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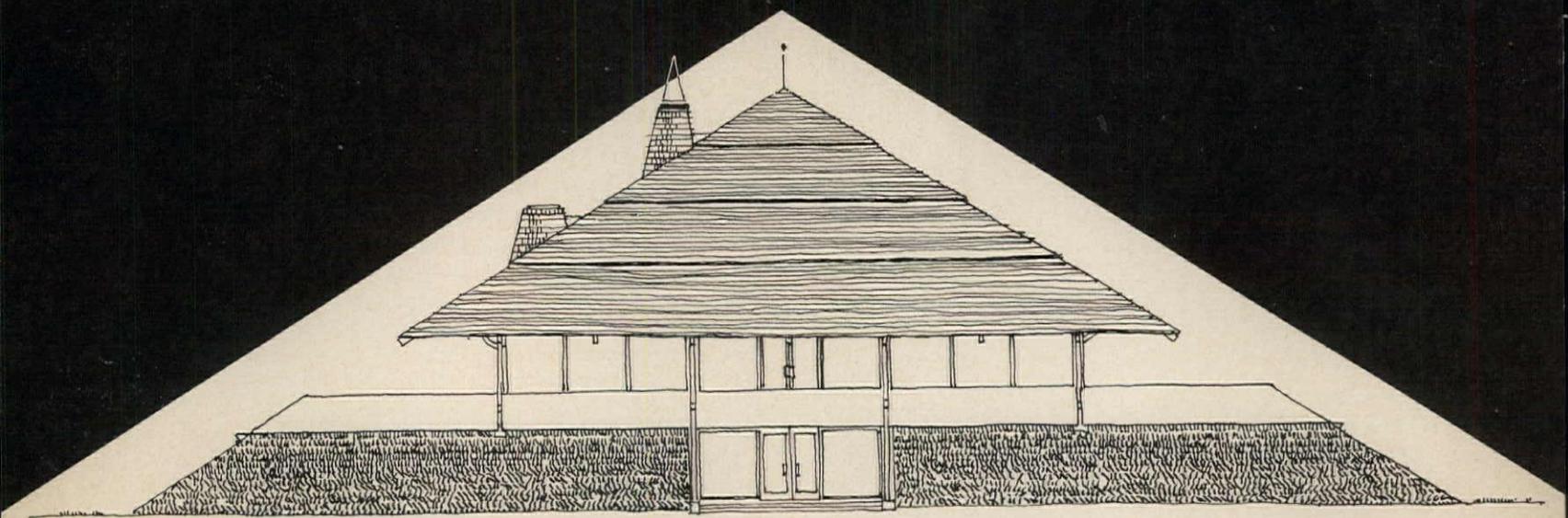
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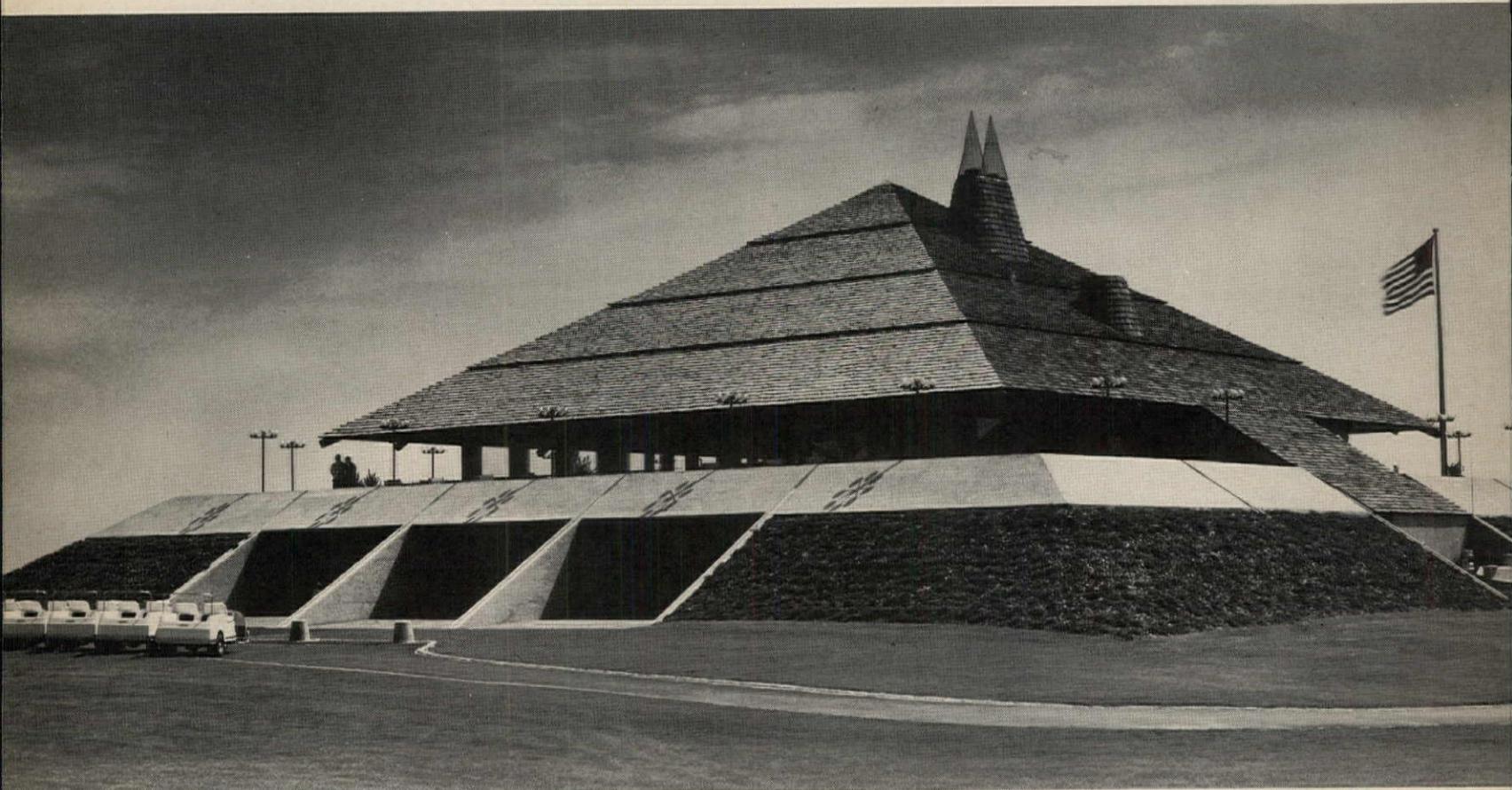


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# AIA JOURNAL

NOVEMBER 1971

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VOL. 56. NO. 5

## comment and opinion

LET'S GET BACK TO ARCHITECTURE (CONTINUED): The response to my September column carrying the same title has been so gratifying, as indicated by a sampling in Letters this month, that I have decided to take another shot at the subject. But now I have the pleasure of writing in a positive vein, based upon the annual convention of the New Jersey Society of Architects where architecture has always been given its due. To begin with, John T. Oliver, AIA, and his convention committee did more than simply choose the theme "Architecture — the '71 Scene"; they stuck to it all the way. Among the topics: construction management, time-saving techniques, joint ventures, state-level public construction, marketing architectural services, Community Development/Design Centers and, for good measure, a recap.

I want to say at the outset that I am aware that the scale of a convention, be it national, regional or state (where only one chapter is involved), has a considerable bearing on its format. But I do believe that other architects could learn a lesson or two from their New Jersey colleagues. Somehow they have a knack for putting together the right mixture of solid content and good fun.

In a departure from the seminar-type sessions, the program consisted of a half-dozen workshops, each lasting about one hour; and in several instances, the questions and comments continued in the corridors and hotel suites long after the participants had completed their "formal" presentations. Another innovation: the workshops were held within the architectural exhibit area, with the audience grouped in a bleacher-like arrangement around the speakers. The architectural exhibit, in turn, adjoined the products exhibit, where the informal luncheons were held.

The Thursday night cabaret featured an after-dinner speaker who, by the way, talked about design. However, I am among those who champion a movement to dispose with after-dinner speakers at *all* conventions. After standing through a cocktail hour and sitting through what generally turns out to be a lengthy meal, the resulting situation is unfair to both the speaker and the audience. The annual dinner was a delight, climaxed by an "architectural prayer" (see p. 59).

Returning to the architectural exhibit for a moment, it was of an extremely high caliber, the photographs and plans being enhanced by a number of models. The three-man jury had done its homework well, and the Institute's first vice president, Max O. Urbahn, FAIA, gave an in-depth critique of the award-winning designs. A comment on the exhibit by its chairman, Kenneth M. Mitchell, AIA, is in order because of the 300 firms represented in the statewide society, 250 have 10 or fewer employees. Referring to the new "in" groups — the environmentalists, ecologists, etc. — and to the growing complexity of jobs today, Mitchell pointed out, "Good architecture at any scale is progress. No matter how small or what type of project, if the architect has recognized the needs, understood the context, created a successful functional as well as esthetic and psychological environment in harmony with the greater surroundings, he has played a tangible role in progress."

When the New Jersey architects forsake Atlantic City next year for the soon-to-be completed Playboy Club complex at Great Gorge, McAfee, I am convinced that they will mind their manners and not touch the bunnies, but you can bet your bottom dollar that they will touch upon the practice of architecture — and produce another first-rate convention.

ROBERT E. KOEHLER

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25 — Susan Landor  
26, 27, 28 — Courtesy, Department of City Planning,  
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33, 36 — John Desmond, FAIA  
38 — Photographic Laboratories, University of  
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40, 41 — Wayne Thom  
42, 43, 44 — Suzy Thomas II

45, 46, 48, 49, 50 left, 51 above left — Ed Beazley's  
Studio  
51 — right, Kenneth Rogers, courtesy, *Atlanta  
Journal-Constitution Magazine*  
53 — above, Unesco/Di San Marzano  
53 — center, Unesco/Dominique Roger  
53 — below, Unesco  
54 — above, Unesco/Berretty  
54 — second from above, Jean Biaugeois  
54 — second from below, Unesco/Vorontzoff  
54 — below, Unesco/Dominique Roger  
55 — Public Information Service, Ball State University

### NEXT MONTH

It is not very often that the AIA JOURNAL devotes an entire issue to a single subject but such is the case in December under the title "The Architect's Stake in Housing." Society in general and the profession in particular demands that we take a good, hard look at the situation as it exists at this very moment in history.

Housing, of course, is such a vast and complicated topic that no one issue of the JOURNAL can possibly include all the ramifications. But this is a start, and we have attempted to cover what we consider some of the most significant bases as far as the architect is concerned. These include mass housing, prefabrication, construction costs, the custom house, remodeling, mobile homes and two case studies — one of user needs in a moderate income project, the other of a highly successful urban renewal complex.

### ASIDES

When Bennett Cerf passed away this summer, it reminded us of the entertaining and equally inspiring speech he delivered before the AIA centennial convention in May 1957 in the nation's capital. In some ways it appears that he might have given his address today. A few excerpts from "The Arts in Modern Society":

"You're going to hear an optimist this morning. I've just been reading the Washington paper and see what you got all day yesterday, being told that skyscrapers were hideous and Lord knows what else. This to me is a lot of sheer arrant nonsense. I believe that American architecture is beautiful. My office is right back of St. Patrick's Cathedral in New York, and we're a half block from Park Avenue, which is changing before our very eyes. . . . So I come with nothing but optimism and congratulations to you architects for what you are doing to the skyline of America. I hope the publishers keep pace.

"You know, we are a great people for deprecating ourselves and at not giving ourselves credit for the cultural background we have been gradually but steadily acquiring during the past 50 or 60 years.

"You know, we all think we are the only ones who have troubles until we start hearing the troubles of people in other businesses.

"The bugaboo of national censorship has come up again. This is a wave that seems to sweep over the United States every 15 or 20 years. I don't mean laws in every state of the union that take care of pornographers to cart off to jail where they belong, the people who print dirty books and pictures. I mean self-appointed censors — bluenoses who think it is their duty to tell other people what they must think, what they must read and what they must see.

"People are now coming to us for ideas. We get the ideas; we now give the ideas to Europe and they send us English and French and Italian automobiles. It's just the opposite of what used to be. We used to be the ones who constructed the great mechanical gadgets, and we would send these to them and they would send us their ideas." □

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## Four Russian Architects Visit Seven American Cities Under Reciprocal Arrangement

The Union of Soviet Socialist Republics and the United States chalked up a first in their cultural exchange program this fall when a delegation of four Soviet architects came here on a visit which will be returned next year, when four practitioners from this country go to the Soviet Union.

The exchange came about at the suggestion of the USSR Union of Architects, which had proposed to the Department of State that it establish such a reciprocal program in conjunction with The American Institute of Architects.

The four Soviet architects were: Mrs. Iraida Shishkina, secretary, USSR Union of Architects, a position roughly similar to that of AIA executive vice president; Igor A. Pokrovskiy, chief of Moscow's largest workshop, or governmental architectural office, composed of 160 persons; Dmitri Bruns, chief architect of the city of Tallinn; and

Igor A. Alferov, chief architect of the city of Kharkov.

The trip, in which the four were accompanied by Bess Balchen, AIA JOURNAL associate editor, took them to New York, Boston, Chicago, St. Louis, San Francisco, Houston and finally Washington, D.C. The USSR paid for the Moscow/New York/Moscow air fares; the US State Department financed intercity travel in this country and took care of all expenses for an interpreter, hired by State. The national AIA developed the general itinerary and the various chapters agreed to arrange for accommodations and cover all expenses of the four visitors during their three-day stay in each city.

The success of the visit gave hope that relations between the two countries' architects can be firmed up and broadened. A report will appear in the January issue of the JOURNAL.

## OAE Wins One, Loses Four Elections Conducted in San Francisco Firms

The Organization of Architectural Employees in August received a ruling from the National Labor Relations Board to hold elections in September in five San Francisco architectural firms, including Fisher-Friedman Associates; Howard A. Friedman & Associates; Hertzka & Knowles; Skidmore, Owings & Merrill; and Wurster, Bernardi & Emmons. The voting, limited to nonmanagement personnel, was to decide whether OAE was to become the recognized bargaining agent for employed architectural personnel within each of the offices.

It was announced on September 16 that OAE had won only one of the elections. Employees of Hertzka & Knowles voted 16 to 2 for the union. OAE may not engage in further organizing activities at any of the firms voting against it for a period of one year. An estimated 200 persons took part in the voting regarding unionization.

OAE was organized in 1969 by a group of Bay area architectural employees. Its *Guidelines for Minimum Standards of Employment for Architectural Employees*, published in 1971, states that the intent of OAE is "to educate architectural employees about their employed status and to create tools which will be useful to them. Through this effort, OAE hopes that the employment conditions . . . will be improved."

James Koentopp, president of OAE, remarked that the ruling of the NLRB to hold the elections has broad implications. He indicated that "a right to such elections exists for the employees of any firm grossing \$50,000 in the course of a year."

In 1969, the Northern California Chapter AIA appointed a local task force to evaluate allegations being made by OAE regarding employment conditions in the San Francisco area. Because the problem had national implications, then AIA President Rex Whitaker Allen, FAIA, appointed the chapter task force as a national Employer/Employee Relations Task Force. James D. Carroll, AIA, of Berkeley served as chairman. The task force was granted funding to enable it to carry out an extensive series of meetings and to retain professional assistance for studying employer/employee relations and for preparing a comprehensive report. To scrutinize the report and to insure its applicability for the profession on a nationwide basis, President Robert F. Hastings, FAIA, appointed a successor task force.

The Personnel Practices Guidelines Task Force now in existence has a membership of both employers and employees of large and small firms on a diverse geographic basis. Carroll is its chairman.

At a meeting in April, the AIA Board of Directors passed the following resolution: "Resolved, that The American Institute of Architects develop recommended standards of employment within the profession, including, but not limited to, basic compensation, employment benefits such as health, life, accident and liability insurance and personnel practices including vacations and sick leave, with portability where applicable, and that the Institute study such internal changes as may be necessary to insure and encourage participation and representation by employee architects on chapter, regional and national boards of directors and policy committees."



In front of Mies van der Rohe's Crown Hall, Illinois Institute of Technology: Alferov, Shishkina, Russian-speaking Chicago architect Vernon Geisel, Balchen, Bruns and Pokrovskiy.

## Official Route Selected for 2,000-Mile Appalachian National Scenic Trail

The official route of the Appalachian National Scenic Trail has been selected, Secretary of the Interior Rogers C. B. Morton announced recently (see AIA JOURNAL, Oct., p. 23). Notice of such selection was published in the October Federal Register.

Proposals were published in February to give governmental bodies and private organizations and land owners and users directly affected by the trail route opportunities to provide advice and assistance in the selection of the official route. Numerous comments were received, and all suggestions of alternative routing were studied before the official trail route was selected. Thus it is hoped that adverse effects on adjacent land owners and users will be minimized while affording the best possible trail locations along the 2,000-mile corridor.

In two years, in accordance with the National Trails System Act of 1968, the federal government will assess the progress made by the states and then work with the states to complete the acquisition program.

## President Directs That Nursing Homes Be Considered at Conference on Aging

President Nixon in a speech to the National Retired Teachers Association and the American Association of Retired Persons called substandard nursing homes "little more than warehouses for the elderly . . . dumping grounds for the dying." He is directing the White House Conference on Aging scheduled for this month to give nursing home care special attention.

Mr. Nixon indicated that it might be necessary to withhold federal funds from homes which do not have adequate standards and said that he did not believe that medicaid and medicare funds should go to substandard nursing homes.

Meanwhile, the 14 technical committees, covering subject-matter areas of the conference deliberations, have collated the thousands of recommendations from state conferences and national organizations into reports for the 3,400 delegates to the White House Conference on Aging, November 28 through December 2. *continued on page 8*

### Adventure for Shoppers and Diners Eyed In Salt Lake City's Trolley Square

Home base for what the natives call the old "car barn" will become Trolley Square in Salt Lake City. When completed this year at a total investment of more than \$5 million, the area expects to take its place among other nationally known places of conviviality such



Existing water tower will be retained and a stairway added so that visitors can observe the square's activities from the top.

as San Francisco's Ghirardelli Square and New Orleans' French Quarter.

In the early 1900s, the owners of the then existing streetcar firm bought the land from the Utah State Fair Association and erected car barns, shops and other structures required in the operation of their plant. The buildings will be renovated; all new structures will reflect the Victorian and Gay Nineties era. Trolley Square will eventually contain more than 50 businesses and retail stores, featuring specialty shops, sidewalk cafes, an open-air market, ice cream parlors, night clubs and theaters.

Project architect for the 200,000-square-foot center is Albert L. Christensen, AIA, of Architects/Planners Alliance, based in Salt Lake City.

### Management Tool Helps Firms Organize Office Space for Results, Not Status

A new software service offered by the Michigan manufacturing firm Herman Miller Inc. is aimed at providing management with a graphic picture of the real communications network linking the individuals within an organization. Called Communication Interaction Analysis, the tool locates key communicators and liaison groups and gives manage-

ment an insight into the real decision-making network as opposed to the assumed hierarchical chain of command.

For example, a vice president of a company may discover that his "status" physical location deprives him of needed face-to-face interaction with his subordinates who may be located on another floor of the building. He then will trade off his status corner for "interactional territory" in the center of various departments and become results- rather than status-oriented.

It is claimed that the service will keep firms from making costly facility mistakes when planning new quarters or remodeling existing facilities.

### Expertise in Design of Kitchens Gives Architect New Ally and Team Member

In 1963, the American Institute of Kitchen Dealers was established. Its accrediting agency, the Council of Certified Kitchen Designers, bestows its CKD designation on individuals who are qualified to design, supply and install the complete residential kitchen. It has awarded such status in the past few years to over 400 kitchen specialists who have passed oral and written examinations and whose references and work samples have been judged to meet rigid specifications by its board of governors.

This specialist considers himself neither adversary nor competitor but a fellow professional of the architect. Contrary to the old concept of the kitchen dealer functioning simply as a sales agent, today's specialist is a planner and coordinator — an expert on kitchens, bathrooms, bars, storage areas and "outpost" appliance centers.

Additional information may be obtained from the Council of Certified Kitchen Dealers, 199 Main St., Hackettstown, N.J. 07840.

### Federal Law Aimed at Stopping Deaths Due to Lead-Based Paint Poisoning

It is estimated that there are 200 deaths from lead poisoning each year in the United States and that 400,000 children have elevated blood lead levels which may lead to cases of lead poisoning with brain damage, blindness, permanent mental retardation and other neurological handicaps, or death. Principal victims of lead poisoning are children from 1 to 6 years of age, the overwhelming majority of whom are poisoned by eating chips of paint peeled from walls, ceilings and woodwork.

Paint with high lead content was used extensively in dwellings built prior to World War II, and poor maintenance results in multiple layers of the old high lead-content paint, particularly in inner city ghetto areas where housing conditions have deteriorated. Due to the extreme vulnerability of the central nervous system of infants and children, a relatively short period of exposure may be all that is necessary to produce lead poisoning. The situation has reached epidemic proportions.

The new federal Lead Based Paint Poisoning Act makes it mandatory that all paint with a lead content greater than 1 percent found in housing units be removed or properly covered. The act authorizes \$30 million

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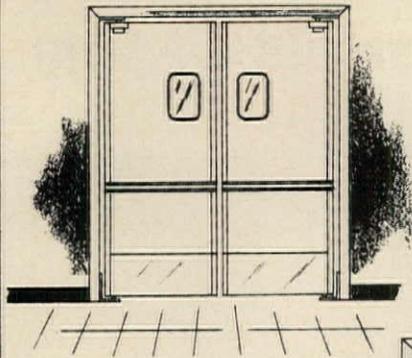
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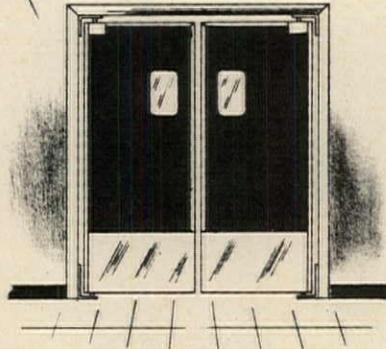
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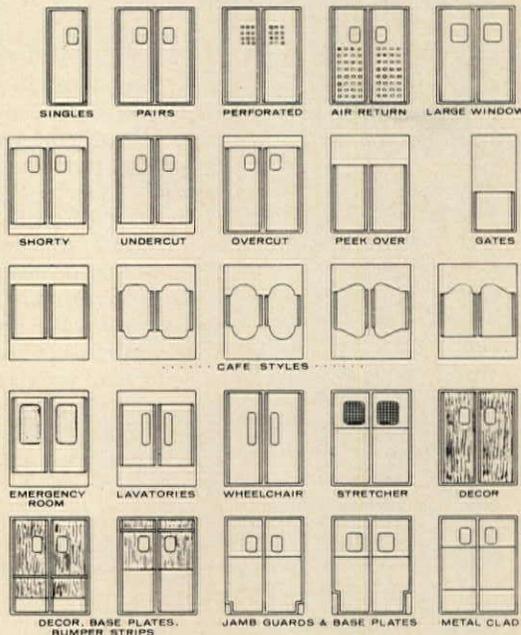
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to carry out its provisions for fiscal years 1971 and 1972. Rehabilitation projects are already underway in many cities.

The Gypsum Association, 201 N. Wells St., Chicago, Ill. 60606, has issued a free booklet which suggests an effective way to cover lead-based paint by using gypsum-board. Its title is "Specifications for Covering Existing Interior Walls and Ceilings with Gypsumboard Products."

### Plastics Firm in Ohio Uses Office Building As Advertisement for Its Own Products

Plastic materials have been used throughout a 10,000-square-foot office building in Findlay, Ohio, owned by R. L. Kuss & Co., fabricators of products using plastic film. The Toledo architectural firm of V. A. Curtis & Associates conceived the design to "ideally reflect the company's position . . . in the plastics field."

The choice of plastic exterior construction materials dictated the vertical curvature and octagonal shape of the building. Twenty-two fiberglass panels, 8 feet wide and 22 feet high, provide the exterior form. Each panel, weigh-



Structure completes major expansion phase.

ing 850 pounds, imposed the need for the bowed design to add necessary strength. The stark contrast of the black and white exterior is afforded by the addition of six sweeping pylons of black fiberglass.

Plastics were used everywhere in the interior as well. There are vinyl floors, vinyl-coated walls and plastic filament carpets.

### New York City Aims to Increase Benefits And Beat Chicago at Convention Game

To bring monies into New York City coffers plans have been announced to build the nation's largest convention and exhibition center on the Hudson River at West 44th Street. The center will have 750,000 square feet of exhibition space on two levels and will cost \$100 million. North of the center, a \$31-million ocean liner terminal with six berths will be constructed. It is proposed to finance construction costs of the center by the creation of a public benefit corporation that could sell bonds. Once the corporation is established, it will take five years to plan and build the center. Some estimated financial benefits on an annual basis are: expenditures of about \$70 million by users of the convention center; more than 4,000 jobs paying about \$35 million; an increase in sales tax revenues of more than \$2 million; and an increase in hotel occupancy of at least 4 percent. New York City's convention and tourist trade is the city's second largest business, with 16.5 million tourists yearly. *continued on page 62*

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Director  
AIA Codes and Regulations Center

On May 1, The American Institute of Architects officially established the Codes and Regulations Center in order to strengthen the collective voice of the architectural profession in the art and science of standards-writing and building code participation. The goal of the center is to modernize the criteria governing design and construction in order to produce creative tools rather than constraints on professional practice which, in turn, affect the public interest. Through the center, the AIA expects to work more closely with model code groups, national standards-writing organizations and those concerned with reform of the regulatory processes. It is anticipated that the center will become an information source on codes and regulations.

As the center's director, I have recently prepared an explanation of the new Occupational Safety and Health Act of 1970 which is available upon request. This act, of significance to the architect, will rank as a landmark in worker protection legislation. Because all rules and regulations concerning the law have not been fixed, the Institute has not taken a position on the matter. Meetings to develop safety and health criteria are currently being conducted, and the Codes and Regulations Center is cooperating. It is anticipated that the center will participate vigorously in the areas of federal advisory committee membership as well as in the preparation of relevant testimony.

The new law covers 57 million American workers in more than 4 million businesses. In the past 25 years, occupational hazards have caused the death of more than 400,000 Americans and disabled 50 million more. Lost man-days of labor result in a loss of \$1.5 billion in wages, \$5 billion in production and \$2 billion in workmen's compensation.

After months of hearings, Congress passed the Occupational Safety and Health Act last December; the law became effective on April 28. The act authorizes the federal government to set and enforce occupational safety and health standards for all places of employment affecting interstate commerce, to enforce those standards with criminal and civil penalties for violation and to provide research and educational aids to foster safe work practices. The Secretary of Labor was given two years in which to promulgate nationally recognized

consensus and existing federal standards. The Secretary has indicated that he will use advisory committees in developing standards in areas where they do not now exist.

The act directs the Secretary of Labor to send safety inspectors into any business covered by the law in order to inspect premises and all conditions and equipment. If a violation is found, the employer will be issued a written citation which must be posted near the site of each violation. He will have 15 days to contest the violation or proposed penalty. A commission will hear contesting parties and issue decisions which are subject to review by the US Court of Appeals.

The law provides federal loans to small firms to help them meet the standards and allows state governments to enforce their own programs as long as their standards meet national requirements. The act provides for grants up to 90 percent of the cost of developing a state plan, increasing enforcement and improving the administration of safety and health laws. Once the plan is approved, the state can receive 50 percent federal funding from the Department of Labor.

During the first year, the Occupational Safety and Health Administration will hire about 2,000 inspectors, or compliance officers as they are called. At this writing, 600 compliance officers are already on the job. These officers usually are safety engineers and industrial hygienists. They will be working through 10 regional offices and approximately 40 area offices within each region.

For the first 90 days following the publication of standards on May 29, Department of Labor investigations were largely confined to violations of regulations involving imminent danger, investigation of specific complaints and enforcement of existing regulations under the Federal Contracts Act. Discussions have indicated that five "target" industries will be subject to early compliance investigations: longshoring, roofing and sheet metal; meat and meat products; miscellaneous transportation equipment (primarily mobile home manufacturers); and lumber and wood products.

In the construction industry, the primary responsibility for the safety of persons and property at the project site is that of the contractor. The architect, however, should be aware of the implications of the new act. □

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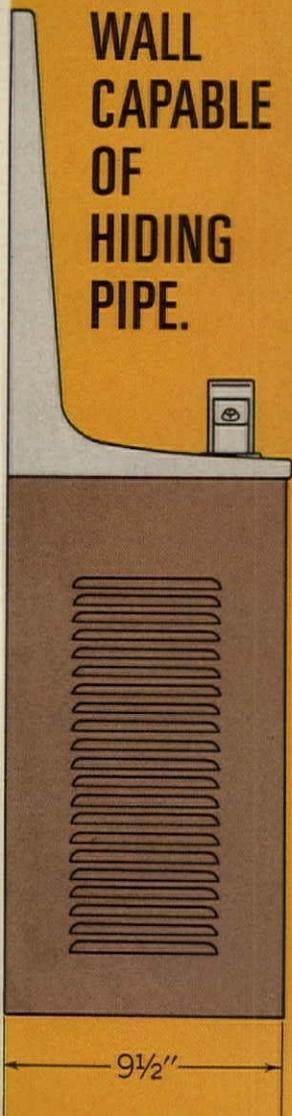
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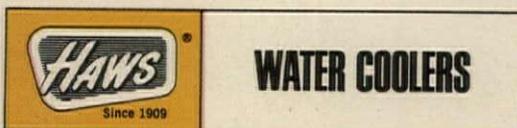
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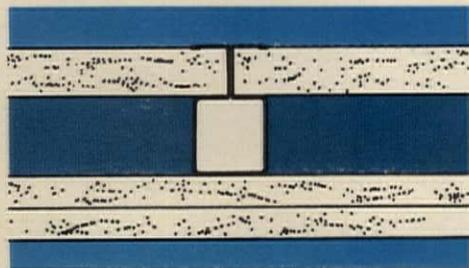
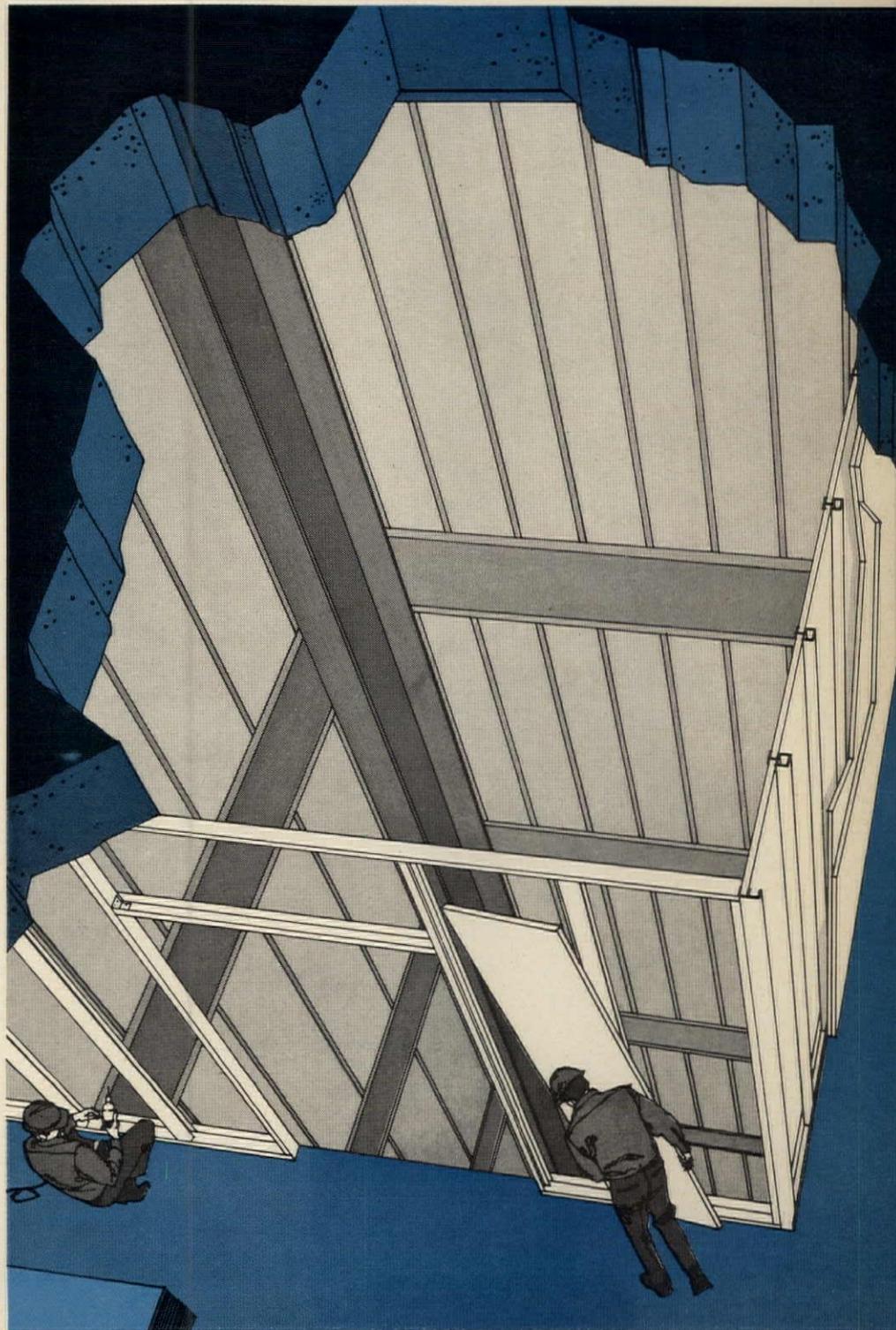
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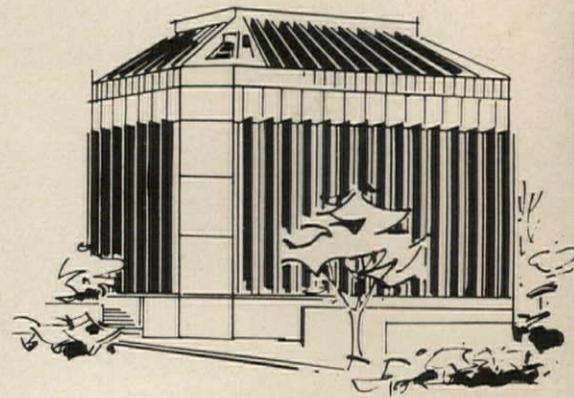
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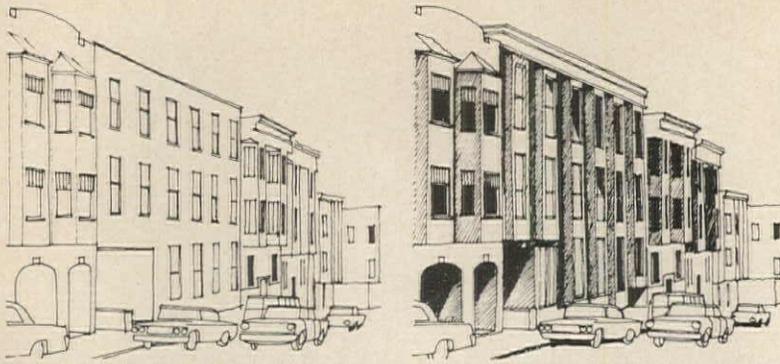
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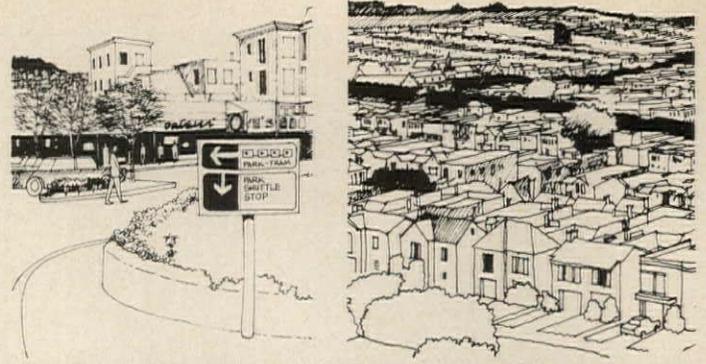
*Every American who has traveled from coast to coast, it seems, claims two cities: his own and San Francisco. The latter's physical environment, like just about every other metropolis in this nation of ours, is being threatened daily. In response to this problem, **SAN FRANCISCANS** the Department of City Planning has prepared the urban design plan, the product of two years of study by the newly formed urban design staff with the assistance of several consultants\* and the participation of the San Francisco community. Here are the highlights of that plan, which has been published in a profusely illustrated report.*

\* Thomas R. Aidala; Donald Appleyard; Marshall Kaplan, Gans & Kahn; Okamoto-Liskamm.





New blank facades introduced into areas of older, more detailed buildings detract from neighborhood character; textured materials with humanely scaled proportions are less intrusive in such sections.



Improved and diverse means of transportation can increase the use of parks. Large-scale or extensive planting can enhance the importance of roadways as both thoroughfares and visual boundaries.

by ALLAN B. JACOBS

San Francisco has been described in many ways over the years in terms of beauty, charm, urbanity and vitality strangely woven with stillness. The setting at the head of a dramatic peninsula is unsurpassed; the combination of sea and bay, urban hills and distant mountains is unique. Man's treatment of the landscape has been benign, as he has imposed on the hills and valleys a sweeping pattern of streets and tightly knit buildings, giving his city a bright and textured quality in panorama and pleasant intimacy near at hand. In total impression the city's physical image depends upon its natural site and its human creations in equal measure.

Much of the face of San Francisco displays its history and past development. During two centuries the early dominance of the missions has been succeeded in turn by military actions, the gold rush, waves of immigration and the rise of trade and finance. Building and rebuilding have brought the succeeding eras together, telescoping time. Visitors have come and returned in order to enjoy long-noted traditions.

The people who live in San Francisco are also a source of pride and vitality. Their energy and tolerance are well known; their various lifestyles add interest to the neighborhoods of the city. For many residents, the San Francisco environment provides a sense of purpose, direction and belonging that is rarely matched in any other urban area, at least in the United States.

Every day brings something new: a vista, an event, an experience of the city's seemingly infinite variety. Herb Caen put it this way: "The San Franciscan never tires of looking at the face of his city. Thousands of them prefer to walk to work every morning so they can gaze anew at the sights that never seem to be quite the same two days in a row. There is always a stray strand of fog across the sun to cast a new light over the rambling hills. The San Franciscan likes to look at his own city, as though to remind himself of his singular good fortune," the columnist continues. "If he lives on a hill, he travels to the next one to gaze back at his own eminence. Sometimes he simply drives to Marin's Vista Point to stare across the bay at the most beautiful of all upthrusting profiles—an admiring tourist in his own hometown."

San Franciscans are unusually aware and proud of their city. They expect San Francisco to be a good place to live. They care about their city and are willing to do battle if its beauty and tradition are threatened. There are streets and areas rich with Victorian buildings, the beautifully detailed structures that people everywhere associate with San Francisco. Intimately scaled alley-

ways offer a change of pace and delightful surprises; some have almost a rural or small town atmosphere, unexpected in the heart of a city.

At an even smaller scale, simple things such as stairways climbing a hillside are colorful, although sometimes arduous, features that add charm and character. Rugged retaining walls, unique landscaping or design treatment, rows of distinguished old homes make many streets into special places within the city that residents remember and to which they return.

A good deal of San Francisco's appeal comes from the variety it offers. Within a few minutes' walk from the man-made canyons of downtown you can be in Chinatown, Jackson Square, shopping on fashionable Post Street or playing on raucous North Beach. Only a little farther and you can enjoy Washington Square and the colorful shops clustered along upper Grant. Catch a bus and in no time you can be atop Russian or Telegraph Hill.

Not much farther is the Marina, Union Street, Pacific Heights, the Palace of Fine Arts and much, much more. Farther afield and not so concentrated are Twin Peaks, Noe Valley, the Mission District, Sea Cliff, Eureka Valley and Bernal Heights. And this is only a partial listing.

These areas share important attributes: They all have a comfortable human scale compounded from a general low height of development and richness of detail, and they each possess a distinctive image and character. They also share certain problems. In all parts of the city, traffic is an outstanding issue. The safety and comfort of neighborhoods are felt by residents to be closely affected by the amounts and speed of traffic.

The auto has become for many the dominant landscape element of the street. The outgrowth of these concerns was the now world-famous "San Francisco freeway revolt." Public opposition has since been extended to bridges, street widenings, one-way streets and other changes designed to increase the flow of traffic.

Maintenance of houses, yards and streets is next in importance in the minds of San Franciscans. Streets and areas having a distinctive image seem to generate more public concern and involvement. In recent years more and more buildings have been erected that do not relate well to the street but instead present a blank row of garage doors or an open parking deck. Such structures discourage interest and pride in the street.

Mr. Jacobs is director of planning for the City of San Francisco. This article is adapted from an address given at the annual convention of the National Council of Architectural Registration Boards.

People are concerned about what is happening to their neighborhoods and are anxious to improve them, but they need help getting started. In some areas this means a visible starting point around which individual efforts can be seen as effective contributions.

Open space has long been an issue in San Francisco. Neighborhoods and parts of the city that enjoy parks and open land have been pressed to protect them from development. Among the more recent examples are the federal properties at Alcatraz, Forts Mason, Miley, Funston and the Presidio. There are other areas that have little open space, and that which exists is often unattractive. The absence of any visible landscaping compounds the lack of convenient open space. The nearly 20,000 cars a day that speed through Golden Gate Park are a current abuse of public open space that still is to be resolved. The pressure for development has led to increased efforts to obtain street vacations and the release of air rights over streets. At present the city lacks standards for determining when streets should or should not be given up.

In San Francisco, people tend to regard everything they can see from their windows as part of their domain. The views they enjoy from their homes contribute to the quality of their environment. They are concerned about what happens to these views: how each new development affects the skyline and character of the city.

The impact of new development upon the skyline has not always been positive of late. Many are concerned that the city is losing its character, that it is being Manhattanized in a rush toward bigness that could be a losing bargain. These concerns, especially over the height of new buildings, have resulted in a series of confrontations between developers and citizen groups, which are costly to both the developer and the image and character of San Francisco.

Finally, San Franciscans are concerned over the erosion of the city's heritage of historic buildings. It seems that hardly a week goes by without the loss of some fine old Victorian building. The replacement rarely equals the original. This loss is achieved in other ways too. The convergence of these forces is ominous. As beautiful as San Francisco is, we can only chip away at the beauty so much. If we do not proceed wisely and carefully, some day that wonderful thing we call "San Francisco" won't be there.

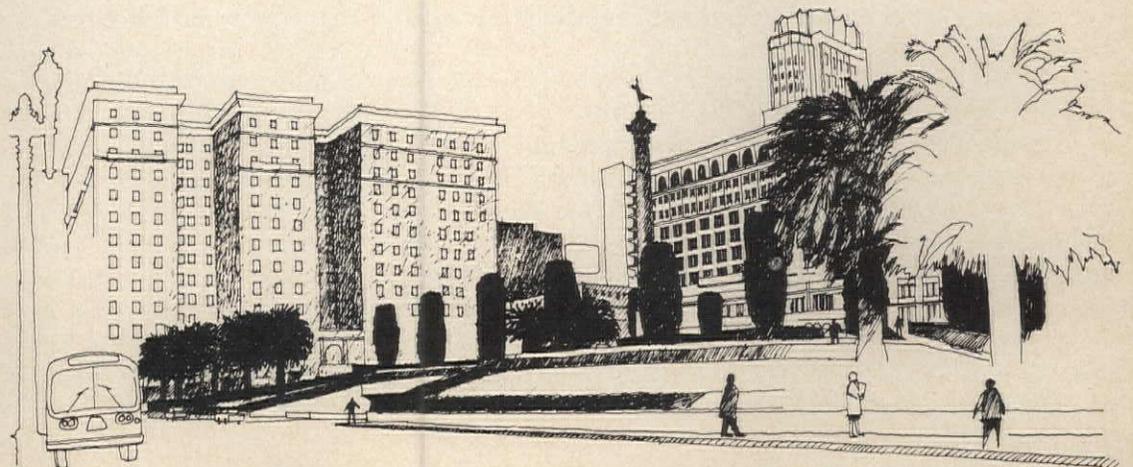
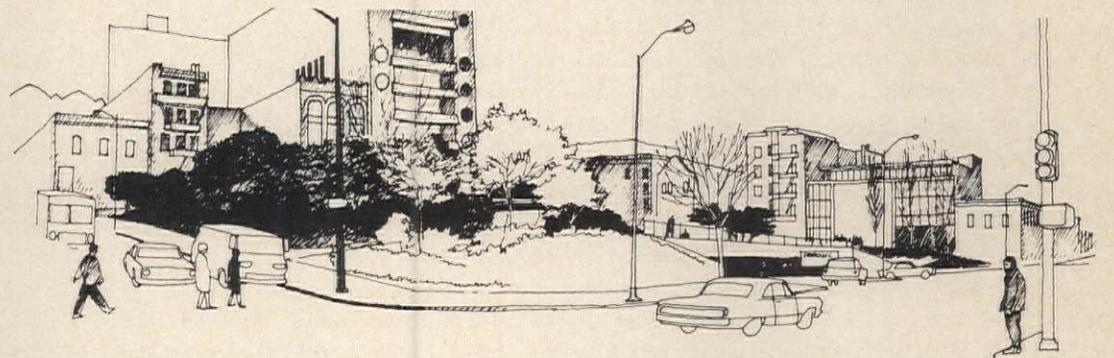
### *The Urban Design Plan*

There is a moment of truth for every city when it must decide what way it will go. Today the decision is ours to make. Do we choose quantity or quality, or can the two be successfully combined?

The urban design plan is proposed as a guide to the important decisions affecting San Francisco's physical environment that lie ahead. In essence the plan seeks to define physical quality stated in terms of human need. It identifies what is good and should be conserved; what needs to be improved and what criteria should be applied to proposed changes. In the urban design plan the issues we have examined are grouped into four categories: city pattern, conservation, major new development and neighborhood environment. We will look at each of these sections in turn and note some of the more important policies and principles contained in the plan.

Located at the tip of the peninsula, San Francisco is framed on three sides by water. The bay and ocean are the focus of major views from the city that give many areas a great sense of openness.

The city's hills are a kind of natural amphitheater giving inland residents dramatic views of the water. Traditionally, building has been higher inland tapering down to the shoreline.



Larger public spaces surrounded by irregular buildings are poorly defined. Buildings of a uniform height provide good spatial definition.

This pattern of development has produced the graceful silhouette the city is noted for and insures the maximum number of good views. The plan makes this fundamental development principle explicit. It is one that must be adhered to faithfully in day-to-day development decisions.

The hills together with certain open spaces and heavily landscaped parkways divide the city into distinctive parts. Building styles, development patterns and unique landscaping further enhance the individuality of these parts. Areas of a city with a positive identity are a rare resource, and San Francisco is fortunate in that it has so many. Residents of such areas enjoy a special sense of place, of belonging that encourages community pride.

Distinctive districts and neighborhoods also contribute to making the city and its parts more comprehensible. This happens when streets, houses, open spaces and hills all fit together into a pattern that gives people a sense of how the city is organized.

Landscaping can enhance the natural and man-made patterns of the city. Landscaping on the tops of hills provides a pleasing contrast with densely packed buildings. The dark green of the trees accents and defines the form of the hill. The plan identifies locations to extend this kind of planting along the hill-tops and ridgelines of the city. In addition, proposals are made to protect and promote large-scale landscaping and open space that define districts and topography.

The total "system" of roadways is the framework used to find our way around the city. It obviously helps when there is a coherent visual order to the road system, i.e., when major streets look like major streets and the major street system can be easily perceived. For this reason the plan proposes landscaping and street lighting that make the major street system easier to follow. Design treatment distinguishing major streets from local ones is suggested to enhance the definition of districts and neighborhoods and link them together in an understandable way.

Many types of improvements can be made in intersections to increase their clarity. Differences in the importance and function of streets can be expressed by differences in roadway width, landscaping and lighting.

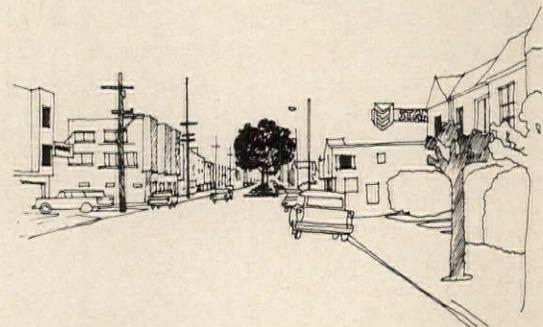
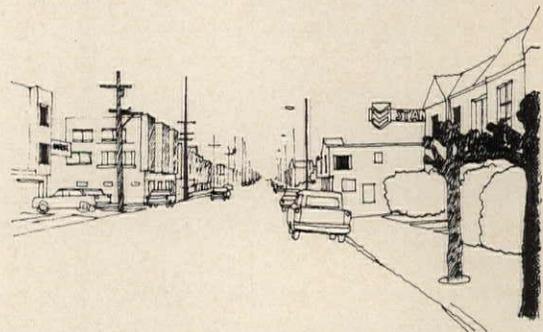
Views of major destinations and landmarks from the major road systems facilitate finding one's way around the city. Protecting and increasing their visibility aid public orientation and access. The plan recognizes the need to protect important orienting views at entranceways to San Francisco and to residential districts.

Thus the city pattern element of the urban design plan contains principles, recommendations and specific policies for shaping streets, buildings and landscaping so that they contribute to neighborhood identity and to our understanding of the city's structure. Policies are also directed toward preserving informative views of the city and its districts and enhancing the visibility of major destinations.

### The Architectural Heritage Is Rich

The buildings that line the streets of San Francisco are as important to the city's character as the underlying hills. This is particularly true of the older buildings. By 1900, approximately half the area now urbanized was developed. Within that area—in the northeast sector—is concentrated the city's rich heritage of early building styles. Here are the Victorians, Carpenter Gothic (see *AIA JOURNAL*, Aug. '71, p. 45) and Queen Annes built between 1860 and 1900.

Their rich ornamentation, tall windows and graceful stairs add interest to the street, and the vertical lines of the buildings emphasize the slope of the hill. The strong facades and cornice



Green space closing a street offers an accent on an upper slope or top of a hill. Uninterrupted grid streets in flat areas often result in monotonous vistas. Closure formed by planting contains the street space.

lines impart a human scale to the street. In some areas pitched roofs create a pleasing pattern on the hillside.

Perhaps just as important as their visual richness is the sense of permanence and continuity they give. They are links with past history and with earlier styles of development. The rare cluster of antique buildings in the Jackson Square area, for example, preserves part of San Francisco's beginnings as a great port and mercantile center. One of the most important sections of the urban design plan recommends policies for preserving notable landmarks and areas of historic, architectural or esthetic value and for promoting preservation of other buildings that provide continuity with past development.

Careful remodeling of older buildings can retain and enhance their character. The plan recognizes that development near older structures need not conflict with them. New and old can stand next to one another well if there is a similarity or transition in scale, form and proportion.

While all areas of San Francisco contribute in some degree

to the image of the city, some are more fortunately endowed with unique characteristics than others. Telegraph Hill is identified by Coit Tower rising above all else from a hilltop park, surrounded by low small-scale buildings with flat roofs hugging the topography and cliffs and complex stairs and walkways. The whole area has an intimate pedestrian scale and texture.

Russian Hill stands out because of the harmonious combination of small-scaled older buildings and tall, slender towers increasing in height toward the top of the hill, its varied well-tended landscaping and highly detailed buildings and walls.

The image of Pacific Heights comes from building heights that increase up the north slope to the top of the ridge. Formally landscaped grounds of detached houses are a hallmark, with spacious distinguished residences and well-landscaped streets.

Buena Vista-Upper Market is distinguished by an irregular street pattern, highly visible planting on steep slopes and varied forms of small-scaled buildings with setbacks, cornices and bay windows.

The charm of Dolores Heights comes from rows of older houses built from nearly identical plans stepping down hillside streets in a series of flat or gabled roofs. Buildings are of a uniform scale with interesting setbacks and entryways, set amid abundant landscaping.

It is quite apparent from these few descriptions that there is a public responsibility to preserve the character of areas such as Telegraph Hill for the enjoyment of all San Franciscans. The plan, therefore, calls for recognition and protection of the five unique areas discussed because they contribute in an extraordinary degree to San Francisco's visual form and character.

The city has two kinds of open space: in the form of streets and in the form of parks and other public lands. Both, over the

years, have been sought as inexpensive land for development of private, semipublic and public projects. Both merit protection.

Like other public resources, streets are irreplaceable and should not be easily given up. They provide views. They are an integral part of the city's pattern and image. In many areas deficient in open space, they are the neighborhood's only resource for enjoying a sunny day or taking a walk. In intensely developed areas streets are the main source of sunlight and air. They are important, too, for service and delivery and emergency access. The plan includes policies which maintain a strong presumption against giving up street areas for any building development.

The city's few natural, undeveloped areas that remain in their original state are precious; they are irreplaceable. The sand dunes in Fort Funston provide a last glimpse of what a large part of our western shoreline once was like. The cliffs along Lands End and the Presidio are the few natural edges of the city left where people can get away and enjoy the grandeur of the ocean and crashing waves. Other areas with similar natural qualities are Glen Canyon, Bay View Hilltop and Lake Merced.

### Conservation Is a Must in the Scheme

The plan sets out guidelines for preserving important undeveloped areas in their natural state. Carrying out the plan in this instance would mean that San Francisco residents will continue to have natural areas within the city to get away from urban congestion. The conservation section of the urban design plan might be concisely summarized this way: It is concerned about protecting and preserving the irreplaceable. Let us not forget that our historic buildings, natural areas, streets, parks and the surrounding bay, once lost, cannot be replaced.

If there is any one measure of the success of a city, it is the quality of life it affords its citizens. This section of the plan



San Francisco's Golden Gate is viewed from Twin Peaks with the woodlands of Golden Gate Park in the foreground and the Presidio in the background. Beyond the bridge are the hills of Marin County.





The old residences which preside over Alamo Square appear to have turned their backs on the 20th century with disdain.

### Better Neighborhoods Add Up to a Better City

Government services should be positive additions to neighborhoods. There is no good reason why schools, libraries and utility buildings cannot be bright, colorful and attractive. The plan calls for special attention to be given to the landscaping of public buildings, including school yards which, all too often, are characterized by asphalt and cyclone fences.

When coupled with public improvements and assistance, encouragement of neighborhood improvement programs can help channel citizen desire for better neighborhoods into effective action. Resident participation is strongly endorsed and will assure an additional measure of pride and satisfaction.

Convenient open space is an important commodity in the city. It was the third most frequently mentioned characteristic listed by residents in a survey conducted as part of the urban design study. The methods used for the creation of protected residential areas are also effective ways for reclaiming open space from city streets where that space is not needed for traffic.

Eventually all areas of the city should have convenient access to a variety of recreation opportunities. Access to the bay should be greatly expanded. The plan recognizes the need for some recreation space to be within walking distance of every dwelling.

Altogether, 31 urban design principles and 15 policies are directed toward the overall objective of this section of the plan, "the improvement of the neighborhood environment to increase personal safety, comfort, pride and opportunity."

It has been noted that San Francisco is largely composed of

small-scale buildings and that unlike a city on flat land, the hills make all parts of San Francisco highly visible. Because of this visibility, changes in scale in one block may affect the views of residents over several miles. Major new development—wherever it occurs in the city—is thus a citywide concern. Such development stands out because it is new and it is different. The effect upon the pattern of the city and its neighborhoods is often benign, but at times it is not. When it is not, the loss can be painful because it is irretrievable.

The city has over the years enacted the most extensive system of legislated height controls in any American city. It is evident that the controls are not yet adequate since the controversies are still with us. Building height alone is only part of the problem, which has two other dimensions: where the building is located, and the width or apparent bulk of the structure. The urban design plan sets forth principles of location and form to guide future development. Some of these are:

- Tall, slender buildings placed near the crown of a hill emphasize the form of the latter. Similar tall structures near the base of a hill or in the saddle between two hills diminish the importance of the hill form and block views.
- Buildings kept low along the waterfront retain the gradual taper of height from hilltops to water that is characteristic of San Francisco.
- Larger public open spaces acquire better spatial definition when surrounding buildings are of uniform height.
- Properly placed tall buildings can enhance the topographic form and skyline of the city and orient the traveler by helping to clarify his route and identify his destination.

High buildings clearly have a valid place in the city pro-

vided that they do not block views, that the change in scale is not excessive and that they relate harmoniously to the topography and surrounding development. Taking into account established patterns of building height and scale, and seeking to follow and reinforce those patterns, height limits can be developed that will meet the design, functional and economic needs for expansion. Studies of all these factors were made to determine where height should or should not be in the city. These height guidelines, expressed in terms of ranges appropriate for different parts of the city, are proposed as a starting point for establishing specific height limitations to be adopted as a part of our planning code. In such a height plan based on these guidelines, existing height controls now in effect in the city would be incorporated in substantially their present form. Large areas presently without any specific height restrictions or policy would have controls; only on the top of Nob Hill and in the office core of the city would height be determined by floor area ratio. Height limits would be raised in a few, small areas where added height would enhance the land forms and provide a needed visual focal point in the neighborhood.

The width or massiveness of a building is a major determinant of how harmoniously it will relate to its surroundings and how it affects its views. A building may appear to be bulky whether or not it is of extraordinary height; the result can be a blocking of near and distant views and a disconcerting dominance of the skyline. The apparent bulk depends primarily upon the amount of wall surface that is visible and the degree to which the structure extends above its surroundings.

Bulk is thus relative to the surrounding scale of development. A structure that would not be considered overly massive in one part of the city could be disastrously so in another. Extremely massive structures on or near hills can overwhelm the natural land forms, block views and generally disrupt the character of the city. A building situated in a visually dominant position, whose exterior is blank and uninteresting, does not relate to surrounding development. A bulky building creates the most visual disruption when seen from a distance as the dominant silhouette against much smaller structures. Bulky buildings that intrude upon or block important views of the bay, ocean or other significant citywide focal points are particularly disruptive. These are some of the basic principles relating to bulk that are in the plan and proposed for adoption.

The plan also contains "guidelines for bulk of buildings" based upon the preceding principles which, if followed, would protect all areas from excessively massive structures. The guidelines relate to the existing scale of development and to present zoning. For example, in the Sunset area the guidelines indicate that any part of a building higher than 30 feet and more than 85 feet in length would appear bulky in comparison with surrounding development. In contrast, in many industrial and warehousing areas, buildings up to 250 feet in length are common and would be acceptable.

Downtown the guidelines call for that portion of the building above 150 feet in height not to exceed a maximum horizontal dimension of 170 feet.

Building color, if it contrasts sharply with the cityscape, can also contribute to disharmony. The plan calls for highly visible buildings to be light in color in order to reinforce the visual unity and special character of San Francisco.

The shape of tall buildings has also become a problem. Traditionally, unusual shapes have been reserved for structures of greater public significance such as City Hall or St. Mary's

Cathedral. Unusual shapes in commercial buildings are usually saying, in effect, "I am more important than my neighbors." This has been the Los Angeles approach. The juxtaposition of several unusual shapes may create visual disorder and compete for attention with buildings of public significance.

The policy recommendations contained in the urban design plan on the relation of individual buildings to the city add up to a rather simple but sensitive message: Fitting new development into the cityscape requires a careful assessment of buildings in terms of the scale and character of surrounding development, its appearance upon the skyline and effect upon the natural landforms. Further, the design of any new development should seek a visual importance in keeping with its social value.

### **Policy, Not 'Pretty Pictures,' Is the Key**

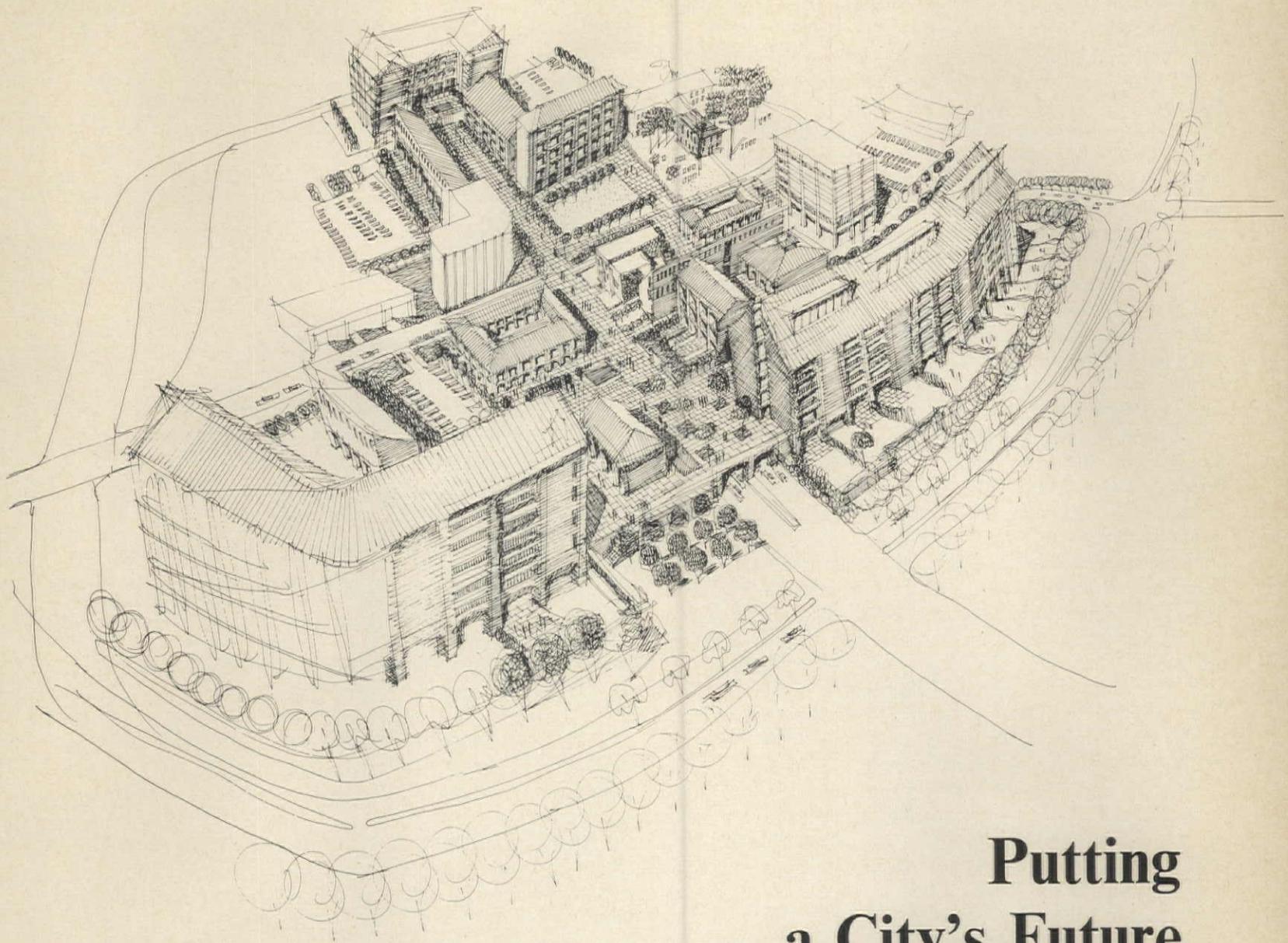
The substance of the plan is policy—specific policy to judge specific proposals for changing the city. It is pointedly not a set of personal architectural drawings or some visionary and expensive scheme for altering the city on paper. Those pretty pictures never become reality. Rather, it is a working tool to be incorporated into the city's master plan. And it is a plan from which many, many individual projects can spring and be judged. It is a continuing guide for the future physical development of San Francisco.

No plan can be relevant or effective without public review and support, and this cannot be emphasized enough. The plan presented here will be the subject of hearings by the City Planning Commission to gain citizen reaction and evaluations, and necessary modifications can be made. The plan finally adopted by the commission should have the clear backing and enthusiasm of the city as a whole.

The policies, objectives and principles of the plan can be implemented in a number of ways. Some can be translated into law, especially as additions to the city planning code. Some would guide the action of all city agencies and officials involved in development, through the capital improvements program and other means. Some would provide direction to architects, developers and community organizations having a stake in both conservation and change. And all of the plan would support and guide the work of the Department of City Planning in its project reviews, area planning and design of prototypes and specific improvements.

What ought to be stressed the most, however, is that this document is intended to stand firmly as a basis for community agreement and commitment to a better city, a lasting set of reference points for rational decision making. No one really wants the divisiveness and confrontations that have accompanied some proposals for change in past years and that have hidden the more positive accomplishments for improvement. Even the most difficult problems in planning and urban design can be brought under control if there are sound processes in government, timely inputs of professional judgment and adequate means for expression of public concerns. The urban design plan is intended to put us on that road.

This urban design plan for San Francisco has been developed with the conviction that quality in the urban environment is an important and growing concern in this great city. Its people have taken a leadership role among the citizens of the country in balancing conservation and change through new safeguards for cherished attributes of their city's character. The plan is intended to reinforce that tradition and focus efforts on protecting and improving the quality of the environment. □



## Putting a City's Future in Focus

by NEIL MAURER

The Urban Design Assistance Teams cannot find answers to all problems in a city after three days of study—they aren't supposed to. But they can see a fresh approach to things, suggest solutions and ignite citizen interest in long-range planning.

The "preservationists" and the "downtown developers" are at war with each other in hundreds of American cities.

So far as the preservationists are concerned, developers are exploiters after a fast buck, intent on ruining the city with garish shopping centers and huge buildings, without regard for esthetics or quiet streets.

Preservationists, according to developers, are so many ostriches with their heads in the sand, convinced that economic problems will disappear if they are ignored.

These battle lines were drawn in the small city of Falls Church, Virginia, until mid-1971 when a team of architects was called in for an impartial third opinion. The volunteer group studied the town, seven miles from the nation's capital, and showed the residents that with good design and sound planning, the goals of both factions could be achieved.

The architects—part of an Urban Design Assistance Team program sponsored by The American Institute of Architects—came to Falls Church at the invitation of city officials who hoped that outside professional advice might indicate a new direction for the city's development and ways to avoid continual zoning-change skirmishes.

Under the AIA's UDAT arrangement, members donate their time for three days. Their out-of-pocket expenses are paid for by the city and the local AIA chapter. To avoid any conflict of interest, the architects cannot accept any work or commissions which might result from their suggestions.

During their study of a city, the architects do not attempt to present a definitive report, which is impossible in three days. They strive simply to be a catalyst to stimulate citizen concern for the sign of the city and perhaps suggest feasible directions for growth.

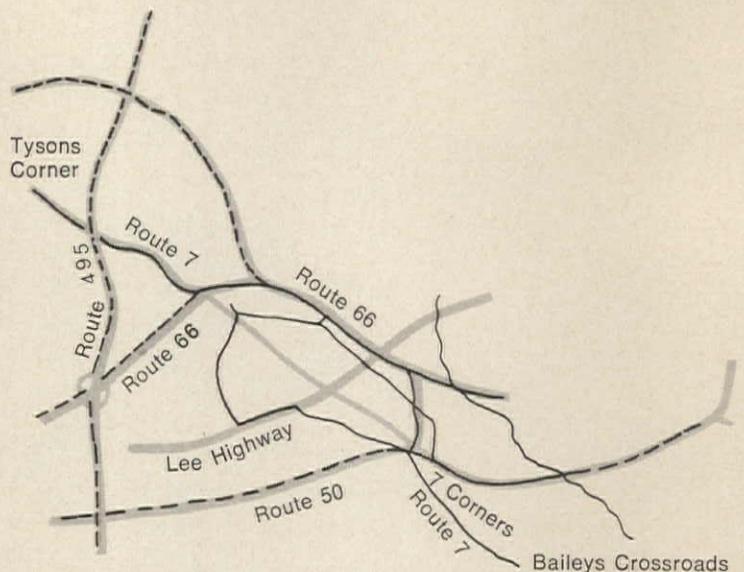
The team called to study Falls Church in May included three architects: William A. Gould, AIA, Cleveland; Wallace Henderson, AIA, Springfield, Illinois; and John Desmond, FAIA, Baton Rouge. A fourth member was Paul Savage, an economist from Columbus, Ohio. They interviewed a broad cross section of the citizens; listened to the residents in a public meeting; talked with the city planner, the economic development commission, gas station attendants, the historical society; studied base maps and transportation projections, and examined development plans of adjacent cities.

Said Henderson: "We were given ample opportunity and facilities to visually inspect the community, to take notes, to walk the streets, photograph the eyesores and in general do what I think too many people believe architects singularly do: build a huge case against unattractive structures, overhead power lines and cosmetic attempts to rejuvenate worn-out sites.

"Because of the total freedom with which we were allowed to pursue our questions and subsequently to prepare our summary remarks," he added, "we were in the first few hours well beyond the three-dimensional, paint-up, fix-up approach. Each of the team members was thrown into ever-expanding rap sessions about questions and ideas which the citizens themselves had brought up as they eloquently evidenced their own concern with their community's future."

The team presented the results of its study in a public meeting at the local high school. Nearly 100 residents attended, most of them initially doubting that anything of value would come of the meeting. Three days were not enough time, they felt. Many thought the architects would pick sides on the development issue which was dividing the town: whether to build a 17-story commercial building in the heart of the low, small city.

The preservationists, in this case, feared that the architects



The present Falls Church has some impressive elements according to the UDAT team, but it has no focal point. Instead, it serves mainly as an intersection for the 27,000 or so cars which speed through each day.

would say, put up the tall building and build a lot more. The developers were sure the "experts" would advocate tearing up the concrete and planting trees.

But as they listened to the report, the skepticism began to subside. They found that the architects hadn't picked sides but instead were presenting the development question in a brand new context.

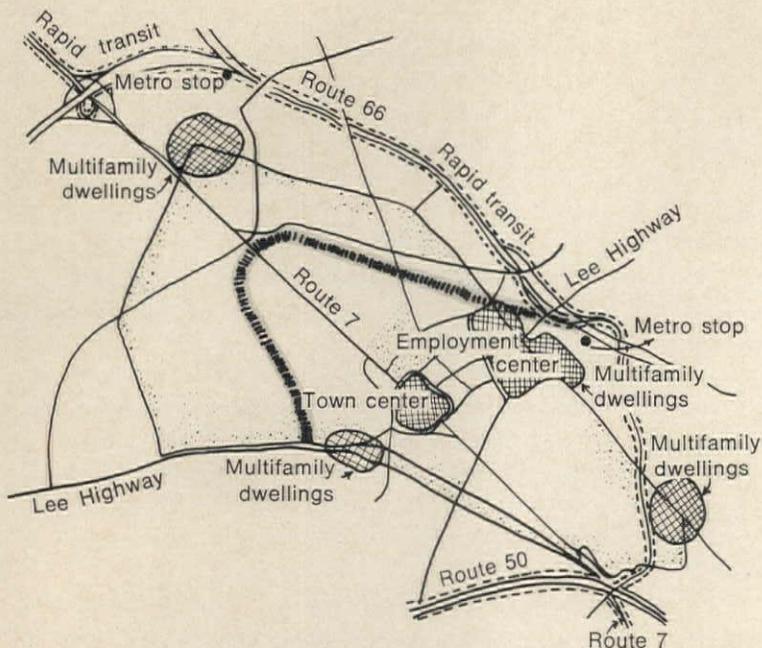
Demonstrating something architects believe is a basic axiom—that good design benefits the whole community—their proposal leaped over the heads of the townspeople and appealed both groups.

The team's proposal respected the town's historic, residential character, yet took into account the need for a firmer economic base. But it said that the town couldn't, and shouldn't, try to compete in the same commercial areas as its larger and economically stronger neighborhoods.

In its final form the plan suggested closing off several blocks of two major streets, at what is regarded by the residents as the town's center, to create a pedestrian mall and a true focal point for the town's activities. Highrise buildings could be placed more advantageously, it said, at the town's edge near an existing giant shopping area and the location of a new metro station. And to form a more solid economic base, it proposed that the town assemble land to attract a major employment center such as a hospital, federal agency or branch of a university.

At the public meeting the team developed the proposal slowly, starting with slides showing the elements of the town which impressed them: good landscaping around the city hall and civic center, fine residential areas, an abundance of trees, a sense of citizen concern for the community.

Mr. Maurer is assistant director, Department of Public Relations, at AIA headquarters.



The near future Falls Church is seen with a town center with lowrise commercial and residential development and with highrise housing around the edges, an old church and other early buildings preserved.

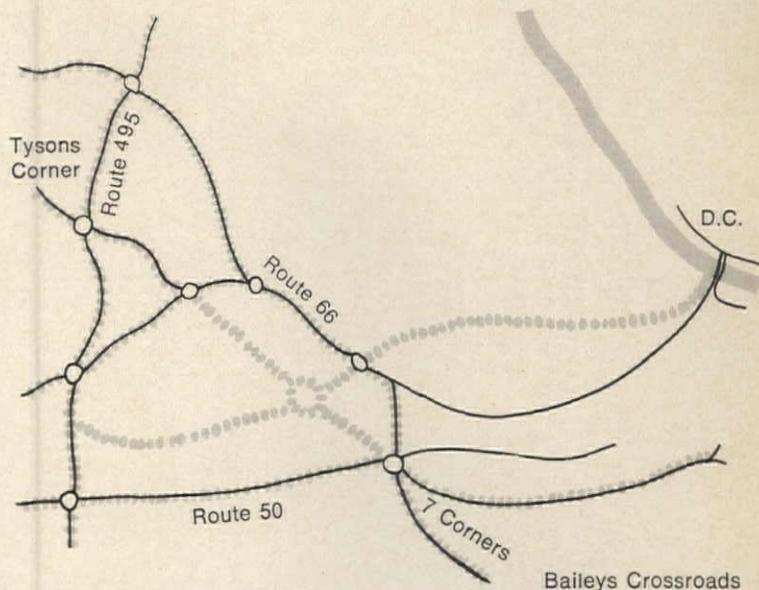
"You obviously take pride in your town with its historic church where George Washington was a vestryman," said Gould, the team chairman. "But despite this, your 100 percent corner is vacant. The town has no focal point, no center, which has historically been the expression of great cities' and towns' sense of community.

"The historic crossroads near the church, which residents consider the town's heart, serves only as the major intersection for 27,000 cars a day," he explained. "Those cars, for the most part, are going somewhere else—to Tysons Corner or Seven Corners." (Two giant shopping areas flank the town on the east and west.)

This observation was echoed later by *Washington Post* architectural critic Wolf Von Eckardt when he wrote about the AIA team's visit to Falls Church. He described the crossroads as a "nonplace" of "messy, vacant lots, some unsightly old houses, a hardware store, a brownish glass box, a whitish brick box, a grayish fieldstone box, and down the road . . . a sluggish creek covered with weeds and debris and a historic marker to tell you about the old church that has been usurped by a far more 'Colonial' looking Howard Johnson's.

"The town," Von Eckardt wrote, "widened Broad Street into Route 7 and Washington Street into US 29, because the businessmen believed that more cars would bring more business. Instead, the cars are just speeding through since there is nothing much to go to. The crossroads is no longer a center. Nor is there much more business. There is nothing to make you stop but the traffic lights."

The architects proposed to save the historic section of the city and yet create a more solid commercial center by closing down the crossroads and routing the traffic around an area of several blocks. They specifically suggested that the town consider purchasing a large tract of land standing vacant near the



A far future Falls Church is visualized with traffic routed around an area of several blocks. The existing parkway system and bike trails would be improved and pedestrian malls encouraged in the city center.

#### A Letter from a Falls Church Resident

Last night was an extraordinary one in Falls Church, Virginia, almost exhilarating in its effects upon an audience gathered to hear the report of an AIA Urban Design Assistance Team that had been studying our community.

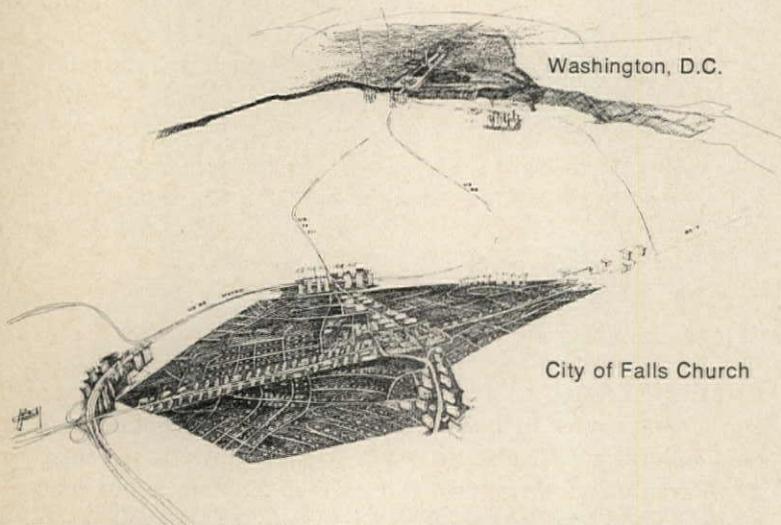
Falls Church has long been a divided community over the issue of intensive development. For one evening at least, the two sides to a festering and often acutely flaring acrimonious controversy were brought closer together by the unveiling of a concept and plan that superimposed an imaginative urban design solution on a thorny problem. The catalytic agent was the gifted, hard-working articulate and imaginative UDAT team.

Not only did the team members leave us with a projected vision of a future that we had been seeking but they also supplied us with a concept that can, and I hope will, frame the urban design of the future for our city.

They developed a logical rationalization for their solution which was derived from their own solid professional achievements and rich experience but applied to a totally unique set of circumstances. They shook up some of our hardened notions. Equally important, they tackled the hard-nosed problems of real estate, land use and availability, and marketing as they emphasized the importance of materials, scale and, above all, the need for high-quality standards.

Although this letter reflects initial enthusiasm, most of us are well aware that the plan faces an extraordinary array of obstacles—human and material—but for the moment at least we are imbued with a new horizon of what is possible. For we have been allowed to see what inventive and creative urban design architects can propose for a community that does not want to run the risk of suffocating in suburban mediocrity and ugliness.

LOUIS T. OLOM  
 Member, Board of Directors  
 Falls Church Village Preservation  
 and Improvement Society



The city of Falls Church, as many another small town, has specific responsibilities as a member community within a large metropolitan area, the team concludes. It cannot flee the problems of the larger town.

crossroads and there build a 300 to 500 car underground parking garage as an incentive to attract developers.

Above the garage they suggested a combination of townhouses and small shopping areas. The houses would be well placed there because they would look in toward a pedestrian walk and green spaces. With surface and underground parking located around the perimeter, all parts of the pedestrian mall, commercial areas, theaters, restaurants and townhouses would be easily accessible.

This would create a true center for the town and at the same time preserve, in an attractive environment, the old church and other early buildings.

Such proposals demand considerable effort to complete; the team had no illusions otherwise. But as a "plan for planning" it seemed feasible. The highway department would have to be convinced to reroute two state roads; the city would have to purchase a sizable amount of land; businessmen and other citizens might need convincing. The scope of the demands did not disturb the people. What appealed to them, they said later, was that for the first time they had been presented a coherent plan for the town's growth.

"Up until now," one resident told the team, "we have been fighting against each development project as it came along. They were all one-shot schemes. They didn't relate to an overall plan."

Changes outside the city limits—especially in transportation—the architects emphasized, would have a strong impact on the future character of Falls Church. They saw construction of Interstate Highway 66 and the location of subway stations for the new metropolitan Washington rapid transit system at the city's edges as opportunities to shape the city.

Accordingly, they suggested that Falls Church concentrate

its highrise development at the edges of the city and retain the center for lowrise commercial and residential development.

"Although the limits of the community are fixed, the potential, even the need, for denser housing does exist," Henderson explained. "Rather than destroy the concept of the historic community—and if this housing in the form of highrise structures is to occur—it appears that such growth could take place on the perimeter. Existing concepts of controlling the height and density in the central portion of the community would still offer adequate safeguards of profile. This would create a 'bowl' effect that would not encumber the pleasant 'village scale' of the older core while providing for population growth and an expanded base for the community to survive as the economics of the future fluctuate."

The team members added that because the city is so close to Washington, it must take more responsibility for solving metropolitan problems.

Gould warned that "if the heart dies, then so will the limbs. You earn your money in the District but spend it and live in Falls Church." He pointed out that the city now has only a minimal commitment to spend money to solve metropolitan problems. It consists mostly of limited participation in a metropolitan council of government and contributions to some social services.

"Many residents are federal government employees who write and administer the laws of the nation, yet will not make an appropriate commitment with their personal lives. That commitment could come as a municipal land use policy to encourage within the community a better economic, racial, housing, employment and cultural mix than now exists."

Specifically the team suggested that the city should acquire a site for a metropolitan-oriented employment center such as a hospital, a branch of a university or a federal agency.

The comprehensive proposal captured the imagination of the townspeople and started them thinking in a whole new direction for the future. Their faith in the plan was buoyed by the professional expertise of the team. A City Council appointed steering group is now reviewing it for possible implementation.

Gould's firm, with offices in Cleveland and Philadelphia, has won several awards. His current projects include a master plan for the National Aeronautics and Space Administration and a special summer facility for the Cleveland Orchestra.

Henderson recently completed a dramatic restoration project in which his firm raised the old State Capitol of Illinois 10 feet in the air and built a new structure, with a parking garage and library, beneath it (*see AIA JOURNAL*, Nov. '67). This saved a historic building while making it completely useful for current needs.

Desmond, a member of three preservation societies in Louisiana, brought a deep interest and insight into architectural history to the team's assignment. His excellent drawings dramatized clearly the complex proposal.

Savage is an economic consultant in real estate investment and development techniques, and general manager of the American International Development Corporation.

"The urban design team," as a subsequent *Washington Post* editorial pointed out, "only showed a way toward better urban design. There is no telling whether Falls Church will follow it. The obstacles are numerous. But the worst obstacle is inertia, the kind by which people prefer to see themselves as passive victims rather than active participants. We hope the visiting firemen from the AIA have succeeded in building a fire under such defeatism." □

# A National Proving Ground: MINNESOTA EXPERIMENTAL CITY

by JAMES ALCOTT

**The experimental city envisioned for Minnesota goes a step beyond today's new towns. One of its aims is to be a living laboratory where innovative economic, social and environmental concepts will be tested. Harnessing all available technology and knowledge for the solution of urban problems, it will try to determine the efficacy of things hitherto untried and finally afford guidelines for the future rational development of the nation's existing cities and new towns still to be built.**

The growing disparity between our ability as a nation to create highly sophisticated programs for defense and space exploration and our inability to deal successfully with human needs and problems is a major paradox of our age. The deterioration of urban living is one of the most discussed—and least resolved—issues in modern America. There is widespread agreement that we have the know-how and the resources to make life on our planet much better, more tolerable, more human. "If we can send a man to the moon, then . . ." is an analogy that may be faulty in part, but it seems apparent that we may require the same sort of focusing of resources if we are to create measurably better patterns of urban living.

The Minnesota Experimental City concept proposes a total systems approach to design a new city where none has existed before, one which is not constrained from making full use of the best ideas and technology available. The overwhelming advantage of a new city is that it is largely free from the constraints which seem to impede every significant innovation that we all agree to be necessary and desirable. A new city would have the ability to innovate, both in its own interest and in ways which would be transferable to other cities. It would represent what has been described as "a chance to explode out of the conventions which freeze our energies and our capabilities to grow."

There is almost no real urban innovation taking place in this country today—not because there are no ideas but because there is no adequate workable opportunity. When apparent opportunities do arise, innovation is almost invariably frustrated by political and economic factors because of the inertia of existing customs, interests and habit patterns caused by the threatened displacement of people and power.

Beyond these generic barriers to change, there are the specific limitations of trying to develop new systems or subsystems in urban environments that are already experiencing great difficulty. As Lewis Mumford observed recently, "No adequate rebuilding of the transportation system is possible without introducing many coordinate measures outside the field of transportation itself—energy, conservation, industrial decentralization, low income housing, pollution abatement, local agricultural production." We cannot truly create change for the better without a total systems integration which can test alternatives.

Important progress is being made in some new towns like Columbia, Maryland, and in new systems like the San Francisco

Bay Area Rapid Transit. But even in such cases there is the feeling that the state of the art is not being advanced commensurate with the need for such advance and that even these landmark developments are not enough. Large-scale integrated efforts in which new technology and ideas can be demonstrated and proved for adaptation elsewhere are required. Urban problems require long-range solutions, but controlling economic and political factors virtually dictate remedial short-run action (or inaction, as the case may be).

In existing cities, it is neither politically nor socially feasible to attempt a major innovation which may not "succeed," a fact which tends to force use of established technology that is virtually obsolete. Most people assume that technology is available to solve most of our urban problems. This assumption is only valid in a limited sense, when at all, and not in the interactive context of other systems. In view of the tremendous sums now spent to maintain the nation's cities—and billions more which will be spent to accommodate the burgeoning cities and new economic activity in the 20th century alone—it seems only prudent to allocate a small fraction to research and demonstration from which will come longer-range solutions and significantly better ways of dealing with urban problems.

It was against this background that in 1966 a small group at the University of Minnesota began to draw together the best thinking in the country to conceive what a city should be like, what is possible and how it can happen. Under the leadership of Athelstan Spilhaus, then dean of technology, and Otto Silha, newspaper publisher and university regent, the Experimental City project initiated a series of 14 workshops on topics ranging from human institutions to new energy sources. These groups brought together the disciplines necessary to lay the framework on which a national laboratory for urban innovation could be built. The three-year study phase, which was funded at \$360,000 by private, federal and state sources, drew on the capabilities of scores of the most knowledgeable authorities in urban and regional development to identify the critical outlines of a truly experimental city and of its interfaces with its surroundings.

The Minnesota Experimental City has been conceived as a totally new city in which innovations—technological, social, economic and physical—could be developed, experimented with and evaluated. We know that today's urban systems are complex and interacting and that only through a new kind of city is a total systems experiment possible.

The experimental city should be a national proving ground for demonstrating social, economic and physical capabilities for building cities that can be truly responsive to man's changing needs. The real premise of such a city is that 1) man can creatively mold his environment; 2) it is possible to unite the technological resources of the private sector with the authority of the public one; and 3) we can do much more to serve people by harnessing and reorienting the social, economic and physical

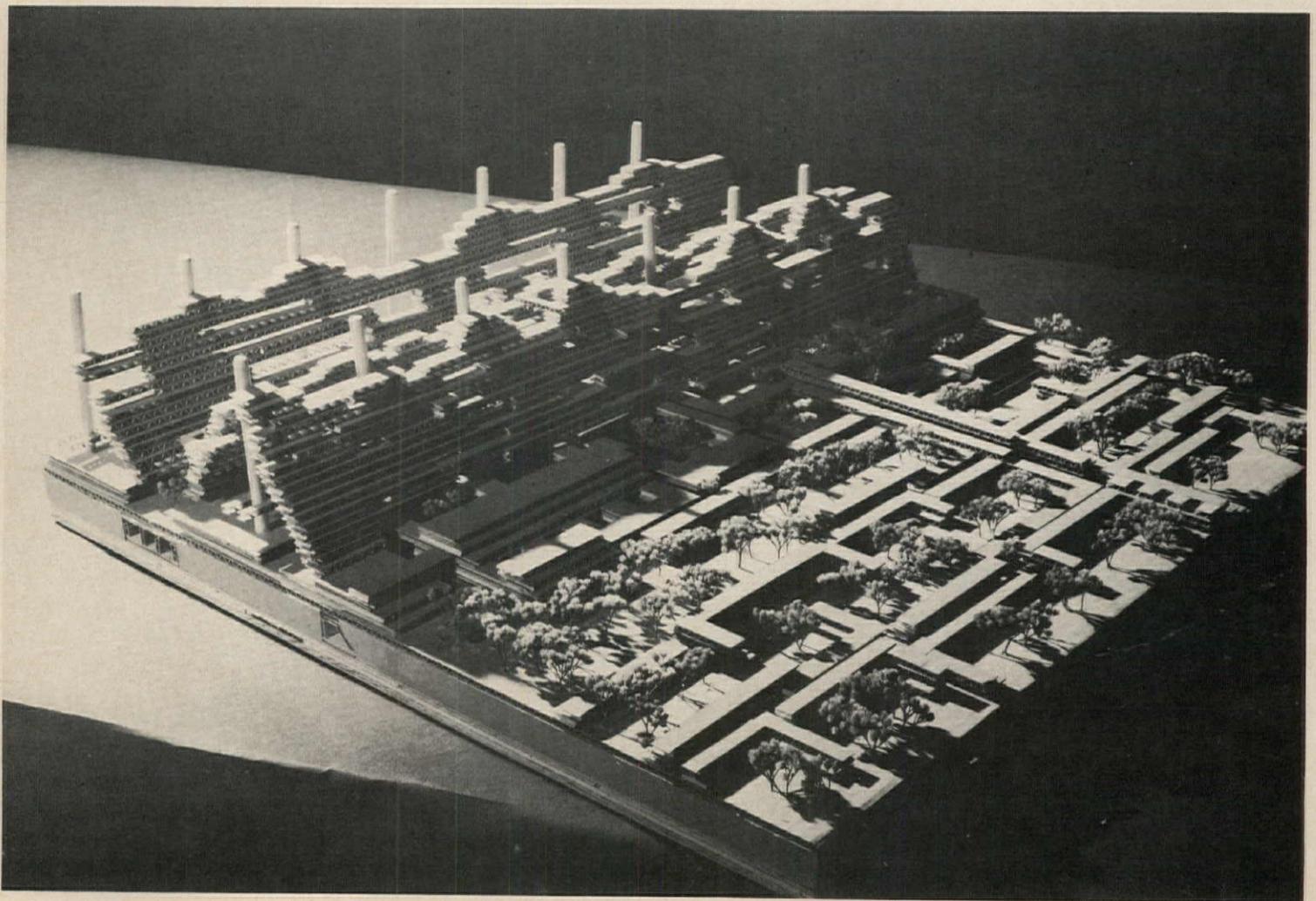
forces about us. A city should adapt to the needs of people and reflect their aspirations and capabilities.

The Phase 1 study established the essential feasibility of the idea and arrived at a number of conclusions about the key parameters which will help measurably to determine the location and some of the physical characteristics of the city. A population of 250,000 was determined to be the "right" size if the city is to be essentially self-sufficient or freestanding. This is the size which the British set for Milton Keynes. Such a city may require as much as 45,000 acres, including provision for buffer zones and extensive open space. Environmental and economic analysis in Phase 2 will further refine that figure. Many other questions concerning the siting of a city must be addressed regarding physical aspects of location—topography, hydrology and water resources, geology and soil structure, micro-climatological features—as well as the larger economic and ecological "fit" with the region.

Minnesota has thousands of acres of low utilization, publicly owned land, some of it in very large tracts, which could be logically acquired for the experimental city. This would tend to minimize many of the dislocation problems and the cost of acquisition. It could also provide new concepts in the use and control of public lands.

Professionals in the urban field agreed that for the city to have maximum experimental impact it should be built in a relatively short period of time—10 to 15 years—to make its contributions relevant to some of our present urban problems and to permit adequate coordinated application of social and physical know-how. And finally, to insure that it could be truly freestanding and not adversely influenced by existing urban constraints, the city will be at least one hour's travel time from a major metro-

An experimental city such as that envisioned for Minnesota has never been built. Only conceptual studies are possible for illustrative purposes, such as the one here conceived by Bruno Erat, University of Minnesota student.



politan area. Only in that way could it develop in an independent, integrated fashion.

It was recognized that this decision not to tap directly into the growth of an existing metropolitan area could create problems of an adequate economic base. To begin to answer these important questions an extensive analysis is now underway of the potential economic base for the city. In addition to an examination of regional growth patterns and the possibilities inherent in the actual construction of the city itself, the analysis will describe the overall economic makeup of a city in a post-industrial economy and what its component parts will be.

In addition to the economic base study, parallel research is being conducted to determine the composition of the required labor force and the necessary public and private investments in the major elements of infrastructure. Among the objectives of the current work is the identification of alternative means for financing several systems which comprise a city and the development of new and better relationships between public and private financing resources to serve as models for future new growth.

The first phase studies concluded that the city should reflect future probable economic trends and that its economic activity would be closely related to information handling in its broadest context and that the economy would be heavily service oriented. The economic planning will make full recognition of the need for a city to relate positively to the larger region of which it is a part, providing social and economic opportunity for residents of smaller towns and cities as well as opportunities for persons who would otherwise move out of the region. In that sense it should become a growth pole which will help strengthen the economy of a much larger area. The current economic and manpower studies are being funded by the Upper Great Lakes Regional Commission, which is responsible for stimulating the economic and social development of the region.

The actual site for the Minnesota Experimental City will not—and should not—be selected until the criteria are more carefully established. The state has recently established a special authority charged with selecting a site and determining the appropriate means and form of land acquisition and control.

Several things have become clear as a result of our study: 1) the city must be a new city because only in such a place would a total systems experiment be possible with adequate diversity to permit demonstration for other cities; 2) the city should be conceived of as an "information center" as distinguished from the older manufacturing center/trade center model which still tends to bias our thinking; 3) the size of the site should be based on the probable needs not only of the city per se, but also should take into consideration the city's relation to its hinterland; 4) the city could be built only with the involvement of business and industry, the academic and research community and state and federal governments, all with a goal of human betterment.

The first phase workshops proposed a number of innovations in the physical and social systems. They include:

- A tunnel complex for physical infrastructure including utilities, services and some movement of goods, mail and solid waste.
- Enclosure of the city or portions of it to provide an additional element of environmental control and avoid the substantial costs associated with winter weather which are present in at least half of the cities of the country.
- A totally integrated movement system for both goods and people which makes possible intermodal planning and operation under a single management.

- Communications and information handling which would utilize coaxial cable and small- and large-scale computers which would link business, government, homes and service institutions in ways not possible today.

- A waste management system embodying the best principles of recycling, reuse and recovery for airborne, liquid and solid wastes.

- Education which would make the entire city a "school without walls," a learning experience for residents throughout their life cycle.

- Health care services which integrate all aspects of individual and public health and make extensive use of modern medical and communications technology.

- A food production and distribution system directed toward a degree of self-sufficiency not possible in existing cities. Further study of these and other systems will be accomplished during the current "program definition" phase.

The concept of Experimental City makes it possible—in fact, necessary—for social and environmental and economic considerations to have equal weight in selecting the site in order to identify an "ideal" set of factors which will permit the development and urbanization pattern to work with the natural flow of ecological forces. It will be a unique opportunity to determine how major urban development can be planned and built in ways which minimize short- and long-term environmental disruption. It will be the first attempt to build an ecologically compatible city. The tremendous attention being given to environmental affairs today is virtually all directed at corrective measures or, at best, at steps to prevent predictable disasters such as oil spills or stream pollution. The city will go an additional step beyond current efforts in setting new directions for the accommodation of growth without major environmental sacrifice.

The form of the city has been left open so that design elements can develop in response to the social goals and the technological possibilities inherent in a truly new city. As an example, the kind of educational patterns adopted may remove the rationale for the more usual village node which structures most new communities and all old ones today. The land requirements of a city with extensive tunneling for infrastructure and movement systems will be quite different from anything we know now. An umbrellaed enclosure could radically change density patterns which are prevalent at this time.

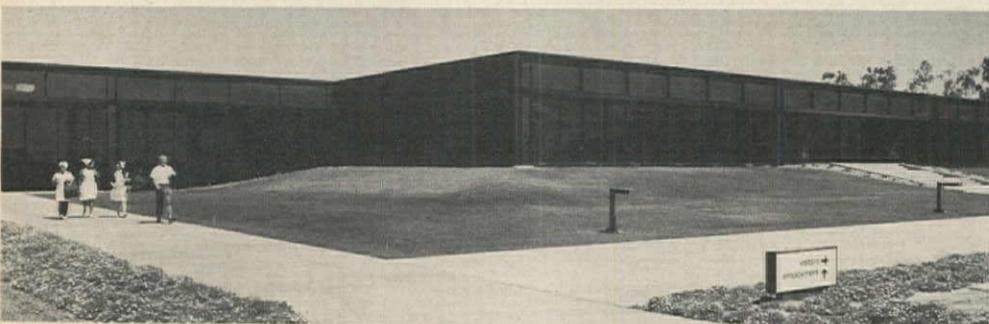
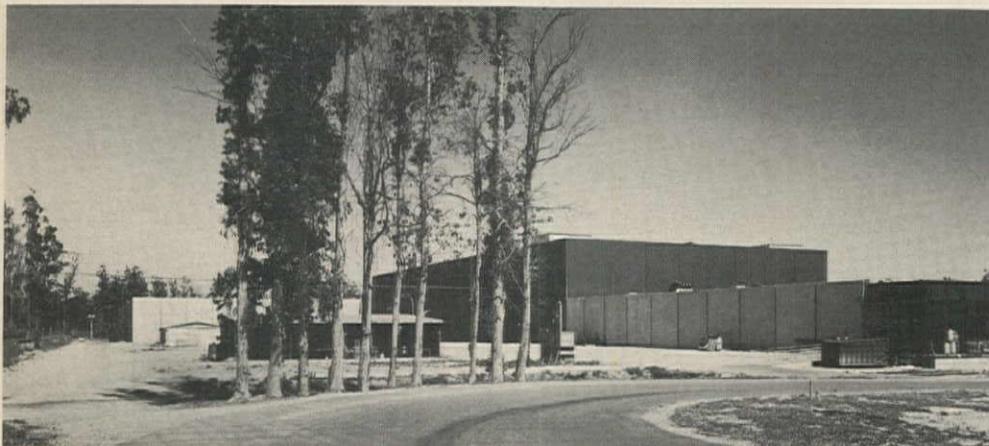
Similarly, decisions about the appropriate governmental structure for the city and management configuration for the development period have been left open until the options can be explored more fully in conjunction with development of the physical and social systems. For instance, a New York type urban development corporation with extensive governmental powers was not adopted initially because it would have a strong tendency to preclude adoption of other options later.

Skeptics have questioned whether it is possible to build a freestanding city in Minnesota, particularly one with a high degree of physical innovation. It has been the philosophy of the National Steering Committee for the project, whose members represent such diverse backgrounds as R. Buckminster Fuller, General Bernard A. Schriever, Ambassador Rita Hauser and the late Whitney M. Young, that this experimental city must be built and that it must be followed by others which will continue to advance the art of urban design. All experience to date indicates that failure to launch a series of experimental innovative cities will consign future generations of Americans to living environments which are only incrementally better than those we see deteriorating around us today. □

Mr. Alcott is general manager of the Minnesota Experimental City.

TISSUE MANUFACTURING FACILITY  
FACELLE COMPANY  
DIVISION OF INTERNATIONAL PAPER COMPANY  
Oxnard, California

Ministry of a Project



All access to manufacturing area can be controlled through one entrance. Glass-walled office facility is square in plan with an enclosed courtyard in the center.

**Architects:** Albert C. Martin & Associates (John Rollow, project director; John Day, partner in charge), located in Los Angeles, with 320 employees. Founded in 1905, the firm has a construction volume averaging \$130 million per year. Its staff consists of 40 registered architects, 59 engineers and 3 planners.

**Type of Architectural Contract:** Multiple of direct costs, with a guaranteed maximum amount determined by an estimate of actual costs made after preliminary design.

**Additional Services:** Utilization studies of over 10 sites and detailed planning schemes of the favored three; engineering analysis and design work in connection with the water systems; soil investigation; development of a new and comprehensive approach to materials handling; procurement activity, review and recommendations on proposals received for major materials and equipment; interior design including graphics.

**Consultants:** Soil investigation and foundation—Leroy Crandall & Associates; water treatment—James M. Montgomery Consulting Engineers, Inc.; materials handling—Theodore Barry & Associates; cathodic pro-

tection—Gordon N. Scott; landscape architects—Eriksson Peters & Thoms.

**Type of Construction Contract:** Negotiated general contract (Swinerton & Walberg Co.) with the largest portion of the work competitively bid by subcontractors.

**Construction Costs:** \$13,392,340 (sitework, \$880,000; manufacturing/warehouse, \$11,765,320; office, \$747,020).

**Program Requirements and Solutions:** Newly established Facelle is International Paper's only retail products division in the United States. Items manufactured include conventional tissue products, household towels and napkins, and disposable diapers. A variety of other nonwoven cloth products will be added in the future. Also housed in the complex are headquarters offices for the new division and extra-large facilities for storage, allowing the complex to serve as regional distribution center for Facelle in the western US region.

Because of pre-established equipment orders and new product marketing schedules, completion time of the new manufacturing facility was extremely urgent. Concurrent site selection, design and construction of the entire project was scheduled for 16 months

and, with the exception of the four-week delay caused by a major strike, this schedule was met.

The project was master planned to expand in three directions to double the size without repositioning of machinery, serious disturbance of the manufacturing operation or disruption of personnel.

The manufacturing facility is expressed as a steel frame building with tilt-up concrete exterior walls. Because of the large size, the volume is arranged in several elements reflecting the space needs of each major function: raw materials storage; paper machine room, hard-roll storage, converting and finished product storage. Roof size of the manufacturing area is more than 20 acres; heights vary from 15 to 55 feet, with the majority of construction being one story.

A multifunctional chain-in-floor materials handling system forms the backbone for movement of materials throughout the plant. This is complemented by overhead conveyors, monorails, bridge cranes and lift trucks.

Since the basement under the paper machine room was below the water table of the site, it was designed as a concrete boat, supported by the flotation effect of ground water and anchored by driven piles. These will support the structure if the water table recedes at a later date.

Due to the critical nature of water supply and waste-water disposal from the manufacturing process, a thorough engineering analysis was conducted to determine the plant's long-range needs in this area and possible changes in quality and quantity of water sources. The plant will ultimately use and dispose of about 1 million gallons of water per day. Extensive demineralization and chemical treatment are required before use. Afterwards, the water is purified and recycled.

Space planning, materials and furnishings selection, along with purchase and installation, for all office and major employee facilities also were provided. This meant cooperation with the owner's management to provide appropriate housing for the new corporate staff—a staff that was changing and expanding as the building design proceeded. Interior design is based on the office landscaping con-

cept. No offices, including top corporate management, are enclosed by solid walls.

Spread throughout the complex are graphics used in an extraordinary way, ranging from parking signs and a 30-foot-high logo on the paper machine building to large abstract designs in the manufacturing area.

**Special Benefits to the Owner:** A close control of costs could be exercised at all times because the contractor's cost data and estimating staff was available throughout the design construction life of the project. The materials handling system was integrated with the building design on a continuing basis over a period of several months.

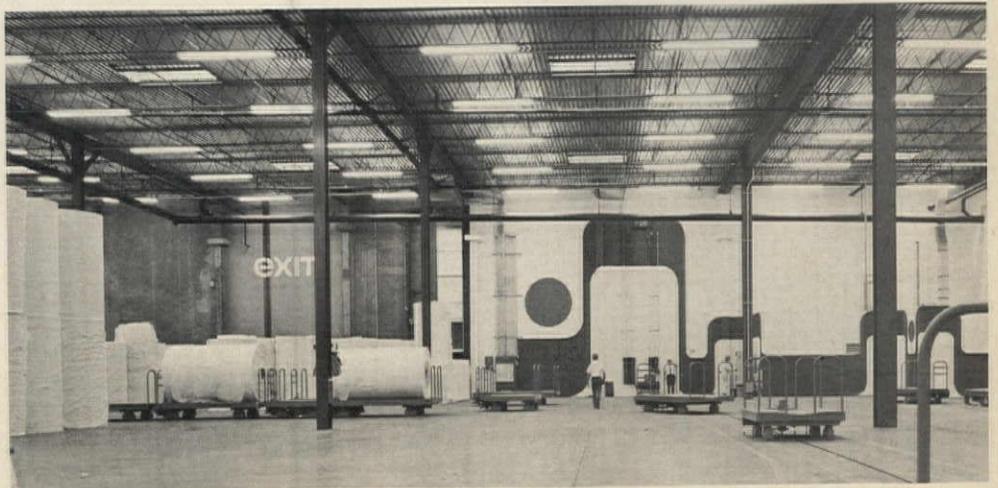
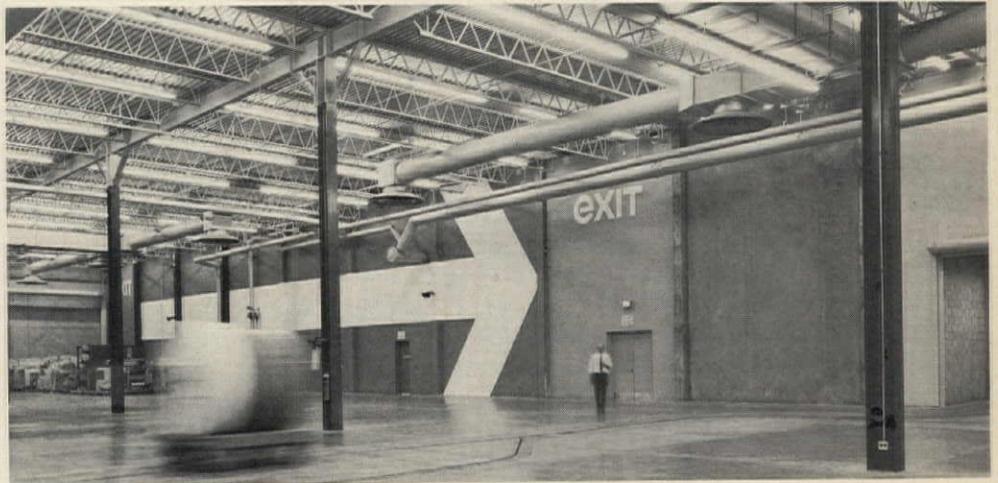
Some 22,000 square feet of graphics, inside and out, include 60x30-foot exit signs, "Facelle" word mural down a 300x9-foot corridor and miscellaneous abstract designs.

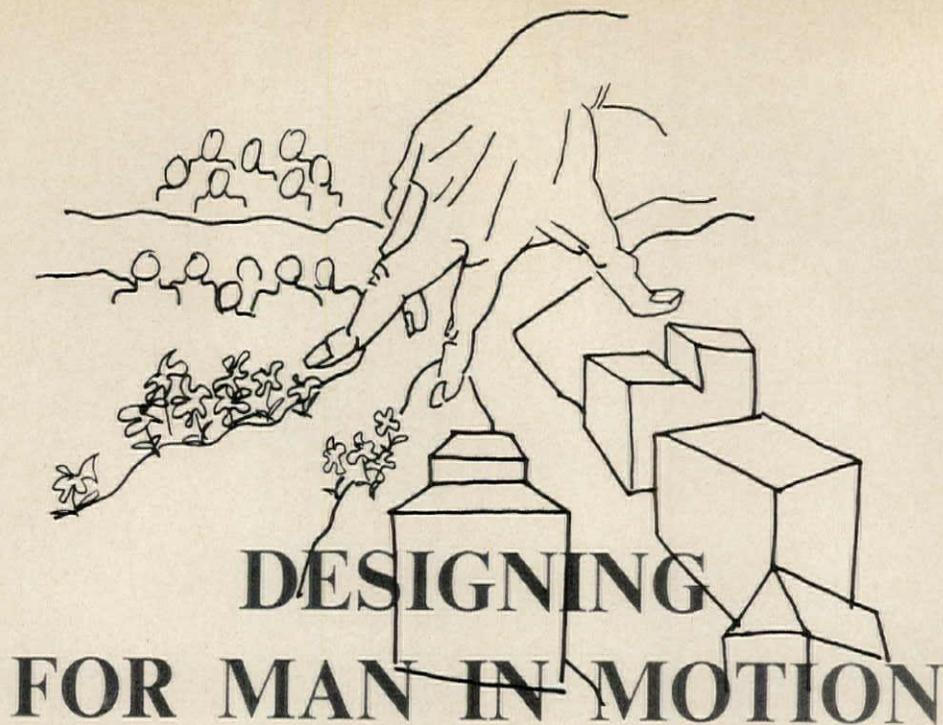


With the use of critical path scheduling, all key goals were accomplished on time and within the budget. Since a portion of the job involved a proprietary manufacturing process, a significant portion of equipment and materials was purchased directly by the owner. The architects played a major role in this area, coordinating owner/contractor efforts in the initial procurement stages, an activity which was shifted to the contractor's staff as construction grew nearer to completion.

**Architects' Comments:** Regardless of the size, magnitude or complexity of the project, today's architect must accept the leadership

role as project manager. This embodies not only the control of the esthetic, functional, time scheduling and construction cost needs but also additional supervisory control of specialized services necessary for the guarantee of the client's successful operation and continued management of the facility. As in the case of the lawyer, constant and continuing education is now a necessity in advancing our professional state of the art. This allows the client to develop the proper confidence and have a full understanding that he is being given the optimum in professional service for his pre-established budgetary demands. □





# DESIGNING FOR MAN IN MOTION

by ARCHIE KAPLAN

**Human locomotion delineates space, defines territory, creates spatial involvement. It is a form of communication, a sensory experience, environmental participation. If the architect is to design space so that the human personality is fully realized, he must give thought to walking behavior and its relation to architecture, filling in gaps in knowledge with needed research.**

The issue of what knowledge is required by architectural designers takes on increased importance with today's emphasis on environmental design. There is a need for a deep understanding of human behavior—not hypothetical myths and beliefs, but real knowledge of how man reacts to and behaves in the physical environment.

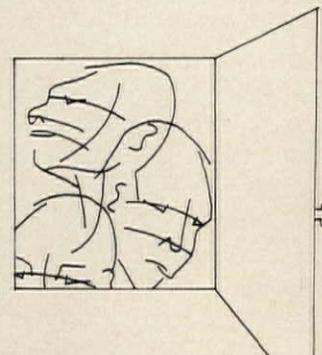
A neglected area of research concerns movement in architectural space. Movement is the natural state of man and the basis of his being. Human life represents no static state; from the blink of an eye to top-speed running, in sleep or wakefulness, man is in motion. Walking is characteristic of the motion system; it is an environmental behavior area worthy of investigation.

Every individual has his own mode of walking. Differences, which appear in early childhood, are due to inherent body structure such as bone size and dimension, distribution of body weight and joint articulation. The human gait and stride are based on motor perceptual interaction in terms of three components: postural, transport and stride and articulatory movements.

Bipedal walking is as distinctive as the brain as a mark of humanness and has evolved as one of our sensory motor refinements which has helped develop the increasingly complex brain. John Napier noted in the April 1967 issue of *Scientific American*, "Human walking is a unique activity during which the body, step by step, teeters on the edge of catastrophe." To cope with two-legged walking, instead of four, we have highly developed kinesthetic and vestibular senses. The kinesthetic nerve endings embedded in our muscles and joints provide continuous data regard-

ing muscle tension and angular joint displacement. The vestibular senses provide information about our balance and the forward, backward and sideways and up and down movements. These two sensory systems couple with the motor system, which actuates the body's muscles to form an intricate feedback that enables us to perform the complex activity of walking upright.

Walking is a sensory experience. The kinesthetic and vestibular sensory input systems combined can themselves provide data which can lead to satisfying esthetic experiences. The physical orientation, character, proportion and scale of the walking environment can be designed so that pleasure can be created through rhythm, tempo and the feel under foot, for example. In this manner, walking can be seen to provide sensory and esthetic experiences comparable to those we seek in vision, taste and



hearing. Designers, however, have been overly concerned with the esthetics of the visual sense, developing philosophies and techniques to deal with it. But they have given scant attention to the esthetic pleasure that can be derived from walking.

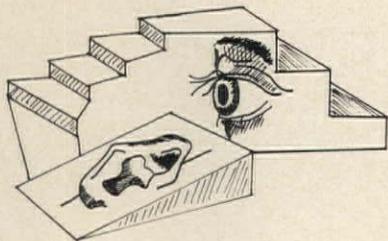
The inputs from all our senses act in concert, reinforcing each other and determining our perception of the world in multi-dimensional form. The static visual world of two-dimensional design is limited in experience, subject to illusion and noncon-

firmation of space, objects and events. Only through somatic movement does a space take on its full dimension; the scale and proportion that relates to us is determined by our size and stride.

In their article "Plasticity in Human Sensorimotor Control," published in the October 25, 1963, issue of *Science*, Richard Held and S. J. Freedman contend that "the stability of man's spatial perception and spatially oriented behaviors depends upon habitual contact with the sense-stimulating environment. . . . Essential for the stability of many of the plastic systems is the order entailed in the relation between the natural movements of an individual in his environment and their consequent sensory feedback. When an observer moves with respect to the many objects in his everyday world, his view of them changes. Their images move on his retinas in a manner highly correlated with his movements. There is an analogous correlation in the hearing of sounds by a moving listener, and a similar relation exists when an individual both moves and views a part of his body. Under any one of these conditions, a given movement tends to cause a characteristic sensory feedback. The central nervous system of the observer is both the originator of the movement and the receiver of its consequent sensory feedback."

The total feeling of designed space is an emotional response to seeing, touching, hearing, smelling, balancing, walking, etc. Space is an emotional experience rather than an intellectual one. As Philip Thiel has observed, "Space is a sequence of experiences: Each movement produces a new experience so that the pathway of a person is almost an infinite series of experiences rather than a single image." Thus one must move through and around buildings and spaces to experience them. This view is reinforced by landscape architect Lawrence Halprin who has noted, "Architecture is an art form in which the viewer participates. His movement is the purpose for the space, and it should function to activate his kinesthetic experience in a series of interesting, rhythmic variations in speed and force."

Breaking walkways with steps and ramps is not all that is needed to provide for enriching experiences in walking. Often



these devices have the opposite effect. Arbitrary incursions on human behavioral needs can be unpleasant and unsatisfactory, even though the designer has the best of intentions. A typical case in point might be the placement of low riser steps immediately before the door of a concert hall whose proportions are out of place with the crowdedness of peak traffic. To further our understanding of the emerging field of walking behavior and its relation to architecture and environment, we need research and hard data in several relevant areas.

First, investigation in the effect of the properties of walking surfaces on both movement and perception is required. These properties can be described in subjective terms as smooth/rough, soft/hard, glossy/dull, etc. We know that stride and pattern of walking are altered according to the nature of the surface. The

Mr. Kaplan, a lecturer on human behavior and design, is president of Environment Planning, Inc., a consulting firm in New York City.

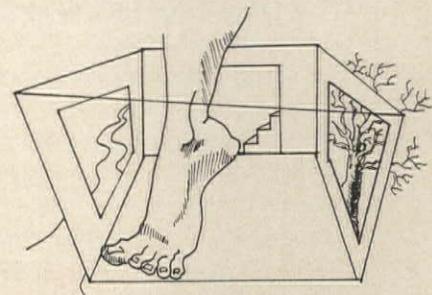
kind of stride and the manner in which we place a foot on the surface relates directly to our perception of these properties. What type of surface do people really prefer, and in what circumstances? Variations may occur with varying strides due to motivation, speed, age, sex, openness of area and whether one is indoors or out. The nature of the walking surface, further, can provide auditory feedback to reinforce the walking experience for a desired response.

Another area in which research is demanded concerns an evaluation of changes of levels, such as inclines, stairs and raised areas. Do these, in effect, create a more interesting kinesthetic experience than level surfaces? Under what circumstances will people enjoy these experiences? Pulling against gravity on the upward movement and being reinforced by gravity on the downward one provide a contrast in motion. If contrast and variety work so well for the visual sense, how are they applicable in walking? Raised areas, such as platforms and elevated plazas, help the participant gain a greater awareness of his relationship to his surroundings. How can these devices be used without intrusion?

Light, another subject field in which research is suggested, seems to affect walking behavior in both direction and speed. To what extent does human phototropism affect us in that we tend to turn toward light? Can we really induce directionality through lighting design in both indoor and outdoor settings? Can we increase or decrease the speed of movement, can lighting hasten or diminish walking tempo? How is this related to design problems?

Also, anthropometric space requirements for walking clearances must be sharply revised, particularly when we consider walking behavior in relation to other people in the pathway. Culturally, Westerners avoid contact when walking past others in either direction. This avoidance of contact adds a foot or so to dynamic space requirements in normal situations. How much space is really needed so that meaningful architectural graphic standards can be evolved? The study of people walking in pairs or in threes in relation to walking and passing could yield useful information. The same kind of study of behavior on stairs would be helpful to designers. The work of Edward T. Hall and of Robert Sommer on the psychology of space point directly toward such investigations and indicate how much the designer needs to know about personal behavior.

Walls dominate walking behavior just as walking surfaces do. Again, anecdotal evidence indicates that we prefer walking near walls, perhaps for security. In man's historical evolution, he has feared open areas, and even today we often become more alert and have a greater sense of environmental awareness when we cross open areas, such as fields, plazas and concourses. What is our response to walls really? Does how close we walk to them



depend on the properties of surfaces, textures, color? Exactness of data requires that objective measures for observing and scoring human behavior be evolved.

The effects of the physical characteristics of enclosing space are related to personality variables, such as emotions, socioeco-

conomic status and motivation. These nonenvironmental factors can alter the anticipated reactions to the desired effect. Although studies have been undertaken in this area, there is a need to discover more about how personality and motivation are related to human reactions to the environment. The manner in which a person walks, holds his pelvis and spinal column, his neck and head, is a measure of self-dignity and esteem. Does the openness or closedness of the walking space inhibit or oppress the human physical structure? Does it create opportunity for the expansiveness of our structural frame?

Other relevant architectural data includes the selection of pathways by people in daily activities, indoors and out. An architect in the Midwest prepared no paths between campus buildings he had designed, leaving the students to beat their own pathways for the first year. The resulting pathways were then paved. It would be interesting to know if behavioral patterns have remained constant, and if not, why. A study by Alvin Bennett at the University of California at Berkeley on the path selection in public buildings revealed problems of orientational cues within the space in the determination of paths.

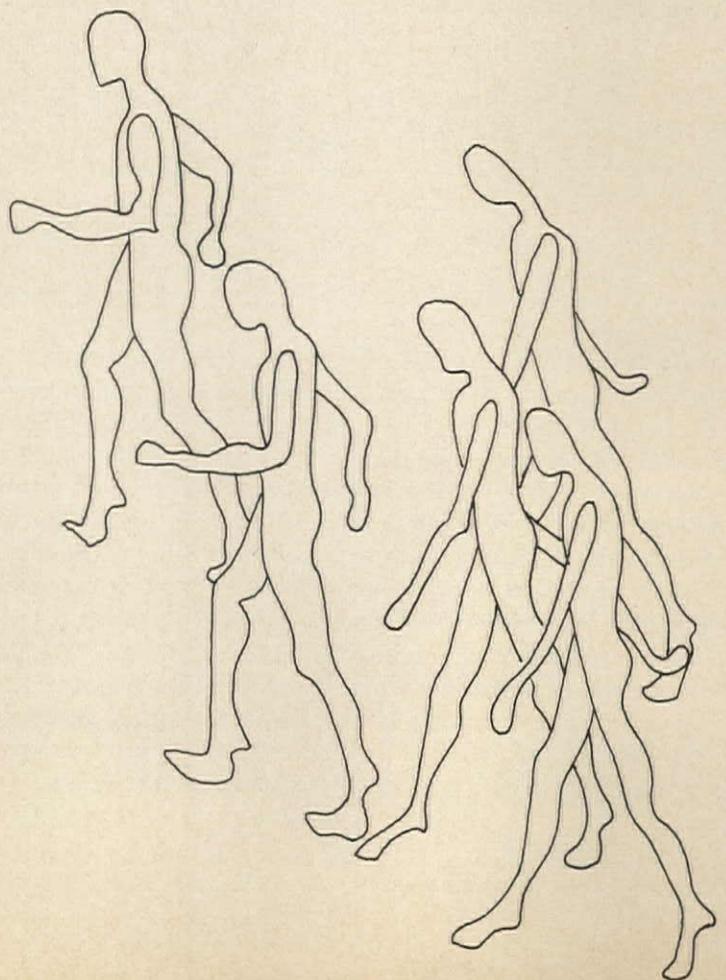
The human organism seeks to conserve energy by minimizing required motion. In walking, we seek the simplest path along the lines of least resistance through doors, slopes, etc., from starting point to goal. The shortcut is a universal item of human behavior. And yet architects often frustrate this biological need to conserve energy by creating circuitous paths, oddly placed entrances, changes in levels and the like. What clues are there in human psychological and emotional responses which will indicate a person's choice of route?

Social interaction can be a function of the walking pattern and of pathway selection. We choose routes dependent upon both social and sensory stimulations since we require a good range of both of these factors on a daily basis. The opportunity to exchange greetings, state of health and complaints seems to be a fundamental human requirement. The route we select in office, school or street is often based upon the possibility of whom we will meet and/or how many interesting sensory inputs we may receive from the physical environment, such as shop windows, posters, flowers, etc. To create the opportunities to fulfill these daily variable needs, people should be given alternate pathway selection. How can we design for the real human needs if behavior is not understood?

It is this kind of data that is required by architects if they are to create effective environments—effective in the sense that they do not inhibit but create opportunities for people to fulfill their daily social, sensory, kinesthetic, perceptual requirements and to satisfy their psyches. The designer only sets the scene. People are free to use his created spaces as they see fit, and they should not be restricted, oppressed or degraded by the architect's creation.

Walking is a fundamental response pattern of man to his environment. By locomotion and manipulation, man seeks to cope with and possibly to control his environment. James J. Gibson suggests that human perception is dependent upon walking possibilities. Thus perceiving space is the same as perceiving that the space has the capability of being walked into and onto.

The central architectural problem of human locomotion is to relate 1) the geometry of human motion with the geometric properties of space and 2) the human sensory and social needs with the stimulating properties of the physical space and the interaction opportunities of the area. The ultimate goal of architecture is to fulfill human qualities through the way in which space and spaces are structured. □



# PRACTICE

*Reynolds/Bailey/Vrooman, Inc., with its home base in Gainesville, Georgia, and a branch in Atlanta, demonstrates that a nine-member firm can make a real contribution to the community.*

# PROFILE



## A Firm Whose Impact Belies Its Size

Gainesville, Georgia, a town of 15,500 in the foothills of the Blue Ridge Mountains, is nourishing a wholesome architectural practice for three still young graduates from Georgia Tech's class of '60: M. Garland Reynolds Jr., Jack K. Bailey Jr., and Philip E. Vrooman, all AIA.

Only in its sixth year, Reynolds/Bailey/Vrooman, Inc. has \$5 million on the boards, \$10 million under construction, and completed projects scattered all over Georgia's landscape: libraries, educational facilities, department stores, business buildings, a newspaper plant, churches, a health center, as well as restored structures.

But of more significance than a full house of work, even in

these recessionary times, is the variety and functional quality of the firm's finished projects. In the December 1, 1970, annual architectural issue of the *Library Journal*, there is an article on "Public Library Buildings in 1970." Of the 276 structures that were completed or renovated, the Chestatee Regional Library in Gainesville, designed by R/B/V, was one of six public libraries to be featured. Its cost was second lowest of the buildings cited. The concrete and brick structure is described as "striking in appearance, a building whose purpose is unmistakable."

"Maybe the main difference was that we called in a consultant before we started the design," says Reynolds. "For Chestatee, we retained Dr. Frank B. Sessa of the University of Pitts-



Use of consultant for Chestatee Library (preceding page and above) saved hours of work for the R/B/V firm and meant savings for the client, who became convinced of the practicality of the two-story concept. The first floor, invitingly open with glass walls, has multipurpose, periodicals and browsing rooms; the second level is for serious reading and book stacks. Wall of the circular elevator shaft is golden; the hung steps are orangy-red underneath; the carpet is rust, the ceiling white, the furniture red and blue.

burgh as a site and building plan consultant. He advised us on traffic flows, area and room sizes, finishes, equipment locations, the latest techniques used in libraries, etc. For the \$1,250,000 Georgia Southwestern College library we also had a consultant, and what a terrific difference it made. He provided the answers

This article represents a joint effort between Bess Balchen, associate editor of the AIA JOURNAL, and Jack Fraser, formerly assistant director of Public Relations at AIA headquarters and now vice president for public affairs of Shelter Management Corporation in Los Angeles.

we never could have found on our own. An architect with a reasonable commission can bring in the finest experts in the country in fields such as acoustics and the mechanical aspects," Reynolds feels. "It's a matter of searching out and choosing. More often than not, topnotch consultants are available for a reasonable fee when used effectively. We usually have ours before design starts."

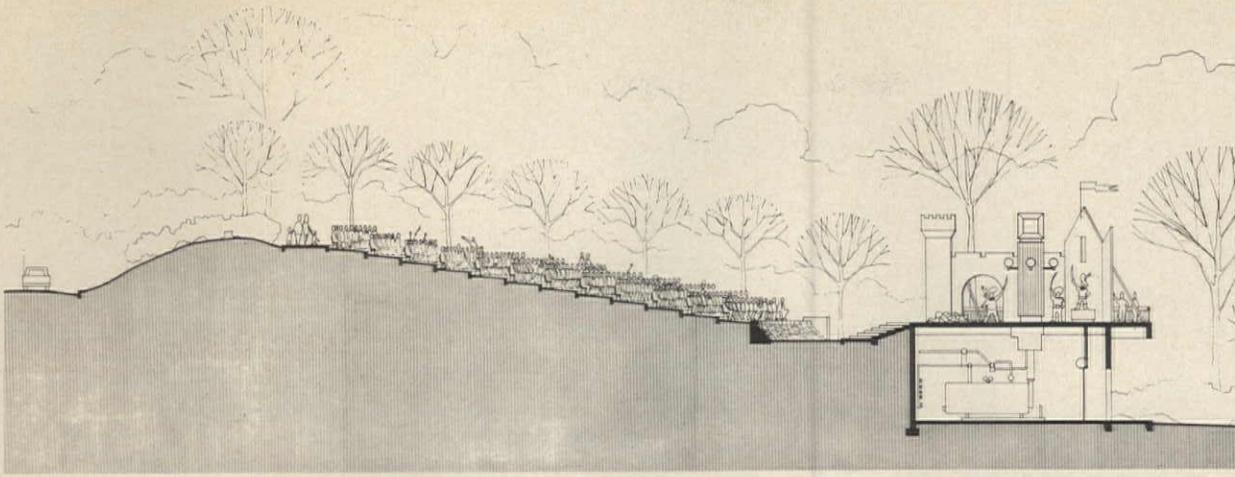
"Thanks to Dr. Sessa, we were able to do the Chestatee library on two floors," explains Bailey. "Our client was convinced that everything on the same level was the only solution. Dr.

Sessa's proposals convinced him otherwise. Because of the second floor, we were also able to provide an overhang around the entire building. This gives protection in all kinds of weather."

"The thing with most clients is that they think in terms of redesigning their old buildings," says Vrooman, "but a consultant visualizes the future in a new structure."

While the Chestatee Library's function, as the *Library Journal* states, is clearly evident from the outside—the lower floor has broad expanses of glass almost like a shop window—the steam plant for Brenau College in Gainesville belies its purpose, at least on fair-weather days. Here, the firm has given the client a bonus for his \$205,000 investment: a stage on top of the plant, doubling its usefulness. In a sylvan setting and with a sloping lawn on one side, it's a natural for informal concerts, rallies and all sorts of student happenings.

R/B/V's methods of saving go beyond the use of good consultants and of innovating multiple uses for structures that should for all practical purposes serve only one. Designer of the buildings in the \$6.5 million new Hall County schools building program, R/B/V has suggested changes in details of the



Brenau College steam plant is located in a ravine and acts as a dam to hold back earth, at the same time providing a natural stage for an amphitheater. All exposed materials are muted to harmonize with the color of the concrete. Woodmen of the World State Service center (right), on a hill, doubles as a landmark for the Gainesville area.



construction to the client, the Hall County Board of Education, that will shave off \$40,000 on two of the buildings. In another instance where the board had budgeted \$150,000 for renovation, R/B/V came up with ways of getting the job done for almost \$65,000 less. "All this will help us get everything done with the bond money that we had hoped for," said Reynolds when he explained the cuts to the board.

His use of "we" goes deeper than a reference to the architect/client. With roots in Hall County stemming back to 1799, when his great-great-grandfather came there from Virginia for the land grants, Reynolds is deeply involved in civic matters and has pitched in in the fight for quality prefabricated housing and a Model Cities scheme, for citizen planning which looks at alternatives to blind real estate speculation, for better or no billboards, for upgraded schools and adult education. With four young businessmen he fought for a reform county board of commissioners by writing a platform, buying space in local papers to advertise it and holding a meeting where they asked all 21 candidates for the county board to pledge it. Eighteen did so publicly, and the five who were elected were among these. The board then

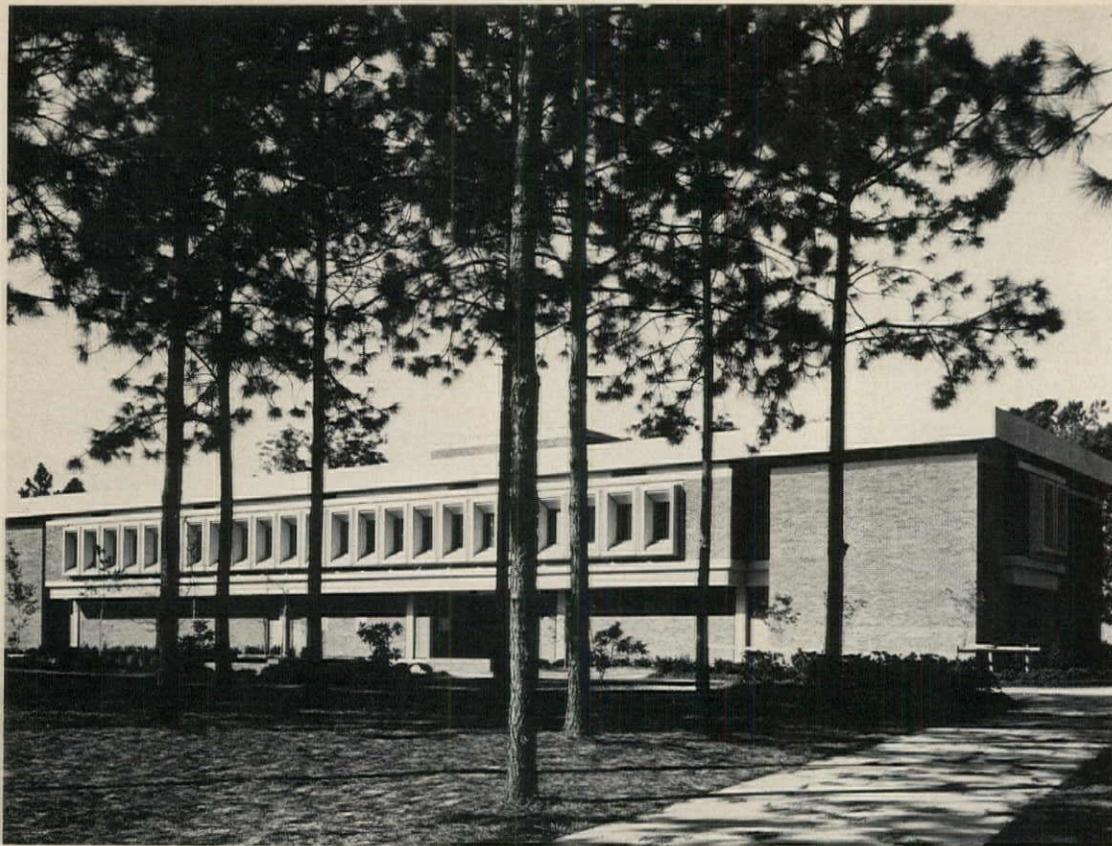
hired an engineer and a manager, implemented countywide zoning and established a fire department.

But roots or no roots, Reynolds still thinks every architect should get involved in community life, and all the three R/B/V partners practice what they preach. "This has helped us to get to know some of the needs and desires of the people in Gainesville and other small towns," Bailey comments. "We encourage community involvement among our staff. Sure it's good for business, but it also helps us serve the people for whom we are designing just a little better."

Reynolds is chairman for the North Georgia Chapter AIA's Planning Assistance Workshop, which is part of The American Institute of Architect's Community Design Center program. The workshop undertakes statewide feasibility studies for minority groups for housing and for such projects as health and recreation centers. It also is helping with a project in South Carolina.

But even before such assistance, Reynolds feels, comes finding a direction for a city. Without that, "A city can split up according to races, ages and incomes."

Northeast Georgia—and Gainesville—has gone through a



Class room building at Georgia Southwestern College (above) is one of several educational facilities designed by the firm and constructed in the traditional manner. Eight recent schoolhouses for the Georgia School District are systems built. The quality of the interior environment (right) of these structures, the school board concluded, is an improvement over that of the conventional building. Construction time for all schoolhouses was 4½ months.

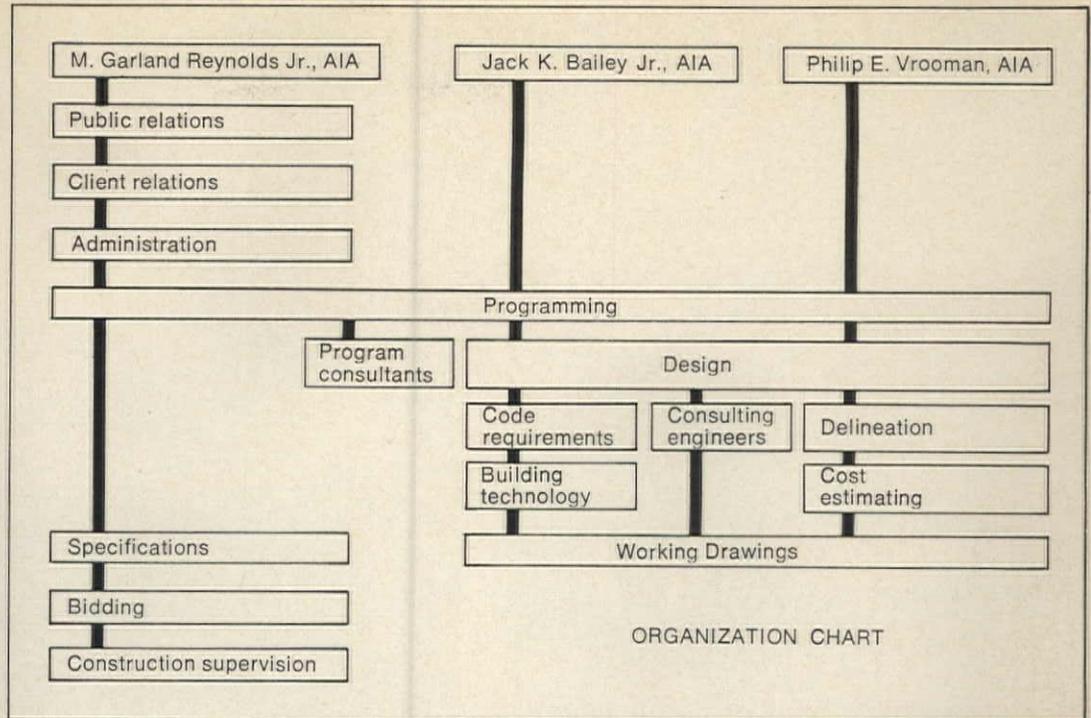
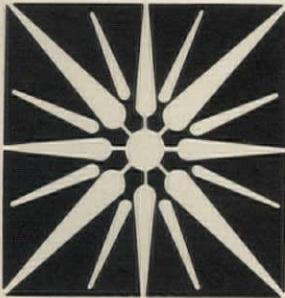


tremendous social and economic change within a relatively short period of time. Prior to 1940, the chief source of income, though not a very lucrative one in this rocky region, was cotton and related industries. World War II changed the economic picture when the poultry industry moved in. Today other more skilled industries are locating in and around Gainesville, but more are needed. The city is still the trade center for northeast Georgia and is in the path of the rapidly growing corridor between Atlanta and Charlotte, North Carolina. And when the Corps of Engineers built Lake Sidney Lanier on the Chattahoochee River, it started a great potential for recreation and tourism.

But, explains Reynolds, the poultry and cotton industries provide rough and dirty work and so the young moved on, leaving the city leaderless in the black community. Gainesville's greatest need at the present, then, is to keep the new generations. Probably one of the solutions to the big-city crisis, the partners agree, is to make our small cities better in order to hold and attract people. And it is right here that they find the most satisfaction from their work.

So far, they have designed in Gainesville alone the Gaines-

ville Area Chamber of Commerce, the Gainesville National Bank, the Chestatee Library, a building for the *Daily Times*, a church, a department store, a court house annex and the Civic Center addition, to mention just some. Each has upgraded a town which was beginning to get seriously worn down. And when the firm moved into new quarters in Gainesville this fall, it had more significance than just getting a new roof overhead. Their 50-year-old Palladian-type building is in an area of town, close to its center, which is rapidly going downhill since people cannot manage to maintain the large, old-fashioned homes any more. But zoning prevented R/B/V from hanging out its shingle; and so the house was waiting for two years, empty, until the partners had convinced the city fathers to change the law. In fact, the architects themselves wrote the new zoning legislation. The neighborhood is now open to professionals, but not to business of any sort. A lawyer is negotiating the purchase of the house next door to R/B/V; more will no doubt follow. And, adds visual-pollution-fighter Reynolds with a wry smile, "The new zoning controls the signs they put up." Furthermore, the front must be maintained in its original condition and parking has to



The firm's hallmark (left) is a copy of a star within one of the many coffers which decorate the portico ceiling of Mnesicles's Propylaea. At one point the partners almost dropped it, but a check with contractors and others convinced them to keep it since their plans and specifications could be spotted immediately in large stacks. Their Gainesville office (with Bailey, Reynolds and Vrooman in front) is part of a "first-class slum area," but the renovated house in its new function has started upgrading of the neighborhood.

#### STAFF BREAKDOWN

Principals	3
Project Managers	2
Draftsmen	2
Secretaries	2
	9

#### GROSS BILLING PERCENTAGES (1970-71 fiscal year)

Primary/Secondary School	40
College/University	24
Commercial	12
Housing	11
Public	6
Industrial	4
Religious	3
	100



be in the rear; a buffer zone is a requirement where the property adjoins residential areas.

This year the city is opening around 100 public housing units which will be mixed between whites and blacks. These will be combined with some 100 rent supplement units and 30 prefabricated homes backed by a local lending foundation. Hopefully, this will give incentive to young families to remain in Gainesville. The city plans to help around 50 families a year until the housing backlog is met.

As a member of the mayor's advisory committee on the Model Cities program, Reynolds has been active in Gainesville's low income housing production, although the firm has not so far been actively involved in the design. It has undertaken other apartment projects but would also like the challenge that low cost housing presents: trying to make it good, with a measure of individuality, yet within the budget. Here's where the work in the Planning Assistance Workshop comes in, Reynolds thinks: The user must be consulted so that the best possible solution to his needs can be found. Another challenge in this area, Vrooman maintains, is to get a little flair into the most mundane structure,

even in prefabricated housing or housing constructed with building systems.

In the latter category, the firm has experience from elementary schools it designed for Hall County and from the Johnson High School in the same county. The three partners are eager to explore the advantages of systems building and fast track scheduling further, especially because of the flexibility but also for economic reasons. However, there weren't any direct economic advantages for the elementary schools, says Reynolds. "We just about managed to stay within the budget. They aren't good examples for systems comparison, for the buildings are on eight different sites. One large project would have been different. The important savings in this case was in time: We had all eight buildings up in 4½ months, and we could have chopped 30 days off that again had the contracts for grading been let earlier."

"Speed is the great factor with the systems and fast track concept," says Vrooman, "and the flexibility after the building is constructed. For example, school roof spans are usually 60x30-foot bays. All pipe and electrical conduit, with exception of waste, are above the ceiling, including water, gas, etc. The floor



Focusing light of the Gainesville National Bank's main lobby is a result of the architects' "doodling and describing" to the fixture company. The golden ceiling coffers have black and red accent lines; the wall panels are Burmese teak. The terrazzo floor has red area rugs.

Function of the *Times* building is clearly visible to visitors: The press room on the lower level is in full sight from the administration and editing area above through glass windows, which also provide one wall in the editor's office. View may be closed by motorized draperies. The walls of the exterior, precast in Augusta, Georgia, and the copper window frames match the firm's design for the Gainesville National Bank across the street.



plan is laid out on a 5-foot grid system which is reflected on the ceiling in metal slots. These act as HVAC diffusers as well as slots to receive the demountable metal and gypsum partitions. All lighting is flush or in coffers above the ceiling. Exterior walls, ceiling and roof are constructed first, the carpet goes down uninterrupted over the floor slab except at toilet and kitchen areas. The demountable partitions are placed on top of the carpet so they can be moved without leaving bare spots. Most cabinetwork is on casters. In all, total flexibility."

In the Johnson High School, which is now under construction, the firm is using all systems components and in this case, the cost is down from that of the elementary schools. But then, it involves an enclosure of 94,000 square feet.

But budget, the partners feel, is one thing; to provide quality for a small price is something else. "If we have a very low budget where we have to use inexpensive materials, we devise interesting things to do with them," says Vrooman.

Varying floor levels in the interior and careful brick detailing on the exterior—involving little or no extra cost—were used to bring relief to Hall County's elementary schools. Bright colors

in carpeting and walls further contribute to give life to what might easily have become a stark building.

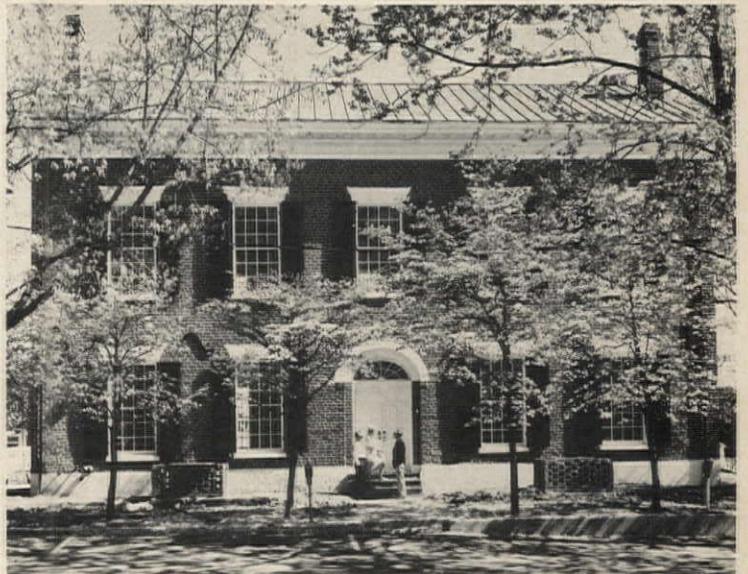
The firm does not do interiors but usually selects all colors and textures while the interior designers select furniture. But, the three partners emphasize, "We *always* insist on veto power over their selections and design."

As was the case with the libraries, a consultant was retained for the schools, in this case Dr. Carroll W. McGuffie of the University of Georgia. Over and over, says Reynolds, "We have found that good consultants in specialized fields can be of great assistance to our small firm. There's only one area where we don't make use of them: cost estimating. We don't trust cost to anyone else."

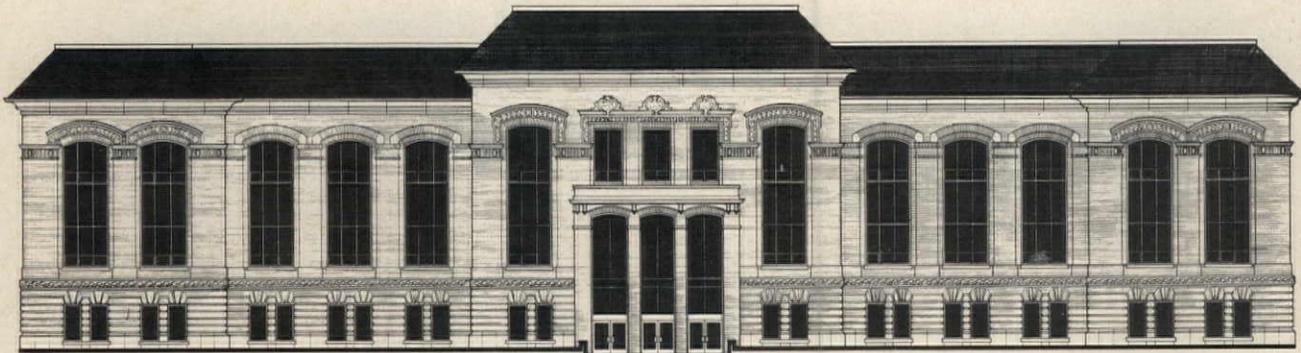
The firm was founded in 1966, when Reynolds and Bailey joined forces and formed the partnership of Reynolds & Bailey. They got started with houses, the first being for the president of Truitt McConnell College, a Baptist institution at Cleveland, Georgia. He was a personal friend, but the work led to other projects. "A happy client is greater than a full-page ad in *Life*," muses Reynolds. "They just go around forever helping you."



Gainesville Area Chamber of Commerce, which uses precast brick soffits backed with reinforced concrete slabs for the 5-foot overhangs, contributes to the improvement of the town.



The old Lumpkin County Courthouse (right), dating from 1836, is now the Dahlonega Gold Museum. It is the biggest surviving souvenir of America's first gold rush. The bricks were originally done with mud, almost causing the walls to tumble when the plaster came off. Another of the firm's restoration projects is the 1908 Conner Hall (below, with altered roof and overhang details), landmark of the University of Georgia in Athens. The interior will be completely reconstructed.



Their first larger job was Lanier Technical School, a vocational training center in the countryside, part of Georgia's acclaimed educational and skills retooling network. But a growing firm in a small city needs ties to a large city's mix of talents. So in 1969, R&B took in as a partner Vrooman, who merged his Atlanta firm with R&B to form R/B/V. Offices are maintained in both locations.

"It's not as if we're leaving Gainesville," Reynolds explains. "But we have grown enough that we have to be in Atlanta to get consultants and hire draftsmen."

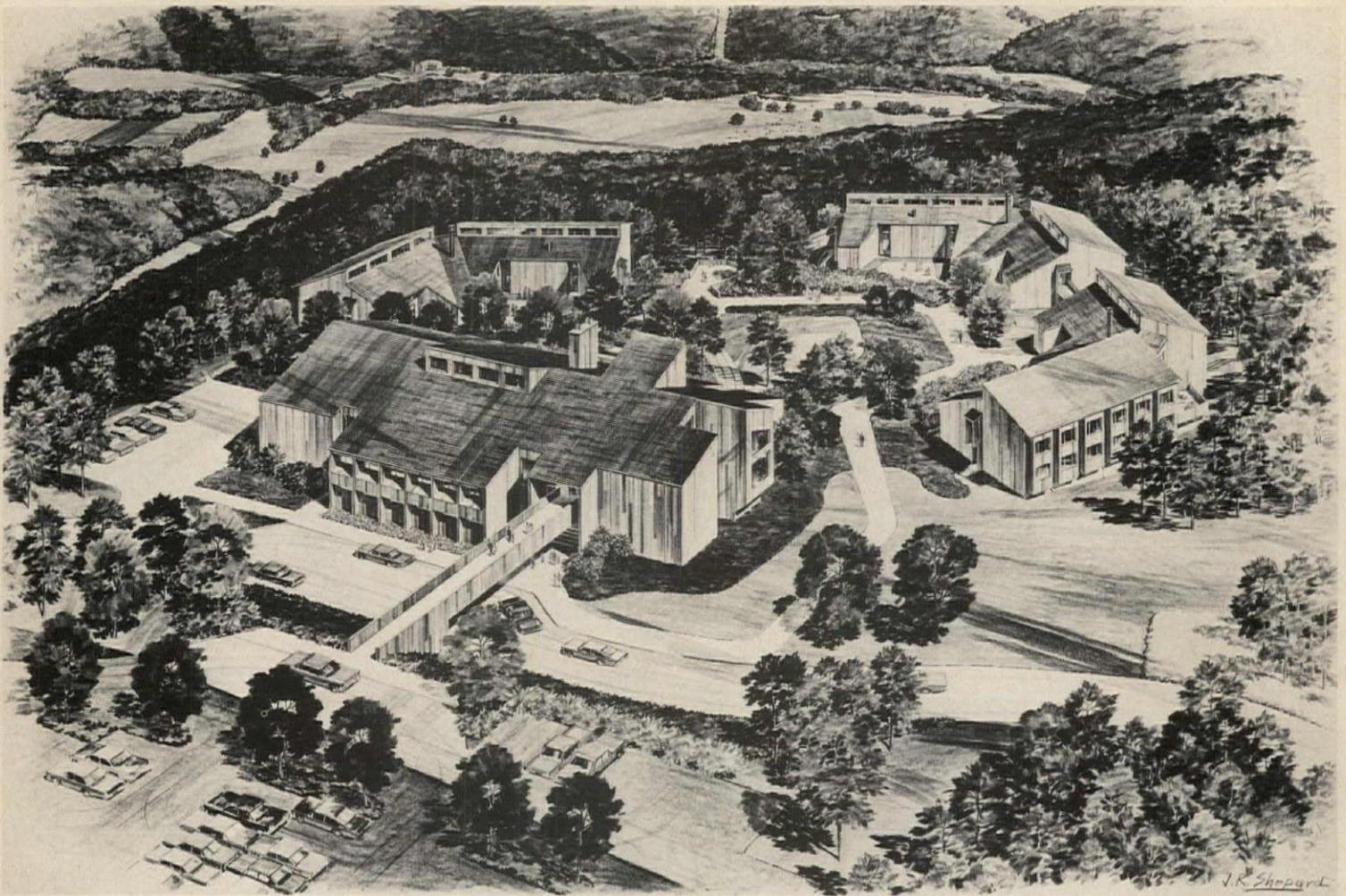
A staff of nine, including the partners, makes up the firm. At times there may be 10 or 11 when extra draftsmen are needed. "We try to remain flexible," Reynolds comments, "in order to gear up for large projects and slow down when work is slack." To speed up the drafting, extensive use is made of the 105 mm Micromaster System of scissors drafting. "This not only speeds it up but also eliminates repetitive drawing of standard details," says Bailey. So far, they have not used computers other than to draw perspectives, but their consulting engineers make constant use of them.

Reynolds and Bailey run the show in Gainesville where, in addition to the two, there's a business secretary or bookkeeper, an architectural secretary and one or more draftsmen.

The Atlanta office is a sharp contrast to the Gainesville locality: It's in a cold-water walkup above a dirty movie house, but nonetheless a great location in the center of the city, according to Vrooman, who heads up a staff of two project managers, one or more draftsmen and a part-time secretary. Interiors of the two offices are also poles apart: Gainesville definitely period, inside and out, although with mostly contemporary furniture; Atlanta completely mod with black ceiling and floors, white partitions with supergraphics and accent lighting.

Once a week the partners get together for lunch to review the week that was and to plan for the one to come. The three are a rare complement to each other: Reynolds, consciously or unconsciously the leader; Bailey, the deep thinker; and Vrooman, the lookout for things new. What they have in common is a deep desire to do their best.

"Jack and Phil are the talented designers," concedes Reynolds. Under the two comes design, but they both agree that



The Unicoi Station, now under construction on a 1,000-acre tract in White County, will become a national outdoor recreation experience facility. Administered by the North Georgia Mountains Authority, it has a 60-room lodge/conference center, 20 cottages, 100 campsites and water/sewage system. Purpose of the station is to create, in these days of increasing spare time, a model for leisure use by the public in an outdoor setting. R/B/V received the contract last December, had bids out in March and started building in May.

solving problems in that phase is only part of the job. Architecture is for people, they are convinced, and, says Vrooman, "to design for people you have to be able to understand them and their moods. A building should evoke the proper emotions to be successful."

Preconceived notions of what a building should look like are strictly tabu. "We start by listening to what the client wants, and why. Once we understand the program, we start juggling to see if we can find any dual purposes that haven't already been thought of. Our steam plant/amphitheater is one example. We hold flexibility as an important part of our buildings," says Vrooman.

Early sessions with the client include discussion of rough sketches and a thrashing out of thoughts and concepts on the spot. This they find more rewarding than working out solutions behind closed doors. "When we get the client involved and excited early, and we nurture that excitement right," Bailey explains, "it usually makes for a more exciting result." The right client participation is as a rule all the inspiration they need, but for a wider horizon they plan their vacations to see things, and sometimes they wrangle rides on friends' planes. That way, they

have been able to check out the latest goings-on in Chicago, New York and other places.

Reynolds' part in the firm is mostly as method analyzer, figuring out what the client really wants. In other words, he handles the client relations. All three take part in the programming, but administration is Reynolds's responsibility, along with bidding and construction supervision.

"Small firms such as ours have many problems which are mainly financial in nature," says Reynolds. "For instance, the necessity for consulting engineers, which is very expensive. The coordination problems of several engineering firms, i.e., structural, mechanical, etc., is a major problem. In a small firm the principal must wear many hats in order to keep as flexible as possible. Besides design, production and supervision, there's the constant need to secure more work. This selling must never get slack in times of heavy workloads. If you let it, the next thing you know is a low period with subsequent layoffs, farm-outs and general cutbacks. Keeping a constant flow of work in is both difficult and demanding. Being a good salesman as well as a good businessman is very much a part of an architect's part in a small firm." □

**'The peace must therefore be founded, if it is not to fail, upon the intellectual and moral solidarity of mankind.'**

The acronym for the United Nations Educational Scientific and Cultural Organization has become so much a part of our language that no longer does one capitalize the initials—it's simply written "Unesco" and stands as a word with its own meaning in contemporary parlance.

Unesco's work has significance for architecture, its past and its future. There is the broad concern of the organization to help reduce the conflict between science and technology and man's diverse cultural heritage, but there are more specific efforts as well which have meaning for the architect. For example, through its endeavors the saving of the monuments of Nubia has had striking success with the reconstruction of the temples of Abu Simbel above water level (see AIA JOURNAL, Sept. '62). The aim now is to rebuild the temples of Philae. Unesco has mobilized assistance to safeguard other cities, sites, historic buildings and monuments. It continues its work for the preservation and restoration of the art and architecture of Florence and Venice with particular zeal. And what about the future? Unesco has given considerable attention to the social implications of technological change and to the preservation of the environment. Architects have participated in a number of conferences sponsored by Unesco that aim at making the future worthwhile, such as the one in San Francisco in November 1969 on "Man and His Environment" and the one in Omaha in June on "Environmental 'Education': The Last Measure of Man." And long before ecology became a household word, Unesco had launched research projects on the subject. For example, in 1957 it initiated a major program on the arid zones which consume one-third of the world's land surface. It has also helped establish a laboratory which conducts research on the peaceful uses of the atom. All these programs, and more, affect architecture.

Unesco's official birthday, November 4, 1946, was established following the acceptance by 20 world states of its constitution which was drawn up the year before in London at a conference attended by representatives of 44 countries. At that time, World War II had not yet ended, and it was recognized that when a new international order was brought about that the improvement and expansion of educa-

Sculpture by Henry Moore (top) and Spain's Chillida (center) adorn Unesco's buildings. The fire escape (right) is sculpturesque too.

# It's the 25th for UNESCO

tional systems and the development of understanding among all peoples must play a primary role in the realization of worldwide cooperation.

The preamble of Unesco's constitution states: "Since wars begin in the minds of men, it is in the minds of men that the defenses of peace must be constructed. . . . The peace must therefore be founded, if it is not to fail, upon the intellectual and moral solidarity of mankind." For this compelling reason, Unesco set about to promote collaboration among nations through education, science and culture.

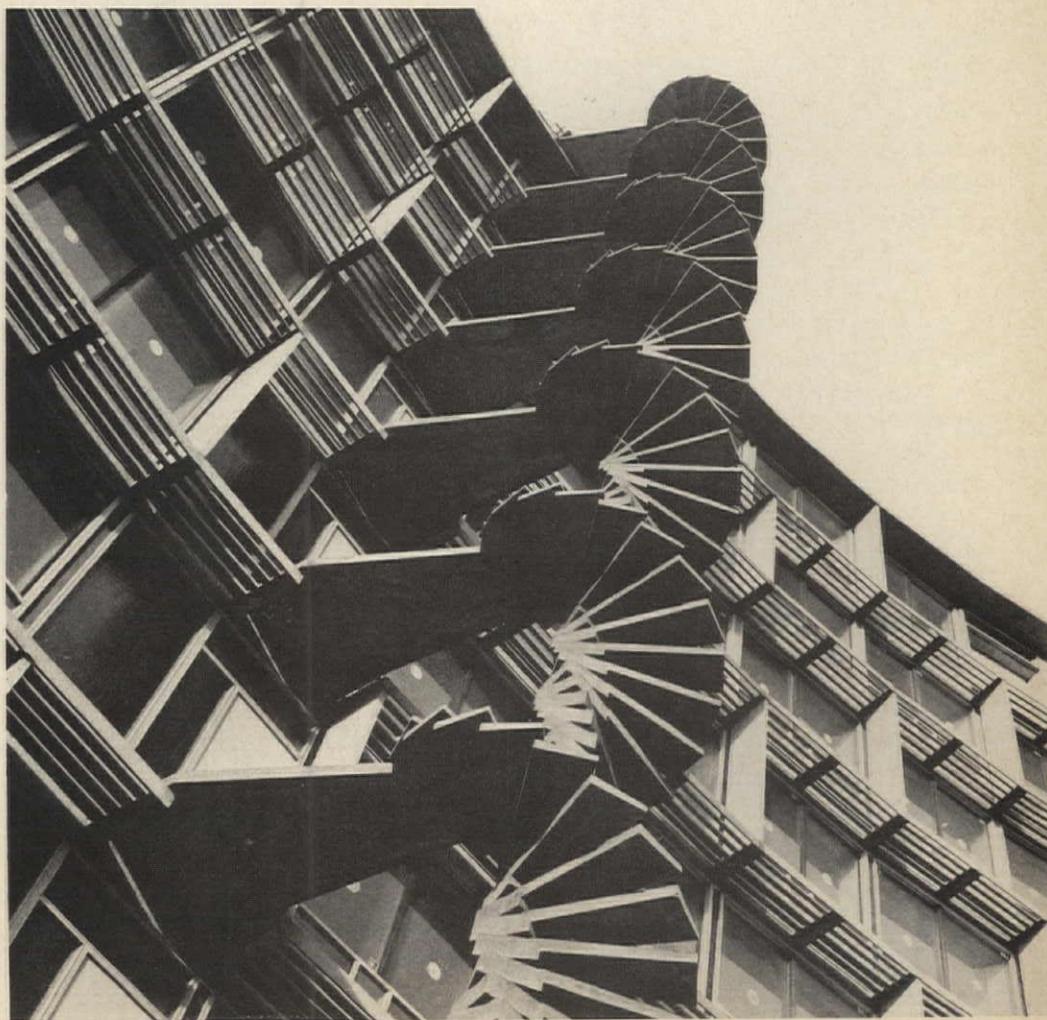
In the 25 years since Unesco was

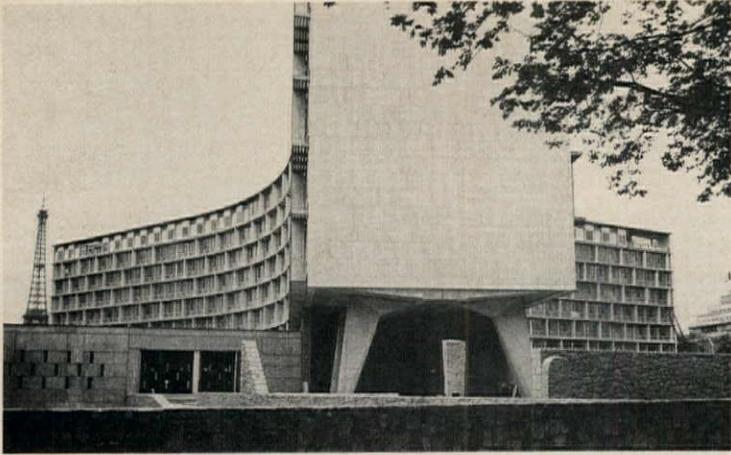


*Unesco's Secretariat Building*



*The fifth and most recent building*





Unesco's three original buildings, officially opened in 1958, are the design of an international team of architects. The Secretariat (1) is seven stories in height and is the tallest of the three. Seen here from the Avenue de Ségur, the structure's Y shape is emphasized.

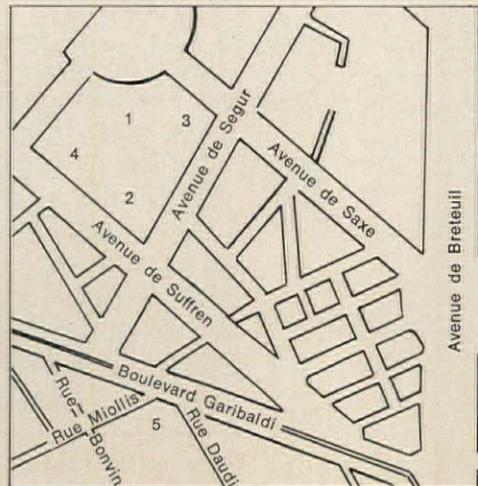


Adjacent to the main building is the Bâtiment des Conférences (2), one of the three original structures. Below (3) is one of the six patios of the fourth building, designed by Bernard Zehrffuss. Opened in 1965, it is constructed below ground level. Artistic adviser for the decoration of the patios was Brazil's Roberto Burle Marx.



The third building, called the Bâtiment des Délégations (4), has a view of the beautiful Japanese garden designed by landscape architect Isamu Noguchi and executed under his direction by two Japanese gardeners.

Unesco's most recent building (5) is also the design of architect Zehrffuss. Situated in the Rue Miollis, it was officially opened in February 1970. Like all the other structures in the Unesco complex, it is decorated with works of art from all nations.



founded, its responsibilities and resources have grown. A specialized agency of the United Nations, the relations between the two are defined by agreement. The parent recognizes the specific field of competence of the offspring, which in turn contributes to the work of the UN through a deliberate orientation of its programs. Unesco views its work as divided into three major functions: international intellectual cooperation; operational action in the service of development; and moral action.

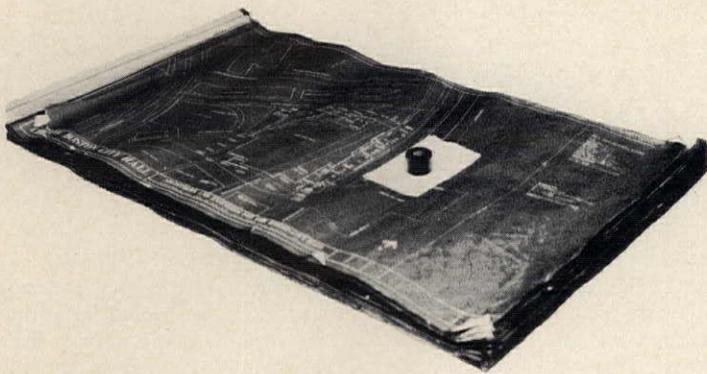
To list all of Unesco's accomplishments and programs would be a formidable task. It has organized conferences and meetings of experts in specialized fields in virtually every part of the world; issued and sponsored a wide range of publications including the first truly global history of the world; encouraged research in such subjects as oceanography, contemporary Arab culture and African linguistics; strengthened the work of museums as preservers and disseminators of culture; developed projects for satellite telecasting to inform and educate millions of people in isolated spots throughout Alaska, India, Brazil and the Spanish-speaking countries of Latin America; acted as a spur to increase efforts in organizational assistance to developing countries; aided education and the development of curricula to meet contemporary needs and aspirations at all levels from elementary schools to graduate study, emphasizing that education is a life-long process; revived and strengthened traditional folk arts. In brief, all its activities have contributed directly or indirectly to the "promotion of peace and human rights and mutual understanding."

Headquartered in Paris on acreage fronting the Place de Fontenoy made available by the French government, Unesco's five buildings can be cited as the most international group of buildings in that city by means of their design and construction and purpose. Plans for the first three buildings were prepared jointly by Marcel Breuer, FAIA, of the United States; Pier Nervi of Italy; and Bernard Zehrffuss of France. They were officially opened in November 1958. The fourth building, completed in 1965, was designed by Zehrffuss alone, as was the fifth one, which was finished in March 1970. Burle Marx and Isamu Noguchi are among the landscape architects.

The various rooms in the complex have been decorated by governments around the world. There are works of art everywhere, including murals, tapestries, sculpture, ceramics, paintings and photomontages. □

# Bidding Document Microfilming

by JAMES W. ROBERTSON



**How can the architect help make the microfilming of bidding documents a more viable means of communication in the construction industry? One of the many commercial companies working in this area suggests what he might do to make his drawings acceptable to the camera for the microfilming process.**

Traditional concepts of construction—design, materials, equipment and techniques—are constantly taking new shapes because of the dynamic influence of the architect. Because he is eager to try new things that make his own efforts more productive, he has been willing to accept the use of microfilm in the reproduction and distribution of bidding documents.

Justification for the increasing use of microfilm as a tool is realized in a number of ways: 1) wider, more comprehensive bidding is obtained; 2) printing and distribution costs are reduced; 3) staff time spent on questions of clarification and detail are minimized; 4) a complimentary copy of plans and specifications aids the work of the architect with the project at hand as well as future ones; 5) replacement of destroyed original documents with microfilm copies is beneficial.

The Dodge/SCAN Microfilm System is a service to the construction industry in which the traditional method of circulating full-size plans and specifications to subcontractors and suppliers preparing bids is supplemented by microfilm and specially designed viewers. The existence of a major project in its late stages of design triggers the initial scheduling of the project at one of our camera centers. Contact with the architect at this stage gives the staff an estimate of the number of pages in the drawings and the number and size of the specification books.

The documents are filmed, reproduced and mailed within one day of receipt to subcontractors, suppliers and manufacturers according to stipulations of project type, size, location and/or product involvement. The aim of the system is to reduce the requirement for hard copy, to save time and travel, to widen competition and, in general, to make the bidding process less painful and less costly for all involved.

Four years ago, few bidding documents were microfilmed; today, over 90 percent of them for projects over \$50,000, where the contract is competitively bid, are routinely microfilmed and distributed by us to more than 4,000 manufacturers, suppliers and installers of construction material and equipment.

Construction-oriented companies, which regularly make takeoffs and prepare estimates for subcontractors and general contractors, welcome the convenience and time-saving aspects of having a full set of plans and specifications on microfilm mailed directly to their place of business. Dodge/SCAN films over 2,000 building projects and delivers over 100,000 reproductions of these films each month—an average of about 50 microfilm copies of each set of bidding documents.

Building our production capabilities to handle these miles of microfilm has forced us to solve a variety of problems. Because we are still pioneering, however, many problems remain to be solved before microfilm will be as acceptable to the user as

**Mr. Robertson** is vice president for manufacturing, F. W. Dodge Division, McGraw-Hill Information Systems Company.

full-sized hard copy. The innovation is still in the "growing pains" stage, and we need the help of architects to develop the technique of microfilm bidding documents to its full potential. Architects have been exceptionally cooperative in helping us improve microfilm copy. We have been told that what is wanted is good, clear copy for subcontractors and suppliers, as well as for the architect's archives. Until now, we have not indicated just how the architect can help. The facts are few and simple.

**1. Contrast.** Probably the most important ingredient for good microfilm is contrast. The camera recognizes black and white, but is mostly blind to gray. Thus ink lines on white paper is the ideal original, but the problem of safeguarding original tracings makes their use when shipped from a distant point impractical. An excellent second choice is a black line print. The contrast is high and invariably a good film is produced. Blue line prints are reasonably good; sepia and blueprints are less desirable.

**2. Drawing Size.** Dodge/SCAN films drawings 30x42 inches at 24-times reduction, filling a 35-mm frame, which may be projected back to full size and scale on our viewer. In our system, only drawings 30x42 inches or smaller can be projected to full size and scale. Larger drawings are filmed at 32-times reduction and projected at  $\frac{3}{4}$  scale.

**3. Overcrowding.** Draftsmen do not usually prepare drawings with reduction in mind. Their problem invariably is to find space to put in all the needed detail. When drawings are crowded, the unhappy result is that the microfilm copy is extremely difficult to read. Because we have not found a way to enlarge our viewers and still be able to squeeze them through doorways, we would like to persuade all draftsmen to draw as though all the pages will be reduced. A good guide to make plans legible when reduced has been prepared by the Department of Defense (DOD-Mil. Std. 1A). DOD adopted the practice of printing  $\frac{1}{2}$ -scale plans for distribution. Its rules are simple:

- Lettering                      minimum 3/32 inches
- Line width                    minimum 0.015 inches
- Line spacing                 minimum 0.050 inches
- Letter spacing                minimum 0.045 inches

DOD's standards require simple block rather than decorative lettering and labels rather than graphics with shading or cross hatching to designate materials. Both practices work equally well in making microfilm legible.

Carl E. Nelson's *Microfilm Technology*, published by McGraw-Hill, is an excellent reference on this subject. Chapter 13 provides good examples of line weights and lettering. The same author's *Modern Drafting Techniques for Quality Microreproductions* (National Microfilm Association) is helpful.

Cameras are as unkind to drawings as they are to people. They pick up all the blemishes: tape and tack marks, harsh erasures and razor marks, wrinkles and rain spots and any other possible lack of uniformity in line or background. Careful handling as well as painstaking preparation of drawings is essential.

If every draftsman followed the simple rules and practices named above, microfilm copy would quickly improve. It might become as acceptable as hard copy to the users, and this particular "growing pain" would disappear. There are other difficulties of this technology which are not the architect's problem primarily. For example, we need to find an economical way of blowing back and printing an entire page of drawings at full size and scale. We are presently limited to an 18x24-inch copy from a 35-mm frame. The technique of blowing back to full size and scale is feasible; cost is the problem. Improved technology will cure this problem, making stored microfilm copies of bidding documents more usable than they are today.

Microfilming is not a magic method to improve documents; reproduction is seldom as good as the original. A venerable expression in data processing lingo is "garbage in, garbage out." "Garbage" in data processing has come to mean poorly prepared input. The equivalent in microfilming is documents that are unacceptable to the camera.

With the help of architects we have been able to develop a valuable tool for communication in the construction industry. With continued cooperation, microfilm will become the least expensive and most acceptable method of bidding document distribution and storage. □

## A TOOL FOR TEACHING

The use of the Dodge/SCAN Microfilm System as an educational tool is reported by Anthony J. Costello, associate professor at Ball State University's College of Architecture and Planning, which stresses the relevance of working drawings, specifications and contracts as an integral component of the design/production/construction process.

For the past 18 months, the college has used SCAN as a resource and retrieval system in order to expose the students to numerous methodologies in the organization and execution of construction documents. An agreement was reached between the college and the Indianapolis office of McGraw-Hill whereby the college obtained a microfilm reading table and the right to order 120 microfilmed sets of construction documents per year.

"Several items of the agreement, such as the professional ethics of allowing bidding documents to be used for a purpose other than bidding, and the feasibility of a trial basis were discussed at length by Dodge and the college," states Costello. "Before the college could obtain the filmed documents, writ-

ten authorization from the architectural firms producing the documents had to be obtained." Initially, 30 firms gave permission; now the number stands at 70. This authorization is granted in two forms: "blanket," in which an office permits the college to order any of its project drawings, and "individual project," which requires a written request for the specific project the college wishes to obtain. "The response shown by architectural firms, which vary greatly in size and geographical location, has been excellent and in a very large way has enabled the project to be a success," declares Costello.

The films that the college chooses to order vary considerably in scope, budget and function. For example, in the same month they ordered construction documents for the remodeling of an elementary school in New York City estimated at \$100,000 and the new \$70 million New Orleans stadium.

In addition to being used by the faculty as an instructional aid and by students as reference material in the construction documents classes, the resource system is also used by students who seek programming, detailing

and other pertinent data. "Fifth year students undertaking the three-quarter undergraduate thesis make good use of the resource during the first quarter, which involves research and programming, and in the third quarter, which concentrates on refinement of design, detailing and structural and environmental systems design and integration," says Costello. "In the future, the college will expand the system to include student projects, the Historic American Building Survey drawings and other documentation projects on 35mm film which can be efficiently stored, retrieved and used at full scale on the reading table."

Costello says that the information a student can extract by studying the construction documents of a building "is immeasurably greater than that normally found in the conventional resources of architectural literature." In brief, the College of Architecture and Planning at Ball State has found microfilmed drawings, developed primarily for dissemination of documents among the construction industry, "to be a viable educational tool." □

# An Architectural Prayer —of Sorts

*(With apologies to  
Art Buchwald)*

*When Kenneth D. Wheeler,  
AIA, president-elect of the New  
Jersey Society of Architects delivered  
this nondenominational petition  
before the annual convention  
in Atlantic City, he told his audience,  
"Please do not feel that  
you have to bow your head."*

Our Heavenly Father,  
We, Thy humble, obedient architect servants,  
Doomed to practice in New Jersey with too few jobs,  
Too little profit and too many headaches,  
Ask Thy blessing upon us.

We ask you, Lord, for little things:  
See that our roofs do not leak,  
Our foundations do not settle  
And our block walls do not crack.

Keep us from planning boards, building departments  
And other regularly constituted authority  
At local, state and federal levels  
That give us a hard time.  
May they realize, Lord, that *they* are not *Thee*.

Give us divine guidance in the setting of our fees  
That we may not incur the wrath of our fellow architects  
For setting them too low,  
Nor the wrath of our clients for setting them too high.

May our clients realize  
That it is more blessed to give than to receive,  
And may our consulting engineers realize  
That thou shalt not live by bread alone.

We beseech Thee that our draftsmen may not hear of  
The four-day week nor of more fringe benefits.  
May they draw in peace and occasionally work a full day.  
Especially, may their coffee breaks be short.

Lead us to good contractors who plague us  
With few claims for extras;  
Contractors who never make substitutions  
And who review shop drawings before submitting them to us.

Help us have comprehension of today's jargon:  
Value analysis, systems design, performance specifications  
And construction management so that we  
May mouth these words with sureness and astound our listeners.

Give our elected and appointed officials  
The will to appropriate money for construction projects  
And the wisdom to appoint New Jersey architects,  
Blind their eyes to the glitter of Philadelphia and New York.

Lead our members to the gatherings of their local chapter  
And, if they stay overly long at the bar,  
Forgive them, for their flesh is weak.  
Be with the officers of this society  
That they may be long on ideas and short on reports.

Be with the board of directors  
That they make their quorum on time  
And that they refrain from asking embarrassing questions.

Heed the cries of our dear executive director, Helen Schneider,  
That we might read the voluminous mail she sends us,  
That we might sell numerous ads for the handbook  
And especially that the ceiling of her new office may be  
Finished before the lease expires.

Grant our dear brother, Edward Durell,  
Strength to recover from the mighty flailings inflicted  
Upon him by our sister, Ada Louise.  
May they hear beautiful Bernstein music together.

Bless our exhibitors.  
May their product sales multiply manifold.  
And, Lord, bless Ross Smith\* for spreading joy and happiness.

Lastly, strengthen our society in all its works;  
And, especially this night, we ask Thy guidance  
To all the hospitality suites.

All this we ask in the name of Frank Lloyd, Corbu and Max Otto.  
Amen!

\*ED NOTE: As the Lord undoubtedly knows, Mr. Smith is past president of the Structural Steel and Ornamental Iron Association, which annually presents the wife of a New Jersey architect with a fur stole or coat, this year a raccoon model.

# Safety Glass Gets a Big Push Across the US

**A newly formed injury surveillance system is bound to have an effect on consumer protection — and manufacturing standards as well. The safety glazing campaign which is gaining momentum in state after state is one of the activities which will benefit.**

How many glass accidents related to buildings occur each year? No one really knows for sure, but the injuries have been estimated at 225,000 annually, of which three-quarters are suffered by children between the ages of 4 and 14. This is believed to be about double the number of such accidents happening back in 1960.

But more accurate information will soon be available as a new National Electronic Injury Surveillance System (NEISS) under the Food and Drug Administration begins to pinpoint accidental injuries involving consumer products.

In announcing the formation of NEISS at the 35th annual meeting of the Architectural Aluminum Manufacturers Association, William V. White, director of FDA's Bureau of Product Safety Injury Data and Control Center, said it will be fully operational by January 1. As a member of the Consumer Safety Glazing Council, AAMA is spearheading a drive for installation of safety glazing in hazardous locations.

The new injury surveillance center, believed to be the world's first, is designed to feed accidental injury data nightly from 119 statistically selected hospital emergency rooms across the nation into a Washington-based computer. The computer prints out the frequency rate and relative severity of injuries caused by electrical, mechanical and thermal characteristics of consumer products. Changes in injury rates and relative severities are measured for headquarters review and assignment of field investigation priorities each morning.

"With steadily progressive growth to a mature, ongoing, reliable intelligence system, NEISS can benefit both manufacturer and consumer," White explained.

Meanwhile, support for safety glazing is snowballing, according to Harry M. Riegelman, AAMA outgoing president. He disclosed that five more states will require safety glazing in hazardous locations by law as of the first of the year. They are Delaware, Illinois, Oklahoma, Pennsylvania and Tennessee. In addition, Massachusetts has adopted similar legislation effective April 1, 1972. By the end of this legislative year, New Jersey is expected to join the safety glazing states, and 60 per-

cent of the population will be protected in one form or another.

The other states which already have passed laws or incorporated safety glazing in mandatory building codes are California, Colorado, Connecticut, Florida, Georgia, Hawaii, Indiana, Kentucky, Maryland, North Carolina, Ohio, Oregon and West Virginia. Wisconsin is now in the process of updating its code.

A state or two have provisions which are more limited in nature, such as legislation applying to sliding glass doors only.

Safety glazing legislation has received the support of the National Association of Home Builders, the Department of Health, Education and Welfare's Bureau of Product Safety, the American Medical Association, the International Brotherhood of Painters and Allied Trades, the National Safety Council and the General Federation of Women's Clubs.

In mid-1969, the Federal Housing Administration incorporated safety glazing requirements for sliding glass doors and shower and tub enclosures in the Minimum Property Standards. At AAMA's suggestion, FHA is now considering a mandatory safety glazing requirement for storm doors.

Riegelman pointed out that in 1970 all sliding glass doors manufactured under AAMA's Quality Certification Program, according to which products must conform to national standards, were equipped with safety glazing. This accounted for about 80 percent of all sliding glass doors produced, an increase of 30 percent over 1968.

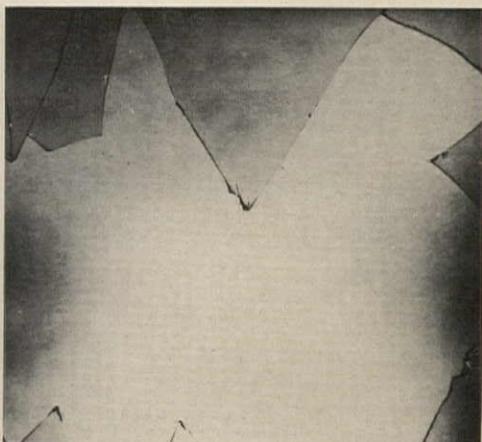
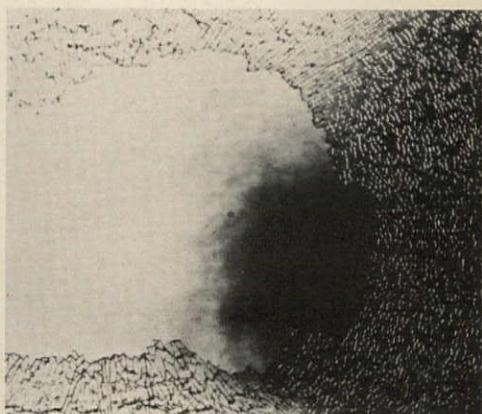
"There were impacts on other products,"

added Riegelman, executive vice president of Rusco Industries, Inc., Los Angeles. "Incorporation of safety glazing in glass entrance doors increased from 30 percent of all those manufactured in 1968 to 50 percent last year. Use of safety glazing in storm doors increased from about 1 percent of all those produced in 1968 to perhaps 6 or 7 percent in 1970. This usage of safety glazing in storm doors will dramatically increase over the next few years."

On other fronts, a national standard for mobile homes sponsored by the Mobile Home Manufacturers Association has been adopted in 28 states, calling for safety glazing in hazardous locations. Nineteen states have enacted legislation to provide building codes for factory-built housing.

John R. Hogan, incoming president of AAMA, gave a demonstration during the annual meeting to prove that tempered safety glass will not break under normal impacts. He dropped a ball onto ordinary glass, which broke like an antipersonnel shell. Then he experimented with safety glass which bent a little but did not break.

AAMA's educational materials include a 12-minute color film, a 10-minute slide presentation, a sound slide film and various booklets. But even with all that, Hogan, who is vice president of General Bronze Architectural Products Division of Allied Products Corporation, Woodbury, New York, makes this comment: "As long as one state neglects to pass safety glazing legislation, AAMA will continue its campaign to educate manufacturers and consumers in this area. □"



Simulated accident demonstrates that muntin bar aggravates injury rather than preventing it. The crossbar stops the body, but the head pitches forward, just as when the motorist slams on the brakes in a panic stop. When ordinary annealed glass shatters, sharp, jagged edges are left. Tempered glass (bottom right), which is five times stronger, on the other hand, only breaks under severe impact, crumbling into small pieces.

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**AIA11**

**TVA Architect and First Mayor of Pioneer New Town, Norris; Winner of Many Honors**

"We hope to prove that public architecture can be practical, sincere and beautiful," said Harry Bird Tour, FAIA, who succeeded Roland A. Wank as chief architect of the Tennessee Valley Authority in 1946. He had been associated with the project since 1935 and stayed with it until his retirement in 1965. His resourcefulness and imaginative skill are credited with much of the beauty of TVA lakes and the architecture of the physical plants.

He was the first mayor of Norris, TVA's pioneer new town, and at one time was chairman of its planning commission. Before his death on August 18 at the age of 71, he was a member of Knoxville's Metropolitan Planning Commission.

Active in many civic and philanthropic organizations, Tour served as president of the Tennessee Chapter in 1944 and 1945 and as president of the Tennessee Society of Architects AIA in 1956. He received many national and international awards for his professional work.

**Seattle Architect, Theater Designer**

"Mr. Architect" was the title given to B. Marcus Priteca, FAIA, by a fellow practitioner in Seattle and a former Institute president, Robert L. Durham, FAIA. Priteca designed approximately 150 major theaters, including Seattle's Orpheum, Coliseum, Palomar and Paramount. "But his greatest influence," said Durham, "was on his fellow architects to practice on a high professional plane."

Priteca died on October 1 at the age of 81. A native of Glasgow, Scotland, he was apprenticed to an architect in Edinburgh before coming to this country to settle in the Puget Sound area.

James Chiarelli, FAIA, with whom Priteca collaborated on a number of buildings, said of him that "with all his experience, he was always a student of architecture himself."

**Seattle Bank Mounts Major Sculpture**



The December 1970 issue of the AIA JOURNAL (p. 49) featured the Seattle-First National Bank Building, designed by Naramore, Bain, Brady & Johanson and consulting architect Pietro Belluschi, FAIA, as an example of the way individual buildings can bring life and beauty to city streets. Since then, the major work of sculpture by England's Henry Moore has been mounted in the plaza.

**Outstanding Woman Architect, Leader In Professional and Civic Groups**

Jean Roth Driskel was the third California woman to be elected to the AIA's College of Fellows, becoming a member of that prestigious body at the 1971 convention. A member of the Pasadena Chapter AIA, she served successively as the chapter's secretary, vice president and president. She was the first woman ever to be an officer of the California Council AIA, acting as its secretary at the time of her death on September 3 at the age of 56.

Mrs. Driskel, who maintained a private practice in South Pasadena, was educated at the University of Washington. Long a leader in national and international organizations, she was a past president of the Association of Women in Architecture. In 1969, she was appointed US delegate to the International Union of Women Architects. She was chairman of the South Pasadena's Mayor's Committee on Cultural Heritage and a past secretary of that city's Chamber of Commerce.

**Newslines**

■ **The art of lighting** as an architectural medium is the primary aim of a new organization formed by prominent lighting designers in the US and Canada. Called the International Association of Lighting Designers, the organization's first president is Abe Feder of New York City.

■ **A computer information retrieval system**, NTISearch, costs users \$25. From a single source, it provides abstracts of technical reports produced from government-funded research and development projects released since 1964. Users may survey current activity in their professions and choose publications of value. For further information, contact Department of Commerce, NTISearch, Springfield, Va. 22151.

■ **Francis Keally, FAIA**, of New York City, has received the National Sculpture Society's highest award, the Medal of Honor, for "meaningful collaboration with eminent sculptors in the design of notable buildings."

■ **The Canadian Wood Council** has issued a free booklet, "Canadian Dimension Lumber," which provides complete one-step span tables and working stresses for new sizes of dimension lumber specified in American Softwood Lumber Standard PS20-70 and for new grades, uniform among all US and Canadian rules-writing agencies. They agree with those approved by FHA. For a copy of the publication, write Canadian Wood Council, 77 Metcalf St., Ottawa, Canada.

■ **Baltimore architect** and antiquarian Bryden Hyde, AIA, is the author of a recent book, *Bermuda's Antique Furniture & Silver*. Published by the Bermuda National Trust, it is the first comprehensive study of the island's antiques.

■ **Among the five new fellows** elected to the American Institute of Interior Designers is Ronald Allwork, FAIA, of New York City.

Fellowship is the highest award that AID can bestow upon members and is given for service at both chapter and national levels. John P. Conron, AIA, of Santa Fe was elected one of AID's regional vice presidents.

■ **Steven Papadatos, AIA**, of New York City, is the only architect on the newly established Architectural Review Board of the Greek Orthodox Archdiocese of North and South America. The board will be responsible for the review and approval of all architectural plans submitted for churches, schools and community centers under the jurisdiction of the archdiocese.

■ **The Learning Place**, proposed by the Electric Heating Association, is a three-level educational structure for children from 2½ to 5½ years old. It's not a school, nor a day care center, nor a kindergarten. It's a place where there are textures to feel, music to hear and experiments to be made. Write the Electric Heating Association, Inc., 437 Madison Ave., New York, N.Y. 10022 for a free copy of the booklet.

■ **An aluminum dome**, 52 feet high and 164 feet in diameter, will be built at the South Pole by the Navy between November 1 and February 15. The bubble, to shield buildings from snow, is being built by the Temcor Polyframe Company of Torrance, Calif., at the cost of \$20 million.

■ **Hugh Newell Jacobsen, FAIA**, Washington, D.C., has been awarded the third John F. Kennedy Memorial Fellowship of New Zealand. During September, he lectured in four of the country's principal cities on contemporary design in the US.

■ **Front-page coverage** in his home-town newspaper was given to Howard T. Blanchard, AIA, for his service of 25 years on the Garden City-Finney County Metropolitan Planning Commission in Kansas. Blanchard has been the commission's chairman for the past 20 years.

**Deaths**

- EDWARD C. EPPLE  
*Newark*
- GEORGE FASULLO  
*Houston*
- SIEGFRIED HEYMANN  
*Los Angeles*
- EDWARD ROOCK  
*Syracuse*

*Members Emeriti*

- ROGER ALLEN, FAIA  
*Grand Rapids, Mich.*
- BIRDSALL P. BRISCOE, FAIA  
*Houston*
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## books

**Design on the Land: The Development of Landscape Architecture.** Norman T. Newton. Cambridge: Harvard University Press, 1971. 714 pp. \$25.

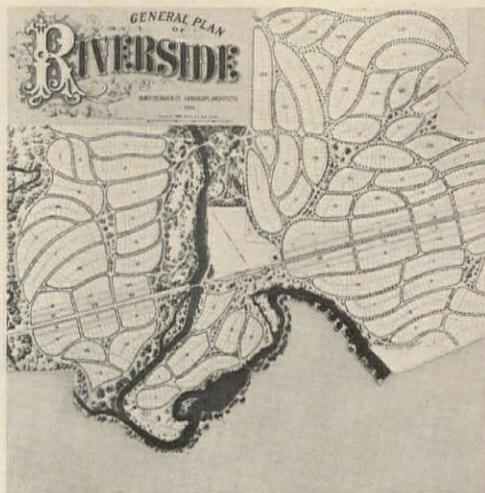
This rewarding history of a profession eminently earns the apothegm of "the right book by the right man at the right time." Emeritus Professor Newton of the Harvard University Graduate School of Design is uniquely qualified to speak with authority on the subject, at a point in time when diminishing land resources, plundered as they have been by greed and carelessness, are being treasured as never before. It is a time as well of an awakening sense of the precarious position of our natural environment, polluted and decimated as it has been for much the same reasons.

The book begins with early glimmerings of design on the land (the expression *landscape architecture* did not make its appearance until the 19th century) from the gardens of Persia, the processional grounds of Egypt, the Greek agorae, the Moorish courtyards with their fountains and pools, on to the walled cities and cloistered gardens of the Middle Ages. All these are well presented and illustrated.

But Newton really shines when he treats Italy: the atrium houses of Pompeii, the astonishing villa of Emperor Hadrian, the urban open space piazzas of Rome, Siena and Florence and, above all, the Renaissance villas of Latium and Tuscany. And well he should. With characteristic modesty, he makes no mention of the fact that he spent three years at the American Academy in Rome as winner of the coveted Rome Prize in Landscape Architecture, a subsequent year as Scholar in Residence at the Academy and the period between the two as an air force officer fighting through the Allied campaign up the Italian peninsula during World War II.

Newton's intimate knowledge of the climate, the people, the landscape and the culture gives him an unparalleled eminence from which to recount and interrelate them all with accuracy and verve. Many of the more than 400 renderings and photographs are his own. One can sense the autobiographic in his poignant account of "an American soldier" contemplating the long silted-over site of Sybaris, the ancient city of Greater Greece on the Gulf of Taranto.

The story continues northward into France, making the point that in the achievement of a national status in landscape architecture, the 15th century belonged to Florence, the 16th to Rome and the 17th to France under the reign of the Sun King Louis XIV, aided as he was by the skills of André Le Notre at Vaux-le-Vicomte and Versailles. At every stage, the background settings of social and



political affairs are identified in their effect upon design.

For example, up to the period of the Tudors, English building could be said to approximately parallel that of other parts of the western world. But with the divorce of Catherine of Aragon by Henry VIII and the resultant break with the Roman Holy See, the impact of the Italian Renaissance, then at its zenith, was deflected away from Britain. For two centuries, other influences, primarily from the Low Countries and elsewhere in northern Europe, were predominant.

The English story continues through the places designed for the royalty and the nobility on to the initial establishment of parks specifically intended for *all* the people: Birkenhead at Liverpool and Victoria Park in London. On it goes to Ebenezer Howard's garden city movement for millworkers, and finally to the concept of new towns, brought into full play after World War II.

Without doubt, the major contribution of this book is its complete exposition for the first time of landscape architecture in the United States from colonial times to the present. Starting with such early estates as Mount Vernon and Monticello, through the parks and country places of the 19th and 20th centuries, the innovations in town planning and subdivisions, the many vicissitudes of the plan for Washington, D.C., the national and state park systems, the Civilian Conservation Corps and other programs of the New Deal, parkways from the Bronx to the Blue Ridge, urban open spaces such as Ghirardelli Square, the account concludes with design aspects of conservation of the natural environment.

In like manner to Kenneth Clark's TV series on *Civilization*, Newton cites a succession of heroes: leaders of movements and innovators of design who produced significant impact on their times. Looming high, of course, is the giant figure of Frederick Law Olmsted, universally acclaimed as father of his profession. In all this, Newton is generous with details. His engaging style and tongue-

in-cheek humor keep these factual matters from being boring, but instead eminently readable and absorbing.

Nit-picking historians might quibble with the assertion that the War of the Roses ended with Henry VIII's accession to the throne in 1509 rather than with his father's victory over Richard III at Market Bosworth in 1485. Some might wish for greater coverage of urban development in early China and in the Spanish new world of Latin America. Others might prefer a briefer treatment of New Deal accomplishments, with an expanded account of the American Society of Landscape Architects, in which Newton held many offices, including two terms as its president.

Such minor caviling, however, can hardly detract from the overall sweep of the book. Each style, each era, each career is logically introduced and carried through to its culmination with deft allusions to outside influences but avoidance of the amorphous confusion of treating too many things at once, the frequent pitfall of less experienced writers.

This landmark volume should be considered a must for the libraries of all students, teachers and practitioners of landscape and urban design, as well as for those interested and involved in the fields of art, architecture, archeology, conservation, housing and allied endeavors.

LYNN M.F. HARRISS

**Changing Patterns in Psychiatric Care: An Anthology of Evolving Scientific Psychiatry in Medicine.** Edited by Theodore Rothman. New York: Crown Publishers, 1970. 296 pp. \$7.95.

This anthology presents 16 articles by some of the most eminent authorities in the field of psychiatry. Beginning with a survey of the evolution of psychiatric care from 1800 to 1968, the subjects range from the treatment of schizophrenia to a walk-in service. The architect charged with the planning of psychiatric care facilities will find that the book provides useful background information.

**The Work of Rietveld, Architect.** Theodore M. Brown. Cambridge: MIT Press, 1970. 198 pp. \$12.50.

A republication of a work which first appeared in 1958. The renowned Dutch architect is viewed as a powerful and independent artist, one of the first rank in 20th century design.

**A History of Design from the Victorian Era to the Present.** Ann Ferebee. New York: Van Nostrand Reinhold, 1970. 128 pp. \$8.95.

Three philosophies of design—Victorian, Art Nouveau and modern—are compressed into little more than a century. Here the editor of *Design and Environment* shows how they are related and what buildings, furnishings, machinery, art objects, graphics and photography tell us about society since the mid-19th century.

**Washington and the Arts: A Guide and Directory to Federal Programs and Dollars for the Arts.** New York: Associated Councils of the Arts, 1971. 176 pp. \$6.50.

Published on the occasion of the 1971 conference of the Associated Councils of

*continued on page 66*

The reviewer is a landscape architect with the Department of Housing and Urban Development and was formerly executive director of the American Society of Landscape Architects, Washington, D.C.

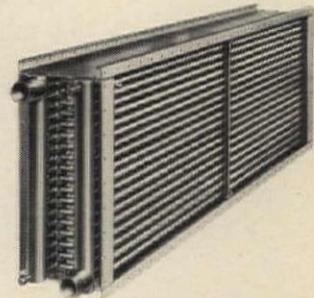
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the Arts, this book tells you where the money is. A comprehensive survey of funds and services available through specific federal programs, it also provides information on commissions, committees, advisory groups and organizations engaged in arts activities.

**Anatomy of a Park: The Essentials of Recreation Area Planning and Design.** Albert J. Rutledge. New York: McGraw-Hill, 1971. 180 pp. \$13 members, \$15.95 nonmembers.

This book, by an associate professor of landscape architecture at the University of Illinois, gives many helpful suggestions for evaluating existing and proposed park plans. It identifies the physical needs of parks and shows ways in which design can eliminate unnecessary maintenance and supervision and construction costs can be held down. The numerous line drawings are by Donald J. Molnar.

**Dwelling House Construction.** Albert G. H. Dietz. Cambridge: MIT Press, 1971. 396 pp. \$3.95.

The foreword states that when MIT Press undertook to bring out this edition of a work formerly published by Van Nostrand, the contents were examined to determine if a revision should be made. It became apparent that the principles set forth have not altered substantially since 1954, although changes in detail have occurred. Therefore, to avoid delay and to meet a pressing national need to retain this information in print, it was decided to issue the book unchanged. There is no other publication which covers the subject matter in such a clear fashion, and all homeowners and builders involved in constructing or altering dwellings will continue to find the book useful and practical.

**Guide to Architectural Information.** Margaret Phillips. Lansdale, Pa.: Design Data Center, 1971. 89 pp. \$4.95.

A listing of 230 sources of information concentrated primarily "on the art and science of building." The items are arranged in broad categories, such as directories, bibliographies, etc., and there are subject, title and author indexes.

Although one may disagree with some of the inclusions and exclusions, as with any such listing, this reviewer is more concerned by the fact that many of the annotations suggest that the list was compiled primarily from other sources and with little real acquaintance with the publications noted—even some of the most basic ones. For example, in discussing the *Engineering Index* no mention is made of the annual cumulation. In the annotation for *Architectural Index* the listing of periodicals indexed is apparently taken from the 1963 edition. In any event, it includes *Arts and Architecture* which ceased publication in 1967. Other examples could be cited.

With these limitations in mind, this is a listing of some of the publications that should prove to be useful in an architect's work; however, it is not to be construed as a buying list for the average office.

GEORGE E. PETTENGILL, HON. AIA

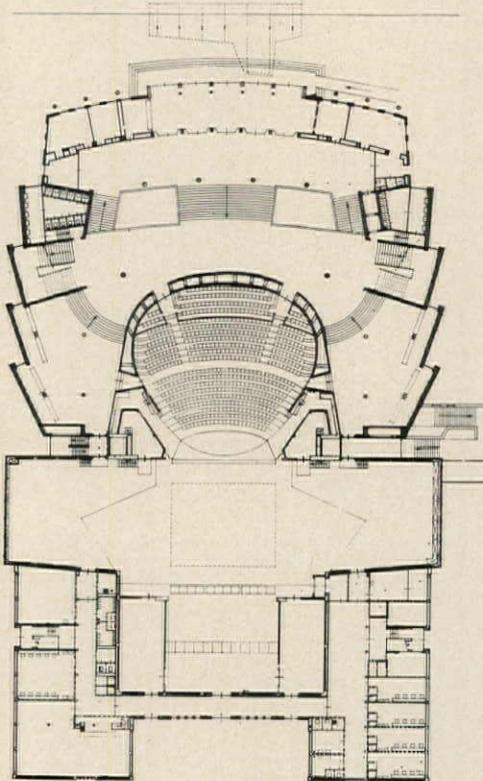
The reviewer is librarian of the AIA.

**The Modern Theater: Architecture, Stage Design, Lighting.** Hannelore Schubert. New York: Praeger, 1971. 222 pp. \$35.

The major portion of this book, a translation of a work originally published in Stuttgart, Germany, is confined to a documentation of theaters built since World War II in West Germany, Austria and Switzerland. Technical data concerning dimensions, number of seats, etc., is supplemented by the illustrative materials which include floor plans, sections, elevations and exterior and interior photographs.

Preceding the documentation of the theater for the German-speaking cultural region is a survey of the international scene. Examples range from Ulrich Franzen's Alley Theater in Houston to Jacques Cuisinier's National Theater in Brussels.

A final chapter is devoted to designs not yet executed. "For the theater," says the author, "is not only reality; it is the unrealized dream, whose existence is apparent in many subsequent creations."



**Urban Structure.** Burnaby, B. C., Canada: Planning Department, 1971. 144 pp. \$12.

The District of Burnaby is located in the Greater Vancouver metropolitan area. It is anticipated that there will be an increasing population in the next five to ten years. Fortunately, the environment is not yet ruined and options are still open. In order to meet the future urban growth intelligently efforts are being directed toward the planning of an urban environment. This report proposes flexible policies that can be used by the decision makers before it is too late to save the environment.

The report is both a planning document and an urban design textbook. As the former, it proposes long-range policies based on newly developed urban design guidelines; as the latter, it suggests a general urban infrastructure which is applicable to any metropolitan area. The attempt is to shape the physical environment by means of structural guidelines

rather than by regulatory control of symptoms.

Thoughtfully conceived and laid out, the report will be of considerable interest to all who are responsible for the future growth of metropolitan areas.

**An Index of US Voluntary Engineering Standards.** Edited by William J. Slattery. Washington, D.C.: US Government Printing Office, 1971. 984 pp. \$9.

More than 19,000 standards, specifications, test methods and recommended practices issued by over 360 technical societies, professional organizations and trade associations are covered in this weighty tome. The computer-produced index will aid architects and others who want to locate quickly the standards and specifications applicable to a particular problem. The index is by the "permuted title" or key-word-in-context system. The key words are arranged alphabetically down the center of the page together with their surrounding contexts. Date of publication, number of the standard, cross references and an acronym designating the issuing organization form part of every entry.

The index is the National Bureau of Standards Special Publication 329.

**Landscape and Site Development.** Ottawa, Canada: Design Branch, Department of Public Works, 1971. 88 pp. \$3.

The purpose of this commendable handbook is to assist those who are concerned with projects where landscape design and the development of outdoor spaces form an essential part of project planning. The relation of building to surroundings requires coordination among planner, architect, landscape architect and engineer. This booklet will help them all in such problems as site analysis and requirements, planting, grading, landscape maintenance, etc.

**Your Government and the Environment: An Annual Reference.** Matthew J. Kerbec. Arlington, Va.: Output Systems, 1971. 244 pp. \$9.95.

This comprehensive digest describes air, water, radiation, pesticides and solid wastes pollution effects; the technology for dealing with them; and laws and penalties concerning them. The appendices give names, addresses and phone numbers of key federal and state personnel involved in pollution control, as well as budgets for 21 federal agencies and other data. There is also a glossary of terms. The digest is most useful to any person who is concerned with pollution and its control.

**Critical Path Methods in Construction Practice.** 2d ed. James M. Antill and Ronald W. Woodhead. New York: Wiley-Interscience, 1970. 414 pp. \$14.50.

There have been four new chapters added to this work, first published in 1965. They concern scheduling and resources leveling, evaluation of work changes and delays, the integration of project development and management and the consideration of CPM as a system. Like its predecessor, the book is intended for those who are concerned with the application of CPM in both office, and field

continued on page 68

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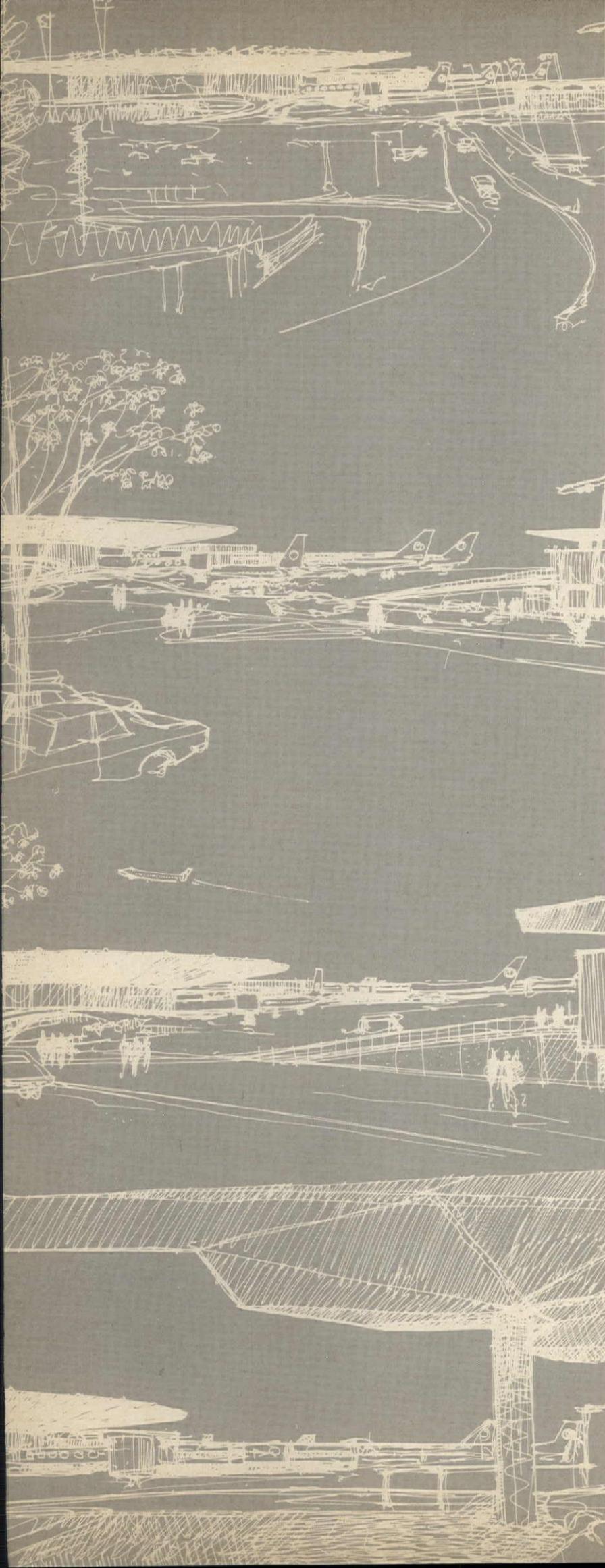
- 6 systems for writing hardware specifications and the basis for choosing the appropriate one
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**M125**

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work. There are three helpful appendices on CPM and linear graph theory; specification for planning and project control; and answers to problems.

**Bureaucrats in Collision: Case Studies in Area Transportation Planning.** Melvin R. Levin and Norman A. Abend. Cambridge: MIT Press, 1971. 295 pp. \$10.

The authors skillfully use a case study of major transportation studies approach to illustrate the bureaucratic machinations accompanying any large public works effort. The book is a must for architects involved with large public clients, particularly in transportation, not so much for its creative thinking but rather to put architects at less of a disadvantage when working with bureaucrats who know well how to manage their turfs and to frustrate projects they deem threats to their positions.

The authors conclude that "underlying all the primary problems is the fundamental one of the lack of national goals and priorities." Thankfully, the AIA, among others, is now pressuring Congress and the Administration to come to grips with the question of a national growth policy. Overall, the book is a sad testimony to the lack of statesmanship and political leadership at the national, state and local levels.

MICHAEL B. BARKER

The reviewer is AIA director, Urban Programs.

**Beyond the Automobile: Reshaping the Transportation Environment.** Tabor R. Stone. Englewood Cliffs, N.J.: Prentice-Hall, 1971. 148 pp. \$5.95.

The thesis of this book is that large-scale commitment to rail and bus transit systems would be more beneficial in the long run in terms of sociology, environment and function than would be the perpetuation and expansion of auto/roadway methods of transportation. In clear and simple English that almost everyone can grasp readily, the author shows just how and why mass transit is the way to meet transportation needs.

Stone, an architectural consultant for the office of the US Air Force Surgeon General, believes that an efficient transportation network will provide a focus for urban and regional development in a saner way than we now seem to be going about it all.

**Design Data: Fire Resistance.** Chicago: Gypsum Association, 1971. 100 pp. Free.

This manual provides fire test data for 262 wall, ceiling, column, beam and roof deck assemblies using gypsum products. Intended as an accurate and convenient aid, the booklet allows the user to see quickly and easily the essential characteristics of a wide range of fire-resistant construction assemblies. A comparative study enables him to be more accurate in meeting design requirements.

The assemblies are classified according to use and fire resistant ratings, with walls, par-

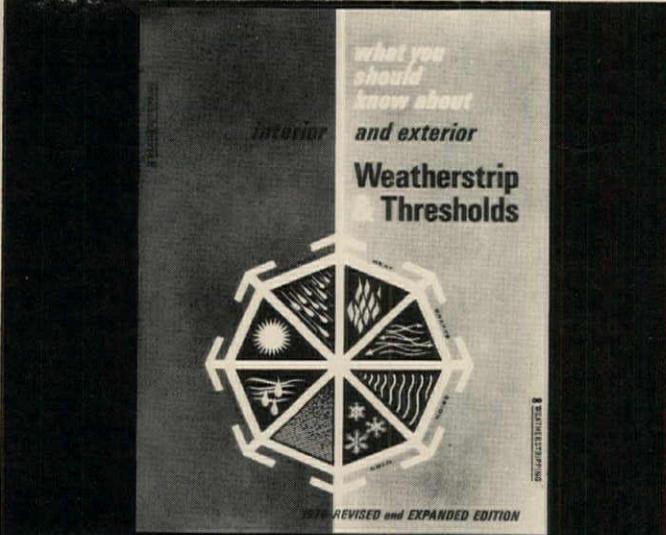
titions and floors/ceilings further classified with sound transmission class ratings. In this current edition, an additional design criterion has been included, i.e., the structural height limitations of nonload-bearing partitions. A pertinent manual for the architect.

**Metal Stairs Manual.** Revised ed. Oak Park, Ill.: National Association of Architectural Metal Manufacturers, 1971. Various pages. No price given.

Originally published in 1959, this manual has been one of NAAMM's most widely distributed publications. The new edition is about 60 percent larger in volume than the previous one. All materials have been updated and revised.

**Insurance for Contractors.** 3rd ed. Walter T. Derk. Chicago: Fred S. James & Co., 1971. 109 pp. \$3.

The purpose of this booklet, according to Derk, is to outline basic hazards and insurance coverages to protect against them; to summarize standard policy conditions; to review policy extensions available to improve the basic contracts; to cite exclusions and limitations; to explain briefly the process of experience rating and premium determination; to illustrate retrospective rating plans; and to discuss some of the surety bonds regularly required of contractors. Of use to contractors, owners, architects, engineers and those charged with properly insuring contract specifications. □



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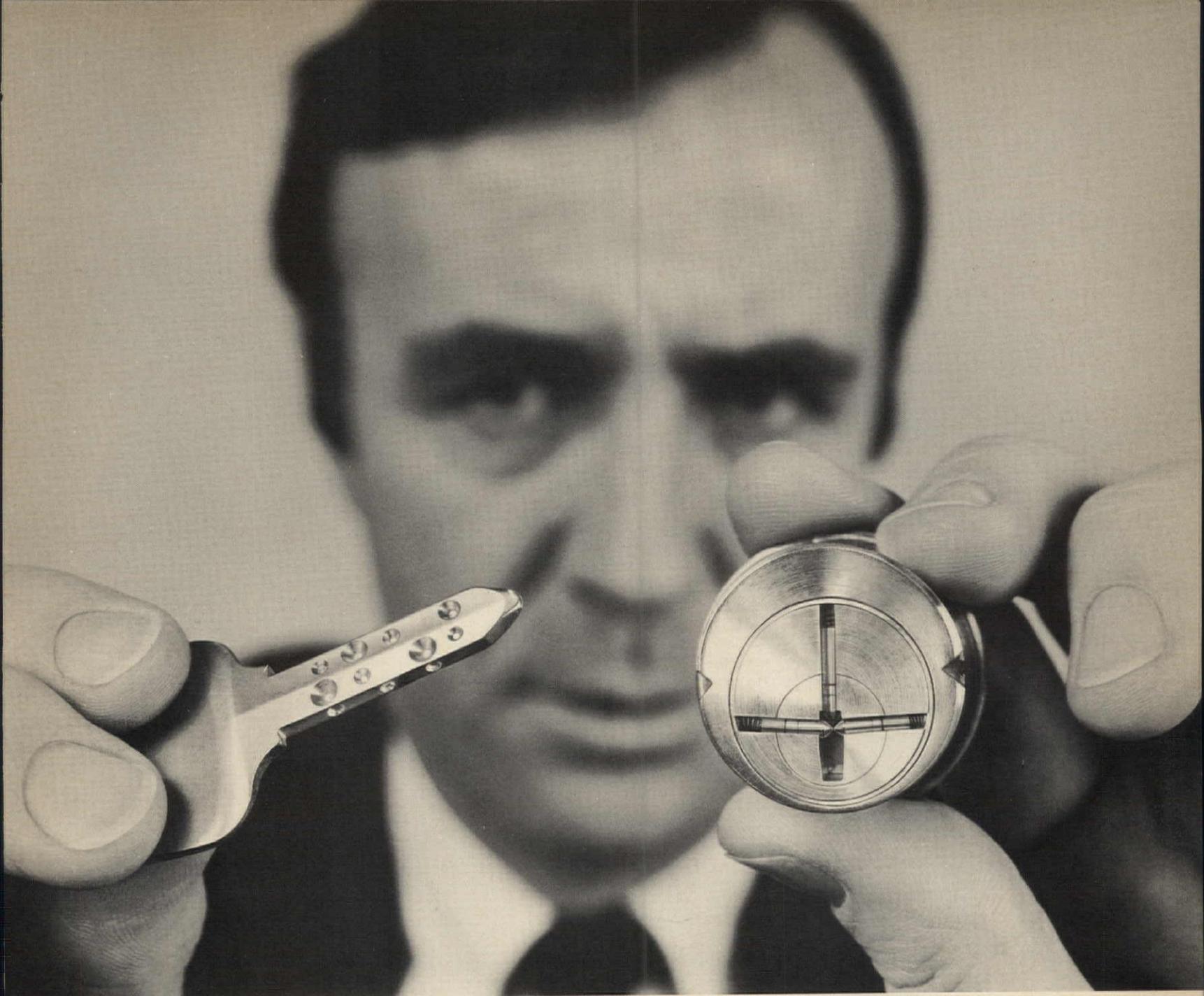
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## Getting There Is Half the Fun

Three resounding hurrahs for "Let's Get Back to Architecture," Comment and Opinion in the September issue.

I am certain that the views expressed represent those of an overwhelming majority of architects in Alabama, the Gulf States Region and the entire nation!

WILLIAM M. PEARSON, AIA  
Montgomery, Ala.

The remarks in Comment and Opinion are a breath of fresh air in the strange jungle that is currently interpreted as "architectural practice." It is time that we decide who wishes to be an architect, i.e., a professional skilled in the design and construction of buildings, and who wishes to perform as a dilettante sociologist-psychologist-paleontologist and writer of voluminous reports on obvious conclusions.

We in practice have by now become familiar with the recent graduate who will consider working with us, as an associate, while waiting for an opening in the local city planning office; however, he "just does design"—and isn't about to be exposed to working drawings. This is not his fault but rather that of an educational system that is in itself confused and has lost touch with the practice of architecture.

Architectural instruction has suffered at the college level by having a curriculum which has been a convenient frame on which to hang all of the "ologies" in the social sciences, and after cursory contact, to imply competence in them. Most of the social science skills are viable and can support themselves when thoroughly taught, but not when used as tinsel by amateurs. Studies of this type are generally advocated for their "broadening" influence: to help the architect relate to his environment, although the thought that architecture and architects can relate to their environment is not exactly a new one. The continued acceptance of the architect's role in society will in the end be determined by his ability to perform his stated task, not by the trappings of a jargon or his ability to maintain a "posture."

Our professional status and protection is in most states anchored to public health and safety, with the architect designated as the one best suited to protect the public in these matters as they relate to buildings. If we foolishly attempt to be all things to all men, we do nothing but adulterate our claim to this status by becoming less competent in our stated field. We glorify the fringe at the expense of the cloth, and we do so at a time when our role is being chipped at by everyone from the package builder to the computer designer.

In the final analysis, the person who has pride and competence in his work has more

true social conscience and social responsibility than is achieved by the mere mouthing of catch phrases, glamorous as they may sound to the user. Until the schools can produce graduates who are prepared to accept their legal and professional responsibility as *architects*, we are in trouble.

JOHN A. WILLIAMS, AIA  
Cleveland

Congratulations on "Let's Get Back to Architecture." Maybe the Age of Unreason is finally over.

EUSTIS DEARBORN, AIA  
New York City

You might have added these words: "And let's get back to designing buildings for people instead of for other architects."

One way to get a larger slice of the building pie back into the hands of architects is for them to stop designing so much of what might be called "late 20th century baroque."

Perhaps what is needed is a 10-year nationwide moratorium on design awards programs. At least this would force students and up-comers to do some serious thinking on their own.

WILLIAM LYMAN JR., AIA  
Birmingham, Mich.

All I have to add to the statement that "designing a building that is both functional and esthetically pleasing to the user, within the budget established by the client, is in itself a form of social responsibility," is amen!

GEORGE BAIN CUMMINGS, FAIA  
Binghamton, N.Y.

As I struggle with the nitty-gritty of how to stay in business, search for a satisfactory balance between my budgets and ("dirty word") design and repay my civic community "dues," I find the September Comment and Opinion most refreshing. Your thoughts are most timely, as the AIA struggles for survival and must explore once again its basic purpose.

FRED N. UNDERWOOD JR., AIA  
Decatur, Ala.

## Pyramids: Points of View

I disagree with the theory about the way the pyramids were built as stated in "Not by Crack of Whip" in the August issue. I have visited Egypt only once and am not an authority on the pyramids, but I will rely on the findings of Egyptologists.

The late 19th century scholar Sir Flinders Petrie said that he believed that about 4,000 full-time workers must have been engaged in the building of the Great Pyramid. These were craftsmen who did the finish work of setting, shaping and smoothing the stone surface, preparing ramps, etc. They probably were in charge of the 100,000 mass slave laborers who were available during the season of the flooding of the Nile River.

C. W. Ceram in *Gods, Graves and Scholars* states that 2.3 million blocks of stone used in the construction of the Great Pyramid were dragged to the site from the Nile River banks on sledges which were moved over rollers by thousands of workers. "The pyramids were built with sheer muscle-power." They rose "layer by layer."

In *Tombs, Temples & Ancient Art*, Joseph Linden Smith comments, "In laying the granite blocks for the first course, engineers had their workers draw the sledge across the smooth surface of the foundation platform, where planes of rubble packed with limestone were set against the construction already in place, and the new blocks rolled up this incline over the 'core' boulders which had been raised in the same way. . . . Pyramid building had been accomplished by means of endless man power. . . . Also, as engineers, the Egyptians had overcome difficulties that engineers of today deemed impossible with the simple tools known in the time of Cheops."

I.E.S. Edwards in *The Pyramids of Egypt*, excellent reading for those interested in the construction theories of pyramid building, states, "The upper portion of the pyramid was finished first, then the middle and finally the part which was lowest and nearest the ground."

"In the absence of the pulley, a device which does not seem to have been known in Egypt before Roman times, only one method of raising heavy weights was open to the ancient Egyptians, namely by means of ramps composed of brick and earth which sloped upward from the level of the ground to whatever height was desired."

According to George Andrew Reisner, a noted American Egyptologist, "Some of the finished pieces of local limestone employed in the Mortuary Temple of Mycerinus weigh about 200 tons. . . . The casing blocks of the Great Pyramid average about 2½ tons and the granite roof slabs of the King's Chamber weigh about 50 tons."

Now the Egyptians knew how to move heavy loads of 200-ton pieces of stone by ramp for mortuary temples. Why not use ramps for pyramids? If the ramps were sloped 1 in 12, they would have been 5,760 feet long for 480 feet vertical height of the Great Pyramid. If the ramps were 1 in 8, they would have been 3,480 feet long.

If Stenhouse's counterweight system would have been tried by the pyramid builders, they probably would have used rope made of palm fiber or flax fiber. Viz: Lifting a 50-ton roof-slab of the King's Chamber would require at least 80 ropes able to withstand 1,000 pounds tension each (neglecting all surface friction). Each rope would have been over 750 feet long, or a minimum of 60,000 feet of primitive rope, each with 1,000-pound tensile strength. The problem of attaching so many ropes to two inclined sleds so that each rope would receive the same stress would have been an endless job using the materials available.

Furthermore, it would have required 800 men weighing 100 pounds each to counter-balance a 50-ton roof slab on a 51-degree, 52-minute slope (the slope of the Great Pyramid). That's a hell of an elevator!

I find it more difficult to envision 11 miles of fiber rope, which would have been replaced many times over the 20-year construction period, than one or even two miles of ramp.

I agree with the theories of the Egyptologists. Sand, earth, and stone ramps and a lot of human sacrifice were required to build those useless pyramids.

KEITH G. WESTENHAVER, AIA  
Columbia, Mo.

Stenhouse's theory about the Egyptian pyramids in the August issue is quite intriguing.

We here in Wisconsin, however, say it couldn't have happened. First, the EPBU (the Egyptian Pyramid Builders Association) turned thumbs down on a setup that employed only 4,000 workers. Second, the unemployment compensation division no doubt declared it illegal. Third, the stonemasons could not, or desired not, to deliver the stones at such a rate. Fourth, the insurance on the counter-weighters would have been prohibitive. And last, the architects would have given up long before to fight the building and safety codes, having just gone through the local code office and assuring them that even though the structure didn't fit the codes—it had all roof and no walls or, if you wish, all walls and no roof—it was still a worthy building.

We don't think it happened—no way.

HELMUT AJANGO, AIA  
Fort Atkinson, Wis.

Bankers also read the AIA JOURNAL. Among the letters that I have received concerning my article on the pyramids is one from the president of the Citizens Security Bank in Bixby, Oklahoma.

He sent me a photograph taken at the optimum time for shadows which shows a very distinct line up the center of the face of the pyramid. This is something I had not known before, and I found this an interesting point to support my theory.

J. A. STENHOUSE, AIA  
Charlotte, N.C.

### Wide Concern over Prison Reform

Congratulations on the article on prisons in the September issue.

It happens to be pertinent to a current project designed by my office, the first unit of which has been completed and occupied. There is little information normally available about this type of building, except for the booklet issued by the Federal Bureau of Prisons which is outmoded by much of today's thinking.

DAVID E. CONNOR, AIA  
Philadelphia

I am a graduate student at Pratt Institute in Brooklyn, N.Y. For my master's thesis I have chosen prison reform as the subject. I found the article on prisons to be excellent.

JAY BOUTON  
Brooklyn, N.Y.

What a fine job Bess Balchen did on the prisons article. For anyone who has little time to read—and I guess that is most of us—this was as lucid and concise a treatment of a

complex subject that I have seen in a long time.

STEPHEN A. KLIMENT, AIA  
Houston

The St. Croix Library Association is encouraging Virgin Islanders to read this important article.

ROBERT V. VAUGHN  
President

St. Croix Library Association  
Christiansted, St. Croix, V.I.

The September cover story is a real step forward in addressing the positive issues and current trends in correctional facility planning.

GARY R. MOTE, AIA  
Chief, Office of Facilities Development  
Bureau of Prisons  
Washington, D.C.

Sometimes the AIA is right on the money! In this particular case, the article on correctional institutions corresponded with the tremendous concern throughout the country. I am delighted that we are presenting ourselves in such a positive light.

CLOVIS HEIMSATH, AIA  
Houston

The "Illinois Team" greatly appreciates the article on prisons. It has been enthusiastically accepted by those of us who participated in the development of the *Guidelines*. It has also given a rush of enthusiasm to those persons who have just begun to work with us as we expand our activity as the National Clearinghouse for Correctional Programming and Architecture.

RAYMOND H. LYTLE  
Research Associate  
National Clearinghouse for  
Correctional Programming and Architecture  
University of Illinois, Urbana

### Serve—and Grow—in India

Last year, the AIA JOURNAL published a letter from us in which we asked for volunteer architectural consultants at Miraj Medical Center in India. Happily, this appeal resulted in several inquiries. One of the architects responding was Jo Kennedy Jr., AIA, of Ardmore, Oklahoma. He and his wife arrived on the scene in February and departed for the US in August. Adolph Roessling, AIA, vice president of the Detroit architectural firm of Smith, Hinchman & Grylls, spent several weeks in late 1968 in Miraj, helping with the preliminaries for the addition to Wanless Hospital. Once more, we are asking for volunteer help.

We need an architectural consultant, a



registered architect in good health and with field experience, who will be willing to spend from three to six months in India, working with the administration of Miraj Medical Center, Miraj, Maharashtra, and with the Indian architect on a major addition (400 beds) to the Wanless Mission Hospital.

The hospital is partly supported by the United Presbyterian Church in the USA. The addition is a three-story reinforced concrete building with elevator and modern equipment. A graduate nurses' residence is also under construction. The complex includes a teaching hospital, nursing school, orthopedic research center, residence halls, medical staff homes and a government medical college.

The volunteer will pay his own fare to and from India. The center provides room and board at American staff doctors' homes, with American style food. English is spoken. The volunteer may bring wife or husband. The hospital's civil engineer acts as translator when required and as clerk of works.

The climate is subtropical, warm and dry, with a 1,800-foot elevation. The monsoon season of moderate temperature and light rains extends from June to September. This is good farming country, near two universities, with access to centers of ancient art and architecture. The staff (Hindu, Muslim and Christian) are hospitable people, and you will have an unforgettable experience of challenge and service while relating to India's beauty, poverty, disease, ignorance, frustration and hope.

Three US architects, recent Mirajers, urge you to share yourself and your architectural knowledge with a vital medical facility in the "third world." Experience in helping develop India can round out your life. India needs some American ingenuity, organizational ability, goodwill and impatience with things as they are. Christian motivation should be an essential for the job because the volunteer riding on humanitarian impulses alone will soon be holding his head in his hands bemoaning the hopeless state of man.

Response to a denominational listing of opportunities for volunteers, preceded and followed by soul-searching and a study of finances, led to my own decision to serve for up to six months in Miraj. Necessary prerequisites: 1) my wife is employed and was willing to stay in the USA and 2) with the help of a friendly banker, I could "fly now and pay later." Unforeseen aid came from the local church. So in April 1970, I was in rural Miraj, 270 miles south of Bombay. As soon as the medical superintendent of Wanless Hospital, Dr. Archie Fletcher Jr., and I saw that I just might weather the cultural shock of India and stay the six-months' span of my tourist visa, we started looking for ultimate replacements. At this point, the JOURNAL published a job description for the architectural opportunity at Miraj.

Face your world. They need you out there just as much as they do here. Yours is the choice: owning things or doing and being. Write Miss Susan Carter, Associate for Overseas Volunteer Services, 475 Riverside Drive, Room 1133, New York, N.Y. 10027, about this opportunity.

WARREN L. HENDERSON, AIA  
Clearwater, Fla.

## Ridding Ourselves of Baggage

One of the prime reasons for our repeatedly disappointing efforts to produce low cost (not to be confused with low rent) housing in the US is our gross system of standards. Behind the system is a philosophy which puts emphasis on *things* and their accommodation and protection.

Think of the phraseology of building protection in use: "one-hour rated construction," "two-hour," "three-hour," "four-hour." This is a measurement of a wall or ceiling system made by a testing laboratory in terms of the time it takes a roaring fuel-fed fire to eat through the construction.

The measurement says nothing about how long it will take to evacuate the building; whether there are smoke barriers to prevent quick asphyxiation; whether the contents are flammable and/or toxic fume-producing; if the occupants are warned early of smoke; how long it will take the fire department to extinguish the blaze; nor if there are automatic fire extinguishing systems built in to protect the building exit system.

Sometimes these considerations are taken into account in some jurisdictions by codes. The major emphasis, however, is placed on containing a fire in terms of time and with traditional materials, particularly in the gut area of insurance rates.

There is another way in which our building standards are those of a 19th century Ameri-

can small town—when beds were high, wide and heavy; dressers basin-laden and pot-bellied; and laundry hand-done. One needed wide corridors, high ceilings, big rooms and domestic help. The same conditions don't obtain any longer, but the minimum property requirements of the FHA have done an absolute job of making those space *minimums* the norm.

Also, we have set up doubtful physical standards of comfort as absolutes: 31 inches for lavatory height, 30-inch passage doors, 36-inch halls and stair width, shallow riser-tread ratios, spacing and height of electrical convenience outlets, pipe-sizing and venting techniques, etc.

Compare the design of fixed, code-controlled housing standards with those used in mobile homes. The mobile home, conceived in terms of cost, weight, width, simple utility connections and built-in furniture, is closer to reflecting the basic human body than the housing standards. The implication is that our standards of height and width are more generous than we think, more luxurious than basic and are not helpful in the effort to lower cost.

Unwritten standards are the toughest to approach but have the greatest potential of being discarded completely. Tradition, heritage, culture and status are factors which combine to inhibit the use of direct approach design in residences and furnishings and work against anything but copying the past in low

cost housing. One could expect, for instance, fibreglas half-timbering in steel-framed high rises to become popular, as are imitation wood ceiling beams made of Styrofoam. Both represent, however irrationally, a wish to be lord of the manor, a symbol of stability and family continuity in an age of mobility.

The design of boats, trailers and campers seems to be far closer to an expression of functional demand than current modular housing. One wonders whether we can or will ever rid ourselves of the extra bag and baggage which ups the cost of basic shelter.

EASON CROSS JR., AIA  
Washington, D.C.

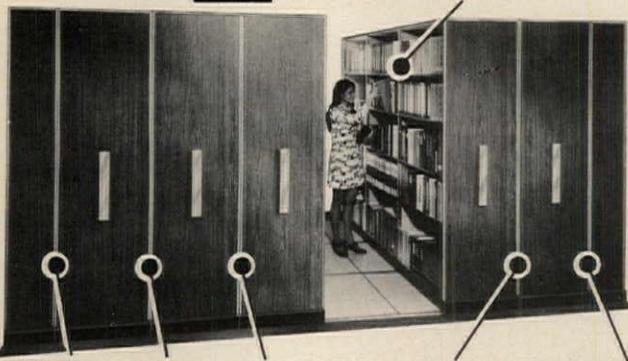
## Michigan's Paired New Town

Many thanks for the fine article in the June issue on "City and Suburb in Tandem," which describes Metropolitan Fund's paired new town for Southeast Michigan. The issue was a good introduction to the AIA convention in Detroit. I thought the linking of our program and the Hartford Process was quite perceptive.

KENT MATHEWSON  
President  
Metropolitan Fund, Inc.  
Detroit

The AIA JOURNAL encourages expressions of opinions from its readers but reserves the right to edit for length and style. Address letters to the Editor, AIA Headquarters.

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## CITY OF MELBOURNE

### APPOINTMENT OF PERSONS OR FIRMS TO PREPARE THE STRATEGIC MASTER PLAN FOR THE CITY OF MELBOURNE, VICTORIA, AUSTRALIA

The Melbourne City Council intends to prepare a Master Strategy Plan for the City and requires the assistance of appropriately qualified consultants to perform the many tasks associated with this project in accordance with a brief available on application to the Town Clerk, which will lead to final decision making by the Council.

The persons or firms selected by the Council may co-opt, subject to Council approval, other specialized individuals or firms to assist and advise them, but the responsibility for the satisfactory completion of the Commission granted by the Council will rest with the original appointee.

It should be noted that a basic condition of the appointment will be that all information, data and products collected and achieved by the Consultants and their associates, if any, must as part of the Commission, be furnished to the Council and become the property of the Council.

Details of the Brief may now be obtained on applications endorsed "Brief" and addressed to:—

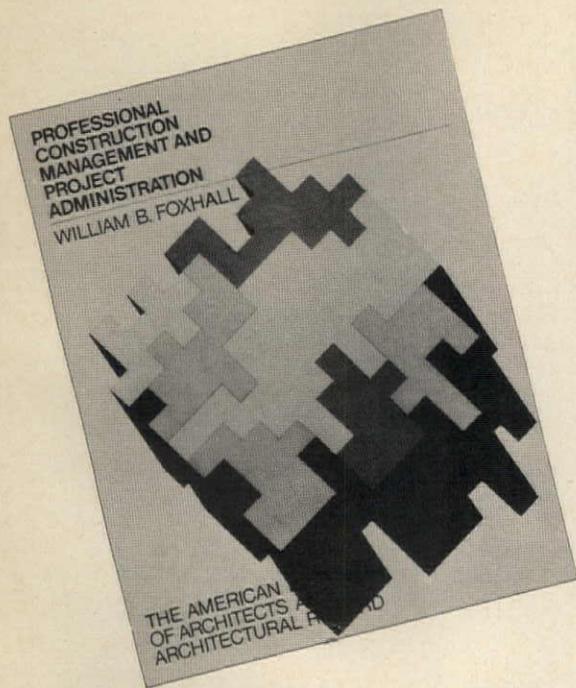
**"The Town Clerk,  
Town Hall  
MELBOURNE, 3000,  
Victoria, AUSTRALIA"**

Sealed and endorsed submissions in accordance with the Brief will be received at the office of Town Clerk up to 4:00 p.m. on 10th January, 1972.

**F. H. ROGAN  
Town Clerk.**

# Professional Construction Management And Project Administration

by William Foxhall



**A NEW BOOK** on the subjects of project management, project administration, construction management and construction consultation—in step with changing times and giving new meaning to the language of building design and construction—

Project administration and construction management are techniques which are being increasingly employed on large, complex building projects. More and more owners—individual owners, corporate owners, public owners—need someone to be responsible for the quality of their buildings. Someone with the ability to employ sophisticated tools—management tools—in the special context of building design and construction to overcome the deficiencies of the low-bidder multiple contract system. Owners—individual, corporate, public—need a workable process for decision, design, and delivery. This is project administration and construction management.

William Foxhall, senior editor of Architectural Record, examines these new techniques in the light of the architect's role in modern, complex

building projects and describes the role of the professional in all delivery and design phases.

What is a construction manager? Mr. Foxhall sees him this way: "He" is the agency who supplies knowledge of construction techniques, conditions, and costs to the project's design and delivery. In design, the construction manager is involved in the cost consequences. In delivery, he is scheduler, purchaser, advisor, and director. He is the construction manager.

What is a project administrator? Author Foxhall labels him individual, department, consultant, or consulting firm—"he" represents the owner in the entire building process.

This veteran architectural writer shows how professional construction management and project administration can overcome the deficiencies of the multiple contract system. Every architect will want to see how these techniques tie into the complex building processes of this decade.

Professional Construction Management and Project Administration—a hardcover volume—has been published by the AIA and Architectural Record at a retail \$15.00. Special price to AIA members is \$12.00. To obtain your copy of Professional Construction Management and Project Administration, just complete and mail the form below. If payment accompanies your order, we will pay the postage.

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# events

## AIA State and Region

- Nov. 11-14:** Kentucky Society of Architects Convention, Seelbach Hotel, Louisville  
**Nov. 17-19:** North Central States Regional Meeting and Minnesota Society of Architects Annual Meeting, Radisson Hotel, Minneapolis  
**Dec. 3-4:** Georgia Association Convention, Atlanta

## National

- Nov. 11-14:** ACSA Teachers' Seminar/Annual Environmental Educators' Conference, Key Biscayne Hotel, Key Biscayne, Fla.  
**Nov. 29-30:** A/E Conference on Federal Agency Programs, Chase-Park Plaza Hotel, St. Louis  
**Jan. 23-28:** National Association of Home Builders Convention, Astrohall, Houston  
**Jan. 24-27:** Architect-Researchers/Environmental Design Research Association Conference, University of California, Los Angeles

## International

- Nov. 17-19:** International Systems Building Round Table Conference, Boston Architectural Center, Boston

## Awards Programs

- Dec. 3:** Submissions due in brochure form, Honor Awards Program of the AIA. Contact: AIA, 1785 Massachusetts Ave. N.W., Washington, D.C. 20036.  
**Dec. 20:** Entries due, Specifications Competition. Contact: Construction Specifications Institute Competition, G. C. Tilghman, NTA, Inc., 815 Thayer Ave., Silver Spring, Md. 20910.  
**Jan. 14:** Entries due, Reynolds Aluminum Prize for Architectural Students. Contact: Reynolds Student Prize, AIA, 1785 Massachusetts Ave. N.W., Washington, D.C. 20036.  
**Jan. 31:** Entries due, Plywood Design Awards. Contact: American Plywood Association, 1119 A St., Tacoma, Wash. 98401.  
**Feb. 15:** Entries due, R.S. Reynolds Memorial Award for Distinguished Architecture with Significant Use of Aluminum. Contact: Reynolds Awards, AIA, 1785 Massachusetts Ave. N.W., Washington, D.C. 20036.

## Fellowships and Scholarships

- Dec. 15:** Applications due, AIA/AIAF Scholarship Program. Undergraduate and graduate students apply through accredited schools of architecture; interns, practitioners and educators apply directly to the AIA. Contact: David Clarke, AIA Headquarters, 1785 Massachusetts Ave. N.W., Washington, D.C. 20036.  
**Dec. 31:** Submission of work due, Rome Prize Fellowships for 1972-73. Contact: American Academy in Rome, 101 Park Ave., New York, N.Y. 10017. □

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