is concerned with education and not with wages and hours. "ASA is striving to achieve, through education and the support, interest and inspiration of others, the highest objectives of a professional association."

Evidence of ASA's interest in professional affairs is demonstrated in many of their local projects. Not long ago, the Seattle Chapter had a wine-tasting party and realized in profits a respectable \$625, which was given to the AIA Minority Scholarship Fund.

Innovator in Storefront Design, Leader In Activities of Producers' Council

In 1934, after having been graduated from the Carnegie Mellon Institute of Technology, Elmer A. Lundberg, FAIA, joined the Pittsburgh Plate Glass Company as a storefront designer. He soon became head of that department and in this capacity was instrumental in helping develop overall improvements in modern store design techniques. He obtained a number of patents on new glass development applicable to the building industry.

He became director of architectural design of PPG in 1945 and in 1950 was given additional responsibilities for architectural development. Last year he became a partner in the Pittsburgh architectural and planning firm of Loeffler/Johnson/Lundberg & Associates.

Lundberg, before his death on March 29 at the age of 61, was active in the affairs of the Producers' Council. He served on its board of directors, chaired numerous committees and was its president from 1960 to 1962. He was active on the joint AIA/PC National Committee from 1954 to 1967.

California Architect: Member of Father/Son Team, Designers of Major Projects

After having studied at the Ecole des Beaux-Arts in Paris, Carl I. Warnecke, AIA, began his architectural apprenticeship in 1911, working with Arthur Brown Jr., who designed the San Francisco City Hall, and with Bernard Maybeck, architect of the San Francisco Palace of Fine Arts.

In 1917, Warnecke founded with Chester Miller the firm of Miller & Warnecke. The firm designed the Tudor Apartments, Castle-mont High School, the Oakland Public Library, the Wells Fargo Bank and residence halls on the Berkeley campus of the University of California.

Upon Miller's retirement in 1950, Warnecke joined his son John Carl Warnecke, FAIA, in the firm of Warnecke & Warnecke, which designed the Metropolitan Oakland Airport, the California State Office Building and the physics and earth sciences buildings at the University of California, Berkeley.

Now called John Carl Warnecke & Associates, the firm has offices in New York, San Francisco, Honolulu, Rome and Washington, D. C., with many ongoing assignments.

Carl Warnecke remained active in the firm until his death on March 27 at the age of 80. The firm designed the restoration of Lafayette Square opposite the White House, the John F. Kennedy grave site in Arlington National Cemetery and additions to the home of the late Robert F. Kennedy in Virginia. Other projects of the firm include Hawaii's capitol building, the \$120 million expansion of the San Francisco International Airport, a master plan for the City College of New York and the redesigning of San Francisco's main thoroughfare, Market Street.

Born in Montreal, Carl Warnecke grew up in the San Francisco Bay area and was living in Piedmont, California, at the time of his death, where funeral services were held.

Newslines

■ A new softwood lumber standard has gone into effect; grading rules to comply are available in *Standard Grading Rules for Western Lumber*. Copies are available for \$1 each from the Western Wood Products Association, Yeon Building, Portland, Ore. 97204.

■ **Tredick (Ted) K. Hine**, AIA, 79-year-old staff architect for the Founders Society Detroit Institute of Arts, has concluded his multiple careers and was cited by the City Arts Commission, the Founders Society and the Detroit Institute of Arts for the successful expansion of the museum's facilities.

■ **Research in highrise building** is detailed in a brochure available from the Chicago Committee on Highrise Buildings, 224 S. Michigan Ave., Chicago, Ill. 60604.

■ **Edmund G. Brown**, former governor of California, has been appointed by President Nixon to the Franklin Delano Roosevelt Memorial Commission. The latest plans for the memorial envision a rose garden on a 27-acre site in West Potomac Park, Washington, D.C.

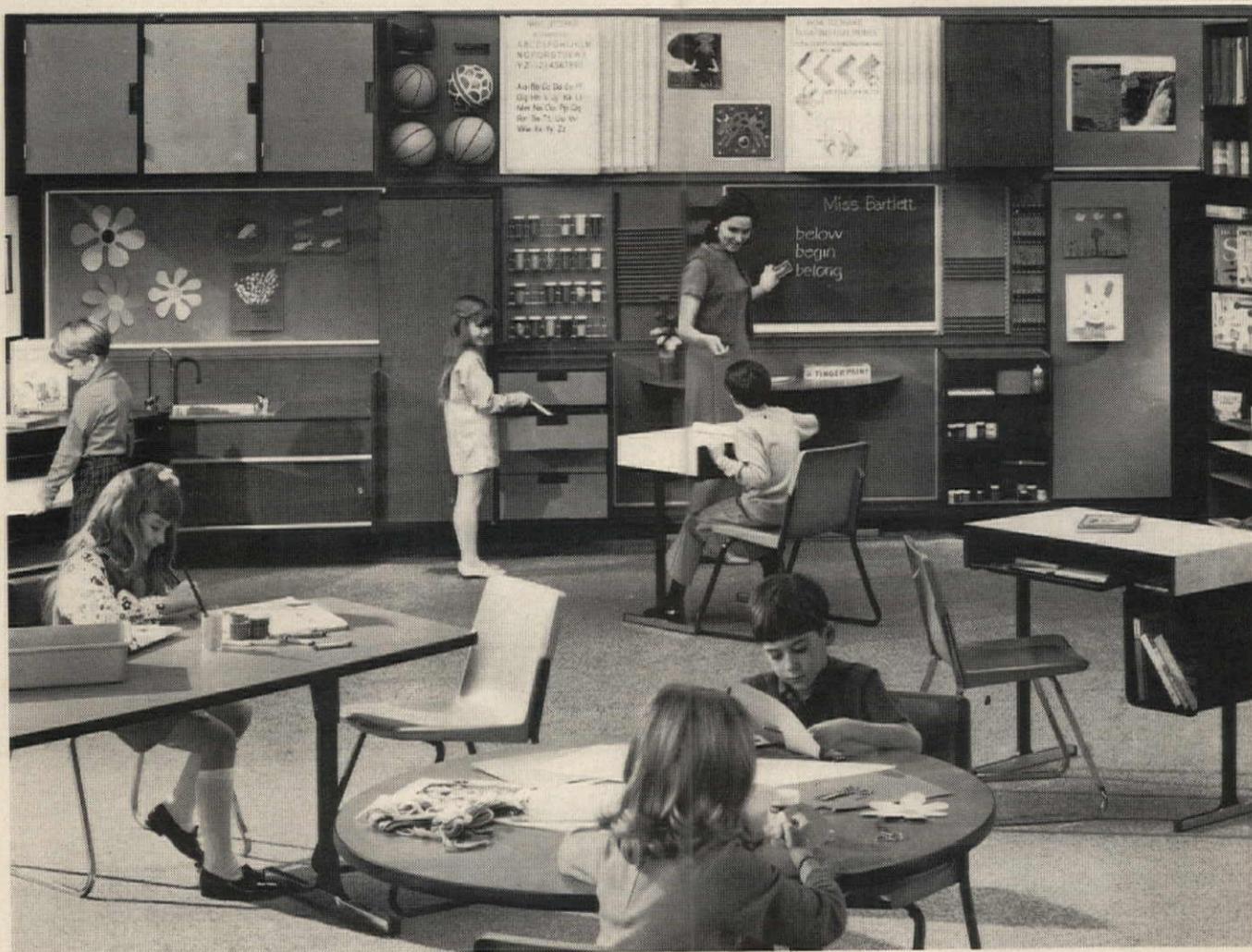
continued on page 12

Learning from the Past in Philadelphia: The Ageless Problem of Keeping Dry



An exhibition of architectural ephemera from old Philadelphia offers an idea for other communities to follow. Entitled "See What They Sawed," the show opened last October on the occasion of the 200th anniversary of Carpenter's Hall. The materials were collected from the demolition of early buildings—much of it by restoration architects and craftsmen. It featured an unusual 1740 closed-string "winder" stairway; the entire corner of a late 18th century frame house; and a sampling of architectural details that are often taken for granted.

American Seating
announces a new line of
classroom furniture
designed to give you a better VUE.*



*Visual Unified Environment

There's been an addition to American Seating's Visual Unified Environment system! A completely new line of classroom furniture that's design-, color- and function-coordinated with the VUE learning wall and cabinetry.

VUE classroom furniture is truly unique—from its square-tube construction to the elegant, sculptured chair shell in an exciting new nylon material or Dexlon®. Desks and table tops invite work with a rich brown or white leather-grain Amerex® surface. And the entire line trims up or down with many options to fit any need or budget.

The total VUE system has interchangeable modular components that provide *storage, display, learning* and *work* areas when and where the teacher needs them. Because learning materials are constantly in view, students become more involved. Learning is more meaningful, interesting. So VUE not only changes the *look* of the classroom, it can also change the *outlook* of the student. And at a surprisingly modest cost.

For literature or to arrange showing of a 15-minute motion picture on the VUE system, write American Seating Company, Dept. AIA-739, Grand Rapids, Michigan 49502.

AMERICAN SEATING 

■ **New abstracting and research service** to keep abreast of developments in environmental conservation and pollution is offered by Ecology Forum Inc., 200 Park Ave., New York, N.Y. 10017. The service condenses and cross-references the environmental content of more than 400 general, technical and scientific publications and is issued bi-weekly.

■ **"Human Settlements"** is the title of a new bulletin issued by the Centre for Housing, Building and Planning, Department of Economic and Social Affairs, United Nations. This number includes studies, reports and a complete inventory of technical projects.

■ **Harry Weese, FAIA**, of Chicago, is a member of a panel of professionals who will judge entries in the 1971 Prize Bridges Competition sponsored by the American Institute of Steel Construction.

■ **The Minnesota Society of Architects** has formed the MSA Foundation for Environmental Computer/Design, Inc. The aim is to serve educational, scientific and charitable functions, including research and development of uses of the computer as a design tool.

■ **Robert Douglass, AIA**, a specialist in the design of health facilities in the firm of Caudill Rowlett Scott, has been appointed by the Pan American Health Organization to serve as a special consultant. He assisted in the organization of an international seminar on hospital planning and design, held in Buenos Aires in November.

Deaths

- ROBERT W. COCHRAN
Oklahoma City
- E. H. HOLOWCHAK
Redford Township, Mich.
- E. L. LITZAU
Glen Burnie, Md.
- ROBERT B. MAJESKI
Niles, Ill.
- VALDEMAR PAULSEN
Jersey City
- DWIGHT E. STEVENS
Stillwater, Okla.
- DAN F. STOWERS SR.
Little Rock, Ark.
- GUY L. SUMNER
Kansas City, Mo.
- HENRY EUGENE WILLIAMS
Atlanta

Members Emeriti

- ROSE CONNOR
Claremont, Calif.
- H. B. DOX
Peoria, Ill.
- C. M. GRAY
Redington Beach, Fla.
- R. G. JEPSON
Detroit
- B. R. KLEKAMP
Pompano Beach, Fla.
- WILLIAM H. LEE
Swathmore, Pa.
- ARTHUR L. LOVELESS, FAIA
Seattle
- A. C. ZIMMERMAN
Palo Alto, Calif.

7 MATOT DUMBWAITERS SPEED MEDICAL AID AT ST. FRANCIS



At St. Francis Hospital, Evanston, Illinois, 7 dumbwaiters in combination with an intercom system are being used to increase hospital efficiency. With a new addition increasing their capacity from 385 to 516 beds, the new system was introduced to relieve the added burden on their staff.

The lifts are used in different areas:

- Surgery to pathological specimen
- Surgery to blood bank
- In-Patient specimen lab to 4 patient floors
- X-ray film storage to filing
- Pharmacy to store room
- Lab clean-up to store room
- Medical records to store room

BENEFITS: The new dumbwaiter with the intercom system provides St. Francis with 4 important benefits: 1.) Service is speeded up in critical areas; 2.) Closer infection control can be maintained during surgery; 3.) More patients can be serviced with less help; 4.) Efficient operation... no frenzied corridor dashes, less breakage and thefts.

Matot specializes in developing units to solve any problem, and provides free engineering services, too.



Write for descriptive brochure!

D. A. MATOT, INC.

1533 W. Altgeld Avenue • Chicago, Illinois 60614
312 Lincoln 9-2177

Specializing in Dumbwaiters since 1888

See our catalog in Sweet's **23a**
Mat **S**

There's a trick to bonding plaster and stucco to painted surfaces.

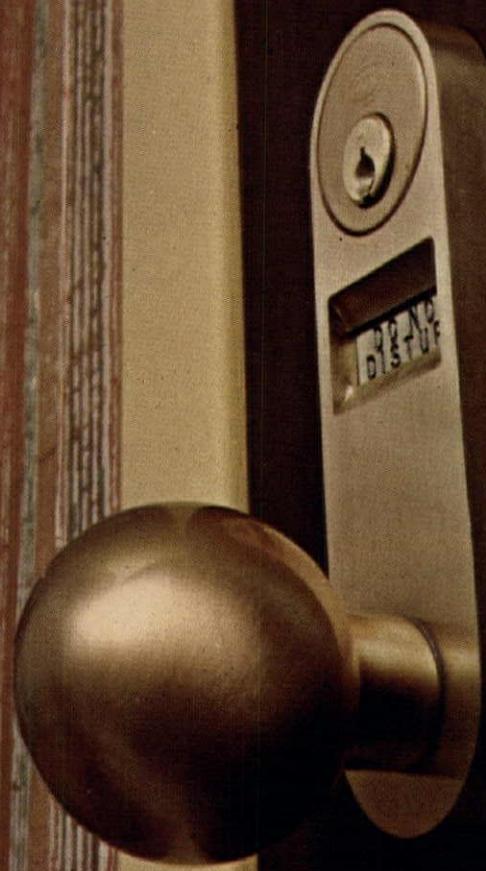
The trick is as old as your hat, if your hat is 20 years old. That's how long Weld-Crete® and Plaster-Weld® bonding agents have been successfully "welding" cement and plasters to sound surfaces, including tricky painted surfaces. It's important; you can save enormously on time, labor, and materials if you apply the finish directly over the bonding agent to a soundly adhered painted surface, thus eliminating the mechanical key necessary for multiple coat cement and plaster finishes. Weld-Crete® and Plaster-Weld®, the *originals*, assure you of a tight, secure job on exterior and interior surfaces with results you can hang your reputation on. Write for our *Bulletin #59* on how to determine suitability of painted surfaces. There's really no trick to it once you get the facts.



Rockville, Md. 20852
Phone (301) 942-9200

594 Corbin... where privacy is assured

When you register with Corbin, privacy is carefully guarded. With Corbin's new hotel mortise lockset, the inside turnpiece not only projects the deadbolt, but also automatically displays a "Do Not Disturb" indicator outside. And an anti-panic feature permits quick emergency exit. Just turning the inside knob retracts the latch and deadbolt simultaneously. Contact a Corbin distributor for information and service or write P & F Corbin, Division of Emhart Corporation, Berlin, Connecticut 06037. In Canada, Corbin Lock Division.



For a More Responsive Structure

by GEORGE M. WHITE, AIA
*Architect of the Capitol
former Institute Vice President*

The Structure Task Force appointed by then President Rex Allen in July of 1970 was charged with the responsibility of examining the past 25 years of studies by previous task forces and to make recommendations to the board and the membership for an organizational restructuring of the Institute.

The task force, in accordance with its charge, adopted the following objectives:

1. Attain a structure that will more adequately respond at the policy-making level to the needs and concerns of an ever growing membership in a climate of change and concern with fundamental concepts.
2. Attain a structure that will be flexible, more equitable in representation than the present structure and encourage broader participation of the membership.
3. Devise a means of enabling the executive functions of the Institute to be carried on with greater effectiveness.
4. Confine the study and recommendations to basic organizational matters in order to simplify the issues with the expectation that future studies will be made of such subjects as membership categories, committee-commission structure, and others.
5. Synthesize the 25 years of prior studies and recommendations for restructuring the Institute with today's posture and future foreseeable needs.
6. Furnish the membership with adequate information to enable action to be taken at the 1971 convention.

Numerous meetings and discussions were held since last July, including discussions at the 1971 Grassroots meetings. Interim progress reports were mailed by the task force to all chapter and component presidents, as well as to all board members and other interested parties. At its April 1971 meeting, the AIA board examined and discussed the task force report and voted to bring the task force recommendations, as modified at the April meeting, to the Detroit convention in June. Each corporate member of the Institute will shortly receive a copy of the final recommendations, together with the proposed bylaw changes necessary in order to accomplish the proposals recommended by the task force.

The task force and the board hope that each member will examine the proposal and discuss it with his convention delegates so that proper study will have been given prior to the convention voting.

The final proposal is a distillation of the majority opinions of component officer recommendations, together with the recommendations of the board members, component

executives and other interested members throughout the country.

The proposed structure results basically in a more equitable representation of the membership on the Board of Directors, thus making possible a more adequate response to the needs and desires of the membership.

Committees composed of dedicated members, many of whom were among the leadership of the Institute, studied the matter of Institute structure and submitted reports to the Board of Directors in 1945, 1954, 1960, 1963 and 1969. It is interesting to note that some of the reasons underlying the need for a structural revision have remained unchanged over the years. In 1945, the report written by Douglas W. Orr, FAIA, later president of the Institute, reads in part: ". . . need sufficient representation among the members of the profession to speak authoritatively for it. . . . Need a long range, comprehensive and cohesive plan for the Institute . . . Board meetings should be planned to allow adequate time to consider basic policy. Detail should be left to executive committee and where possible to administrative staff."

In 1960, from the report of the Structure Committee headed by Philip Will Jr., FAIA, also later president of the Institute, the following excerpt is still pertinent: "We must make our organization more responsive to the needs of a rapidly expanding membership and better geared to cope with the mounting demands on our profession."

The observations by other men at another time are even more appropriate today. When the 1960 proposal was made, Institute membership numbered about 12,000. The need for revision to the structure was very apparent to those concerned with it at that time. Their predictions have been realized. With almost twice the membership today—and it continues to grow—together with the geographical changes in our professional population, the need for a responsive structure is most compelling. The efforts to increase the Institute's effectiveness over the years have culminated in this present proposal in which many of the principles recommended by past studies have been reflected.

The task force has expressed its gratitude to the membership for the numerous welcome responses that were offered during the conduct of the studies. The opportunity to be a part of this major effort in Institute affairs has been a source of satisfaction to all who have been involved. The task force and the Board of Directors urge the favorable consideration of the proposal. □

BOARD OF DIRECTORS

Officers

President
ROBERT F. HASTINGS, FAIA
First Vice President
MAX O. URBAHN, FAIA
Vice Presidents
RICHARD M. BENNETT, FAIA
ROBERT J. NASH, AIA
WILLIAM MARSHALL JR., AIA
Secretary
PRESTON M. BOLTON, FAIA
Treasurer
REX L. BECKER, FAIA
Executive Vice President
WILLIAM L. SLAYTON

Directors

(Terms expire 1971)
Gulf States
ARCH R. WINTER, FAIA
Michigan
WALTER B. SANDERS, FAIA
Middle Atlantic
MILTON L. GRIGG, FAIA
New Jersey
ROBERT R. CUEMAN, AIA
Northwest
JOHN L. WRIGHT, FAIA
South Atlantic
S. SCOTT FEREBEE JR., FAIA
(Terms expire 1972)
California
ARTHUR FROELICH, FAIA
Central States
FLOYD O. WOLFENBARGER, FAIA
Florida
HILLIARD T. SMITH JR., FAIA
Illinois
FREDERICK W. SALOGGA, AIA
Pennsylvania
RUSSELL O. DEETER, AIA
Texas
DANIEL BOONE, FAIA
(Terms expire 1973)
East Central States
CARL L. BRADLEY, AIA
New England
HUGH MCK. JONES, FAIA
New York
DARREL D. RIPPETEAU, AIA
North Central States
LOUIS R. LUNDGREN, AIA
Ohio
JAMES J. FOLEY, AIA
Western Mountain
MAX FLATOW, FAIA

HEADQUARTERS

Executive Vice President
WILLIAM L. SLAYTON
Acting Deputy Executive Vice President
DUDLEY HUNT JR., FAIA
Administrator, Public Relations
MURIEL CAMPAGLIA
Administrator, Education & Research
JAMES E. ELLISON
Publishing Director
DUDLEY HUNT JR., FAIA
Administrator, Public Affairs
FRANCIS A. KELLY
Administrator, Professional Services
ARTHUR T. KORNBLUT, AIA
Administrator, Community Services
GRADY E. POULARD
Administrator, Institute Services
J. WINFIELD RANKIN, HON. AIA
Controller
WM. G. WOLVERTON

Don't think of it as \$3,000.



Think of it as 1/10 of 1%.

THREE THOUSAND DOLLARS.

That's 1/10 of 1% of \$3 million.

That's our approximate fee for making a detailed quantitative estimate of a \$3 million building.

OF COURSE FEES VARY WITH COMPLEXITY, REPETITION AND SIZE. A \$3 million warehouse doesn't cost as much to estimate as a \$3 million church.

Our fee on a \$3 million apartment project with half a dozen repeating room layouts is less than on a \$3 million hospital.

Any \$3 million job costs proportionately less than a \$300,000 job. And proportionately more, of course, than a \$10 million job.

WHY DO MANY ARCHITECTS AND OWNERS THINK A DETAILED ESTIMATE IS WORTH IT?

Because it shows you how to control your costs by substituting less expensive materials and systems at every stage of drawing development.

Because it gives you a fair and accurate guide in negotiating change orders.

Because it can help you secure a loan with the aid of the estimate's independence.

Because it is a valuable guide in evaluating contractors' proposals and sub-contractors' bids.

BECAUSE IT SAVES YOU MONEY. *And that's what we're all about.*

When you're negotiating *your* fee or planning *your* next project call Robert Scharf at 301/652-2622 (cable SHARFEST) to include *our* fee. He'll show you how we have helped others and how we can do the same for you.

EDWARD G. SCHARF & SONS

Construction Cost Consultants

8555 Connecticut Ave. N.W.

Washington, D.C. 20015

(301) 652-2622

Cable SHARFEST

members

American Association

of Cost Engineers

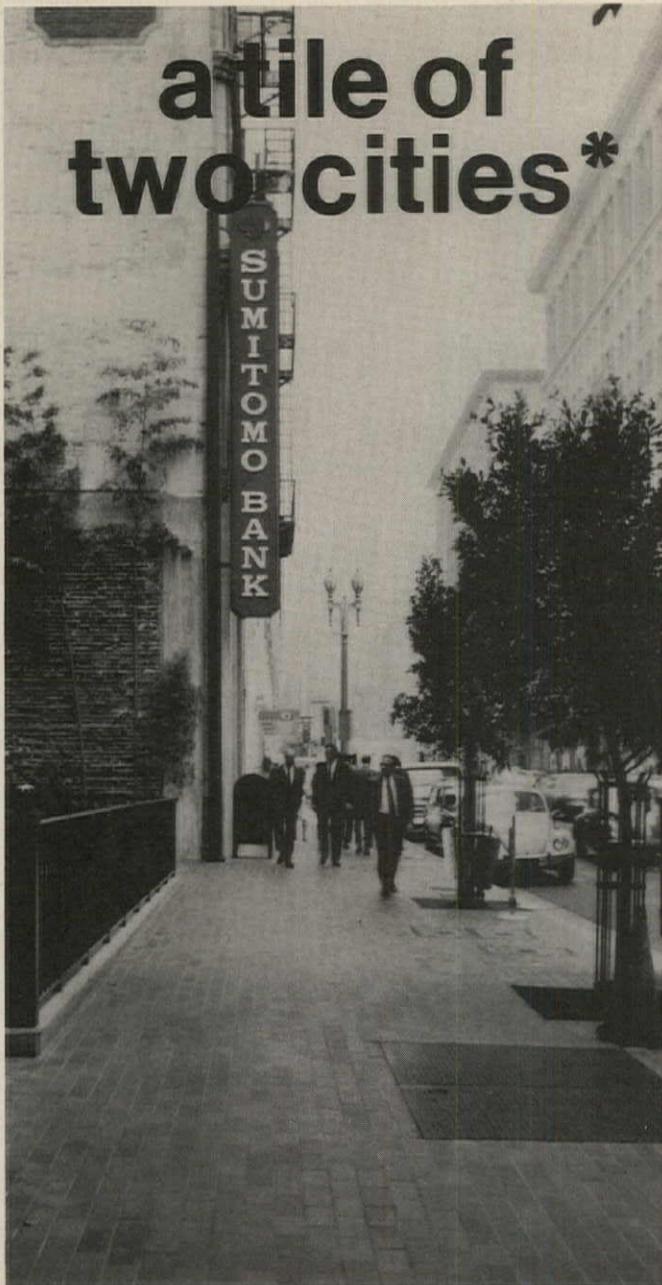
National Association of

Construction Cost Consultants



since 1920

a tile of two cities*



Sumitomo Bank, Los Angeles
Lanier, Sherrill & Bourg, Architects



Musto Plaza, San Francisco
Bull, Field, Volkman & Stockwell, Architects

GAIL BRICKPLATE®

Gail is actually a far, far better thing for sidewalks.

Why? It's non-slip, dense, easy to clean, abrasion resistant. It has a handcrafted appearance. It has brick scale, with all the pattern possibilities of brick.

Want more? It's lower cost because the tile trade had more efficient methods of installation.

Want excitement? Try combining two or more of our eleven standard unglazed colors or even accent with one of our exotic glazed Tessin colors.

Need versatility? Both of these projects carry Gail Brickplate into the lobby, and Musto Plaza continues beyond onto an outdoor plaza.

Pressed for space? Gail "brick" is only ½ inch thin.

* Actually, Gail has been used for sidewalks in many areas: Vancouver, B.C., Calgary, Alta., Las Vegas, Nev., Honolulu, Hawaii, and many others.



**GAIL
INTERNATIONAL
CORPORATION**

1201 Douglas Avenue Redwood City, CA 94063

See our catalog in Sweets or AEC and contact your local representative or Gail Ceramics, 1201 Douglas Avenue, Redwood City, California 94063

THE HARD CHOICES

Here are three vital issues and conflicts of our times, expressed in the three themes that follow. Themes simply stated, perhaps, but when interlocked, they generate the most complex and critical of domestic crises this nation has ever faced. Architects must come to grips with all these three simultaneous sets of dilemmas—now. Otherwise, we can sit back and leisurely consider all the doomsday statements best describing our inevitable future.

1. What should be the patterns of human settlement at the national, regional and local scales?
2. Within these patterns of dispersion or concentration, how do we use all our human resources?
3. What do we have to give up to create a livable environment?

Three intertwining issues, all in seeming conflict with each other; three sets of hard choices. Our response will be wrenched from all of us as we struggle with alternatives.

This is change. This is design. This is design for the future, not the past. This is right down the architect's alley. He must have the courage to get on the line, where the action is, and make those agonizing hard choices for his country and for his countrymen. **HERBERT H. SWINBURNE, FAIA**

Chairman, 1971 Convention Program



**What
Patterns
of Human
Settlements?**

Edward J. Logue, HON. AIA, is president and chief executive officer, New York State Urban Development Corporation, a position he has held since his appointment by Governor Nelson Rockefeller in 1968. The Yale Law School graduate was formerly administrator of the New Haven development program and of the Boston Redevelopment Authority.



**How to
Use All Our
Human
Resources?**

Vivian W. Henderson is president, Clark College, Atlanta. Before accepting that position in 1965, he served for 13 years with Fisk University in various capacities. Professor Henderson, author of numerous articles and books on economy and manpower, is, among other things, a board of director member, National Bureau of Economic Research.



**What
to
Give
Up?**

Carl H. Madden is chief economist, Chamber of Commerce of the United States of America. He has held that position since 1963. A writer and educator, Dr. Madden formerly served as economist, the United States Senate Banking and Currency Committee and was dean, College of Business Administration, Lehigh University, Bethlehem, Pennsylvania.

The Need for Urban Growth Policies

by EDWARD J. LOGUE, HON. AIA

This century has seen the mass migration from farm to city, and the spread of the city outward in the form of suburbs. While most of the land is still open or rural, the society itself is now urban. This transformation is a central theme in the nation's experience over the past 50 years. What is most striking about it is that it has happened without a plan, policy or even suggestion from any level of government indicating how or where it should occur.

In 1969, about 28,000 acres of land — an area roughly the size of Buffalo — were converted from open land into urban use in New York State. Given the trend toward larger lot sizes in the suburban fringe of all the state's metropolitan areas, this annual rate of urbanization will increase. This growth is occurring in small increments that are difficult to control. In its total impact, it is producing a massive duplication of the problems that have accompanied the state's urban growth in recent decades.

Only now are we beginning to understand more fully the results of such haphazard growth. And we are beginning to see that many of the byproducts of our "urban problem" — the housing shortage, racial polarization, dwindling open space and pollution — can be directly attributed to the wasteful and inefficient way in which we are allowing precious land to be transformed into urban use. Once we realize this, we can begin to pose some of the right questions — as well as some possible and workable solutions.

On the national level, some observers see immense dangers in the way we are growing. A 1969 study of development patterns throughout the nation prompted the National Committee on Urban Growth Policy to conclude that "a continuation of current trends will bring the nation a succession of one urban crisis after another."

A thorough analysis of urbanization in 1969, by the US Advisory Commission on Intergovernmental Relations, pointed to "a specific need for the immediate establishment of a national policy for guiding the location and character of future urbanization, involving federal, state and local governments in collaboration with the private sector of the economy."

Three other national commissions — the President's Committee on Urban Housing, the Douglas Commission and the President's Council on Recreation and Natural Beauty — have arrived independently at the same conclusion. Each recommended greater public involvement in the urbanization process, through such steps as broad development controls and public improvements for new communities and a vast acceleration in the purchase of land for recreation and open space.

Ample precedents exist in both national and state history for the state and federal governments to assume far more active roles in new settlement and economic and urban development programs. While some of the examples are obvious — the Homestead Act, the development of virtually every state capital, land grants, the Tennessee Valley Authority, the Atomic Energy Commission towns, the Greenbelt towns of the 1930s or even the na-

tion's railroad system — overall public passivity today about urban growth in America makes them sound like references to another country.

Professor John Reps of Cornell University has provided perhaps the most dramatic example of how far this nation has strayed from its early planning traditions. He described a public effort to build a totally new city on 5,000 acres of open land — all held by private owners. A public agency was created to acquire the land. Through the insistence of two public officials the agency created a development plan and sites were sold only to those who agreed to conform to it. Land was retained for open space, streets, parks and public buildings. The results of this ambitious effort was Washington, D.C. The two officials were Thomas Jefferson and George Washington.

Contemporary urban society has produced few individuals or institutions capable of matching our founding fathers in boldness or imagination. Carl Feiss, FAIA, in the Report of the National Commission on Urban Growth Policy, includes Philadelphia, New Orleans, Savannah and many New England communities among examples of planned urban growth and development — early in American history — through public initiatives. Feiss concludes that only in this century has America turned away from its "... tradition of community building which, in the nation's first 300 years, created most of the beauty and amenity that is to be found in America's man-made environment."

The troubles and needs of our time, tied as they are to the use — or misuse — of land, suggest that an appropriate renewal of past traditions may now be in order. It is important to note that the federal government is beginning to face the question of how to reassert its role in promoting desirable urban growth. But there has been little action. Organizing vast federal resources around an agreed-upon national urban policy is vastly more difficult these days than it was in Thomas Jefferson's time. The pressing need, however, has produced the beginning of some new programs.

More Than Private Enterprise

One fledgling new federal program came with the inclusion in the 1968 Housing Act of loan guarantees for private developers of new communities, but by mid-1970 only three private applications for a new community loan guarantee had been approved by the US Government anywhere in the country. With Title VII of the 1970 Housing and Urban Development Act (The Ashley Bill), public agencies are now eligible for this assistance and major new federal aids for new community development were provided. But these are still not funded.

Quite apart from the questions of policy, there is the problem of implementation: There are few state, local or regional agencies capable of planning and carrying out new development programs on a realistic scale.

What of future population growth? How and where can it be accommodated in ways that will improve the quality of life, bring economic growth to areas of need, introduce new technology to housing and community service systems and stop the pollution of

ED. NOTE: Mr. Logue's paper is adapted from a 1970 report *New Communities for New York*, by the staffs of the New York State Urban Development Corporation and the New York State Office of Planning Coordination.

the natural environment? There is no single answer to these questions.

One important step would be the development of new communities — both new communities that are built as distinct settlements and those that are extensions of existing communities. Here is an opportunity for the states and private enterprise to demonstrate that we can learn from past mistakes, that we can harness new technology to urban problems and that we can live in harmony with the land.

Since 1950, private enterprise has built 85 percent of the housing in New York State. But private enterprise is finding it increasingly difficult to provide housing for any except upper middle and upper income groups. It faces even more serious obstacles in new community development to accommodate urban growth. Among these are difficulty and cost of land assembly; unwillingness or inability to make the heavy investment required for improvements and facilities such as roads and sewers; high interest rates and shortage of mortgage funds; restrictions of local zoning and land use controls and building codes; and inability to achieve market aggregation and thereby utilize new building technology.

While the impact of some of these factors may ease through time, the private sector on its own cannot cure the problems of land assembly or provision of supporting facilities. The private sector does not have the power of eminent domain, nor are private developers normally willing to make "front end" investments that may not pay a return for as long as 10 years. Thus — to assist private efforts where possible and employ direct public action where necessary — a major new public commitment is required to initiate new communities programs.

The new community of the 20th century bears some resemblance to its 18th and 19th century prototypes. For those who live in new communities today there is a sense of adventure and creativity. They are participants not only in the building and opening of new homes, churches and shops, but in the moulding and shaping of new human settlements whose appearance, style and values will bear their stamp. As they have evolved in Europe and, more recently, in the United States, new communities offer new opportunities not just for individual families but for new public policies and programs to deal with the problems caused by unguided urban growth.

The population of a new community can range from 10,000 to 100,000 people, or more. The size is usually sufficient to create some economies of scale that can be passed on to inhabitants through environmental quality, attractive design and, often, lower costs. The economies of scale emerge from the simple principle that unit costs will be lower if, for example, 2,500 homes are built

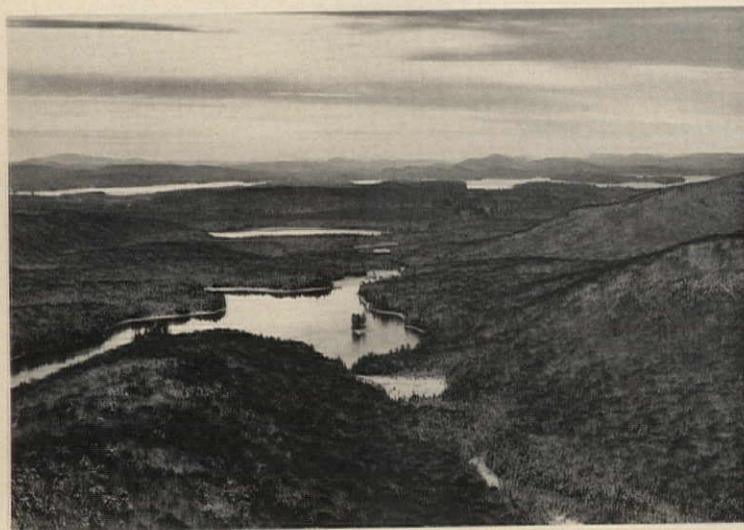
sequentially on portions of one large site, than they would be if the same number were built in increments of 50 on 50 separate sites. The planning and management of large-scale community construction offers many other advantages compared to the smaller scale that now characterizes most residential development.

One advantage is the opportunity to achieve from the start efficient and pleasing relationships among the various elements of a community — its schools, shops, open space, job centers and homes. All can be planned simultaneously, and they can be provided sensibly and with sensitivity as the community, diverse in terms of race, religion and economic status, takes life.

New communities are not going to cost any more than communities that now spring into being as a result of "natural" growth. Indeed, the reduction in the amount of land used will represent substantial cost savings. New community facilities may be reasonably expected to cost less than their traditional counterparts. For example, early installation of an adequate sewer system, to serve the entire planned population, will provide better service and prove less costly than future construction of expansions and extensions.

Further, existing cities can make use of new communities to help control their own growth. In Europe, such planned extensions have been employed as a means of diverting growth away from congested areas and into new ones where investment and development is desirable.

Through assembly and preservicing of open land with basic facilities, the public sector can strengthen its important partnership with private enterprise. Site assembly problems have become a principal cause for the gap between the need for housing and the rate of private residential construction. Public leadership and initiative for new communities, therefore, not only can guide devel-



opment patterns but also can structure the urban land market on a scale large enough to enable the private sector to be more responsive.

Large-scale new communities provide the opportunity for direct development control. Land is sold or leased only to those agreeing to conform to the overall plan. Open space and greenbelts are permanent parts of the plan. And, finally, new communities offer a convenient, structured method for introducing new technology in construction of both housing and basic community facilities at reduced unit costs — as well as complete new systems of transportation, sanitation or power supply.

The European Experience

The new community programs of Great Britain, the Netherlands, the Scandinavian countries and France have some relevance to the urban needs of many parts of the US. The urban densities are comparable. European nations have confronted similar problems of urban sprawl, central city congestion and depressed areas. Moreover, new community efforts in these nations are by no means exclusively governmental enterprises. While all are characterized by public initiative, guidance and financing, much of the actual construction is being performed by private enterprise.

Great Britain's program set up under the New Towns Act of 1946 was a means of rehousing families affected by the bombing of London and, at the same time, of siphoning off that city's population growth into attractive new communities beyond existing sprawl. A recreational greenbelt was established around the city, and eight new towns were planned beyond the greenbelt in open country, 20 to 30 miles from London. These eight new towns in the London Ring, at the end of 1969, contained an estimated total population of 460,000, and about 240,000 jobs.

So far, Britain has built or initiated some 24 new communities with an estimated total population, at the beginning of 1970, of just over 1 million. The large-scale construction has lent itself to broad application of industrialized housing techniques and innovations in community services and facilities. At Thamesmead, within Greater London, which will ultimately house 60,000 people, what has been described as the largest systems building project in western Europe is underway, using precast concrete panels manufactured in a large factory on the site.

New communities in the Netherlands began as an effort to preserve farmland. The first of 20 new communities there were agricultural villages, publicly supported to demonstrate new engineering and land use techniques in the nation's vast land reclamation efforts. From these early successes, and the urbanization pressures following World War II, new planned communities are a principal instrument of creating a "rim city," or circular urban pattern, where future growth will be concentrated, alleviating development pressures and preserving prime land inside the rim.

A number of new communities have been built in Sweden and Finland. The program in Stockholm is tied to the renewal of the city's central business district and to metropolitan efforts to guide and shape urbanization patterns. Public land acquisition was started by the city at the turn of the century. On large sites, what many regard as the most attractive new communities in Europe have been built. Each is tied to Stockholm by a rapid transit system that passes through preserved open space, separating the older city from its new satellites.

In Finland, the architecturally renowned new community of Tapiola was created as a relief for extreme population pressures in Helsinki. It is designed for a population of 17,000, which in turn will be the nucleus for a region of 80,000.

In France, new "parallel" towns are being created near exist-

ing cities. These towns are part of a national policy of curbing current sprawl patterns, meeting housing needs, establishing regional centers and decentralizing growth around Paris. There, planners propose a double axis pattern of development on either side of the Seine, along two transportation spines composed of railroads and expressways leading toward Rouen, Le Havre and Caen. The plan calls for the concentration of public facility expenditures in eight new communities, with populations ranging from 35 to 300,000 along the double axis.

There is nothing in recent American experience to compare with the scale and purpose of the European new communities. The reason is that no real commitment has been made by the public sector. Those American developments that can be characterized as new communities have been limited to efforts by unaided private developers intent on proving, often at financial sacrifice, that urban growth can be made more attractive and efficient. Both Reston and Columbia have proved the point — and shown the need for further public action.

Private experiments in new communities like Reston and Columbia, plus a few West Coast examples, represent the limits of privately developed new towns in America today. Each is essentially a better alternative in suburban living and is enormously important as a model. It is generally agreed that, as a group, these privately sponsored new communities represent the most promising and exciting trend in an otherwise dreary American picture of urban sprawl and environmental decay. But these existing privately developed new communities represent only a minute proportion of total urban development. They are surely not a means of guiding existing urban growth and development, but rather a sensible aggregation of a tiny fraction of it.

Tragically, even this one glimmer of hope may fade. Shouldering the uncertainties of assembling large tracts of land and the enormously high initial costs of new community development have proved too much even for America's vigorous private enterprise system. Reston became financially troubled in its early stages and required a sizable infusion of emergency funding from its original investors. James W. Rouse, the developer of Columbia, has said that it is unlikely that he could ever do it again without public, governmental support.

A profit can be made in new communities, however. Economic models for proposed new communities — and the record of those now in operation — show that the returns, ultimately, can be great. The problem is the amount of capital required during the initial years of development and the delay in achieving a positive cash flow. Moreover, the administration and management of a new community is complicated, comparable in complexity to anything encountered to date by American private enterprise. The assembly of separately produced components for a rocket to be launched at Cape Kennedy is no more difficult than the new community planning and building program which will assure that the schools are ready, the shops are open, the streets are paved, the doors all work and pure water comes out of the faucet when the first of perhaps 30,000 families moves in.

Solution to the Urban Crisis

By themselves, the problems of land assembly, installation of "infrastructure" and public facilities, financing and management would be insuperable. But as an ensemble, they are too much for the private sector. It is therefore highly doubtful that, despite the promise of America's recent privately built new communities, the nation will see more new towns of quality and relevance to its growth needs and problems — unless the government is prepared to become a partner.



When the public sector makes the commitment to sponsor new communities, it is logical that state governments are the most suitable level at which to carry out the development function. In our federal system, the states have a unique combination of legal authority, financial power and geographic reach to undertake large-scale new communities programs. The federal government is too far from the scene; local governments have jurisdiction over insufficient areas.

Apart from its potential value as a means of providing for population growth and land conservation, a state-supported new communities program could speed up the tempo of new housing construction, pump new life into depressed areas and serve as a proving ground for new technologies in waste disposal, transportation and housing construction. Federal financial support, with creative funding and administration but without direct operational responsibility, of course should be provided — and is now possible through Title VII of the 1970 Housing and Urban Development Act, signed into law on December 31, 1970, if sufficient appropriations are made available for it.

A state-supported new communities program would have to include site selection, land acquisition, preparation of overall development plans, provision of support services and facilities and sale or lease of land to private developers. Such a program, designed in part to divert growth from presently built-up areas, also would involve the creation of an employment base and the participation of business and industry.

Among the most pressing problems in America today is the explosive nature of ghettos where racial minorities are trapped;

difficulties are compounded by lack of adequate education, housing and employment opportunities. Critical to solving the tragic situation is the location of jobs in relation to impoverished members of the labor force. According to the Bureau of Statistics, 63 percent of all new industrial development in the nation between 1954 and 1965 occurred outside central cities. Present development trends, as they affect the inner city poor, take no account of this fact. New communities will provide homes near jobs.

While new communities will not be a panacea for all our social ills, they can help defuse some of the explosive tensions that have built up in our urban and suburban areas as separation between black and white, and rich and poor, has increased. They offer an alternative for those who want to exercise freedom of choice in where they want to live. Publicly supported new communities will be accessible to all, and therefore racially and economically balanced. There must be meaningful involvement by local residents in plans for their development, with advice and guidance from the people an essential ingredient. New communities cannot be conceived independently of the human beings who will bring them into living realities.

The central cities are being inundated with the unresolved issues of poverty, racial tension, slums, fiscal crises, the politics of participation and confrontation and functional and economic obsolescence, making it nearly impossible for them to hold the line, let alone absorb future population growth.

Suburbia, on the other hand, is dominated by a population heaving a very understandable sigh of relief at having escaped the central cities. The suburbs have a system of zoning, building re-

strictions and a state of mind which resists increases in density, subsidized housing, apartments and possible tax increases. The low density patterns, set by local preference and law, will not easily be broken to provide the facilities and housing needed to serve population growth.

This leads to the implication that the most efficient area in which to embark upon large-scale urban development is on presently undeveloped land. The construction of new communities in undeveloped areas will enable the suburbs to retain their basic character and will provide breathing space and mobility — a safety valve — for the central cities, by radically increasing the range of choice in housing and jobs.

We must rely on new communities as a major solution to our overall urban crisis. They can make a significant contribution to prevent further sprawl and to achieve social objectives. We do not know exactly how much can be accomplished in the next generation; we are aware that it takes time to develop a delivery system

and that some suburbs will continue to be built and that central city renewal must continue to take place.

A question for all Americans is whether, in the face of extraordinary pressures from fast-paced technological and social change, we are willing to make a new commitment to the American Dream — still only a dream for too many of our fellow citizens.

Are we willing to come to grips with the problem of future growth and to offer an alternative for our cities which have too often become traps for the disadvantaged poor?

Are we willing to look ahead with the people outside our cities — people who fear they may be victimized if city decay is not stopped at the city limits?

The time for bold commitment is now. New communities will not provide all the answers, but they offer an opportunity to start anew, on a voluntary basis, to see if all Americans can work and learn and live together in harmony. □

How to
Use All Our
Human
Resources?

So We All May Count

by VIVIAN W. HENDERSON

During the past few years, the American city has emerged as the focal point of national and local concerns. Central to these concerns is the plight of the inner city characterized by its racial and economic ghettos. At the heart of the problem of racial and economic ghettos is a whole series of questions regarding poverty and resource use, particularly human resources.

Much of what we are concerned about can be traced to a series of developments over the last quarter of the century and the convergence of several forces during the last decade or so. Three such forces stand out for purposes of this paper. First, there has been the tremendous demographic alteration in rural, suburban, urban, city and central city balances. The most salient characteristic of these alterations is the continued growth and concentration in the inner city of the black population and the simultaneous rise and dispersal of the white population in suburbia. Growth in the population of our central cities has been virtually all black, while growth in the suburban population has been largely white. As a result, 55 percent of the total Negro population now resides in central cities compared with 26 percent of the white population. The Negro population in central cities has increased by about 3 million persons since 1960 while the white population in central cities has shown a decline of about 2.3 million. Negroes today make up about 25 percent of the total population of central cities in metropolitan areas compared with 12 percent in 1950.

Second, there is the continuing trend of commerce and industry activity, and therefore economic opportunity, to move away from central cities to the suburbs. Thus larger and larger proportions of blacks are involuntarily trapped in racial ghettos, much of which can only be characterized as slums, and economic survival is complicated by the movement of opportunity further away from those who need it most and their access to economic opportunity is reduced even more. This is further complicated by

the fact that what growth in job opportunities which does occur in the city is in the sectors of industry which require skills and professional qualifications for which a significant proportion of the ghetto work force does not qualify.

The sharp void between opportunity location and access to those opportunities was pointed up during the early 1960s. The 1967 Economic Report of the President showed that in seven metropolitan areas 975,000 new jobs became available in suburban rings during the period 1948-62 while the central cities were gaining only 60,000 new jobs. The central city gains were in finance, insurance, real estate and services. These are the very industries that persist in patterns of exclusion against Negro workers and they offer occupations for which a significant part of the Negro work force doesn't qualify. The exception to this involves Negro-owned and -operated financial firms and those service industries with occupations which have traditionally absorbed black workers as janitors, porters, messengers and parking lot attendants. In manufacturing alone, the seven cities lost 150,000 jobs while suburban rings around the cities gained 250,000 new manufacturing jobs. These patterns persist today.

Third, there is the failure of local government to maintain a suitable infrastructure to support central city activity. This is particularly the case with transportation. Transportation facilities have not been developed in the interest of serving central city residents but to service the suburban population, which wants, and gets, all the advantages of suburbia without central city responsibility. The central city continues to be a major source of economic opportunity for the suburban population.

These and other such forces have clearly projected racial and economic ghettos as integral parts of the problem regarding the future of cities. Our cities are plagued with a series of problems involving physical environment. The problem of physical deteri-

oration and destruction is seen rather clearly as one observes our cities in their present state. What is not seen so clearly is what is happening on the human scale, i.e., the rising destruction of human beings and the social disparities that accumulate social dynamite as a result of failures regarding human development and human resources use. Everything that is said about the plight of our cities in the final analysis comes down to the human factor. Therefore, the job of revitalizing our cities is basically one of revitalizing people. This is of paramount importance, perhaps even more so than that of physical rebuilding.

Professor of political science Max Lerner has summarized the problem of our cities in the form of three testings. These, each of them involving the human factor, are raised here as fundamental questions:

1. Can racial groups live together, not in an uneasy coexistence punctuated by erratic flare-ups of burnings and killings but in a growing community of give and take, live and let live?
2. Can a tolerable open society, clinging to the frame and political style of a traditional democracy, absorb and resolve the tensions of social divisions that are at once racial, class and generational in character?
3. Is the modern American city viable as a social organism? That is to say, can it meet the minimum needs of the growing-up years so as to achieve a reasonably healthy personality structure with some roots in the city environment?

The underlying question involves the human factor. It is out of phenomena associated with these observations that questions of "hard choices" regarding human resources are derived.

Human Resource Use in Our Cities

Indices suggest rather clearly that human resource development and use in central cities is in a very serious state. One of the hard choices that must be made by public and private policy makers involves greater investment in the development of human resources and their use or continuing the status quo. Mr. Nixon made such a choice in November 1970 when he vetoed the Manpower Bill that had been passed by the Congress. As I understand it, he vetoed the bill because it included a provision for \$2.5 billion for the creation of public service jobs. (The Kerner Commission Report on civil disorders called for this three years ago.) I will comment further on this later.

Human resources in the central cities are disproportionately unemployed and underemployed. They are poorly trained for changing employment demands and a significant proportion is in a state of idleness. At the same time, social ills in the form of poor housing, polluted streets and air, slums, a high crime rate, poor and limited health facilities and services, poor quality public services and deterioration of the human spirit have manifested themselves as potent forces entrapping central city people.

Evidence points to the conclusion that future black population growth will continue to be concentrated in the inner city and that further population growth in the cities will be black unless major changes in public policies and practices are made. This doesn't seem likely since there is little or no evidence of a single significant program of local, state or federal government aimed at altering this tendency nor is it likely that policies and practices will have the unintended effect of doing so.

Experience provides no basis for hoping that the present largely unplanned process will produce efficient, secure and attractive cities. The social pathology of cities appear in fact to be on the rise. Everything we see about us in the cities manifests a failure to reorganize the needs of the human spirit.

Recent surveys have pointed up the real plight of central city

residents. These surveys point up three categories of unused human resources and indicate quite clearly what we are up against with respect to human resource development and use. In the first category, *unemployment*, it was found, for example, that in the black poverty areas, unemployment averaged 10.3 percent during the last quarter of 1970; up by 4 percentage points from 6.3 percent during the last quarter of 1969 and more than three times the 3.1 percent unemployment rate for other neighborhoods in urban areas. Over one-third of the total Negro unemployment in 1969 was in 20 cities, according to the Manpower Report of the President, 1970. During the same period, unemployment among black teenagers in these areas was 42 percent.

These are people who are in the labor force. They were actively seeking work but couldn't find any. These are not lazy people who don't want to work. These are the people who are asking for opportunities which escape them. They make up a significant part of the unused human resources found in our cities.

The second category of unused human resources is *underemployment*. In one case, persons, many of whom are heads of families, work full time at poverty wages. These are the working poor. There were, according to the Manpower Report, 1 million male family heads in this category in 1970. In another case, they are employed in occupations or jobs below the level of their capacity as indicated by levels of educational attainment or other abilities. Then there is the person who works involuntarily part time while searching and wishing for full-time work. Part time may be year around employment or it may be seasonal and involve periodic layoffs and periodic unemployment. In the central cities, approximately 25 percent of the work force was unemployed at some time during the year 1970. Underemployment is a major characteristic of the black worker that is often overlooked. It re-





sults from forces previously mentioned plus the continuing practice of racial discrimination in employment and incomes.

The third category of unused human resources is *nonparticipation*. This in many ways is the most disturbing aspect of the problem of human resource use in the central city. Nonparticipants are those who do not work and no longer seek work. They have left the labor force and in essence became economic dependents rather than productive members of the work force. Despair and disillusionment with the job market is a major factor underlying their decision to leave the labor force. These persons are distinct from those outside the labor force by choice or inability to work. The data indicate that there is one "discouraged worker" for every four unemployed workers in general, again according to the Manpower Report, and I suggest an even higher ratio for black workers. The phenomenon of the discouraged non-

participant is acute among Negro members of the working age population, particularly in the central city.

Whatever else the aggregate of these components of unused human resources mean, they add up to a substantial chunk of idleness highly concentrated in central cities of metropolitan areas and a disturbing amount of idle human resources is concentrated in racial ghettos. Recently studies by the Department of Labor pointed up that unused black human resources in black ghetto central cities averaged about 35 percent of the working age population. In some central cities, as many as one out of every two persons who could and should be working was idle.

Human resources in the central city go unused primarily because people cannot get jobs for such reasons as police records, garnishments, low skills, training and education deficiencies, the absence of jobs for which persons can qualify at present skill

levels and, very importantly, because of racial discrimination. This, of course, doesn't make sense. An idle brain is the devil's workshop, as city crimes, delinquency and unrest show. Moreover, it is poor economics and poor business to let human resources go unused and thus wasted.

These facts suggest to me that what is often referred to as an urban crisis or the crises of our cities is in reality a crisis in race relations. It is a crisis wrought out of locked-in patterns of racial discrimination in housing and employment and the involuntary confinement of racial groups to the inner city. Our present predicament is the result of a history of poor race relations and failure to implement policies and practices that would offset institutionalized racism in the society. One cannot divorce problems of the cities from the plight of black people in the cities. One cannot divorce the plight of black people from the question of resource utilization. While there is a growing middle class in the black population — about 25 percent — there is also a growing underclass. The masses of blacks have been bypassed by the affluence of society and the black worker is the most insecure of all workers. The gap in income between whites and blacks widens, and there is a widening gulf between those few blacks who are making it and the larger proportion who aren't. About 45 percent of all poor black families live in central cities.

An Urban Strategy

I think we know what the basic problems are. What I have tried to do is to sharpen focus on these problems for a profession that has a great deal to do with approaches to meeting them. The issue is facing up to the problems. Many of you are planners. You help develop the agenda for change or for the status quo. You are involved with questions of educational improvement, rapid transit, improving the physical environment, new architectural forms and the quality of life in our cities.

This is good. However, I would argue that reconsideration of the "urban strategy" should be an item of priority for architects. The urban strategy is what the hard choices are all about. As I have attempted to point up, much of the problem with the cities and the hard choices have at their roots the racist character of our society. Race and social bigotry have been potent factors in choices and implementation of alternatives. This has been the case in decisions regarding human resource use. It has been the case in determining where people work and live, where children go to school and where people play. It has been a dominant factor in urban planning and the urban strategy.

What then are the hard choices? Obviously, the first choice is between continuing present trends or attempting to alter them with affirmative policies and practices. The first item of business in this respect is to implement policies and practices which will bring the economy to full employment or by my definition to a maximum level of 3 percent unemployment.

Second, we must recognize that we cannot correct the problems of human resource use among black people with black capitalism. Black capitalism is the only program that has been advanced by the present administration to get at economic problems encumbered by blacks. Black capitalism will not do the job. We need blacks in business. I want many more blacks in business. But the few blacks who succeed in entrepreneurship cannot employ blacks in sufficient quantity to meet the needs of those who can benefit from capital development. To get at the problem of black workers, employment opportunity and training for changing employment demands is what is needed.

Third, we have a hard choice to make between what I call "guaranteed jobs" or income maintenance. Some prefer to call

them public service jobs. While I present this as a hard choice, it is a fact that we need both. Income maintenance in some form is necessary for those who cannot and should not enter the labor force. However, I favor a system of guaranteed jobs to meet the needs of those who could be and should be in the labor force.

President Nixon vetoed the Manpower Bill that had been passed by the Congress last fall. The bill included provisions for about 300,000 guaranteed or public service jobs. It was assumed that it was because the bill included provisions for the public service jobs that the bill was vetoed. Along with many others, I do not understand the reasoning underlying the President's choice in this case.

Mr. Nixon has insisted on the one hand that his Family Assistance Plan would take people off welfare rolls and put them on payrolls. On the other hand, he vetoed a Manpower Bill that contained measures that would have provided some of the payrolls to make such a transition possible over the next three years.

A program of public service employment would do two things: It would employ a large number of people who want and need work. If properly structured, it would provide a way for this nation to attack some of its many social ills. In other words, these need not be make-work types of jobs. They could be jobs closely identified with the normal job market process. Moreover, they need not be public service jobs in the context of direct government employment. The jobs could be created through the private sector with the government dollar just as defense jobs are generated and subsidized in this fashion.

It should be noted that development of a program of public service employment also involves some hard choices. It is necessary in the first place to make the hard choice between making the jobs as identical as possible to regular jobs or labeling them as public jobs for people who couldn't make it in the competitive job market. It is a choice between making them into types of welfare jobs to the extent that the jobs would be conspicuous and perhaps undesirable and possibly shunned, or, finally, to make them into regular jobs.

A second problem with public service jobs is whether to emphasize the product or the service rendered or to stress the employment these jobs provide for the poor and the unemployed. Should we search for the task that the unemployed can perform or should we emphasize the community benefit to be derived? No doubt we should do both; but the more we can offer employment to produce products or services needed by the community, the greater the social benefits from the program and the greater the possibility that employment in public service jobs will be comparable to regular jobs.

Then there is the problem of duration. To what extent should the public service jobs be ends unto themselves and to what extent should they be designed merely as preparing people to enter other jobs? This is the mobility question. It is a question of permanent versus temporary jobs. This, as I understand it, is one of the factors that led to President Nixon's veto of the Manpower Bill. He was concerned with the question of objectives of the public service jobs provisions in the bill.

Finally, there are hard decisions regarding pay for public service employment. Should all the jobs pay the minimum wage or should they pay the prevailing wage rate for comparable work? The minimum wage would limit the attractiveness of the job and would no doubt confine the job to low skill categories and menial types. Jobs at the minimum wage would also, for better or worse, build the incentive for workers to move on to higher paying unsubsidized jobs.

The fourth hard choice takes us back to what I referred to

earlier as the urban strategy. It is a choice between revenue sharing, categorical grants to cities and federalization of some of our human service programs. I do not trust federal revenue sharing. My experience from living in the south, unfortunately, makes me shudder when I think of block grants going to some of our southern cities and towns. I question seriously whether poor people and black people would benefit from such funds. Experience has led me to have more faith in the federal government, with all of its faults and problems, than in local governments. I would prefer that we federalize such services as the welfare system and the employment services and in other services continue the system of categorical grants.

The fifth hard choice also returns us to urban strategy. Strategy, of course, it what revenue sharing, public service jobs and so forth are all about. But there is also a conceptual aspect of the urban strategy that must be faced more realistically. Central to the urban strategy is recognition of the dynamics of race relations as a continuing and central factor in the life and order of urban growth and development.

Racial attitudes and practices are major factors conditioning the lives of one-third to one-half of the population in various cities throughout the nation. It seems to me, therefore, that we must face up to the necessity for "color consciousness" to underlie the urban strategy while we simultaneously work for a "color blind" society. This is a very important hard choice.

It has become quite popular for those in positions of comparative advantage — planners, mayors, chamber of commerce members — to use the facade of color blindness in approaching

social problems. It may seem contradictory for one who is thoroughly committed to a racially integrated society to call for color consciousness. We must recognize, however, that too many injustices were heaped upon black people under the color conscious institution of racial segregation for us to expect the consequences of those injustices to be erased under a scheme of color blindness. Careful and intelligent use of color consciousness is a pillar that necessarily must underlie the urban strategy.

This is a particularly critical choice for those engaged in the planning of our cities and metropolitan areas. An affirmative concept of color consciousness is essential to urban planning. Unfortunately, planners have two faces: one directed toward physical environment in terms of buildings and developing access for the majority population to opportunities and amenities; the other away from the problems of the poor and ignoring the racial imperatives that in essence have to force themselves upon the planners. Racial bigotry has played an important role in bringing our cities to their present plight. Affirmative use of color consciousness could go far toward improving the situation.

In sum, we have serious needs regarding our physical environment. These involve needs in the area of environmental protection and restoration. This is indisputable. I believe, however, that it is relatively more important to direct resources in the next several years to ending poverty, correcting unemployment, underemployment and idleness that persist among human resources. It is the human factor, in the final analysis, that must be restored and sustained if our cities are to prevail as viable parts of the society. □

What
to
Give
Up?

The Cost of a Livable Environment

by CARL H. MADDEN

What rich irony there is in asking what we have to give up to create a livable environment. Death is the simple answer, the death of the threatening present. To forswear death to gain life sounds like an easy choice to make, but it is not easy in a crisis in culture. Losing one's life in order to gain it comes no easier to an age than to an individual, but that could be the task ahead. In our dying age of industrialism, finding the path toward a new advance will not be comfortable or easy.

What Is Rational?

The issue is what is rational. In our times we have debased the currency of that grand word. Commuters who roar in cars to the city breathing the lethal air, like lemmings who rush to the sea, no doubt feel rational. Religious ladies who slap in the face the blasphemers of virgin birth no doubt feel rational. Executives who school their minds to seeking short-term gains because in the long run we are all dead no doubt feel rational.

But rationality, we are learning, is much more than cold inference; above all it concerns context and caring, and environment is a form of both. Today, man's contexts and cares are exploding. We see our tiny Spaceship Earth afloat in an awesome

space-time construct made up of uncountable island universes, galaxies more than 14 billion years old. We see our planet trace out its 4-billion-year journey in lonely solitude and even from the moon, all evidence of man's accomplishments lie cloudhidden. An astronaut told me the earth, as he saw it from the moon, looked like a Christmas tree bauble and he could blot it out with his thumb held at arm's length in front of his eyes.

The change in context from Mother Earth to Spaceship Earth is profound and irreversible. When we were young the warm moist soil around our place in spring was like a bountiful mother, filled with the promise of fruitfulness and protection. Only a few short years later, we are burdened with electronic imagery which sees the whole globe as a fragile and tiny bauble that can be hidden by a thumbnail. One can no longer boast that with 6 percent of Mother Earth's land area and 7 percent of her people we use 40 percent of her resources and produce 33 percent of her toys and goodies. Such a giant maw of consumption threatens to create a more and more unlivable environment for all the world before your grandchildren reach old age.

This is not nice to think about, but where does our juggernaut of production take us? The highest estimate of a population

ceiling for a present-day industrial economy, worldwide, made by geo-chemist Harrison S. Brown of California Institute of Technology, is 50 billion people. Suppose we will be able to industrialize all the countries of the world, develop nuclear and solar power and learn to do all that is needed — which is doubtful but taken for granted as a goal until now. Brown concludes that our food would be supplied by algae farms and yeast factories, we would live in one vast world megalopolis, and our living standards would be reduced somewhat. We would then process, using enormous amounts of energy, mostly air, water and ordinary rock. And at present world rates of population growth, according to Oberlin College historian Robert E. Neil, we shall reach this theoretical 50 billion ceiling in only a century and a half.

If, as seems likely, such a runaway world population could not accumulate the vast amounts of capital needed and if adequate energy supplies were not available, then much of mankind might be forced to revert to an agrarian life. However, such agrarian technology would support a world population, according to Neil, of only 1 billion. Obviously, the majority of the human race, he concludes, would have to perish. "Our brief fling with industrialism," Neil observes, would leave the majority of the world a vast India, "where already today one out of 15 people is kept alive only by grain imported from the United States and where in the city of Calcutta 600,000 people live and die in the streets." This situation if created, Neil points out, would be irreversible because to rebuild the collapsed economy would require enormous quantities of inanimate power, but cheap sources would have been consumed.

In this context, it will not do to give easy answers to the question — what is rational — any more than to give narrow answers to the questions what is a liveable environment and what must we give up to get it. In a dying age and during a permanent crisis of conflict between mankind and its environment, thinking-as-usual is in for profound cultural shock in all our institutions, and we must start a new search for rationality as seen in broader and broader contexts.

Gaining Perspective

We lack experience with the culture created by the scientific revolution. We have not adjusted our behavior to the knowledge we now have gained. Man or his erect relatives have lived on this planet at least 4 million years. If we consider just the history of the past 50,000 years of mankind's existence and divide them into lifetimes of 62 years each, we ourselves live in the 800th lifetime. Now then, mankind has spent 650 such lifetimes in caves. Writing has been possible in only the last 70 lifetimes. Only during the last six has printing been available. We have been able to measure time precisely in only the last four. The electric motor came along only during the last two. In our lifetime we face the revolution in knowledge made possible by electronics, cybernetics, nuclear and biological engineering and space science. We are going through cultural shock, what the writer Alvin Toffler calls future shock. Because we have such small experience with the culture we have just now created, we are likely to be making some blatant errors in the way we do things which nevertheless our leaders confidently believe are just exactly right for us.

The context of ecology illustrates our proclivity to error. Ecology, biologist Garrett Hardin of the University of California at Santa Barbara points out, teaches us that "you cannot do only one thing." Large-scale and fundamental technology like ours interacts with the environment to produce unexpected and unwanted results, but these results could be foreseen if we perceived events in broader perspective. Interdisciplinary study and systems

analysis in essence mean the broadening of perspective. Our complex systems where everything depends on everything else do not respond to simple solutions. In fact, the chances are that our intuitive and simple solutions are likely to worsen matters. Urban renewal, slum clearance, public housing, farm subsidies and many other such simple enthusiasms illustrate this truth. Two current examples, however, suggest that mankind here and elsewhere remains victim now to simplicities on a mammoth scale.

One example is the Aswan Dam. Building the Aswan Dam in Egypt — doing this one thing — has produced unexpected results of serious dimensions. For example, silt is building up behind the dam which before gave fertile soil in the annual floods to the farms along the banks of the Nile. Irrigation ditches built to water these farms in the Nile Basin are a perfect environment for snails which carry the dreaded disease schistosomiasis, and the snail population has multiplied. Reduced flow of flood-borne nutrients from the Nile delta in silt previously carried to sea has destroyed the sardine crop in the eastern Mediterranean. No one foresaw the erosion of river banks from silt-free water flowing by them. It could be that the Aswan Dam is adverse to human life support in Egypt.

The other example is our own Interstate Highway System. This public works project, the largest in modern man's history, will eventually extend 42,500 miles. It has risen in cost from the 1954 estimate of \$27 billion to \$46.8 billion in 1966 and to \$75 billion if extended through 1978. The system was originally intended to serve interstate traffic and connect the most densely settled portion of the nation's population. Originally, the inten-



tion also was to finance the system by tolls, but in 1956 Congress provided financing through the Highway Trust Fund. Through that restricted fund all federal taxes on motor vehicles, gas, oil and ancillary equipment would be channeled to the fund and used solely for highway construction.

In consequence, the Interstate Highway System has diverted traffic from other surface modes of transportation, dumped car traffic into unprepared central cities, caused the building of 5,600 miles of urban freeways, spurred the suburban migration of business and shopping, taken freeway land off central city tax rolls, created windfall gains for suburban landholders near intersections, and through the trust fund financing has allowed auto transport to feed on itself by piling up capital restricted only to further highway building. The result is that in many cities people must rely on personal transportation to get to work. Yet by 1960 House and Senate District Committees in Washington concluded: "Any attempt to meet the area's transportation needs by highway and private automobiles alone will wreck the city."

The Interstate Highway System was a primary policy decision of Congress which literally has changed the urban structure of the entire nation and has resulted in much of the present problems of cities. Yet it is extremely doubtful that many governmental policymakers foresaw the snowballing impact of the system in threatening social, political and economic arrangements of central city existence. Planners in the Bureau of Public Roads set the design criteria for the geographical arrangement and location of the system in a simple context. It was almost exclusively a statistical analysis of car traffic patterns with compounded growth rates (as usual, too low) applied.

Creating Culture

What must be given up, above all, if we are to create a livable environment is such simple culture. There is, however, much more to this statement than meets the eye. The term culture was coined by anthropologists in the 19th century as they studied the artificial extensions of human beings that allow them to achieve more effective interaction with their environment. The term is very broad. Culture refers to all the things and devices — including nonmaterial things such as myths, beliefs and stories — that human groups use to enhance, protect, or express themselves. Culture allows humans to survive in the evolutionary process without having to accomplish physical specialization. We make saws instead of growing saw teeth, and we write down how to do it, therefore storing the knowledge outside anyone's brain.

The irony is that culture is a two-edged sword. If we do not control our culture it devours us. Biologist and lawyer Jacques Ellul warns us of our dangerous belief that what is technically possible should be done; that is, becomes morally desirable. The growing concern in the industrial societies is that technology, far from creating a livable environment, is destroying it. And the growing concern is that ordinary people have too little say in the process by which we move mountains — and build cities.

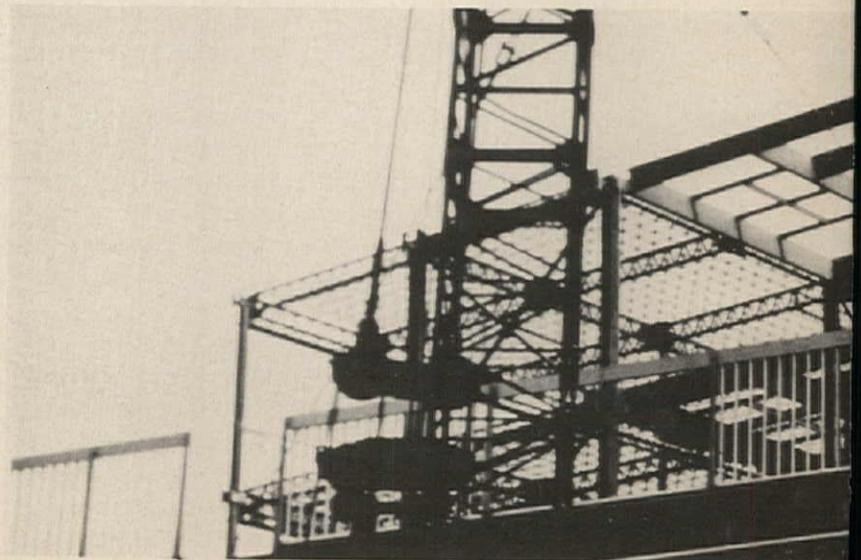
It is easy for combative types of people to identify scapegoats but it does little good. In urban renewal, it is "government planners"; in public housing, it is "animal tenants"; in the farm program, it is the "farm lobby"; in the Aswan Dam, it is "Soviet specialists"; in the Interstate Highway System, it is "the auto lobby"; in environmental pollution, it is "the greedy profiteers"; in the Viet Nam war, it is the "military/industrial complex"; in the society at large, it is "the Establishment," or, at the extreme, "the dirty Capitalist pigs."

It does no good to identify scapegoats because where knowledge is growing, evil inheres in the culture itself. There is so much



that is good about our culture, it is hard to believe that Pogo is not only right but profound when he says, "We have met the enemy and he is us." We have rediscovered evil in our time; what's new is that we find it in the very culture we have created. To live in a culture is to do good *and* evil; culture is the knowledge of good *and* evil. As soon as we learn that protein deficiency in infants creates mental retardation, we see the evil of existing poverty programs. Indeed, as soon as we learn that poverty can be practically eliminated, we see that to tolerate poverty is evil. But to feed protein to infants and pregnant mothers or to cure poverty require a significant change in the cultural norms which now determine who gets income, for what reason, and how he uses it. Cherished beliefs are shattered.

Man through the ages has had to control his culture so as to survive. A livable world environment is a survival issue on Space-ship Earth and at home is an issue of inventing new culture. The alternatives in a culture crisis are few. When a culture is strained, the population is checked, the culture is fragmented, or a new culture is invented. It should not be news that you and I will almost surely see in the world the advent of war, disease and famine serving as population checks in the next 20 years. At home the issue is not the pressure of population: It is social, political and economic barriers; the unresponsiveness of our institutions; the fragmentation of our culture; and the risk of decline in our civilization from the sheer inertia of vested interests and the arrogance of power. The call to renew our institutions is a call to create an advance in our civilization lest it responds to the culture by shattering and decay.



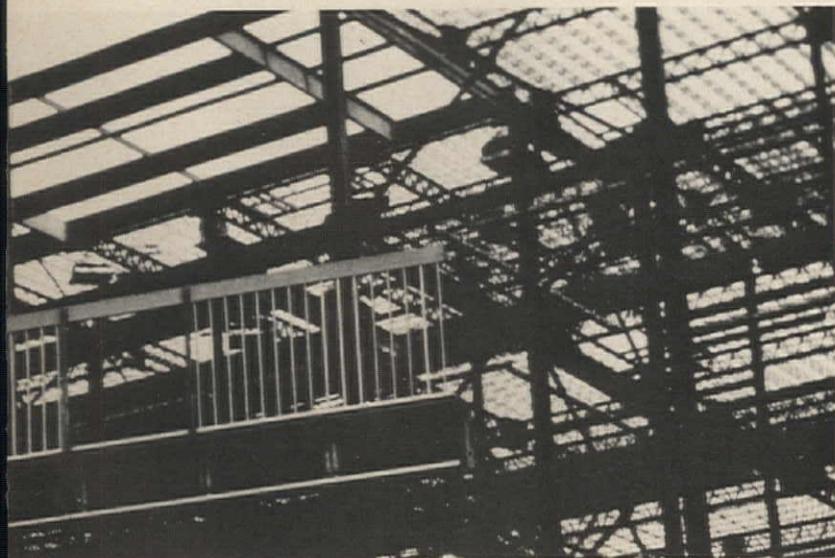


Is the City Here to Stay?

"History," says James Michener, "is mainly the account of what happened in the cities." He goes on to point out, though, that ours is the first generation in which "people have had the option to reject the city if they wished." This is, indeed, the choice facing Americans in creating a livable environment: Will we give up the city?

Some people think we should, but I believe they are lacking in perspective. Esthetically, since Rousseau and Jefferson, a strong tradition in the US rejects the model of the city man in favor of the natural man. Technically, the use of the car for personal transportation, the jet plane for long distances and the soon-to-come TV telephone for communication challenge the need for cities. Economically, just when the car made the suburbs an alternative to the city, the epic migration in the last two decades of rural poor brought with it problems in education, housing, health, jobs, crime, narcotics and municipal finance and control. Give up on the city, some people argue, and build the country over again away from the crowded transport nodes of 19th century life. Since suburbs are now more populous than cities, it is clear that many millions have "voted with their feet" to leave the city behind.

The view may well be profligate. The primary reason cities developed is enormous economies of scale. Romantics argue that our present structure of urban places is arbitrary, but they see confusion because they lack intellectual context or perspective. The gossamer web of urban light-clusters that roll past the transcontinental jet on its nighttime journey of five hours across our



land is a complex and articulated hierarchical system of metropolitan communities. It has been created by the workings of a probabilistic process searching out economic advantages for three and a half centuries as it filled a subcontinent with people who have been subject to no barriers to hinder the movement of capital, industry, jobs, or families in the subcontinental market.

The economies in the organization of our system of metropolitan communities are enormous. The subtlety of their expression, allowing California and Florida to compete to put carrots on dinner tables in East Side apartments, defies detailed description. Even the arithmetic of a great metropolis such as the New York area, where one out of 10 people in the nation lives within 40 miles of Manhattan, challenges the imagination. If one in every 100 New York area residents is an alcoholic, and if alcoholics escape to central cities, then this greater New York area should gather around Third Avenue something like 1 percent of 20 million people, or 200,000, drunks. Any fewer would suggest social advance.

Unless in the future the human-ness, the "soul" of man, becomes a TV shadow, then a shade, the centering of government, intellectual and artistic leadership, business and industry, communications, finance, health care and the rest in cities remains the subtle but profound economy and spur to achievement borne out by the whole history of civilization. People who have in recent decades been voting with their feet to escape the city can only run so far. And the bulk of the country's physical assets now domiciled in cities cannot be allowed to rot in discard.

In fact, concern with environment argues squarely for economizing such physical resources as never before. Ecology adds a new dimension to scarcity — the scarcity of earth, air and water. The duplication of utilities that suburbanizing the whole population would involve comes only at astronomical real cost, i.e., at a cost real in the sense that it requires foregoing other uses for such resources. Looking ahead in the mind's eye for half a century, could anyone seriously argue that dominant civilizations on the globe will abandon cities?

Quality in Cities and Towns

If we are to rebuild our cities rather than desert them how shall we assure their quality in a livable environment? Doing so not only requires but invites the adventure of inventing culture. The rebuilding of America's cities could offer us the chance for an urban Golden Age in this generation, when we reshape the human and physical design of our urban habitat to conform to the intellectual advance of the scientific revolution. Technology is not wanting for this achievement; barriers need tearing down that fence in the political, social and economic institutions from realizing our potential.

Government policy: We need a government policy for urban growth, a primary decision reached systematically to create conditions for metropolitan innovation. It should preserve our remarkable freedom of movement for people, jobs and money but set national environmental standards. It should create a national environmental monitoring system and a national urban monitoring system so that our resources of information on what is happening are vastly improved. The policy should equalize conditions on government assistance now biased toward suburb against city or one transport mode against another. It should include a national balanced transportation policy resting on careful analysis of economics of transport. It should be formed in cognition of the economics of and rationalities of the hierarchical structure of our system of metropolitan communities. The issue of new towns is not one of scattering diamonds across the nation's landscape at

random. It is one of creating a new discipline: That of planning human habitats.

Perhaps the most important long-run policy change needed on the part of the entire society, including government, is a systematic and sophisticated effort to develop far better understanding of social change. Science cannot make choices, but knowledge or lack of it may determine choice, and our society has neglected the application of science to the observation and understanding of social affairs. We have astronomical observatories and weather observatories, but lack a system of urban observatories. We have economic indicators but lack social indicators. We have mathematical models of industrial processes but lack mathematical models of social processes. Our statistics in health, crime, housing, construction, transportation and many other areas reflect primitive concepts and crude methods. We need to develop new kinds of information systems for analyzing social benefits and costs of alternative policies of community and urban development. The lack of appreciation in detail of the effects of alternative policies and of interactions within metropolitan areas of one urban system with another continue to contribute to gross errors of governance and foster urban primitivism which creates mutual hostility among



groups whose intuition and experience refute policymakers and their crude schemes. In short, we need to take seriously, as such new towns as Columbia, Maryland, have done, the entire range of social, psychological and human knowledge in building cities.

National policy should foster innovations in housing, in the human and social learning needed by occupants of low income housing, in land planning and in community and neighborhood design through avoidance of specific requirements and a shift to setting performance requirements. It should foster mass-produced modular and component elements, promote revision of state building codes to set uniform, nationwide performance standards and free up the nation's construction work force from its scandalous monopoly grip on large portions of the building industry. Government policy should reject the financial gimmickry which now pushes the housing industry further into government control in favor of unleashing private creativity from the shackles of out-moded habit.

States should move toward enabling laws providing incentive for metropolitan government and incentives for ending the irrational political separation in metropolitan communities of central city and suburb. Enforcement of Supreme Court requirements for equal distribution of public goods among neighborhoods according to population could bring a new era of municipal cooperation

and good feeling. The metropolitan areas must find some way to govern themselves intelligently, including those that cover portions of several states, because the nation cannot long afford the alternative. The environmental problems of water, air, sewage, police, fire, health and transportation are no respecters of archaic political forms, and they should be attacked through sophisticated systems analysis which reflects their interdependence.

Government policy cannot function by thinking of the city itself alone. The archaic restriction of the city will kill it in a few years. Already suburbs are learning that a dying city spreads its infection; indeed, the justification for public goods such as health care in communities is that equal access benefits all by maintaining health. The suburbs, as any systems analysis plainly shows, cannot fence themselves away from the city because they live on it.

Reform is badly needed in municipal tax systems. The metropolitan tax base needs broadening. A powerful tool for rebuilding urban centers through private initiative lies in reforming the property tax. The effect of higher taxation in urban areas of location or site value of land and lower taxation of improvements is to push land into more effective use. Growth of the city upward rather than outward economizes on expensive utilities. Combined with multiuse zoning, such development restores human scale to urban life, creates variety and contributes to urban safety.

Environmental policy, now in infancy, must expand in metropolitan communities to analyze and set standards for the disposal of wastes into air, water and earth. The key to stimulating the invention of new culture in waste treatment is setting rules of the game and allowing private business to respond flexibly by competing to serve society's needs. This approach stimulates invention and discovery of new knowledge which economizes resources and human effort.

Business policy: A revolution is needed in business policy toward urban communities and some evidence suggests it is coming. Business responds to opportunity to earn profits by producing what people want. Business effectiveness is market oriented. The market for business in solving urban problems, though potentially large, is now defined through specific products and services. Business, to tap the market potential, has to rethink with government the nature of its function. The organization of markets in transportation, education, alleviation of poverty, manpower training and performance of public services around functions rather than products, as Michael Michaelis of Arthur D. Little, Inc. has argued, could free the creativity inherent in business enterprise.

More than this, business management through chambers of commerce and other organizations participate in managing communities. The rise of the national corporation and the peripatetic executive threaten to weaken business perspective of its community role and to substitute short-run goals or withdrawal of role for the personal interest of local leaders in other times. Business has to invent a substitute, such as a national center for community development leadership, and set policy at the top to assure its participation in managing communities.

If we can see the urgent need to create a culture that would make our environment livable, the benefit of survival and advance would far outweigh the cost in change and adjustment. Social change is inherent in the basic fabric of civilization. To describe the social change needed to respond to fundamental questions is to sound like a Cassandra. The call for change, however, is not to presage doom. In the history of life and mankind on this planet, the evidence goes the other way. As anthropologist Paul Bohannan of Northwestern University says: "Change is not doom — it is the antithesis of doom. Doom is to be found in the struggle to resist change; salvation comes with understanding it." □

The terms "construction management" and "construction manager" are among the most misunderstood in architecture and the building industry today. Answering the need for a definitive work on the subject, The American Institute of Architects and *Architectural Record* will soon publish a book written by William B. Foxhall, senior editor of that magazine. Meanwhile, in an attempt to help bridge the information gap at least momentarily, the article below looks at the topic from the vantage point of a graduate student who worked for Tishman Realty & Construction Company while completing his thesis. The Practice Profile that follows focuses on a firm which is a forerunner in utilizing construction management in its approach to architecture.

Construction Manager: More Than a Hard-Hat Job

by JAMES I. LAMMERS

Within the past several years, the construction management approach has come to be standard practice for an increasing part of all building in many large cities across the country. Just what is a construction manager and how does his role differ from that of the general contractor?

The construction manager, as the name implies, is a professional consultant who offers his services for a predetermined fee as opposed to a general contractor who makes entrepreneurial profits on the project he handles. The basic difference, therefore, is the shifting of risk from the contractor to the owner. The construction manager guarantees neither project cost nor completion time, and since he assumes no risk in this area, he therefore expects no related profit.

Construction management contracts, representing a professional service, are normally negotiated. Prime contractors, many of whom were formerly subcontractors to a general contractor, now may have a direct contractual agreement with the owner, possibly negotiated through the construction manager as agent of the owner. The prime contractors' prices include their own overhead and profit, but overhead and profit for the general contractor are replaced by the construction manager's fee.

The construction manager's fee often covers the full-time salary of the project executive and the partial salaries of other advisory personnel who are not assigned permanently to the project, as well as profit. All overhead is reimbursable by the owner. Overhead may include such expenses as the salaries of field project manager, project superintendent, assistants, clerks, etc., and all field work such as setting lines and grades, obtaining permits and other "general condition" items.

What are the duties and responsibilities of the construction manager? In the classic situation, he works as the owner's professional agent, operating alongside the architect/engineer. During the design stage, the construction manager rounds out the project team, consisting of owner and A/E, by providing expertise related to construction, costs, systems, scheduling, etc.

The construction manager's services during the design phase, although extremely important, require less of his time and effort as compared with his duties during construction. Here he takes over the leadership of the project from the A/E and proceeds to manage and supervise the job. In some cases he takes full responsibility for assuring that the project is constructed in accordance with the drawings and specifications which he helped formulate. The construction manager solicits construction bids, coordinates

bidding, start of construction and completion of construction documents, schedules the project and essentially takes on all the duties of the general contractor.

Perhaps the principal advantage of the construction management concept lies in filling the void in the typical project team by supplementing the role of both the owner and the A/E with construction, cost and management expertise. Although the A/E may be well qualified in programming, planning and designing buildings, he is not always as expert when it comes to construction scheduling, coordination, expediting or construction operations. Thus the function of the A/E may be broadened as the construction manager makes available construction and cost information which the former would not normally have. The rapport which the construction manager has with subcontractors, material suppliers, manufacturers and labor provides a vital link necessary to relate design concepts to reality.

In addition, the construction manager looks at the project from an entirely different point of view and can often spot potential problems or solutions which would otherwise go unnoticed. Most important, the construction manager can put a price tag on alternative systems and materials in order to promote logical decision making in their selection. Such decisions can result in up to a 20 percent "swing" in the project cost. Finally, the construction manager is able to provide accurate cost estimating to minimize the possibility of a job running excessively over the budget.

Just as the construction manager assumes the duties of the general contractor, he also may take on some of the A/E's traditional responsibility during the construction. The job of auditing and approving payment breakdowns and monthly payment requests, coordinating, verifying and approving change orders and handling routine inspection can be done easily and effectively by the construction manager. This may be viewed as an infringement on the A/E's role by some; others feel that this may free some professionals in an area where their expertise may not be strong and allows them to concentrate on the planning and design of buildings. In any event, the A/E is certainly not divorced from the project during construction.

In addition to promoting cost savings through proper material and system selection, the construction management approach can provide numerous other savings for the owner. Construction cost has the same basic components whether a general contractor or a construction manager operation is used. On a lump sum or negotiated bid, a general contractor will solicit subbids and base

his total bid price on what he feels the subcontracts can be bought for after the contract with the owner is signed. Thus he may rely to some extent on bid shopping to reduce his subcontracts and, if he is successful, may be able to pocket the savings. With a construction manager, bid shopping as such is eliminated; competition between subcontractors is in the open, fair to both owner and subcontractor. Savings, therefore, accrue to the owner, not as additional profit to the general contractor.

The item of overhead expense occurs in both the general contractor and construction manager system. While the general contractor must estimate what percentage to use for this, the construction manager operates on the basis that all overhead is reimbursable by the owner. The owner pays only for the actual overhead expense incurred, and any savings in this area is his.

Since the construction manager is able to pass the risk exposure on to the owner by not guaranteeing construction cost or completion time, his risk is eliminated and he no longer bases his profit on risk assumption. Hence the construction manager's fee can be lower than the general contractor's profit since it is a sure thing and will not be eaten into by unforeseen conditions. It does not serve as a contingency to cover the unexpected because any additional costs become the owner's burden.

The major disadvantage of the construction management system is the lack of a guaranteed project cost before construction begins. The owner must rely on estimates since he cannot add up the prime contracts and reimbursable overhead expense until the job has been completed. An owner who requires a guaranteed cost for his own protection or to satisfy lending institutions or government agencies such as the Federal Housing Administration cannot use this system. However, savings in both time and cost can more than offset this disadvantage.

Beyond savings achieved through the shifting of risk and elimination of entrepreneurial profit, the construction management system can facilitate the use of two devices which further reduce costs: 1) bid packaging to increase competition between prime contractors and 2) concurrent design/construct scheduling to shorten the total construction cycle.

The effectiveness of bid packaging depends on the skill of the construction manager and, to some extent, his ability to analyze the market at a particular time as well as his ability to coordinate several smaller contracts. On large projects this device is mandatory and very effective. For example, by contracting with over a dozen steel contractors on New York City's World Trade Center, it was possible to reduce steel costs 25 percent.

Concurrent design/construct scheduling is the second means of reducing costs. Since construction costs are escalating at an annual rate of over 10 percent, shortening the total project costs by overlapping the design and construction phases may result in significant cost savings. Depending on the season of the year, a concurrent schedule may shorten the construction period and thus reduce construction financing costs as well. Earlier beneficial occupancy, and hence revenues, is another obvious benefit of concurrent scheduling. Coordination is more complex, and a skillful construction manager can keep the project running smoothly.

Construction management as a concept has evolved from a number of influences. Among these are the increasing size and complexity of projects and, in turn, the negotiated contract and the specialist subcontractor, and the owner-builder.

Increasing size and complexity of projects have led to a

major change in operation of the construction industry. While 10 or 15 years ago a \$20 to \$30 million project was large, today it may be medium sized, and projects of over \$100 million are not uncommon. Whereas smaller jobs previously could be bid or negotiated easily with a general contractor, as the size of the project increases, the number of general contractors who are qualified to handle it, or who have bonding capability, decreases. Also, the degree of risk on the part of the general contractor may loom so large as to preclude his bidding. It then becomes necessary to split the job into "biddable" segments to get it built or to maintain reasonable costs. Once this is done, the need for someone to manage and coordinate all the prime contractors emerges. This need is being filled by the construction manager.

Perhaps partly in response to larger and more complex projects, the negotiated construction contract came into being many years ago. It has often been found that competitive bidding places too much emphasis on price alone without concern for quality of construction, completion time or general efficiency of the project, and both owners and architects have tended to turn to reputable construction companies to work out negotiated contracts for their projects. In recent years, contractors have found an easy transition to marketing their construction knowledge as professional consultants or construction managers rather than entrepreneurs. Indeed, it could be argued that the construction management contract is a variant of the negotiated contract.

Coupled with the negotiated contract has been the development of extremely specialized subcontractors. Many large general contracts today sub out from 90 to 95 percent of the construction work to subcontractors on a typical project. In many cases, they may provide only management and supervision services. With subcontractors who are in fact experts in their field, this becomes a logical method of operation. After all, why should a general contractor use his own crew when with less risk he can get a guaranteed cost, quality and more efficient job from a subcontractor? In such an atmosphere, the general contractor has become more of a manager and less of a builder in the traditional sense. He can easily make the transition to professional construction management.

Since the early 1900s, owner-builders such as Tishman have built successfully in New York and other major cities. Their typical method of operation forms a close-knit project team consisting of the A/E and the owner, who is also the builder. Construction cost and management expertise is made available to the A/E at the beginning of the design phases, and the design parameters are well defined by the owner-builder. The A/E thus receives the input necessary to assist him in arriving at the proper decisions to achieve the optimum building package. The owner-builder is his own construction manager, and only recently has he begun to provide this service for other owners.

Up to this point it may appear that the construction manager is a general contractor who is simply wearing a different hat. Actually, construction management services are being offered by the A/E, owner-builder and management consultant also.

Although construction management is still very much in its infancy, it has been applied to several billion dollars of construction since the early 1960s. It will no doubt continue its popularity as owners begin to see its advantages. There are those who predict that construction managers will eventually replace general contractors on all large and/or complex projects. This is a distinct possibility since most large general contractors are in a position to step in as construction managers simply by replacing risk profit with a professional fee. Thus construction management may well point the way of the future. □

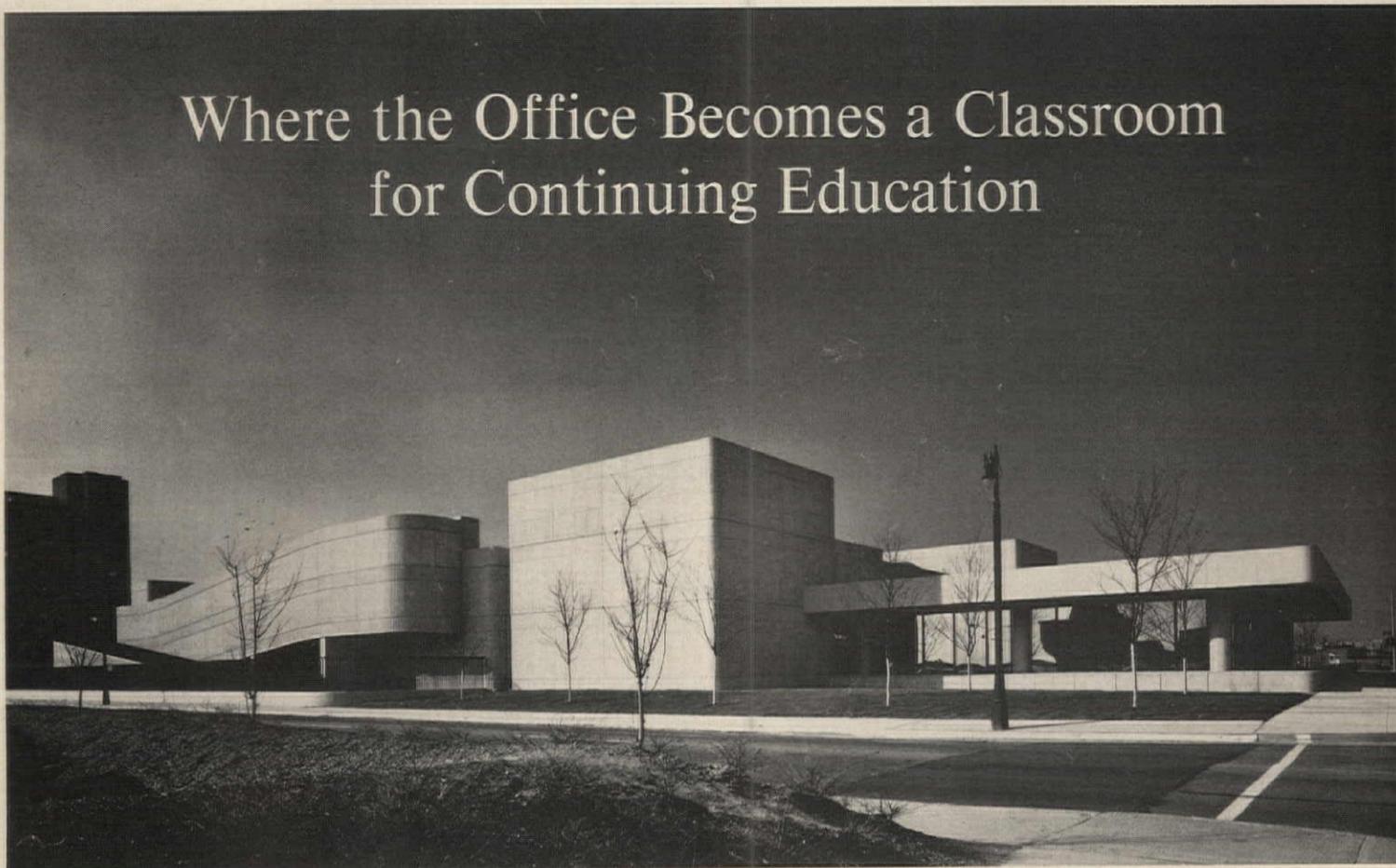
Mr. Lammers, who is now employed by Gingold-Pink Architecture in Minneapolis, developed this article from a thesis prepared under a Eugene Hult Fellowship and an AIA/AIAF Fellowship in the Division of Architectural Technology at Columbia University.

PRACTICE

Smith, Hinchman & Grylls Associates, Inc., a Detroit institution since 1903, acts like an upstart firm as it readjusts traditional concepts with an innovative approach to architecture.

PROFILE

Where the Office Becomes a Classroom for Continuing Education



Woodward District Plant Office, one of 90 some buildings by SH&G for Michigan Bell Telephone, is winner in Bell's '71 design awards program.

The professional vocabulary of Smith, Hinchman & Grylls Associates, Inc., is constantly expanding with such terms as "unified team action program," "construction management" and "computer programming"—terms that are no mere idle phrases but are being put to use daily by the architectural/engineering/planning staff. In some instances, the Detroit-based firm, which now employs over 500 people and is designing over \$600 million in domestic and international projects, is even writing, or at least helping to clarify, the definitions.

This should not be surprising, yet is all the more significant, when one considers that SH&G's newly named chairman of the board, Robert F. Hastings, FAIA, also is mid-way in his term as president of The American Institute of Architects at a time of unprecedented change in the practice of the profession.

Take, for example, the unified team action program—UTAP in SH&G jargon—which thus far has been most dramatically

demonstrated by the results on the completed \$12 million Health Sciences Complex for the State University of New York at Stony Brook, plus some \$80 million of projects underway, illustrating how the firm bids systems or subsystems in lieu of bidding the entire jobs and then manages construction (*see Design & Construction Schedule and related data, pp. 38-9*). In a documentation of the process before a Building Research Industry conference, Philip J. Meathe, FAIA, who has just assumed the firm's presidency, listed these six benefits on the first Stony Brook project alone:

1. A 78 percent reduction in total time required to produce the completed job.
2. A \$5.4 million saving in construction cost escalation.
3. A \$3.3 million saving in rent payments for space the owner was able to occupy three years earlier than normal.
4. A complete team input of professionals which enabled the



SH&G board of directors: Roessling, Livingston, Johnson, Hastings, Miller and Meathe.

STAFF BREAKDOWN

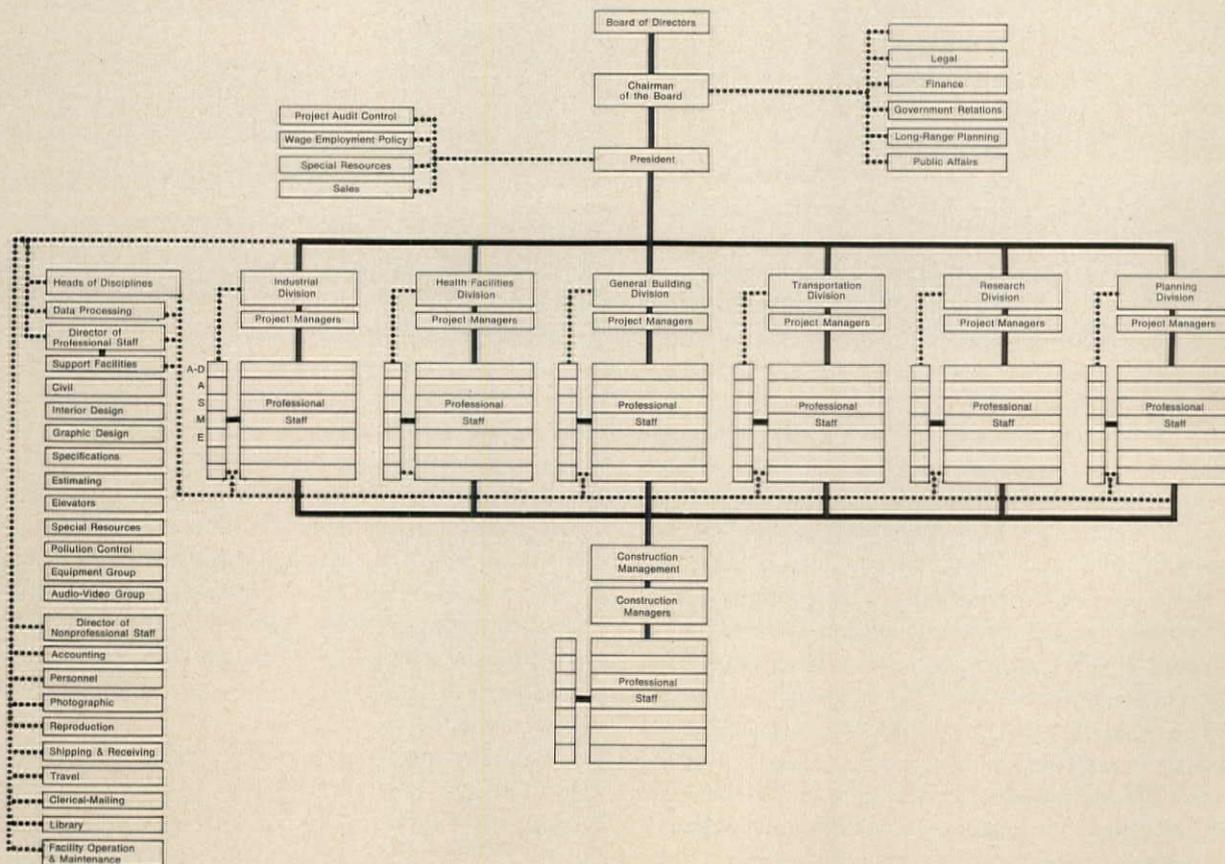
Directors & Officers	11
Division Directors & Assistants	10
Discipline Heads	7
Project Managers	20
Architectural Design	109
Structural Engineering	28
Mechanical Engineering	82
Electrical Engineering	40
Civil Engineering	9
Planning & Landscape Architecture	17
Estimating	3
Interior Design & Graphics	18
Electronic Data Processing	11
Specification Writing	10
Specialized Areas	9
Field Supervision	41
General Office Employees	84
Total	509

Registered personnel: architects, 54; engineers, 43; landscape architects, 6; planners, 3.

ARCHITECTURAL/ENGINEERING FEES

DIVISIONS	1969	PERCENTAGE	1970	PERCENTAGE
General Building	\$ 3,039,714.99	29.30	\$ 4,363,581.74	41.50
Health Facilities	3,386,706.09	32.65	3,126,679.13	29.73
Industrial	2,894,157.07	27.90	1,570,348.34	14.93
Planning & Landscape Architecture (JJ&R)			707,823.94	6.73
Transportation	866,438.06	8.36	677,858.81	6.45
Research	165,996.79	1.60	13,433.85	0.13
Miscellaneous Income	19,921.44	0.19	55,795.86	0.53
	\$10,372,934.44	100.00	\$10,515,521.67	100.00

ORGANIZATION CHART



proper design balance of systems and subsystems to meet all the main problem requirements of the owner and his program.

5. Major competitive bidding on all principal systems and subsystems, keeping each bid package to a modest dollar volume and gaining maximum input of the construction market-place.

6. Utilization of systems and subsystems design plus performance specifications to provide a key impetus in achieving maximum participation of the principal building manufacturers.

The more sophisticated concepts such as UTAP tend to steal the attention, overshadowing a number of other basic procedures and recent developments which are permitting SH&G to grow and produce a high quality of architectural design. It should be noted first of all that the firm no longer has an overall director of design in line with having adopted the philosophy of employing the team approach for each project; there is, however, an architect who carries the responsibility of design chief in each division and on every job.

Six phases of the operation which are particularly worthy of mention suggest the direction in which SH&G is moving today:

Divisional Structure: The key to the staff organization is found in seven divisions, each with its own director and project managers: industrial (John J. Andrews), health facilities (Adolf H. Roessling), general building (William Jarratt), transportation (Walter Lavalli), research (Gene St. George), planning (the firm of Johnson, Johnson & Roy) and construction management (Henry Repinsky). In addition, SH&G has complete departments in interior design and graphics, computer systems programming and a number of technical specialties.

Each division operates as a more or less autonomous unit, the project managers under the division directors being charged with everything from the quality and the scheduling of the project to the profitability of the services rendered to keeping the client happy. But the firm is quick to explain, "We don't create the division first, then get the jobs; it's the other way around." As would be expected, there is a certain amount of horizontal movement from division to division as the workload shifts within each discipline.

Consolidation with Johnson, Johnson & Roy, Inc.: Last summer SH&G combined with the environmental planners/landscape architects of neighboring Ann Arbor through a stock exchange, with both firms maintaining their own offices and keeping their identities intact. "This joining of forces," according to the principals, "means that the two separate operations now have at their command a full range of skills needed to integrate more effectively tomorrow's large-scale projects into the communities they serve."

JJ&R has grown out of a 1961 partnership of three Michigan landscape architects: William J. and Carl D. Johnson and Clarence Roy. With a staff numbering 31, it is engaged in a variety of work on both a local and national scale, with campus plans—72 at last count—representing about one-half of the volume. Many recent commissions, like the study of Chicago's 28-mile lakefront and the master planning of the island community of Grosse Ile, Michigan, involve the conservation of natural resources. JJ&R, has, in fact, established a post that includes the identification and evaluation of historic buildings, neighborhoods and communities as part of the planning process.

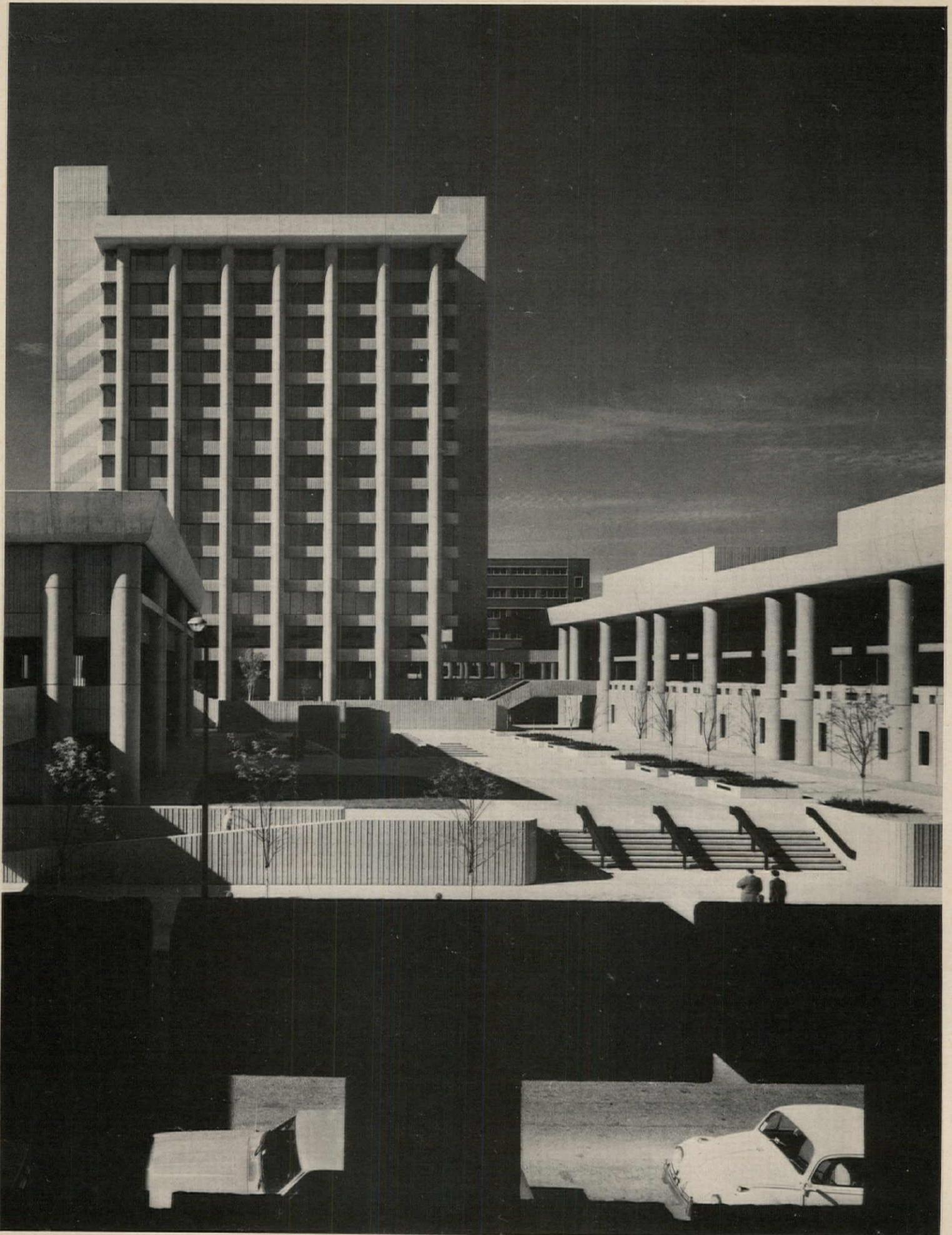
JJ&R, which is continuing to serve its own clients, does not necessarily do all of the work for the Detroit firm, but it will serve as a consultant on all SH&G projects in the above areas. "Honor the site," is the motto at Ann Arbor. Feeling that their discipline is often called in too late, they structure activities in relation to an architectural framework, but remind their design colleagues,



Executive floor reception area (top) features part of the firm's extensive collection of art. Painting is by Murray Jones, sculpture by Jacques Lipchitz. Design department looks out on a landscaped roof garden, a favorite spot for employee lunches in good weather.



JJ&R offices are in a Civil War-era brick structure which the landscape architects bought and renovated, winning praise from the Ann Arbor Historical Commission and City Council for its restoration.



University of Louisville Medical and Dental Complex is an SH&G project done with Arrasmith, Judd, Rapp & Associates and Louis & Henry Associates, associated architects; E. R. Ronald Associates, associated engineers; Eichstedt, Grissim, Young & Associates, landscape architects.



Recent jobs include Detroit Edison Company and Consumer Power Company, Michigan Electric Power Pool Control Center (above), and Detroit Municipal Employees Credit Union Office Building.

"A building should not do violence to the rest of its environment but must be a successful design solution that does not compete with its neighbors."

Affiliation with Ryan Associated Architects, Inc.: In a somewhat related move, SH&G more recently has joined with the Louisville firm in a unique mutual investment agreement. The relationship is not a merger of either one into the other but rather one of professional support. While joint ventures between architectural offices on specific projects are common, the SH&G/Ryan type arrangement is relatively untried. Both firms continue to operate independently and use the other's services as needed. As mutual stockholders, each will benefit from the future growth and profitability of the other.

Hastings and A. Bailey Ryan, FAIA, candidly put it this way: "It is our hope that the range of architectural/engineering/environmental/planning services offered by SH&G will be helpful in enabling Ryan, with \$10 million annually in a variety of building types, to reach its full potential. In turn, Ryan's practice throughout the mid-south will give wider exposure to the comprehensive services that SH&G offers." Hastings implies that similar arrangements with firms in other parts of the country are in the offing.

Construction Management: This is the newest of the seven divisions. SH&G sees it, however, as an important phase of the work in the future as it thinks of the newly evolving "simultaneous process" (UTAP) for creating buildings where the three phases—Decision, Design and Delivery—are pursued concurrently."

President Meathe is enthusiastic about construction management, as he indicated at the already cited BRI conference: "This is a professional service. It should be provided by, and is being done so, by architects, engineers, planners, real estate developers, general contractors and management people. Above all, this service must be offered professionally as distinguished from an entrepreneurial production service so that the advice given can be unbiased and can help a client make the very important decision whether to go ahead with the project in the first place."

Getting back to the three D's, "Construction management,"

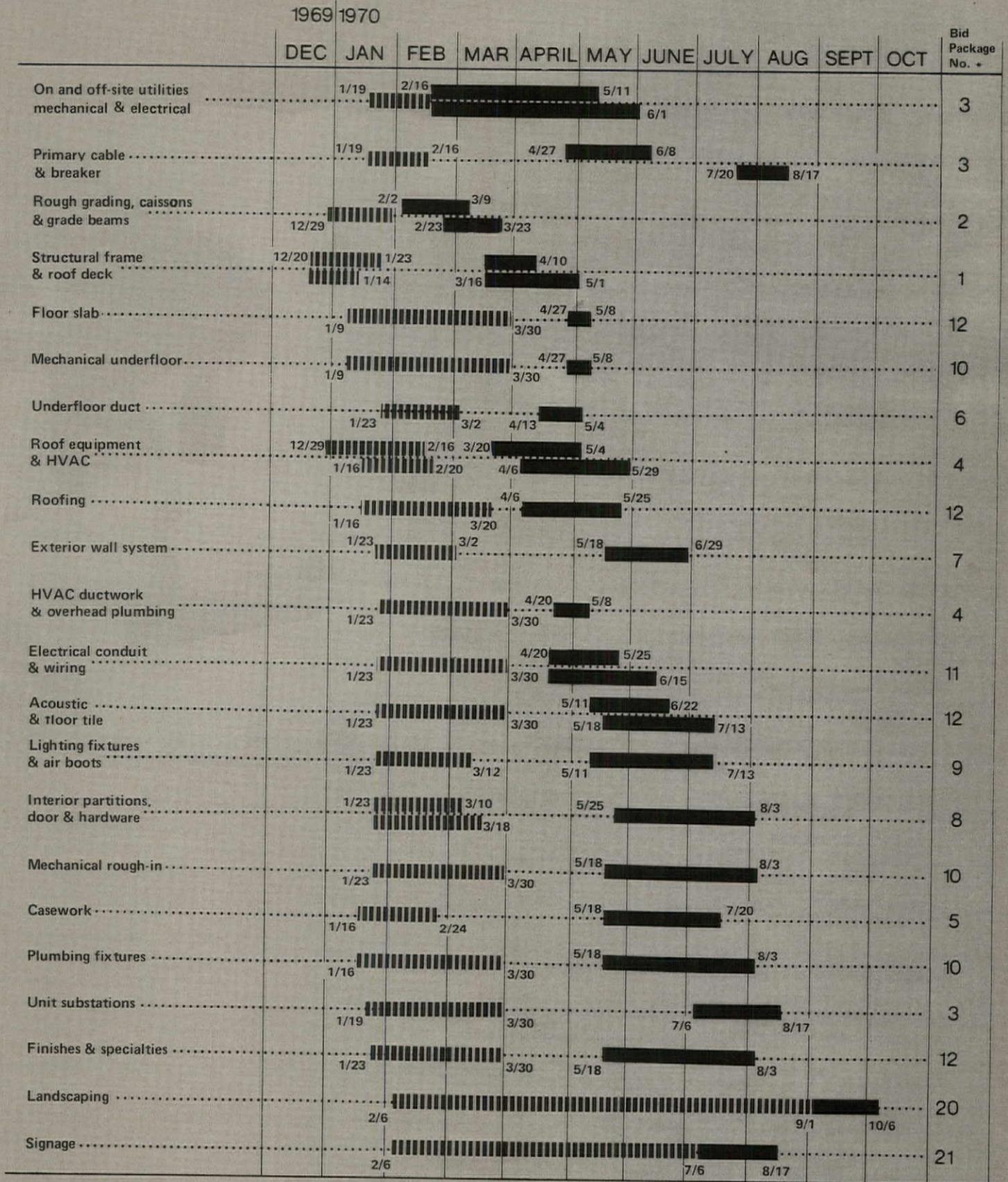


as Hastings defines it, "pervades all three phases of the creative process, bringing to bear on each whatever production skills and emphasis are required. The role of the construction manager is the management function that has been traditionally carried on by the general contractor. But the construction manager's role is broader than that of the traditional contractor, even in its management concepts, since it penetrates into decision and design as well as delivery." But he does not "plan" the design phase, Hastings is quick to make clear; the designer remains free to make the decisions he always has made.

"The construction manager presents costs, materials information and production methods to the designer and design engineers that may be germane to the design options as the project develops. In the case of accelerated jobs, he may enter into the breakout of those systems which can be bid and built in advance of completion of the entire design phase. During the decision, design and delivery phases, he tells the architect and engineers which components are required and the sequences in which he needs them in order to expedite the flow of the total creative process—in this instance meaning the entire decision/design/construction logic.

"Where the normal sequence of the creative process does not entirely accommodate the scheduled objectives of the delivery phase, the architect and the manager should be able to work out

DESIGN & CONSTRUCTION SCHEDULE FOR THE HEALTH SCIENCES COMPLEX AT STONY BROOK



design to bid award delivery & construction (start to finish)

*Bid package numbers merely indicate the order in which bids were prepared and let. In some cases (unit substations, for example), a component that is installed very late in the job was bid early (No. 3) because of the lead time needed to manufacture and assemble this item.



PROGRAM

Population: 4,500

Housing Date:

104,000 net sq. ft. — Sep. 1, 1970

86,000 net sq. ft. — Dec. 15, 1970

Budget: \$12.5 million

Size Requirements:

190,000 sq. ft. net total

2/3 wet space (laboratory)

1/3 dry space (offices, classrooms, seminar and conference rooms)

12,000 sq. ft. animal research

Shape Requirements:

5 to 10 separate buildings permissible

1-story buildings with flat roof permissible

Minimum classroom, lab size 600 sq. ft.

Minimum office, conference room size 180 sq. ft.

Flexibility to easily change minimum room sizes

Ceiling heights of 9'-0" minimum generally

Ceiling height of 14'-0" in 1/3 of net area

Environmental Requirements:

Clearing of wooded area to be absolute minimum

Airconditioned throughout

Utility services extendable @ 20' centers

Lighting level — 70 footcandles at desk height

Campus central heating system not available

Campus central power system not adequate

Initial Design Decisions:

5' x 5' planning module

30' x 40' bay structural

Dual double-loaded corridor configuration with offices exterior, laboratories interior

Net/gross ratio — 0.75

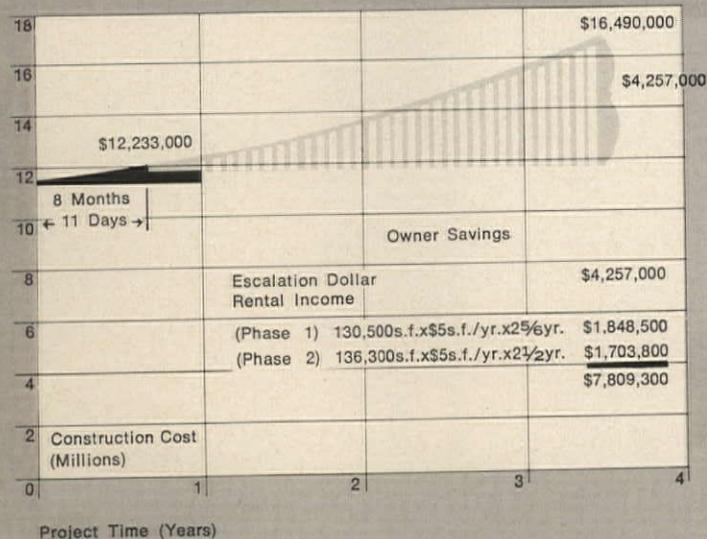
Clear 4-building areas, 2 to 3 buildings per area

Capitalize on premanufactured systems

Extend site utilities to central campus system

Provide temporary transformer on central system

ESCALATION CURVE
(1%/MONTH COMPUTED MONTHLY)



the conflict. That is why it is essential that they work as a team with parallel objectives rather than in any relationship of discipline one against the other."

Hastings adds these words of warning: "Unless the scope of services is precisely spelled out, it is easy for one firm to quote a fee half as large as another, and each can label its services 'construction management.' The architect or consultant who offers services in this area should make it very clear to the client what he is to provide."

Computer Capability: Among the architectural pioneers in the development of a complete systems design, research and data processing team that is available to all clients, SH&G has an extensive library of structural, mechanical and civil programs which allows it to make detailed analyses of various design options. The firm has access to hundreds of commercial programs (its computer talks to others) which can be secured on a rental basis, and it has thousands of specifications on disks which can be immediately retrieved. The computer capability is now being used in the critical area of cost estimating.

SH&G Development Corporation: The firm is in the process of forming an entity that will have the power to initiate projects, secure tenants and commission the design. And it is expected that this corporation will retain partial, or full, ownership of all such properties. The reasons for this move are threefold, Hastings points out: "1) The economic advantages of ownership are attractive and give professional persons a means of building financial security. 2) There is long-term investment value to better-designed, better-constructed buildings. 3) There are some building types, such as housing and office facilities, where an increasing number of clients prefer the renting of finished products, and we believe our development corporation will generate clients for such buildings."

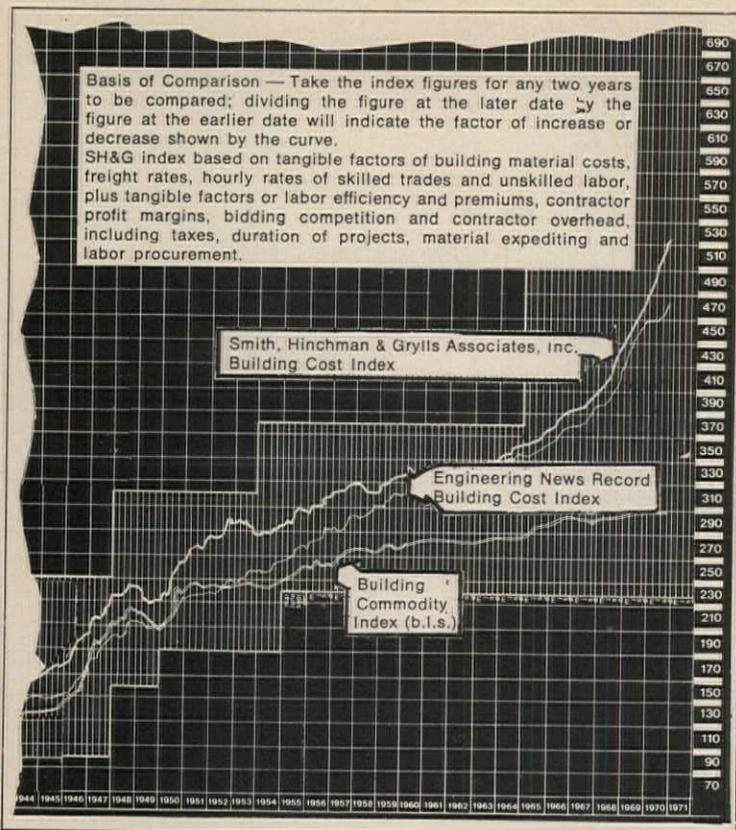
The firm emphasizes that this corporation will not be a contracting organization; the entity will manage the building process but not the construction labor. It anticipates that this corporation will be wholly owned by SH&G personnel but expects that it will share ownership with other investors where the need for additional capital dictates in specific projects.

SH&G, incidentally, has a stock buying program for its key employees. The stock is sold back to the firm as these persons retire. This is just one of many programs instituted by Hastings, who joined the firm upon graduation from the University of Illinois in 1937 and has been with it ever since except for two years during World War II.

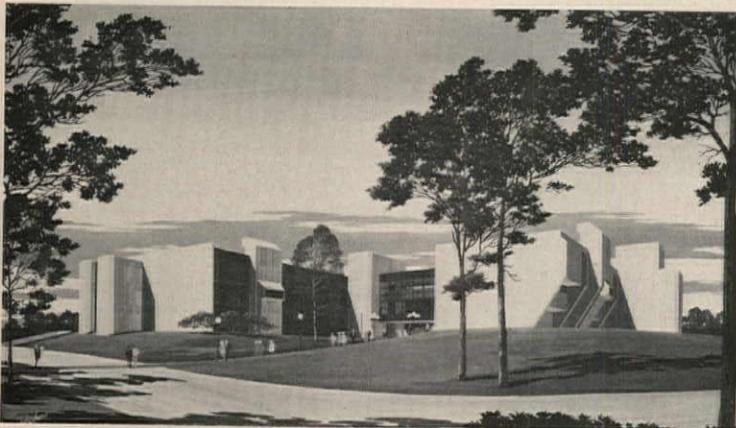
Founded as a corporation in 1903 — the same year that Henry Ford got his start in Detroit — the firm was originally Field (Henry G.), Hinchman (Theodore H., Jr.) & Smith (Fred L.). By 1906, H. J. Maxwell Grylls became a partner and the present name was adopted. Upon the death of Smith, Grylls assumed the presidency, to be followed by Hiram Walton, Wallace MacKenzie, Amadeo Leone, Hastings, in 1960, and now Meathe.

During the building boom of the 1920s, SH&G designed the larger part of downtown Detroit's skyline, including the Penobscot Building (still the city's tallest), the J. L. Hudson Co. department store, the Bell Telephone, Buhl and Guardian Buildings. After World War II, the firm was associated with Eero Saarinen in the design and engineering of the General Motors Technical Center and with Minoru Yamasaki & Associates in the Michigan Consolidated Gas Company office tower — during this period it also developed an international practice that saw SH&G projects on all the world's continents.

Under the new corporate structure, Hastings as the chief executive officer has the last word about policy, while Meathe as



Building cost index, which goes back to 1923, is published quarterly and mailed to clients and other interested parties.



Among projects underway are University of Iowa College of Dentistry Building, Iowa City (top); S. S. Kresge Co. Headquarters Building, Troy, Michigan (bottom); and State of Michigan Capitol Development, Lansing.

president is the operating head. The latter was a founder and president of Meathe, Kessler & Associates from 1955 to 1968, when he joined SH&G as executive vice president.

Completing the board of directors are Adolf H. Roessling, AIA, vice president and secretary; Bernard L. Miller, engineer, vice president and treasurer; James R. Livingston, AIA, vice president for sales development and governmental relations; and Carl Johnson. There are three other vice presidents: Andrews, Frank J. Brady and Peter P. Petkoff, all engineers.

Discipline heads include Dale R. Johnson, AIA, and John V. Sheoris, AIA, design; Lin Huang, structural; William Louie, mechanical; Jack Rodger, electrical; and Kami Targal, civil.

Another key person on the SH&G team is Roger W. Margerum Jr., AIA, executive assistant to Hastings, who aids the board chairman in his AIA responsibilities, community relations and public commitments.

Hastings, of course, holds a big stake not only in SH&G but in the entire profession as its elected leader until this coming December. He acknowledges and supports the architect's move toward more social and political involvement. He thinks in terms of all applicable modern business practices and is dedicated to the concept that the architect must be financially successful; but he must also produce quality work and be a leader in the community.

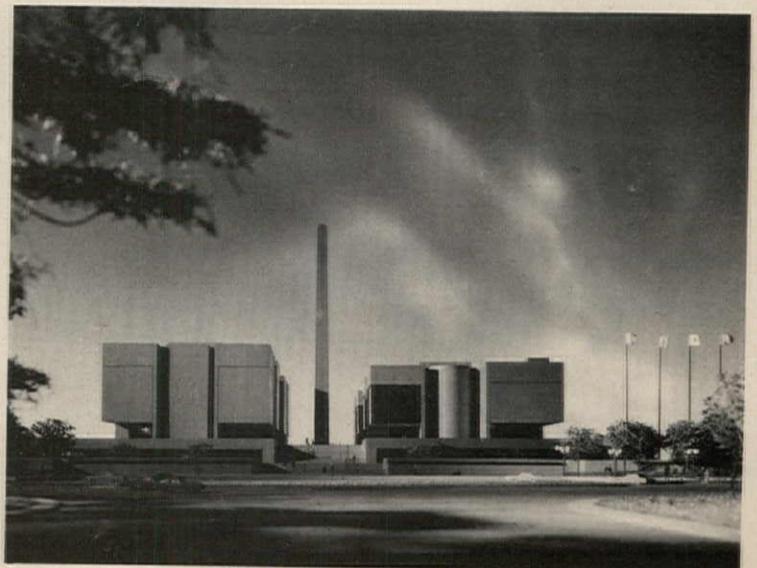
Perhaps because its top officer is a registered engineer, too, SH&G has come a long way in making the members of this discipline equal team members in the creative process. In recognition of his efforts, Hastings was the first architect ever to be named "Engineer of the Year" by the Detroit Chapter of the Michigan Society of Professional Engineers.

On a broader plane, the AIA president is convinced that the Institute must develop a national urban policy and offer leadership in providing decent housing for all people. Hastings admits, however, that the firm up to this point has had little involvement in housing, although he himself has been reappointed to a four-year term on the Michigan State Housing Commission.

He favors the rebuilding of our cities by asking these questions: "Can we really afford to eat up new land? Can we abandon services already built, get rid of what we've paid for, replace them and then continue to use up natural resources?"

Hastings and SH&G practice what they preach. Having outgrown their present quarters about four miles from the city core, the firm has purchased a 61-year-old building in the heart of downtown and will begin its rehabilitation soon. Smith, Hinchman & Grylls Associates expects to be a Detroit institution for a long time to come.

ROBERT E. KOEHLER





A program of guided architectural tours has proved to be one of the most successful public service programs of the St. Louis Chapter AIA, judging by the people's participation and enthusiasm and the city's cooperation.

How would you like to have well over a thousand people visit a building of your design on a Sunday afternoon? Would you enjoy helping another architect, not of your firm but of your chapter, show the building to the public? How would you like to hand out literature about the building to all these people—and have not one piece of paper left behind? This is exactly what is happening in St. Louis the second Sunday of each month.

The public service project, known as Architects' Sunday, is sponsored by the St. Louis Chapter AIA and is set up to enable people to visit both contemporary and restored structures which might not ordinarily be open to the public. No reservations nor tickets are required. The buildings are open from 2 to 5 p.m.

The idea had been tossing around in my subconscious mind ever since the time of the AIA convention in St. Louis in 1964 when our guests enjoyed the walking tour of the private places near the hotel headquarters. I always managed to push it back because of lack of time to get the whole thing properly organized.

Finally, at an executive committee meeting of the St. Louis Chapter in November 1969, the thought reached the verbal stage. The more we talked, the more enthusiastic I became. Some people thought that it was all too much work and that there was too much competition from house tours by too many groups in the area. The final reaction, however, was "What have we to lose?"

Armed with a list of about two dozen suggested buildings and with my excitement

about sharing some of our fine buildings with the general public for an afternoon, I returned home and in less than two hours outlined the plans for procedure with a rough outline of a schedule. Two weeks later, the plan was presented to the chapter membership. There were mixed emotions. I shall never know if those faces indicated amazement or lack of interest. I shall never forget the words of the former national AIA President George E. Kassabaum, FAIA, who said in effect: "Decide what you want to accomplish, and do the very best job possible."

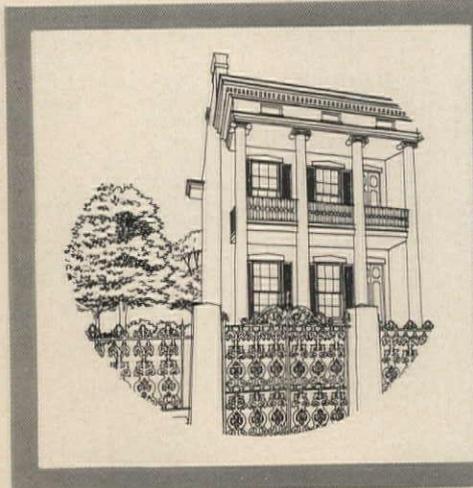
We opened Architects' Sunday in January 1970 on a bleak, cold and miserable day, hoping that perhaps 50 people would turn up. Over 125 guests came, not including chapter members. The building visited was the Ethical Society Meeting House in Ladue, designed by Harris Armstrong, FAIA. It is a contemporary structure which is a shining example of creativity and workmanship built on a difficult site. Our visitors enjoyed hearing about the building from its architect and then being allowed to wander around at leisure. We have since learned that people come to our tours not for just a hurried glimpse of a building, but may spend most of the afternoon with us.

The next month, we toured the newly completed University City Public Library designed by Smith & Entzeroth. It was a cold and snowy afternoon, but word evidently had gotten around and over 400 people came. We had arranged for the Women's Architectural League's educational kit slides to be projected automatically throughout the afternoon in the auditorium. Much to our surprise, our guests sat down and looked at all 80 slides, enjoying identifying the buildings among themselves. In March, therefore, we capitalized on their evident interest and had Mrs. William W. Rupe give the combined

'Meet Me in St. Louis'—

On the
Second Sunday
of the Month

by BETTY LOU CUSTER, AIA



The Chatillon-DeMenil Mansion

Built originally in 1849 by Henri Chatillon, fur trader and guide to Francis Parkman's Oregon Trail Expedition, this house was for years a landmark to riverboat pilots rounding Chatillon's Bend. Chatillon built the house following his marriage to Odile Delor Lux, granddaughter of Clement Delor who founded the community of Carondelet. In 1856 the house was sold to Dr. Nicholas DeMenil who made his fortune by establishing the first retail drug store chain in St. Louis. It was Dr. DeMenil who transformed the original simple brick structure into the elegant mansion we see today with its Ionic colonnaded porches and delicate iron railings.

3552 South Thirteenth Street

Drawing prepared for the
St. Louis Chapter, American Institute of Architects
by
Laurent Jean Tornø, Jr., A.I.A.

WAL talks on historic structures and contemporary buildings when we visited the Lindbergh High School, the work of Charles W. Lorenz, AIA, and Jack Sorkin, AIA, associate architect.

The crowds began to grow in April when we visited the Christ Church Cathedral in downtown St. Louis. This early English Gothic building of 1867 was renovated in 1969 by Burks & Landberg. Our tour included a visit to the remodeled chapel done in 1963 by Dunn & Stinson. A special feature of the April tour was a talk by William D. Peckham, AIA, on "Restorations in Use."

Our May program, which provided an hour's drive to Elsah, Illinois, was attended by 850 people who enjoyed the visit to the Principia College campus. There they saw the Bernard Maybeck buildings and work by Kenneth E. Wischmeyer & Partners and the award-winning student center building by Smith & Entzeroth.

The three gardens we visited in June included the 1969 winner in the City Beautification Competition, owned by Verner I. Burks, AIA. We also saw the garden of his partner and neighbor, Kurt E. Landberg, AIA, and of an artist friend. I made a special effort to have the heads of all (90 plus) neighborhood organizations invited to attend this tour. The gardens show ingenuity and creativity in a central city area and are financially within the means of almost anyone who has interest and determination.

And thus Architects' Sunday went. In July, there were 1,149 guests. It was a dreary, rainy day in September when we visited the General Daniel Bissell House, restored by Kramer & Harms, and the Bellefontaine United Methodist Church, with its old chapel and contemporary church building by P. John Hoener & Associates. Over 1,000 people stood in line in the rain to get into the house, and there was not one complaint. Many of our guests rely on public transpor-

tation, and because the two structures we visited were in a part of the city not near any public transportation, we chartered buses and charged \$1 for each round trip.

There are so many people in the St. Louis Chapter AIA who are responsible for the continuing success of Architects' Sunday that I could not name them all. Each month one of them makes a handsome announcement sign for the chapter office window. Often a member produces walking tour maps for buildings in the area we visit. We have prepared also a map of downtown St. Louis which includes location, name of project, date of construction and name of architect of 44 buildings. The map is free.

We have received splendid cooperation from outside sources as well. For example, the publisher of the *St. Louis Construction News and Review*, which serves as our official chapter newsletter, furnishes us with extra copies of the paper so that our guests can learn of chapter activities. We have had a number of outstanding features in the *St. Louis Globe Democrat*, the *St. Louis Post-Dispatch* and other area papers. Radio and TV coverage has served to enlarge attendance and to increase the public's awareness of the noteworthy buildings in the region. Visitors from other parts of the country have been attracted to our tours as well. The hotel magazine includes them each month and the Convention Bureau lists them in its events folders.

The program has been of use to architects too. It allows them to discuss their designs, construction materials and the use of the site. A cooperative spirit in the chapter is created as members help the firm of the day to show the structure. We have not neglected owners either. A framed certificate is given to each one in which we express our appreciation for having the building open to the public for our tour.

Architects' Sunday takes work, patience and cooperation. Our tours in 1970 were so successful, however, that we have extended the program into 1971. And in January 1972, our tour will celebrate the 60th anniversary of the St. Louis Public Library because we have been asked to manage the festivities as an Architects' Sunday event.

What will you be doing on the second Sunday of any month? Come see what we do in St. Louis. □



Miss Custer, active in the St. Louis Chapter AIA since 1945 and one of its directors, is the coordinator of Architects' Sunday. Each year the St. Louis Chapter of Theta Sigma Phi honors women in the community who are outstanding newsmakers. This year Miss Custer was unanimously selected for her creation of Architects' Sunday and her efforts to establish communication between the architect and the public.



Questions About the New Exam

by JOHN W. McHUGH, AIA

How will NCARB's proposed changes in architectural examinations affect the profession? the schools? the students? Who stands to benefit the most? A round table provides some of the answers.

The National Council of Architectural Registration Boards is planning to change the architectural examinations which have been uniform across the nation for the last several years, and to replace the seven separate ones now given with a single comprehensive examination. It is expected that this new professional exam will be of the multiple-choice type, capable entirely of machine grading, with one grade. It will be comprehensive in that all of the different disciplines which are now the subject of separate exams will be expanded to include additional predesign capabilities and combined in relation to a single environmental project.

This proposal has generated a great deal of interest in and out of the profession. Many architects, students and educators are reluctant to abandon the present smooth-running system and are concerned lest unqualified persons may be licensed as architects to the detriment of the public health, safety and welfare. The following round-table discussion in which the NCARB examiner is put on the firing line by a student, a practitioner and a dean of an architectural school will help bring members of The American Institute of Architects up to date on what the NCARB is doing in this area.

The dean in our round table is head of the college of architecture in one of the nation's most respected universities; the student is a national leader in student AIA work; the practitioner, age about 50, maintains a moderate size office in a sizable city in the eastern part of the country; the examiner is chairman of his state's board and an important adviser to the board of the NCARB.

ARCHITECT: *How will this new examination system work?*

EXAMINER: It is planned that there will be two examinations: the new professional examination for eligible graduates of accredited architectural schools and a qualifying exam for other candidates. A candidate who does not have a degree from an accredited school will first have to take the qualifying exam and then, after passing, he will be eligible for the professional exam.

DEAN: *What about this qualifying exam?*

EXAMINER: NCARB's present examination is based upon traditional academic subjects. Graduates of National Architectural Accrediting Board member schools have been educated, tested and passed in these areas. These graduates, after a period of internship, will be admitted directly to the new professional examination. Our statistics indicate that most architectural registration candidates will be in this category. However, member boards of NCARB, after literally years of debate, have concluded that we must not shut the door on candidates with backgrounds different from this norm. The intent of the qualifying exam is to evaluate basic skills of candidates equivalent to those acquired by graduates of accredited schools of architecture. It will be a compressed version of our present exam with building equipment, building construction, structures and professional administration combined into an eight-hour, first-day part called construction theory and practice; and history/theory/planning, design and site planning combined into a 10½-hour, second-day part called architectural theory and design. Everything except design will be machine graded. Examining boards will thus be assured that this type of candidate has mastered these architectural basics.

DEAN: *How are the schools to react to this action by NCARB?*

EXAMINER: To begin with, NCARB has been working with educators and students as well as with practitioners on this change. It has been discussed at our national conventions for over two years now, and many educators have participated in our research and development. We have been working in the open — no smoke-filled rooms. But as to how the schools should react . . .

DEAN: *Yes, how can the schools be expected to change their programs to conform to these examination requirements?*

EXAMINER: Conforming is the last thing we want or expect. Schools of architecture are as different as the educators who run them. There are very few conformists among the ones I know. However, we are indeed placing greater trust in the professional degree you grant because we will no longer retest the same subjects your students have passed. In order to thoroughly inform the schools of these developments, the national council established a liaison committee with the Association of Collegiate Schools of

NEW PROFESSIONAL EXAMINATION (NPE)
DEVELOPMENT SCHEDULE

	1970	June	NCARB CONVENTION ACTION
Model Development Phase	1970	July	Development of NPE model and procedures by NCARB management and exam committees
	1971	February	Input by NCARB members, architects, educators, students and consultants
	1971	March April	Review of NPE model and procedures by NCARB regions
	1971	May June	Modifications of NPE model and procedures by NCARB management and exam committees
	1971	July	NCARB CONVENTION ACTION
Final Draft Phase	1971	August	Completion of NPE final draft; review of NPE model and procedures by the AIA, Association of Collegiate Schools of Architecture, National Architectural Accrediting Board and Association of Student Chapters/AIA
	1972	February	Further input
	1972	March April	Review of NPE final draft by NCARB regions
	1972	May	Detail corrections of NPE final draft by NCARB management and exam committees
	1972	June	NCARB CONVENTION RATIFICATION
Implementation Phase	1972	July	Final detail corrections as necessary; publication of new NCARB
	1972	October	Examination procedures
	1972	December	First NPE in use

Architecture and this year invited all the schools, in and out of the ACSA, to attend the NCARB regional meetings for an in-depth preview of the new professional examination and to participate in the development process. Next year as we go into the final draft phase of the new exams we plan to continue to involve the schools. As much as feasible, NCARB wants to maintain this effort on a profession-wide basis.

STUDENT: *During this change why can't there be some sort of review board to consider each case separately?*

EXAMINER: Do you mean to issue special licenses?

STUDENT: *Yes, the idea of a generalized exam came about back in the days before the profession was not so specialized. Shouldn't you now reassess the situation and provide special exams and special licenses?*

EXAMINER: NCARB has devoted considerable study to this concept and I suggest you consult our annual reports of the last few years. Copies were sent to your school library. However, in answer to your question, we have reassessed the situation and found such an approach infeasible and definitely limiting upon the profession as well as the individual practitioner.

STUDENT: *But in the medical profession . . .*

EXAMINER: In the medical profession everyone's an M.D. If a man wants to go in for open heart surgery, well, that's in addition to his basic competence as a doctor.

STUDENT: *I'm afraid that if I specialize in my six-year program I will not be able to pass the exam. Is that true?*

EXAMINER: No, it is not true. You, personally, will be as well equipped as you, personally, would have been with the five-year program and present exam. The concept of the new professional exam is to place you in a position of professional judgment

in relation to a major environmental design project; so we will be looking for mature tactical ability in addition to the technical skills we already require. In this sense the exam will be tougher, but so are the problems facing our profession. Your specialty will be tested no more or less than anyone else's. Beyond basic technical competence the emphasis will be on your judgment.

ARCHITECT: *Can you guarantee the profession that this new exam will test the candidates as thoroughly as present exams do?*

EXAMINER: Yes, in fact, even more thoroughly.

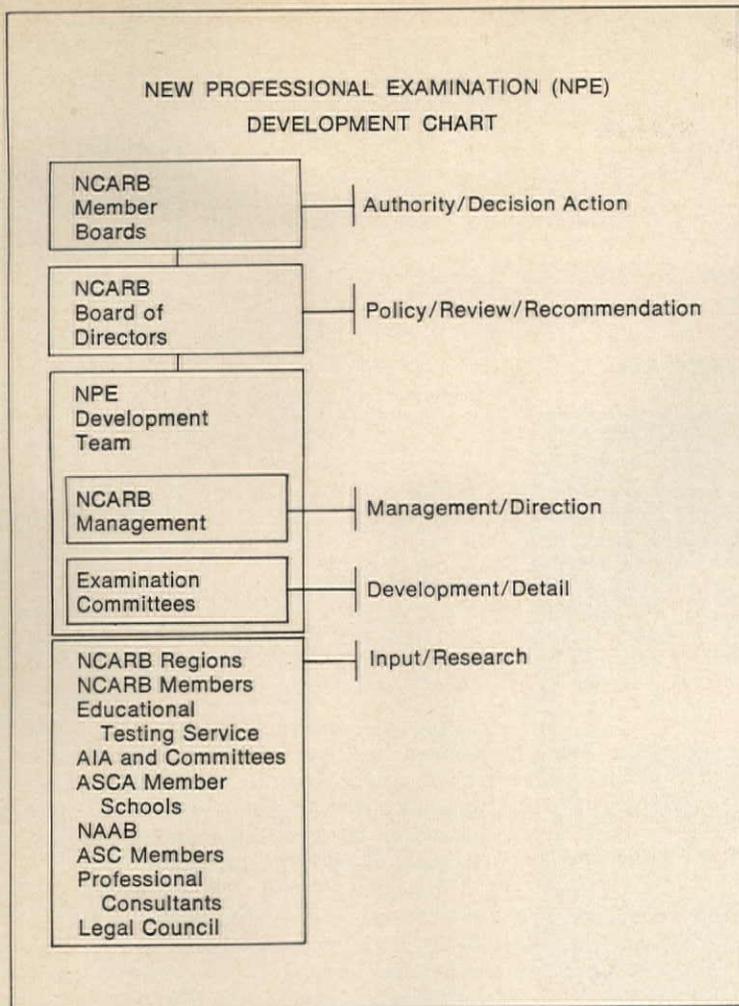
ARCHITECT: *That's all very well, but if students are not taught to draw and use the other tools of architecture, why should they be licensed at all?*

EXAMINER: We are confident that accredited schools or the qualifying exam will verify their ability to draw; but let us not forget that the tools don't always stay the same. There are new tools now, and there will be still newer ones by the time these students are in practice.

STUDENT: *Why should there be an exam at all?*

EXAMINER: We have passed the public-be-damned days when rich or powerful states or people planned and built as they liked and the public had to pay for it and put up with it. There's more to public safety and welfare than just designing a building that won't fall down. The public health will suffer if a building is poorly ventilated, just as the public welfare will suffer if a building is wastefully designed. If, by its design, a building becomes a source of pollution or if it degrades the environment in some way

Mr. McHugh, a partner in the firm of McHugh & Kidder, Santa Fe, New Mexico, is secretary of the New Mexico Board of Examiners for Architects and chairman of the Western Conference of the NCARB.



or other, then it is detrimental to the public health and welfare. By law, the public demands that your examining board be certain that you possess a minimum competence before granting professional registration. An objective examination is the only fair, impartial way.

STUDENT: *Why, after four or six years of education, must I still put in experience or apprenticeship time before even being allowed to take the exam?*

EXAMINER: This is another subject of lengthy and continuing debates among member boards of NCARB. Last year at the Boston convention we voted to shorten the minimum internship period from three years to one in this new examination procedure for graduates of accredited schools. I personally agree with this decision but a vocal minority is still skeptical. There will be more debating and more voting before the issue is settled. It is a complex subject and probably should be re-explained to every graduating class. A few exceptional candidates like yourself may be qualified to enter the exam upon graduation, while at the other extreme, three years may not really be enough. However, state boards must maintain *one minimum requirement for all*. Board members are, of course, deeply concerned with the public safety and welfare but they are also keenly interested in yours. Premature registration might well lead you into naive self-destruction. The market-place remains a harsh master and a young colleague's mistakes, while serious indeed for him, also reflect upon the profession. In any case, the old myth "keep the youngsters in servitude as long as possible" is as dead as a dodo. Anyone who has even a passing acquaintance with the environmental design field knows that our profession needs as many new members as we can get — and as quickly as possible.

ARCHITECT: *Getting back to this new exam. Some practitioners have the idea that it will be a lot easier than the present exam, that there is a general lowering of requirements diluting their registrations. Is this true?*

EXAMINER: No. It is not true. Since you took your exam years ago, our present ones have gradually grown more complex. The new exam continues this trend even though it will be compressed into two days. The shorter time simply leaves less room for error. Just to be certain about this, perhaps you would like to sit in for the new exam when it becomes available?

ARCHITECT: *I would be delighted. However, right now my schedule is a bit crowded.*

EXAMINER: So is mine.

ARCHITECT: *OK. You are eliminating all drawing in this new exam. Do you really think that you can judge a man's design ability without this?*

EXAMINER: His drawing ability, no; his design ability, yes. We have been doing it in a small way for several years in the present exams, through the use of problem diagrams and tactical design situation problems. By the options he chooses we can determine whether the candidate has a good design sense. And I want to add that this system of machine grading eliminates finally and totally any prejudice a board member might unconsciously have for or against some particular architectural style or material.

STUDENT: *What guarantee is there that after someone passes this new exam he will be able to make a living?*

ARCHITECT: *Guarantee?!*

EXAMINER: We'll all pretend he didn't say that.

ARCHITECT: *I understand that NCARB is hoping to get this new examination ready for December 1972?*

EXAMINER: Yes, we hope to do that. The exam will be ready but the logistics of change by each state board is quite a different problem. A few boards must negotiate necessary changes in their respective state laws plus manage the attendant administrative adjustments. It can be done.

ARCHITECT: *Can the NCARB force this exam on the states?*

EXAMINER: Of course not. The states themselves are NCARB. We are a voluntary federation and everyone involved recognizes the tremendous need for achieving universal agreement. Enfranchisement of architects is a state's right.

DEAN: *Are you planning to do away with the oral examination altogether?*

EXAMINER: The oral examination is now called "Exam B" and is required by the statutes of many states. I'm sure that it will remain part of the exam.

STUDENT: *You have been saying for years that you had a good exam; now you tell us that it is no good.*

EXAMINER: No, we are not saying that. Our present exam is regarded as the best in the professional environmental design field. We are making an even better one with this effort.

ARCHITECT: *I understand NCARB member boards will vote on this new exam at the next annual convention. Why can't an individual practitioner like me have a voice?*

EXAMINER: Yes, NCARB member boards will vote on the model of the new exam this year. If the vote is in favor, the total exam will be completely ready for implementation in December, 1972. The authority in architectural registration rests with the individual board. Bear in mind, however, all the people who make up these boards are registered architects. While a few are architectural educators, the rest of us are individual practitioners just as you are. I think our interests in the welfare of your profession coincide. As for your voice, you can make your views known through the AIA or your own state board members. □

WASHINGTON PARK COURTS WINNEBAGO COUNTY HOUSING AUTHORITY

Rockford, Illinois

Ministry of a Project



Architects: At the time of the project Knowland, Smith, Ream, Inc. (now Knowland & Smith, Inc.), a firm founded in Rockford 20 years ago and incorporated under that name for the past three. Presently made up of a six-man staff — two principals, three architects-in-training and a secretary-bookkeeper — the office has an annual construction volume ranging from \$3 to \$5 million.

Type of Architectural Contract: PHA 1915 (percentage of construction cost with reimbursable inspection clause).

Additional Services: Studies in site utilization, assisted by the landscape architects, which involved the selling of the community on the advantages of the project, and preparing zoning studies and reports; program development phase (none offered by the local housing authorities) in conjunction with local social service agencies.

Consultants: Structural engineers — Norman H. Meyer & Associates; mechanical engineers — Donald R. Johnson & Associates; landscape architects — R. C. Greaves & Associates.

Type of Construction Contract: HUD LR-12 (single contract with Pearce Butler Construction Co.).

Project Costs: \$1,485,850 (site acquisition, \$34,550; site improvements, \$228,455; dwelling construction and equipment, \$1,012,632; nondwelling construction and equipment, \$52,605; overhead, interest, etc., \$158,012).

Program Requirements and Solutions: Washington Park Courts was the first public family low rent housing in the Rockford area for

30 years. As the first 75 units of an anticipated program for nearly 1,500 units, the client insisted that, in addition to meeting all criteria set forth by the Department of Housing and Urban Development, the design, appearance, low maintenance, safety and quality assure future public acceptance that low rent housing can be a desirable community development.

A narrow, gullied site with a 30-foot variation in elevation dictated the segmenting of units into five groupings set at different levels. Each grouping is arranged around a central service court concealing parking and service areas from neighborhood and traffic views. Each court contains resilient-surfaced tot lots, easily supervised by parents from their apartments. Hard surfacing has been applied wherever traffic ruled out sod survival.

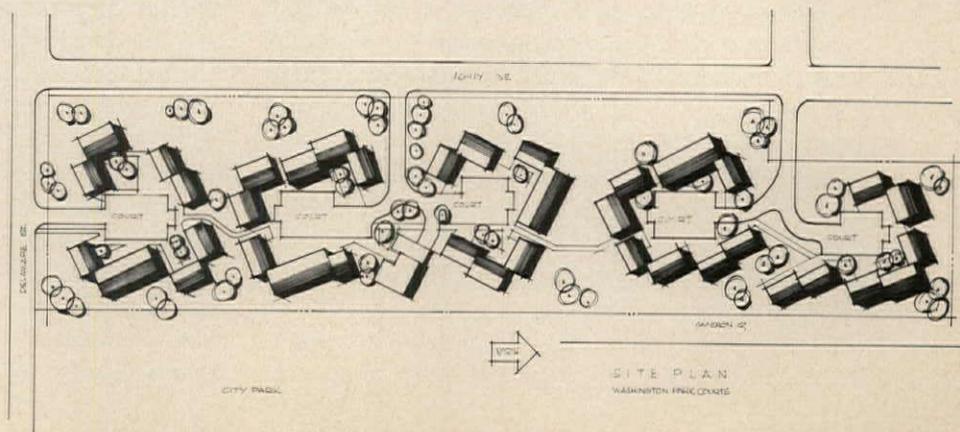
Seven types of units with variations of from one to six bedrooms provide diversity, and the

resulting roof silhouettes and building angles deviate properly from the usual barrack-row look of public housing. A community building is located adjacent to the public park, making the latter and its recreational facilities an extension of the project.

The buildings are of wood frame-type construction with 3-inch thick brick veneer on the first floor. Foundations are 8-inch thick poured concrete with 4-inch slab on grade. Walls between apartments are 8-inch exposed painted concrete block to prevent sound and fire transfer. End walls are 4-inch brick and 4-inch block with 2-inch furring, insulation and drywall. First floor exteriors combine face brick and white acrylic stucco. Second floors are textured, stained cedar plywood and stucco panel under horizontal sliding windows with storm and screen. The roof is a rolled mineral surface with a cold mastic application.

Interior finishes consist of asphalt tile floors in bedrooms and living areas, with vinyl asbestos in kitchens and bathrooms. Walls and ceilings are 1/2-inch painted drywall. Doors are hollow core hardboard covered with vinyl film for easy maintenance. The window stools and kitchen countertops are plastic laminated for durability.

Special Benefits to the Owner: The principal merit of this project stems from the fact that it was the first public housing in the area, including an outlying region of about four counties, in more than 30 years. The existing



public housing in its unsanitary and socially deplorable state had created a stigma in the citizens' minds that had to be overcome. The need for such housing was great, and the local authority made it quite clear to the architects that the success of future projects depended heavily upon general acceptance as well as tenant approval of the initial 75 units.

Since the execution of this project, which was completed in 13 months — one month ahead of schedule — and within the budget, about 1,600 public housing units have been constructed, with the community now supporting efforts to create more and eliminate substandard shelter.

Architects' Comments: It appears, then, that the project was a success. Why? For one thing, the usual maintenance and upkeep problems of public housing, along with the typical battle of construction costs on low income housing, appeared to have been won.

But the real success stemmed from a strong conviction rather than from any program or design concept. This conviction was born from an early realization that this was to be family housing. Within the influence of family living are developed beliefs, departments and, most important, individual character. When a family loses its individuality, as it does when referred to as "public housing tenants," or when an individual's character is buried in row-on-row barrack-type housing (where his home is distinguished only by a number), he resents, rebels or becomes apathetic toward his own environment.

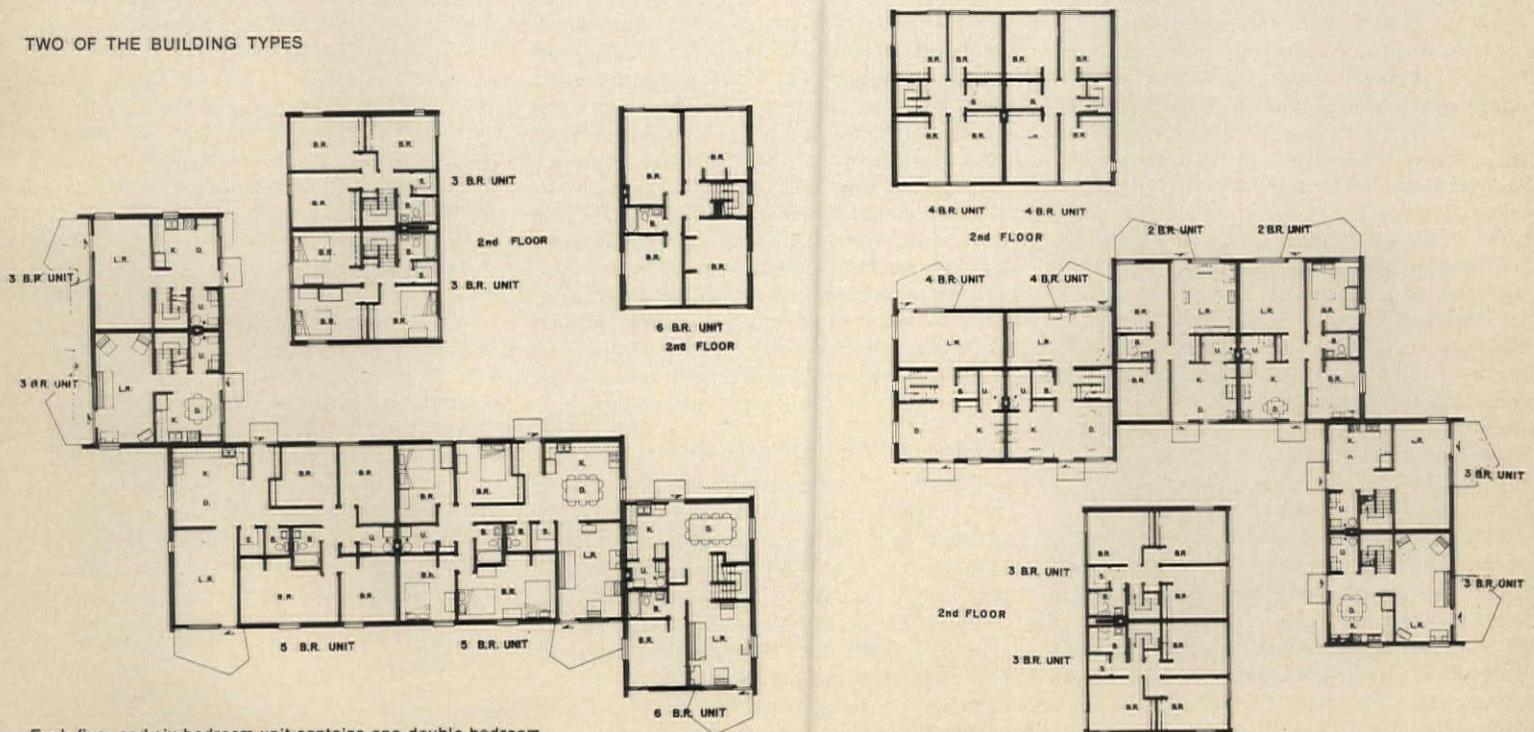
An attempt, therefore, was made to design "family units" rather than "units." Public housing budgets do not allow individual homes placed in the better-developed sections of a city so a compromise was reached to provide enough varieties of structure to give the individuality desired and to place them

on this rather difficult site in a manner to achieve a feeling of separation despite the density.

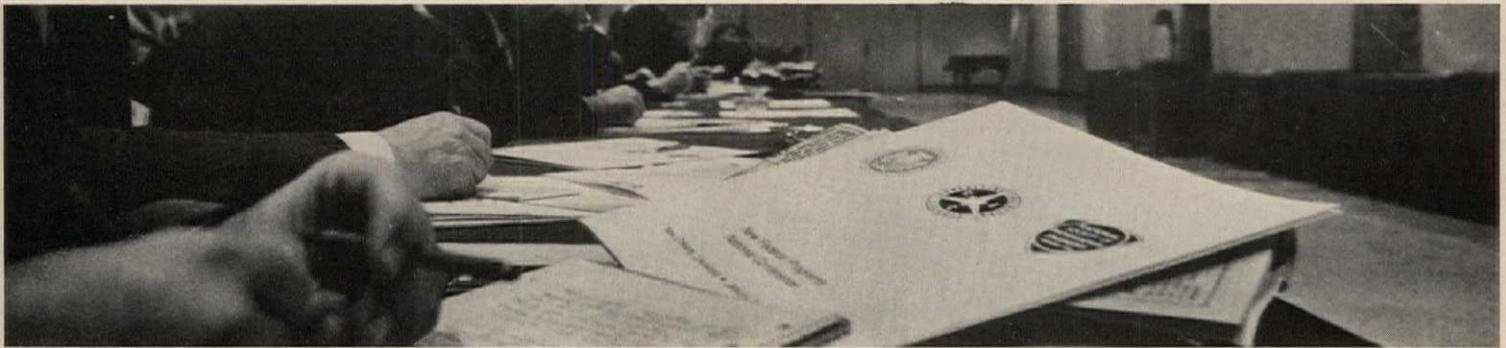
The variations in floor plans and roof lines already cited contributed to the desired family individuality, but the frosting on the cake was in the establishment of a program of help and education to the tenants wherein those who were inclined to be proud of their new home but not trained in housekeeping, child rearing, health and sanitation, birth control, budgeting, etc., were given an opportunity to improve their ability to manage and create an environment for true family living.

We would be less than honest if we tried to say that Washington Park Courts was a winner on every count. On the other hand, we are convinced that public housing cannot help but be a total failure if it does not attempt to restore individual dignity to the families it shelters. □

TWO OF THE BUILDING TYPES



Each five- and six-bedroom unit contains one double bedroom.



Indeed there is a new attitude in the government toward architectural/engineering firms and it's being translated into action. The New Orleans seminar, "The 'New Look' in Federal A/E Contracting," clearly testified to this.

"It's a milestone," said James C. Donald, director of The American Institute of Architect's Federal Agency Programs. "The government agencies are now seeking A/E advice through their professional societies."

Over the last several months, the agencies have gone to the professionals for straight talks in a series of important meetings to discuss newly recognized problems and to search, in cooperation with A/E firms, for means to solve them. "We have to improve the situation any way within the law—and we have to change the law if necessary," stated Robert W. Blake, chief, Research and Development, Facilities Engineering and Construction Agency, the Department of Health, Education and Welfare.

The new attitudes, the problems, the laws and actions to overcome them, were presented in forthright addresses by top level officials to the audience of more than 800 at the A/E conference in New Orleans earlier this year. Co-sponsored by the Consulting Engineers Council/USA; National Society of Professional Engineers-Professional Engineers in Private Practice; and the AIA, in cooperation with the participating government agencies, it was the first such joint meeting. It was, in content and presentation, of utmost value.

The seminar focused generally on four areas: the new Standard A/E Agreement Form for use by all federal agencies; job opportunities for private firms, expected A/E performance and application procedures; structural reorganization and new design and construction philosophies in government agencies; technical information insufficiently familiar to architects.

Themes which ran consistently through the thinking of different agencies were:

- the ferment and excitement of putting a new way of thinking to work
- the urgent search for means to control costs and cut time while improving function and quality
- consciousness of the total human environment (pollution/population/poverty)
- introduction of systems technology, life-cycle costing, value engineering (analysis), construction managers
- inspired creation of incentives and disincentives with federal funds to nudge private enterprise into new responsibility for the public good

- analysis of the purpose of a building type to obtain handsome buildings which function rather than obsolescent monuments
- improvement of the agency/professional relationship
- greater delegation of authority to regional offices
- rejection of the idea of "bidding" for the services of top professionals.

The New Standard A/E Agreement Form—which should create uniformity while allowing for special conditions—was discussed by Walter A. Meisen, assistant commissioner, Public Building Service, the General Services Administration. Among the important clauses:

- "Termination for government convenience," which entitles A/Es to an equitable adjustment in contract price if the government ends a job before it is completed. There is an adjustment also if the government makes changes affecting A/E costs.
- "Liability of the architect," in which the word "negligent" has been inserted before the word "performance"—a minor triumph for the architectural profession.
- Unlimited government rights to "all drawings, designs, specifications, notes and other work developed" on the project—further including the right to reuse the work without payment.

Gilbert A. Cuneo, author of *Government Contracts Handbook*, cautioned on the importance of careful reading of a government contract to ensure that all the professional's rights are included. When a problem comes up, he warned, "your friend in government cannot allow you to deviate from the word of the contract. His word can be only as good as the contract." Emphasizing the necessity for liability insurance, he said: "Paths of professional glory lead to liability. Where there is a potential liability, you have to be ready to pay for it." Consequential damages he explained as outside consequences of direct damage to government property, such as when the building falls and damages neighboring buildings. The A/E is liable for both direct and consequential damages.

General Services Administration

Dramatic recent changes have reshaped the GSA, which was represented at the seminar by its administrator, Robert L. Kunzig; Commissioner of the Public Building Service Arthur F. Sampson; and Assistant Commissioners Meisen and R. I. Nixon. Over 80 percent of GSA's top management has been replaced in the effort to get the huge agency to move. It has improved A/E relationships in many ways:

There is an individual project manager with comprehensive authority on major jobs. A construction manager on major projects, a totally new responsibility and function, may be realized. Firms are selected on the basis of qualifications and past performance from recommendations by public advisory panels. The lengthy criteria are being reduced to include only exceptions to normal national standards. Intermediate reviews are reduced to two, held in the A/E's office, with timely decisions by agents with on-the-spot authority. Timesaving techniques can produce more profit for the A/E as well as reduce the ultimate cost of the facility.

Expected in turn from A/Es is work that is creative, punctual, carefully structured,

WHAT'S IN

cost conscious, responsible. Tight schedules must be met within the budget. Accurate cost estimates are an integral part of good design. As the largest civilian construction agency in the country, Kunzig said, "we in the GSA know that we are an important client and we intend to be treated as one." Preferential treatment is expected, "and, if you are not willing to give us that, then, we do not want to do business with your firm." The GSA would like design and working drawings to be completed within 12 months.

In the race against inflation, phased construction has been introduced, whereby substructure and long-lead items such as construction steel and transformers are bid separately prior to the completion of the working drawing stage. In conceptual stages are systems building and value engineering. In areas where labor costs have risen beyond reason, "we are instructed to withhold projects if their construction contributes substantially to runaway inflation."

The new planning office of the PBS is concerned with the total environment, operating within the statutes of the National Environment Policy Act of 1969, the Agricultural Act of 1970 and Executive Order 11512, also of 1970. The latter obliges the administrator, when selecting sites for federal facilities, to

Mrs. Botond, a former magazine editor and the wife of István Botond, AIA, represented her husband's Washington-based firm at the A/E seminar in New Orleans.

consider the impact a selection will have on improving social and economic conditions in the area, including the positive effect on unemployment (the new facility should be located in an area of underemployment), on environmental plans, on economically disadvantaged areas and new communities.

Department of Health, Education and Welfare

As opposed to the GSA, which constructs government buildings of a general nature, HEW's new Facilities Engineering and Construction Agency is the government's special purpose construction agency. Staffed by 311 people of whom 228 are professionals, FECA has \$10 billion worth of work for private A/E firms, which will be recompensed by task and man-hours.

Gerrit D. Fremouw, FECA administrator, outlined his agency's missions: improving services to federally assisted construction; bringing savings in construction costs through new techniques; carrying out a facilities management system for federal property. Said he: "Too few jobs are being built under new procedures because costs are out of control and getting worse." Emphasizing the need to increase cost-efficient design by reducing job drudgery, he went on to say that FECA

Added to these are time for design and construction and quality standards of the facility.

2. A pilot project, as applied to a Tuba City, Arizona, hospital for the Indian Health Service, a "single design-construct contract," provides for design and delivery of a completed hospital. After a negotiated contract the private A/E firm (selected on the basis of experience and capability) prepares a technical data package including performance requirements, conceptals, schematics and preliminaries. (The firm will also act as consultant to the project manager during preparation of the government's review, inspection and test plan.) Prequalified design/construct teams then price their own proposals for completion of the design and construction under a two-step procurement method. With this approach, FECA feels that the private A/E and the government can spend more time on performance and less on particulars.
3. Another pilot project is application or promotion of techniques established by the School Construction Systems Development Project and the Schoolhouse Systems Project. Here, the private A/E specifies the performance required for the system consisting of structure, HVAC, ceiling lighting, and partitions. After a performance-based selection is made, the A/E designs the nonsystem por-

outlined by VA's Deputy Assistant Administrator for Construction Lowell G. Schweickart: The A/E, brought in soon after approval and funding of a project, will be able to participate earlier in the preliminary planning process. Critical path method networks have been introduced on all projects over \$1 million. "As an escape from our dilemma" of 6 percent limitation on fees, included within that 6 percent will be only those services directly related to the development of construction contract documents; VA will be able to negotiate a more reasonable fee basis and a system of partial payments is being worked out. In turn, the A/E is expected to further assist VA in providing better health care at lower costs.

Private A/E firms are commissioned for 85 percent of VA work, and there are jobs for small offices as well—upward of \$100 million of construction projects, from 1,000-bed hospitals to minor remodeling; research or educational facilities; improvement of existing, intensive care units; boiler plants; airconditioning programs. To apply for a commission, Schweickart said, send Form 251 and keep it up to date with the VA. Write when there's an interest in a particular project. Get to know the supply officer of the local VA hospital—he contracts the A/E.

FEDERAL CONTRACTING FOR YOU?

by PATRICIA BOTOND

measures its effectiveness by reduced total cost and life/cycle costing of facilities; reduced time for design and construction; improved total quality standards. "We view the reduction of a needlessly high and indefensible quality standard as just as much of an improvement as the change to a product with a more rewarding life/cycle cost. Great architecture can be simple. We don't want monuments."

FECA has endorsed for action areas:

- Value analysis, the economic analysis of the structure, focusing on meeting a given objective at the lowest life/cycle cost.
- Construction management from the earliest stages so that cost control and construction concept can develop concurrent with design, and thus make phased design and construction possible.
- Systems building as an approach to building which proposes and tests solutions during the design process. Life/cycle costing is to be applied in program and performance stages, permitting conscious choices between costs and quality.

Use of the systems approach has resulted in four projects which were presented by FECA's Blake:

1. Life/cycle costing, which consists of present and future costs of the facility, as discounted to the present, including not only costs of the facility but also denial of its use during design and construction; maintenance and operation after occupancy; and the cost of the process within the facility.

tions of the building around the system selected.

4. The Academic Building Systems Project is providing a software program for design and construction of college laboratories, offices and classrooms. Organized around a space module, it makes for repetition in design and construction and results in open configuration with built-in adaptability.

Successful results of research will be promoted by FECA in the hope of generating wider application to the benefit of the nation.

Veterans Administration

The VA is experimenting with a systems and modular approach to hospital design, aiming at flexibility at reasonable cost, for instance in its San Diego Hospital now being completed (*see AIA JOURNAL* April '70), where the exterior walls are movable and the floors are column-free. VA's Research Staff, Office of Construction, headed by George E. Distelhurst, is investigating applications of advanced technology. "We are enthusiastic about the potential this study has for application," he said, describing the integration of mechanical, electrical, structural and architectural systems as "a set of rules of assembly rather than a kit of parts."

The struggle for self-improvement and a more attractive role as client brought the VA to hold a "most enlightening and candid discussion" last October with A/E firms and representatives of professional societies. Improvements resulting from this meeting were

Get to know the engineering officer of the hospital—he advises on the adequacy of the performance. The Washington, D.C., office awards projects down to \$300,000 to \$400,000; smaller projects are awarded locally.

Department of Housing and Urban Development

"The housing situation is in a new crisis in an era replete with more crises than the normal mind can comprehend," warned Assistant Secretary for Research and Development of the Department of Housing and Urban Development Harold B. Finger. A decent home in a suitable environment for every American "is another of the unkept promises that has fed discontent and polarized social and economic divisions." Furthermore, he said, the standards for "decent" and "suitable" have risen and will continue to rise—along with population figures.

The Housing Act of 1968 requires us to produce 26 million housing units during the '70s. But in the last 10 years we were able by conventional means to produce only 15 million. Secretary Finger outlined the major impediments: money availability and the cost of money; land availability and its cost; shortage and cost of skilled labor; thousands of autonomous building codes; unwillingness to experiment with new methods.

Federal incentives are being applied to try to bridge the staggering gap between the need and the ability to meet it. Operation Break-

through is HUD's main effort, designed to stimulate change and improvement in the entire business of housing (see AIA JOURNAL, March). Simultaneously, Breakthrough is trying to generate improvements in building codes, zoning, and labor and industry arrangements that are required for industrialized production and large volume marketing. HUD is trying, Finger said, to "bring our great social vision and enormous technical and productive capacity" to the realization of America's great housing dream.

Leo Morris, director of Community Facilities, HUD, emphasized greater reliance on local public officials and A/Es in the management of the projects and in speeding up the processing after project approval. This will involve accepting certificates as to the adequacy of plans and specifications, and certificates as to the adequacy of construction and its compliance with all federal requirements. HUD will as a matter of policy not review plans and specifications, nor inspect construction, except where the area administrator determines that such is necessary.

United States Postal Service

Even the old Post Office Department has a new look. Stripped to a shell and now being rebuilt, it is free of politics since Congress relinquished most of its powers over it last August. Its management will become both permanent and professional, controlling wages and postal rates, and with funding capacity for expansion and modification of facilities.

The present facilities were described by Deputy Assistant Postmaster General for Construction Robert Isaacs: "We have buildings in all stages of deterioration. They averaged seven to ten years from concept to occupancy and in most cases were obsolete before we moved in. The design was monumental and in most cases bad. . . . The most impressive building in town and also the least functional."

The new postal service recognizes its reason for being: to move the mail. Thus it needs a production line facility, a mail factory. Design philosophy has changed correspondingly; buildings must serve their functions, be easily expandable and flexible, have a pleasing environment for employees and customers, be designed with an industrial plant approach for the useful life of the building. Aware of the need for good architectural design, the postal service still intends to cut the time span from concept to completion, which is not to exceed three years. To this end, phased construction, construction management, negotiated construction con-

tracts, and new materials and methods will be used; selection of A/E firms will be according to qualifications and not political influence; the fee will be for services performed rather than restricted.

Mail facilities will include high-speed transport belts, product lines, electronic zip code translators, sorting machines with memories. Bulk mail, with its particular distribution network and physical handling requirements, will have facilities on beltways or bypasses. Small and medium buildings will be constructed with modules or standardized.

Some \$700 million each year during the next four to five years is available for new construction, in addition to expansion and improvement work. Architects should submit Form 251 with brochure and letter indicating the project of interest. Interviews are held in the A/E's office. If selected, he will receive a federal design package including program and space relationship studies only, leaving him to design the building. Plan reviews are held in the A/E's office, with a project manager as the single point of contact.

Federal Aviation Administration

For the first time, attention is given to overall planning of an entire aviation related environment. According to FAA's Deputy Director of Airports Service Clyde W. Pace Jr., the landmark Airport and Airway Development and Revenue Act of 1970 commits the government to putting \$15 billion into the aviation system during the next decade. These funds will not, however, be approved unless the ecological impact of an airport improvement project has been documented, adequate replacement housing guaranteed available for persons displaced by the facility, and air and water quality standards are met.

For A/Es there are now how-to manuals prepared by the FAA on how to plan a metropolitan system, a regional space system, an airport master plan. A brochure on consulting services now in draft form will be on selection of the consultant; contracting documents; performance evaluation; the federal role. Selection of A/E is through Form 251.

Environmental Protection Agency

Also for the first time there will, it is expected, be enough funds to make significant progress in pollution control through the EPA, which includes programs for air and water pollution, solid waste, pesticides and radiation.

"The time is here for aggressive and imaginative adoption of newly developed treatment practices to be applied to enormously

expensive municipal treatment facilities which must be designed in the next four years," said Ralph Palange, director of Construction Grants, Federal Water Quality Authority, EPA.

The emphasis will be on technology, planning, cost effectiveness—as well as persuasion and participation. "If our rivers stink," said Palange, "we must work together in eliminating the smell."

Private A/E firms are commissioned by nonprofessional grantees; ads in *Commerce Business Daily* list job possibilities. Technical publications available through the EPA inform on new techniques, criteria, present projects, and summaries of demonstration waste projects.

Department of Commerce

A vast amount of research material of value to architects is offered through this department. Deputy Assistant Secretary for Product Standards Richard O. Simpson drew attention to the new National Technical Information Center, which makes available two publications series of advanced information on computer tape: "Government Reports Announcements" and "Topic Announcements." Full reports abstracted in the two can be bought at cost in paper copy and in microfiche from NTIC. *Commerce Business Daily* lists government procurement invitations, subcontracting leads, contract awards and foreign requests for proposals. "For raw job leads, this is one of the biggest bargains available from government, at \$30.25 a year," said Simpson. In the international field is the *Quarterly Summary of Future Construction Abroad*. There are opportunities also with the Economic Development Administration and the Joint Export Association. Available to architects holding international meetings are seven US Trade Centers which offer free use of meeting rooms and libraries, as well as consultation with their staffs.

Where Do We Go from Here?

While there will certainly be some mistakes made as the agencies restructure themselves, they are clearly trying to improve federal construction for the good of the nation, and they are looking to architects to help them. Said Kunzig: "We are asking you to join us in shaping a new partnership which will reflect the changes we have already made and which will help determine where we go from here." Added Public Building Service's Meisen: "It is now time to begin building our profession anew. The way we do business today will affect all of our careers—ultimately the future of our profession." □



The electrical promise of tomorrow...



needs
the electrical
contractor of today

The integrated electrical ceiling. Offering great design flexibility, it promises comfort and efficiency for years to come. It heats, cools, lights, and carries communications . . . thanks to electricity.

Your buildings need a lot of power—electrical power—to sustain a modern Electro-environment. An environment properly heated. Properly cooled. Properly lighted. An environment where intercoms and business machines and background music can all get along together in harmony . . . thanks to a qualified electrical contractor.

He, and he alone, possesses the theoretical and technical skills to translate new designs and concepts of electrical technology into working, functioning realities. Trust the qualified electrical contractor to wire your building safely. To anticipate future as well as initial power needs. To coordinate the work of other specialists—carpenters, sheet metal men, heating and refrigeration experts—while he himself handles everything electrical in such installations as integrated ceilings.

Remember: your qualified electrical contractor guarantees performance not only on the electrical functions, but on the entire ceiling installation he oversees as well.



National Electrical Contractors Association
Washington, D. C. 20036

Survival in a Sea of Trash?

A glance at some of the proposals to help America swim out of oceans of garbage and into more beautiful environmental waters.

If you see boy scouts scurrying all over the place on June 5, don't be surprised. They will be engaged in a worthy project—picking up litter. Keep America Beautiful, Inc., is co-sponsor of the massive cleanup campaign to be known as Scouting Keep America Beautiful Day.

David P. Reynolds, executive vice president and general manager of the Reynolds Metals Company, is chairman of a 90-person committee responsible for planning the event. The group includes such notables as Mrs. Richard Nixon and Mrs. Lyndon B. Johnson, as well as leading conservationists, industrialists and labor leaders. Reynolds said that the aluminum, steel, glass and paper industries will recycle the litter collected by the boy scouts.

The concern about whether we will all drown in a sea of trash goes beyond the scouts. In 1970, the Resources Recovery Act was passed which authorizes \$463 million in appropriations over three years to help cities and states to plan and construct systems for waste disposal and recovery.

The problem of waste disposal that confronts the environmentalists seems gargantuan. More than seven pounds of household, commercial and municipal wastes are generated for every citizen every day—double the poundage of 40 years ago. It is estimated that by 1980 these wastes may exceed 500 million tons annually.

In 1969, more than 36 billion bottles and glass jars were produced, about 17 billion being beer and soda bottles. The early '50s saw a bottle making 30 trips from plant to consumer and back again. In 1970, our disregard for pennies was such that the average for the country was less than 14 trips for the bottles, with the larger cities down to two or three.

The soft drink industry was founded on the concept of the returnable beverage bottle; and when bottles are actually returned, it is a good recycling package. The system breaks down if the consumer won't return the bottle and if retailers do not cooperate. New York papers in February reported that store owners are resisting because they think the bottles are too much trouble, cause injuries from broken glass and attract insects. When one grocer was asked if his customers were requesting returnables, he replied that there was "not an ecologist among them."

Some citizens are rallying, however. Early this year, the Coca-Cola Company of New York offered to pay anyone 10 cents a pound for aluminum cans and 1 cent a pound for bottles brought to any of its 17 collection centers. On a Saturday in March, despite stay-at-home weather, thousands of people from New York, New Jersey and Connecticut brought in more than 100 tons of glass (about 400,000 bottles) and five tons of aluminum (about 200,000 cans) so that Coca-Cola paid out about \$6,000. In Newburgh, New York, one group of boy scouts unloaded four truckloads of bottles and cans, making \$58.

Reynolds Metals is also helping clean up the environment. In February 1970, the company announced an expansion of its aluminum can reclamation program, and by now nine cities are participating in the program which gives cash payment for aluminum scrap at 10 cents a pound. During 1970, the company paid out \$400,000 for aluminum cans turned in, equivalent to about 80 million cans.



It pays to be tidy; can-pickers here hope to make a neat profit by turning in litter. Recycling is one answer to the refuse problem.

New York City has two collection centers, and there is one each in Newark, Houston, Los Angeles, San Francisco, Phoenix, Miami, Tampa and Jacksonville, Florida.

It worries ecologists, however, that bounties for most materials is not likely to be the total answer to the problem. The ultimate solution perhaps is to get at the economics and find new markets for recycled materials. It is generally agreed that sophisticated, computer-oriented techniques are required that will cover everything from the original design of products to collection, recovery and recycling or conversion to profitable products. The approach goes beyond reclamation to such essentials as change in marketing, new materials, consumer education and different behavior patterns.

The National Center of Solid Waste Disposal is a united effort by business and industry to save the environment. Among its objectives are the following: to act as a resource center for information on disposal systems; to receive funds for support of research; to contract for research on the development of litter control and solid waste disposal systems; to

evaluate results of research; and to take responsibility for designing and operating modern physical systems for solid waste disposal.

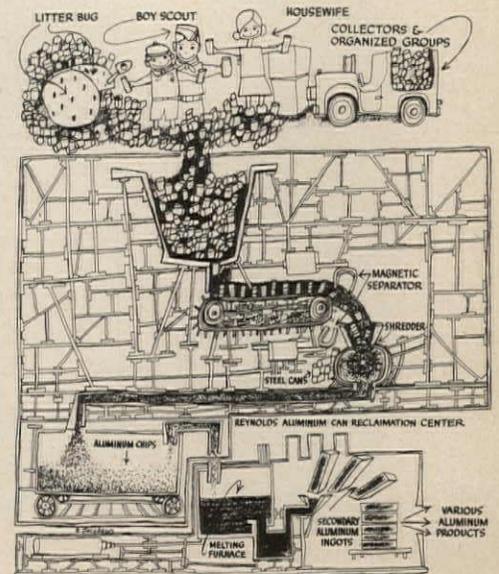
Industry has some 100 programs in progress already. The Aluminum Association and the Rust Engineering Company have a plan for a \$15.8 million model recycling plant in the Washington, D.C., area (near the eyes of government officials) which would define and refine all methods of recycling and put the data on a computer so that other municipalities could determine their needs and build plants accordingly. A prototype waste handling plant, designed by Black Clawson, is being installed in Franklin, Ohio. Fifty tons of waste will be processed in one shift, producing seven tons of pulped fiber, four tons of metals and four of glass.

Harrisburg, Pennsylvania, is building an incinerator and has plans to sell \$3 worth of steam for every ton of waste. Ferrous metals remaining will be sold for useful products. In the Wilmington, Delaware, area, Hercules, Inc., will build and operate an \$8 million plant which will take 500 tons of solid waste and 70 tons of sewage sludge daily, with as much as 90 percent of the output expected to be marketable. Other cities are advocating that recycling can be less expensive than landfill; besides, landfill areas are fast filling up.

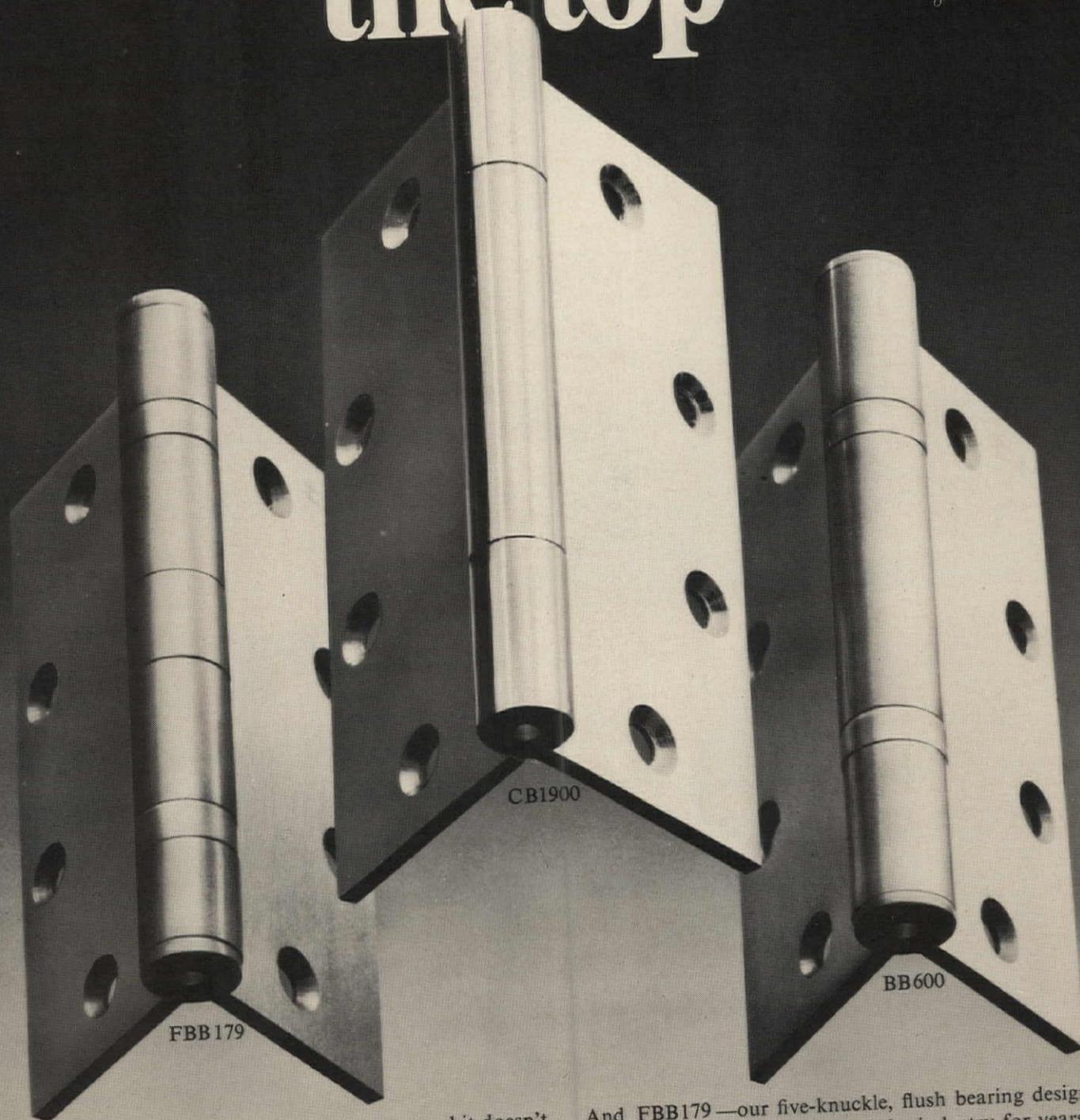
The United States Bureau of Mines in Edmond, Virginia, has on display bricks and building blocks made from recycled glass and ingots of reprocessed zinc and aluminum. Research Director Max Spendlove says that the cost of grinding out better garbage is \$3.52 a ton and that the recycled value is a potential \$12 a ton.

As a *Time* magazine reporter said, "The ideal container for prodigal America is the edible ice cream cone." We can't live on ice cream alone, however. And just think of all the old automobiles. Last year, there were more than 75,000 cars left on city streets—20 times more than a decade ago. And there is all the construction debris, worn out machinery and enormous tonnages of industrial wastes. It is well to note that some people are concerned lest we drown in a sea of trash. □

HOW AN ALL-ALUMINUM BEVERAGE CAN IS RECYCLED



Let's take it from the top



For style and quality, the one at the top—and it doesn't matter how many hinges you look at—is Stanley's CB1900. We call this one *LifeSpan*. The slimmest, longest life, *concealed* bearing hinge manufactured today. So unusual, we've even had it patented. So fine, it meets every architectural challenge. So great, we guarantee it for the life of the building.

Of course, there's also the BB600 *Slimline*—the first three-knuckle ball bearing hinge made.

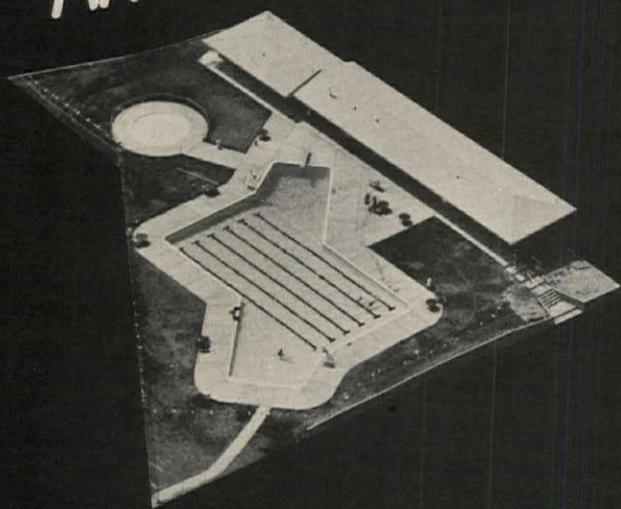
And FBB179—our five-knuckle, flush bearing design hinge—has been the *standard* of the industry for years.

No question about it, they're all great hinges. But if you really want the best, take it from the top. Address inquiries to Stanley Hardware, Division of The Stanley Works, New Britain, Connecticut 06050. In Canada: The Stanley Works of Canada, Ltd.

STANLEY
helps you do things right



Swimming Pool Know-How



Swimquip, Inc. can save you time, money and headaches on your next swimming pool project.

Swimquip is one of the oldest and most respected names in the swimming pool industry. All of the experience and know-how of the Swimquip international staff is available to you without cost or obligation.

Yes, Swimquip manufactures pool filters, heaters, deck equipment, etc. But we'll take our chances on whether you select any of it. The offer to help comes with no strings attached. We'll leave the equipment selection to your judgment of quality and value.

In the West call 213/443-4211

"Ask for George Bowman"

In Central U.S. call 214/357-3801

"Ask for Ross McAlister"

In the East call 404/355-0480

"Ask for Allen Hames"

SWIMQUIP INC.

DEDICATED EXCLUSIVELY TO THE ART AND SCIENCE OF SWIMMING POOLS

3301 Gilman Road, El Monte, California/1121 Huff Road, N.W., Atlanta, Georgia/2665 Manana Dr., Dallas, Texas/74 Gervais Dr., Don Mills, Ontario, Canada/Blvd. Miguel de Cervantes Saavedra #151 Mexico 17, D.F./Ashley St., West Footscray, W. 12 Victoria, Australia/203-205 Cashel St., Christchurch, New Zealand Stanwell Moor Road, Stanwell-Staines-Middlesex, England



what you should know about

weatherstrip & thresholds

FREE Not a sales booklet, but a worthwhile guidebook covering all brands. Profusely illustrated to scale. 24 pages.

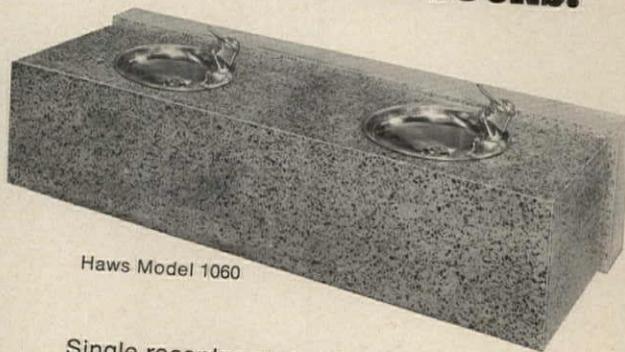
Gives fast answers to specification problems. Tells advantages and disadvantages of each of hundreds of items... material cost... installed cost... ease or difficulty of installation, etc.

PEMKO

Manufacturing Company

5755 Landregan St., Emeryville, Calif. 94608

Make yours a double... on the rocks.



Haws Model 1060

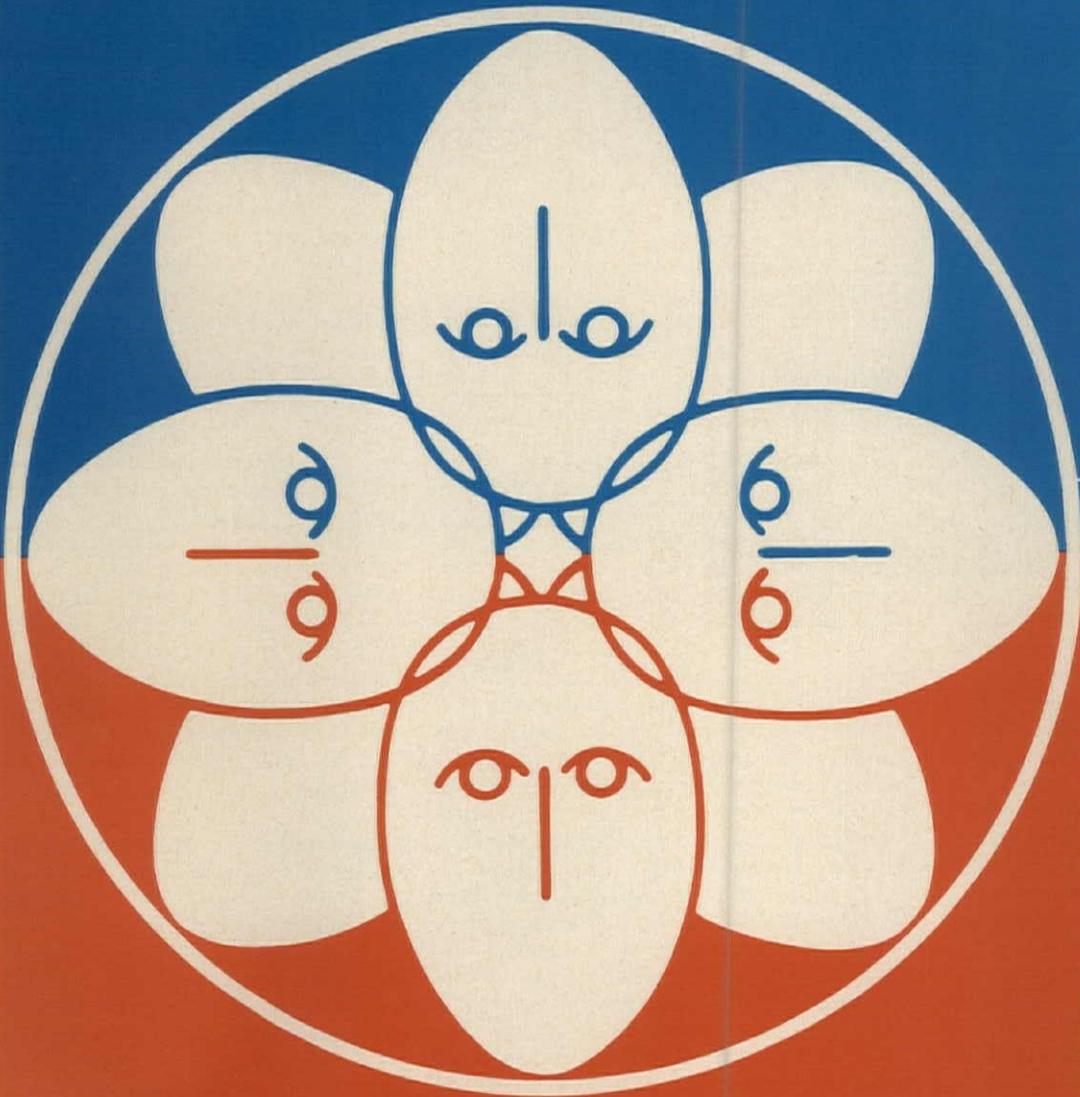
Single receptor or double, our new fountain of precast stone has clean, simple lines, handy deck space, five colors in three distinctive finishes. For details and all the facts, write: **HAWS DRINKING FAUCET CO.**, 1441 Fourth St., Berkeley, Calif. 94710.



DRINKING FOUNTAINS

NATIONAL EXPOSITION OF CONTRACT INTERIOR FURNISHINGS

neocon 3



6/23 · 24 · 25

The week of the architect. June 20-25. It starts with the AIA Convention in Detroit June 20 and ends with NEOCON 3 at The Merchandise Mart in Chicago June 23-25.

Critical changes in our physical environment over the past two decades — coupled with heightened sensitivity to a broad pattern of human values — have created a new world for this generation of architects. New opportunities. New challenges. New responsibilities. New roles in expanding parameters of public and private work that demand new capabilities.

At the AIA Convention in Detroit, you will be evaluating the ramifications of the new dimensions in contemporary architecture.

At NEOCON 3 you will be able to evaluate the practical applications of these new dimensions — for NEOCON 3 is a marketplace of great ideas. Ideas focused on products, materials, design trends — on all interests important to the architect and his engineers.

It's convenient and economical to include both AIA and NEOCON 3 in your time away from the office. Chicago is only a half hour away on any of 54 daily flights. One week in June. The week of the architect. Write for your NEOCON 3 reservations. No program fees or registration charges.

NEOCON 3
The Merchandise Mart
Suite 830
Chicago, Illinois 60654

PRESENTED BY THE MERCHANDISE MART IN CHICAGO

Moholy-Nagy: Experiment in Totality. Sibyl Moholy-Nagy. Cambridge: MIT Press, 1969. 259 pp. \$8.95.

Although Mrs. Moholy-Nagy may have had understandable misgivings about seeing the book on her late husband republished, we ought to be grateful to the MIT Press for this new edition of his biography.

This is a significant publication because it offers a fascinating insight into the work, methods and personal make-up of this great master of the "visual revolution," as only Sibyl Moholy-Nagy could have written it. Aside from having this importance as a historical document, the book is interesting to read and a literary achievement—something rare in the annals of writing on art. It is a warm and touching account of the successes and triumphs over human odds of a brilliant man who surely was driven, as Walter Gropius says in the introduction, by "the recognition that the destructive tendencies of our time could be changed into constructive forces only by a universal, superhuman effort."

The author's great analytic gifts and sophistication of language help to bring us nearer to an understanding of Moholy's work than we can learn from any other source. While Moholy's name as a teacher is importantly connected with the German Bauhaus and his own Institute of Design in Chicago, his work and credo were much more far-reaching.

In this context, it is probably less important that his constructivism is not as "meta-physical" as expressionism. What Goethe thought to be two souls within us is rather the universal fact that there are juxtapositions in our reactions to life and art that must finally come into balance for our survival.

There is a new awareness of the importance of Moholy's work. No one working with visual media can escape the impact of his didactic influence that extended into all directions where space, light, form and movement are present. We still must learn from his efforts in painting, photography, architecture, stage design, industrial design and typography. The overlay of current fads and fashions over old habits should not obscure the basic truths of vision that call for constant exploration and sensual perception. In an age when we are not sure what machines are doing to us, we could greatly be helped by such human attitudes as Moholy was blessed with.

H. H. WAECHTER, AIA

Planning of Surgical Centers: Basic Studies. Ervin Pütsep. Stockholm: Natur och Kultur, 1969. 124 pp. No price given (distributed outside Scandinavia by Lloyd-Luke, Ltd., 49 Newman St., London W1, England).

John Weeks remarks in the introduction to this book that Ervin Pütsep has written a

"most thorough and useful survey of contemporary practice and planning and wise recommendations in an area where unwise over-simplification has had far too long a run." Pütsep has for many years studied hospital planning, and he knows the requirements of the specific area to which he addresses his attention here: surgical centers.

He knows what he is talking about. But a limitation on the use of the book is that it is addressed to those who already know as well what he is talking about. The book is too technical for the beginning designer of surgical centers and is replete with information that experienced hands already have.

There is limited information on the all-important matter of surgical procedures. For example, there are long discussions on the problem of sepsis, but scant attention is paid to sterilizing techniques so vital for consideration in the architecture of surgical theaters. There are lists of spatial requirements and of environmental and technical specifications but limited information on surgical procedures.

"The intention has not been to develop a rigid pattern or final pattern for a surgical center," Pütsep writes, "but to provide a grid against which the flow of continuously developing contributions in the planning and designing process could be correlated." Fortunately, he presents no "ideal plan," but it would have been helpful had he established some criteria for judgment and discussed the pros and cons of various solutions.

The book is highly personalized; at the same time, it is heavily footnoted. It is worth noting, however, that he makes no reference to Isadore Rosenfield's important works *Hospital Architecture and Beyond* and *Hospitals: Integrated Design*.

It is unfortunate that no glossary has been provided. But despite the minor carping here about the book, it will be useful for the architect who wants to double-check his own information. In brief, the book is sometimes puzzling for its contradictory aspects. Too little for the beginner and in some areas too much for the experienced; packed with information but with amazing lacunas.

MARY E. OSMAN



Antoni Gaudi. Revised ed. James Johnson Sweeney and Josep Lluís Sert. New York: Praeger, 1970. 192 pp. \$18.50.

First published in 1960, this revision will be of interest to all who admire the Spanish architect's compellingly eccentric work. The plates, 13 in full color, reveal Gaudi's remarkably imaginative use of space and textures. As the authors write, this book points out certain values which Gaudi's work has for the present day — "his vision of space, ability to work out fresh structural forms and to employ texture, color and the abstract sculptor's approach in architecture."

A History of Architectural Styles. Fritz Baumgart. New York: Praeger, 1970. 304 pp. \$12.

The history of architecture is put into concise language in this book. Each chapter summarizes briefly the historical events that led to the development of each new architectural style, and specific examples are given for each period. The most significant buildings, as well as the most typical ones, are analyzed briefly. Illustrations and ground plans complement the text. Every architectural school library should have this book in its collection.

Systems Approach to Architecture. A. Benjamin Handler. New York: Elsevier, 1970. 184 pp. \$11.

Divided into two main divisions, this book examines function and system in architecture and building costs and effectiveness. Handler, professor in the Departments of Architecture and Urban Planning at the University of Michigan, considers architecture in terms of technical, environmental, human, symbolic and economic performance and delineates the role of each in the architectural system. The section on economic performance analyzes the economics of the construction industry; capital and lifetime costs in relation to output and revenue; facility needs and demands; the role of construction in the economy.

Opportunities in Landscape Architecture. Ralph E. Griswold. New York: Vocational Guidance Manuals, 1970. 102 pp. \$3.75 hardbound, \$1.95 paperbound.

The student who is interested in landscape architecture as a profession will do well to read this authoritative guide. It gives concise information about education requirements, a typical day in the life of a landscape architect, how to gain employment and other matters that will help the student make a decision about making a career in this profession.

Downtown. Detroit: Mayor's Committee for Community Renewal and the City Planning Commission, 1970. 64 pp. No price given.

This exceedingly handsome booklet provides a description of Detroit's central business district and its physical and economic resources. It looks at both old and new aspects of downtown Detroit — its facilities, transportation, physical setting, activities and growth. The three-year research program cost \$568,000, with two-thirds of the amount covered by federal grants.

continued on page 58

HOPE'S ALUMINUM WINDOWS

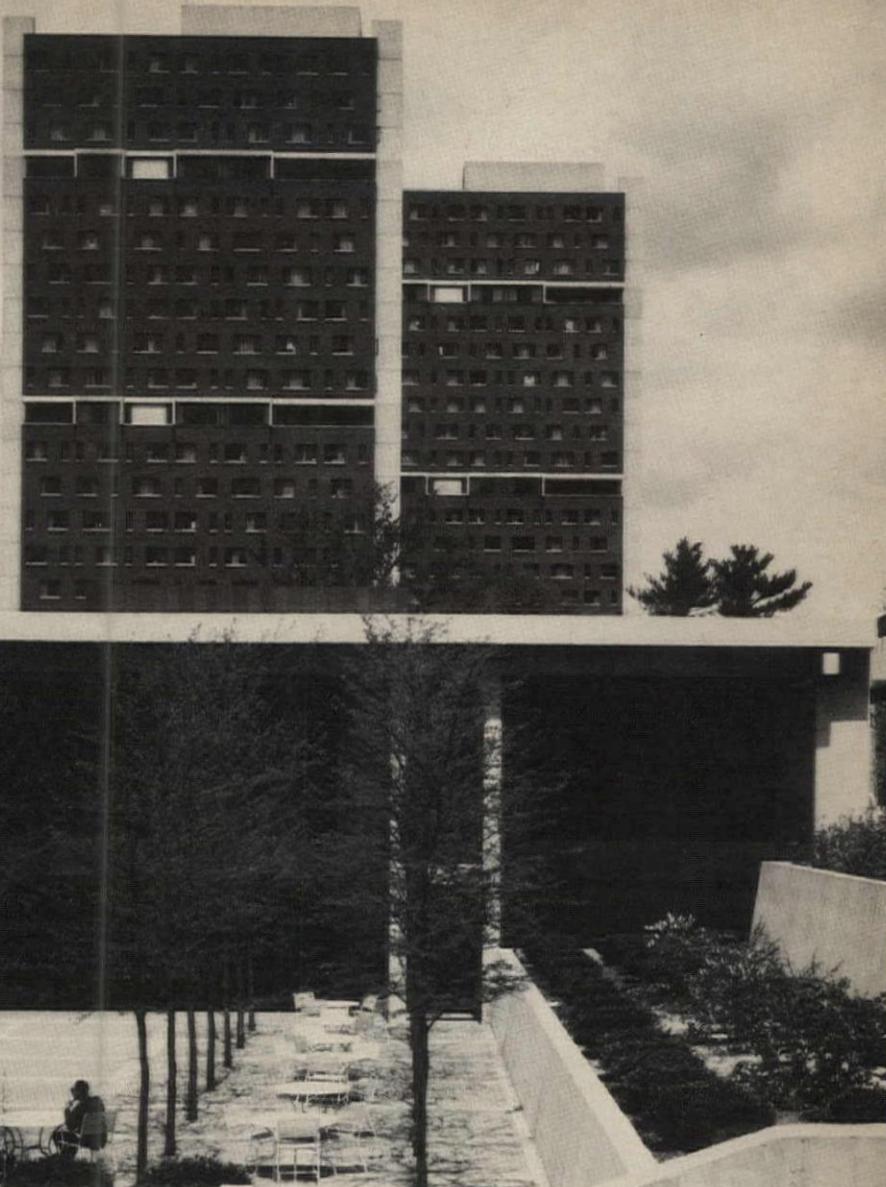


Photo by Ezra Stoller (ESTO)

University of Massachusetts, Southwest Quadrangle, Amherst, Massachusetts • Hugh Stubbins and Associates, Architects • Daniel O'Connell's Sons, Inc., and George F. Driscoll Company, Joint Venture General Contractors

For the 22-floor dormitory towers in this striking complex of modern university buildings, the architects selected Hope's field-proven Series 220 Aluminum Casement Windows. Series 220 frames and weatherstripped ventilators are custom-made from strong tubular aluminum extrusions, 2" deep front-to-back, having $\frac{3}{4}$ " high glazing legs. All frame and ventilator corners are miter cut and electrically flash welded throughout the entire section profiles. Pile-type weatherstrip interlocked into both inside and outside ventilator contacts is standard as are snap-in type glazing beads. Casement ventilators are hung on rugged aluminum cleaning hinges with extruded leaves solidly welded to both ventilator and frame. Finish is Duranodic* 313 Dark Bronze, processed in Hope's own licensed facilities. Series 220 windows are designed and recommended for conditions where top quality units with unusually high strength are required. In this instance, as in all Hope's installations, erection by Hope's own erection crews eliminated the problem of divided responsibility and assured proper installation of materials. Architects have been specifying Hope's windows for buildings at leading universities for more than half a century. This role in the expansion of American higher education is one that Hope's Windows is proud to play.

* Trade name of Aluminum Company of America.

HOPE'S WINDOWS

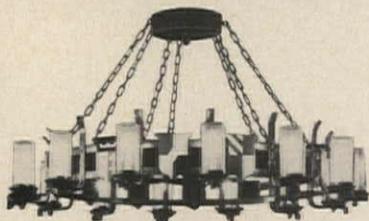
Jamestown, New York 14701

A DIVISION OF ROBLIN HOPE'S INDUSTRIES, INC.



**MEIERJOHAN/
WENGLER**
*Custom Metalcraftsmen
for over half a century*

CUSTOM LIGHTING FIXTURES



*Contemporary and Traditional
Bronze/Stainless Steel
Aluminum/Wrought Iron*

BUILDING PLAQUES



*Creative Identification
Castings/Engravings/Permalon*

ARCHITECTURAL LETTERS



*Special and Stock Design
Fabricated/Cast*

**SPECIAL DESIGN SIGNS • HONOR ROLLS
DOOR / NAME PLATES**

*"Custom Designs crafted
to Exacting Specifications"*

Literature Available
upon Request



**MEIERJOHAN-WENGLER,
INC.**
Metalcraftsmen
10330 WAYNE AVE., CINCINNATI, OHIO 45215

books from page 56

Metro '85. Minneapolis: Minneapolis Planning and Development, 1970. 156 pp. \$10.

Central Minneapolis of 1985 is being built today, says this study for the development of programs and priorities for expanded opportunities. What it will be depends upon decisions made today.

It is estimated that the realization of the plan will cost some \$823 million. This comprehensive framework for Minneapolis' development suggests guidelines in five inter-related areas: land use, circulation of pedestrian and vehicular traffic, the visual image, the visual form and environmental quality control.

Beautifully illustrated and thoughtfully executed, the plan affords an example for other downtown areas to study.

The Design Collection: Selected Objects. New York: Museum of Modern Art, 1970. Unpaged. \$5.95.

This book reproduces about 100 outstanding works contained in the Museum of Modern Art's international collection. Selected on the basis of their quality and historical significance, the items illustrate the development of design over the past 75 years.

Windmills & Watermills. John Reynolds. New York: Praeger, 1970. 196 pp. \$13.95.

An interesting survey of the first engines devised by man to harness natural power. The book outlines some of the ways in which wind and water power have been used over the centuries to relieve man of the burden of slow, repetitive labor. Profusely illustrated.

Environmental Psychology: Man and His Physical Setting. Edited by Harold M. Proshansky, William H. Ittelson and Leanne G. Rivlin. New York: Holt, Rinehart & Winston, 1970. 690 pp. No price given.

Where a person lives; the design of the room, home, school or office that he inhabits; the inefficient transportation system he uses; the way he is crowded in streets and subways — all affect his behavior. The editors have brought together here diverse writings about all this, authored by psychologists, psychiatrists, sociologists, urban planners, geographers, architects and novelists. The architect will find the section on environmental planning of particular interest.

Mart Stam: Documentation of His Work, 1920-1965. London: RIBA Publications, 1970. 40 pp. \$4.50.

Stam was a co-founder of CIAM, and his name is found again and again in criticisms of the formative period of the modern movement from 1918 to 1928. He was "everywhere modern architecture arose," working in Switzerland, Germany and Russia before returning to practice in Amsterdam in 1953. He retired in 1966.

Stam, a teacher at the Bauhaus, is said to "stand beside the old masters Oud, Duiker and Rietveld, as the foremost Dutch architect of the succeeding generation." This book, published in collaboration with an exhibition of his work at the Architectural Association in London, will help to modify the

strange situation that his work, in spite of his foresight and mastery, is so little known.

The City of Man: A New Approach to the Recovery of Beauty in American Cities. Christopher Tunnard. 2d ed. New York: Scribner, 1970. 424 pp. \$10.

First published in 1953, this book considers the city in its economic, legal and social aspects and analyzes the American city planning tradition. A new introduction is provided.

Order in Space: A Design Source Book. Keith Critchlow. New York: Viking Press, 1970. 120 pp. \$7.50.

This manual on space functions is a practical tool for the architect who must consider such problems as defining space, patterns of distribution, space-filling properties, packing and stacking, economy grids and communication linkages. By means of illustrations, charts and diagrams the author sets forth ways in which related division is possible with economy or least effort between elements. Mathematical facts and formulas are presented concerning a definition and understanding of space.

Construction: Principles, Materials & Methods. John L. Schmidt, Walter H. Lewis and Harold Bennett Olin. Chicago: American Savings & Loan Institute Press, 1970. Various pages. \$18.75.

This book, authored by three AIA members, provides an understanding of the principles of construction and collects into a single reference source many recognized industry standards and specifications. Written for the use of personnel of the United States Savings and Loan League, it will be of use to the architect as well.

1971 Handbook for Ceramic Tile Installation. Princeton, N.J.: Tile Council of America, 1971. 23 pp. Free.

This handbook provides a means of simplifying and standardizing installation specifications for ceramic tile. The quick reference details and outlines cover most installation methods and conditions.

Guide to Designing with Architectural Porcelain Enamel on Steel. Washington, D.C.: Porcelain Enamel Institute, 1970. 31 pp. Free.

This manual covers color ranges and weatherability tests for porcelain enamel; types of insulated panels and an evaluation of core materials; design data on veneer and fascia panels; fabrication consideration; and fastening systems. There are sections as well on covering sealants, maintenance tips, accessory products and components and factors to be considered in specifying architectural porcelain enamel.

The Off-Road Vehicle and Environmental Quality. Malcolm F. Baldwin. Washington, D.C.: Conservation Foundation, 1970. 52 pp. \$1.

A report on the social and environmental effects of off-road vehicles, particularly snowmobiles, with suggested policies for their control. □

New USG® Cavity Shaft Wall brings down in-place costs 3 more ways

Lighter Weight.

Weighs only 10 lbs. per sq. ft. 78% lighter than masonry. Reduces dead load to save on structural steel.

Faster Installation.

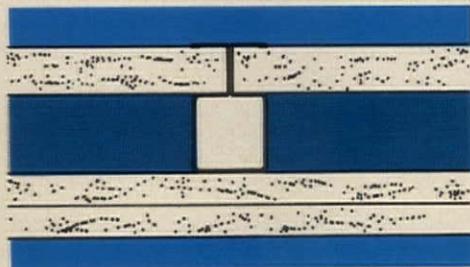
Takes less manpower, less time to build. Gets elevator cars running sooner. Liner panels score and snap like wallboard, are easily handled by one man.

Cuts Extra Work.

Incorporates vertical chaseway to facilitate installation of electrical conduit. Allows simplified construction for special height requirements at lobby and mechanical floors. Can be installed from exterior of shaft.

Over 1000 floors of original USG Shaft Wall are now in place. This new Cavity Shaft Wall System offers even more advantages for plumbing and air shaft enclosures, stairwells, elevator shafts, and equipment rooms.

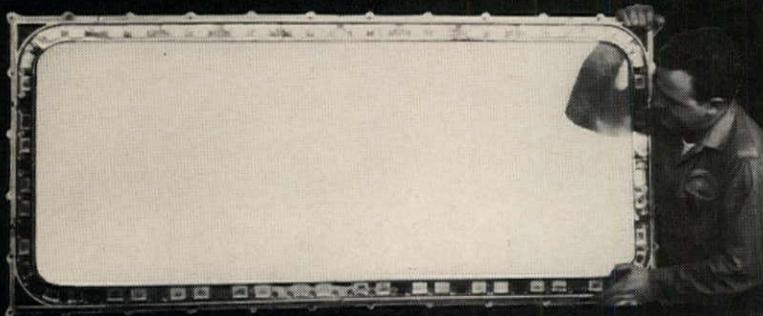
The 1" thick FIRECODE Shaft Wall Liner simplifies cutting, handling and is water repellent. Steel box "T" studs provide structural integrity for shaft pressures up to 15 lbs. per sq. ft. Sound control characteristics meet code needs. Up to 2-hour fire ratings. *Reg. U.S. Pat. Off.



This non-load bearing assembly is comprised of 1" thick FIRECODE Shaft Wall Liner applied vertically between floor and ceiling "J" runners and supported by steel box "T" studs that engage each vertical liner edge 16" or 24" o.c. Opposite side is finished with double layer 5/8" SHEETROCK® gypsum panels screw attached to studs. Or, IMPERIAL* Veneer Plastering may be used. Assembly is 3 3/4" thick for ceilings to 14 ft. For complete information, see your U.S.G. Architect Service man; or write 101 S. Wacker Dr., Chicago, Ill. 60606, Dept. AIA-51.

UNITED STATES GYPSUM
BUILDING AMERICA

Design your next pool with a KDI Paragon underwater window.



You'll see the difference.

No other single piece of equipment multiplies the use of a pool like an underwater observation window. It is coveted by Coaches of swimming and diving; an invaluable aid for ballet and synchronized swimming instruction; a dramatic aid for photographers and a delight for audiences.

KDI Paragon underwater windows are precision-engineered of cast bronze with a polished chrome surface. Available with $\frac{3}{4}$ " tempered polished plate glass or $1\frac{1}{8}$ " safety glass. They fit flush in any plain or tiled concrete wall pool. Shipped fully assembled to the job site ready to install. Rectangular windows 2' x 2' to 3' x 5'. Also 18" round windows.

Detailed Engineering Specification Sheet on Request



KDI Paragon Inc.
Mfrs. of Quality Deck &
Underwater Equipment
12 Paulding St.
Pleasantville, N.Y. 10570
914-769-6221

See Our Catalog in Sweets Architectural File



FROM An Ancient Castle IN SCOTLAND

Four outstanding Stained Glass and Leaded Windows, which would create a magnificent effect when installed in a Public Building, Financial Institution, Residence, Boardroom or Club

Two Windows — each measure 67" by 45"

Two Windows — each measure 42" by 45"

From the Collection of
CAPTAIN ROCHEFORT-SMITH

Inquiries Invited:

Coastal Management, Inc.

Post Office Box 10593

Riviera Beach, Florida 33404

Telephone: 305-844-1244

ATTENTION

KEEP YOUR HANDBOOK CURRENT

SUBSCRIBE NOW TO THE HANDBOOK SUPPLEMENT SERVICE

For only \$7.00 per year payable in advance, you will receive one copy of each new or revised Handbook Chapter and Appendix document in periodic mailings throughout the year.

It's the easy way to be sure you always keep your valuable Handbook up-to-date. Send in your check with the subscription form below and we will do the rest.

THE AMERICAN INSTITUTE OF ARCHITECTS
Publishing Department
1785 Massachusetts Avenue, N.W.
Washington, D. C. 20036

Please enter _____ subscriptions for the HANDBOOK SUPPLEMENT SERVICE
@ \$7.00 each. Enclosed is my check for \$_____.

FIRM _____

ATTENTION _____

STREET _____

CITY _____ STATE _____ ZIP _____

letters

An Organized Plan of Travel

The goals of the Urban Mass Transportation Act will not be achieved unless planning and development can be accelerated to keep pace with demand. Today's needs must be met today to prevent programs from becoming obsolete before they are operational. By 1980, we will have to double or perhaps triple our national transportation system (rail, highway and air) just to keep abreast of the normal growth demands.

In 1971, a 500-mile-an-hour jetliner takes only 40 to 50 minutes to travel from any one of the three New York/Newark airports to Washington's National Airport. However, the total travel time for the suburban or city traveler averages four hours or more from the time of leaving either home or office to arrival in downtown Washington, D.C. The delay is even worse for overseas flights.

We reached our level of achievement in these United States by "doing" and not by continually analyzing and creating equilibrium between supply and demand. The answer to this ground transportation problem may well be a utilization of existing railway

systems, highways, a combined new freeway/railway system, plus a new third level air carrier concept including STOL.

We need today an organized plan of air travel, rail travel and highways and freeways to meet the demand of the various sectors of the community. The complete system must integrate with the city. It must integrate with other transportation systems and hub airports to create a network of interrelated airports and center city connections.

A planner's dream? I say no. We have within our grasp the basic tools, ingredients and materials right in the Northeast Corridor from Boston to Washington, D.C., if we do not lose sight of the problems; if we do not cloud issues with computer statistics; and if we do not mix realism and truism with political confusion.

Every airport and city in the Northeast corridor has good rail access. The right-of-way and the rail beds are there. What is needed is a modernization of systems to connect suburbs, center city and airports. Airports like Philadelphia, Friendship Airport in Baltimore or Dulles Airport in Washington, D.C., would carry many times the load

they now carry if a reasonable 24-hour rail service were set up to interconnect the airports and the cities.

LOUIS C. RIPA
President

Porter & Ripa Associates, Inc.
Morristown, N. J.

No Arbitrary Sun Controls Here

Our firm's Sacramento Collegetown project was one of the winners in the 1970 Design Awards for Nonprofit-Sponsored Low and Moderate Income Housing, as reported in the January issue.

The jury statement reads: "Privacy fins and overhangs protect windows as well as break up the regularity of the facade—in a rather arbitrary way, however." The statement should have concluded with the word "facade."

The "Architect's Descriptive Data" form in our submission stated that "additional variation is gained by the solution to the window treatment and sun control depending upon the orientation. All orientations have a different solution as a result of their differing problems."

Sun control is critical in the Sacramento area where temperatures of 105 degrees are frequent in summer. It took us a long time to work out a solution for each orientation that would really work. All west elevations have wooden shutters; all east have vertical fins, etc. There is nothing arbitrary about their application.

CLIFFORD HANSEN
Smith Barker Hansen
San Francisco

It's new,
It's needed...

Cabot's Decking & Fence Stains

Wood decking and wood fencing, popular now as never before, require a finish both decorative and durable. Cabot's Decking & Fence Stains answer the demand for just such a product. The perfect finish for porches, sun decks, patios, marinas... plus fences

- Available in eleven colors
- Will not rub-off or track-off
- Surface weathers gracefully
- Resists peeling, blistering.

Samuel Cabot Inc.
One Union St., Dept. 545, Boston, Mass. 02108
 Send color card on Decking & Fence Stains
 Send new Cabot handbook on wood stains.

We have something to hide.



It's out of sight. An Albina window washing system doesn't fracture the design of today's clean-lined buildings.

Albina's low-profile Uni-Track® carriage and scaffolding roll away, then move to position on built-in tracks or roadway when ready for use. Fast. Inconspicuous.

And safe. The system meets the nation's toughest safety regulations—New York State's. With BSA approval number 5525. That's another important reason you'll find so many Manhattan buildings equipped with Albina powered scaffolding.

The power is provided by a pair of Albina Climbers®. Controls for both vertical power units are mounted in the center of the safety rail so one man can operate both controls to assure level raising and lowering of the platform. The vertical control is a spring-loaded

switch—always in "stop" position unless it's pressed down. A fail-safe system prevents movement as well as overloading of the platform. Cable drums are equipped with positive control level-wind mechanism for added safety.

All Albina scaffolding equipment complies with ANSI standards for powered platforms.

Let Albina engineers help you design a safe "hideaway" window washing system for your buildings. For specifications and engineering data, see your local authorized dealer, or write Albina.



ALBINA ENGINE AND MACHINE WORKS

A Division of DILLINGHAM CORPORATION

Dept. J, 2100 N. Albina Ave.
Portland, Oregon 97208
503/294-1131



TERNE

...and the visually significant roof

The Annie Fisher Elementary School, Hartford, Conn., Architect: Russell, Gibson & von Dohlen, West Hartford, Conn., Roofer: Southern New England Roofing, Hartford, Conn.

Such roofs have recently become an element of major importance in architectural design, and whatever form they have taken—whether traditionally pitched or in some variant of the mansard concept or hyperbolic paraboloid or barrel vault—Follansbee Terne has been

specified for the majority of them where metal has been used. For Terne is a superbly functional material with an inherent affinity for color and unexcelled durability, yet one which is also relatively moderate in cost. We welcome your inquiry.

FOLLANSBEE

Follansbee Steel Corporation, Follansbee, West Virginia

events

National

- May 16-19:** National Parking Association Convention, Stouffer's Riverfront Inn, St. Louis
- May 23-26:** Associated Councils of the Arts Conference, Mayflower Hotel, Washington, D.C.
- May 25:** Delays and Disputes in Building Construction Conference, Madison Hotel, Washington, D.C.
- May 26-27:** Building Research Institute Forum on Air-Supported Structures, Hyatt House Hotel, O'Hare Field, Chicago
- June 7-9:** Construction Specifications Institute Convention, Anaheim, Calif.
- June 18-19:** ACSA Annual Meeting, Detroit Hilton Hotel, Detroit
- June 20-24:** AIA Annual Convention, Cobo Hall, Detroit (recessed convention, Copenhagen and London)
- June 21-22:** Conference and Exposition for the Building Team, Cobo Hall, Detroit
- June 23-25:** National Exposition of Contract Interior Furnishings, Merchandise Mart, Chicago (tour of Italy afterward, departing June 25. Contact: NEOCON, 830 Merchandise Mart, Chicago, Ill. 60654)
- June 28-30:** Annual Design Automation Workshop, Sherburne Hotel, Atlantic City
- July 12-16:** Annual School Planning Institute, Stanford University, Stanford, Calif.
- July 14-17:** NCARB Annual Meeting, Fairmont Hotel, San Francisco

International

- June 20-25:** International Design Conference, Aspen, Colo.
- July 2-25:** Ekistics Month, Athens, Greece
- July 5-16:** World Consultation on the Use of Wood in Housing, University of British Columbia, Vancouver, B.C.
- Sept. 6-10:** Tokyo Conference on Urban Problems

Awards Programs

- July 1:** Entries due, Prestressed Concrete Institute Awards Program. Contact: PCI, 20 N. Wacker Drive, Chicago, Ill. 60606.

Fellowships

- July 1:** Applications due, Senior Fulbright-Hays Awards for teaching in 1972-73. Contact: Senior Fulbright-Hays Program, 2101 Constitution Ave., Washington, D.C. 20418.

Tours

- May 27-June 13:** Housing, Urban Planning and New Towns in Southern Europe and Eastern Europe. Contact: Nonprofit Housing Center, 1717 Massachusetts Ave. N.W., Washington, D.C. 20036.
- Aug. 12-23:** Northern Cities in Britain. Contact: Society of Architectural Historians, 1700 Walnut St., Philadelphia, Pa. 19103.
- Oct. 9-31:** Architecture and Gardens Tour of Japan. Contact: K. M. Nishimoto, AIA, 285 S. Robles Ave., Pasadena, Calif. 91106. □

AIA JOURNAL

1785 Massachusetts Ave. N.W., Washington, D.C. 20036, (202) 265-3113

Dudley Hunt Jr., FAIA, Publisher
Richard J. Satola, Sales Manager
George L. Dant, Production Manager

ADVERTISING SALES OFFICES

Atlanta (404) 223-6729
Morgan Pirnie
Harold Brown
Charles I. Reynolds
G. Spencer Prankard
3108 Piedmont Road N.E.
Atlanta, Ga. 30305

Chicago (312) 383-8448
Len Mifflin
104 N. Oak Park Ave.
Oak Park, Ill. 60301

Dallas (214) 369-8621
Stanley T. Poag
6617 Snider Plaza
Dallas, Tex. 75205

Los Angeles (213) 877-2772
Johnny Johnson
Jim Moreland
10373 Riverside Drive
North Hollywood, Calif. 91602

Miami (305) 891-2414
John J. Kelly
1005 N.E. 125th St.
North Miami, Fla. 33161

New York (212) 685-9620
Robert L. Bassinette
Harold D. Mack Jr.
271 Madison Ave.
New York, N.Y. 10016

St. Louis (314) 241-1965
Jim Wright
Steve E. Wright
Paul Patty
Paul Brown Building
St. Louis, Mo. 63101

San Francisco (415) 332-9226
Jerry Nowell
Gene Watts
3030 Bridgeway Building
Sausalito, Calif. 94965

Washington, D.C. (202) 265-3113
Richard J. Satola
1785 Massachusetts Ave., N.W.
Washington, D.C. 20036
(Ohio, western Pennsylvania,
West Virginia)

ADVERTISERS

AIA	60	KDI Paragon, Inc.	60
Albina Engine & Machine Works	62	Larsen Products, Inc.	12
American Seating Company	11	D. A. Matot, Inc.	12
Bradley Washfountain Company	1	Meierjohan-Wengler, Inc.	58
Samuel Cabot, Inc.	61	The Merchandise Mart (NEOCON) ..	55
Coastal Management, Inc.	60	National Electrical Contractors	
P&F Corbin, Division Emhart Corp. ..	13	Assoc.	51
Elkay Manufacturing Company	2	Pemko Manufacturing Company	54
Follansbee Steel Corporation	63	Potlatch Forests, Inc.	Cov. 3
Gail International Corporation	16	Red Cedar Shingle & Handsplit Shake	
General Portland Cement Company		Bureau	7
(Trinity Div.)	Cov. 2	Sargent & Company	9
Hawes Drinking Faucet Company	54	Edward G. Scharf & Sons	15
Hope's Windows, Inc.	57	The Stanley Works, Hardware Div.	53
Inland-Ryerson Construction	4-5	Swimquip, Inc.	54
Johnson Service Company	Cov. 4	United States Gypsum Company	59



Your fair share gift works many wonders
the UNITED WAY



27 million families benefit by child care, family service, youth guidance, health programs, disaster relief and services for the Armed Forces from 31,000 United Way agencies.