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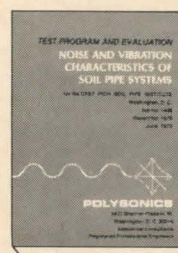
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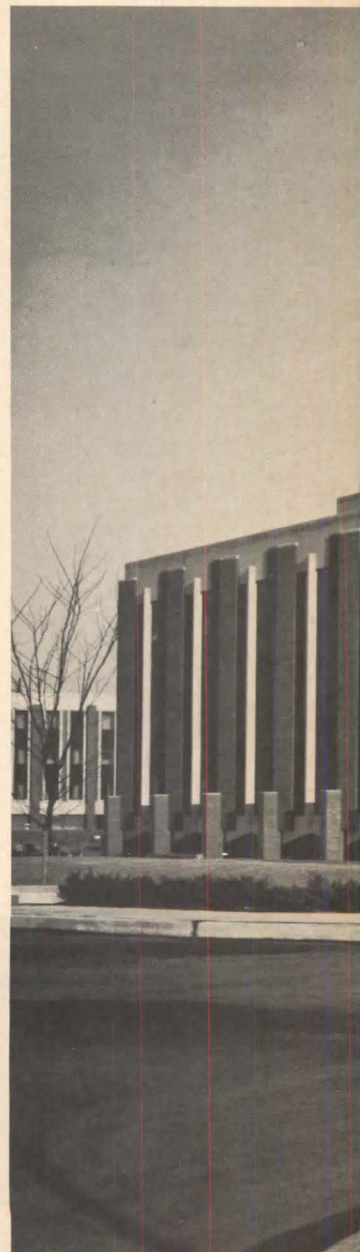
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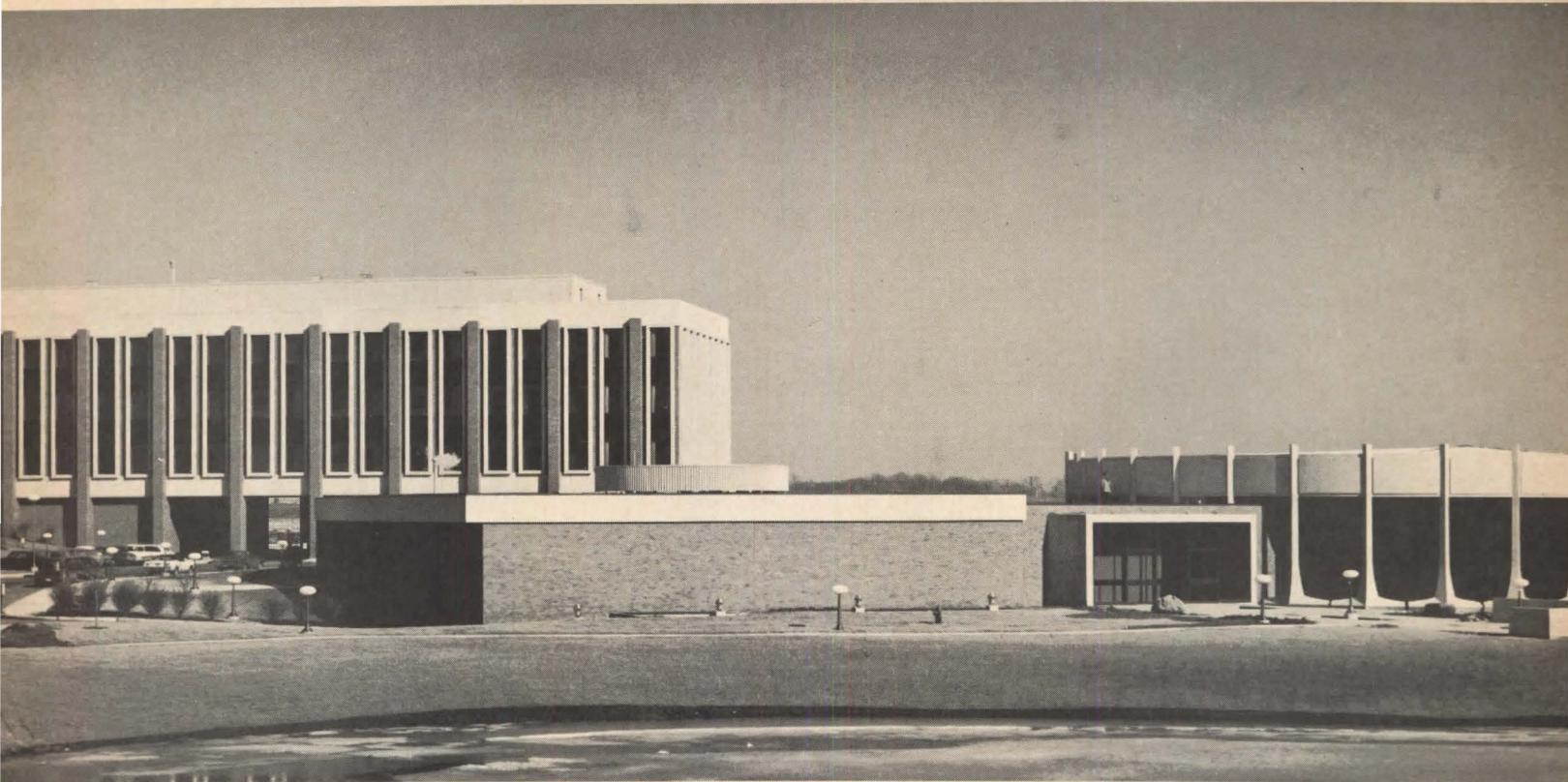
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# AIA JOURNAL

DECEMBER 1971

## The Architect's Stake in Housing

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**COVER:** Housing. Ned H. Abrams & Associates for the Department of Defense.

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THE GREENWICH SAVINGS BANK

THE GREENWICH SAVINGS BANK



# How Vari-Tran® is helping The Greenwich Savings Bank save on cooling.

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## comment and opinion

**HOUSING—THERE IS STILL HOPE FOR THE PROFESSION'S STEPCHILD:** The subject of housing is so complicated and broad in its scope that a single AIA JOURNAL devoted to it, as it is this month, can only scratch the surface. The articles appearing on these pages, for example, are not concerned with the response of politicians or corporation executives; they ask for the response of the architect to the overwhelming changes of these times. And with these foreseen changes, I see a glimmer of hope.

All of us are well aware that the profession in the past, generally speaking, has not accepted its responsibility in the field of housing and that The American Institute of Architects itself has got to share part of the blame. We have, up until the last several years, at least, given only lip service to the matter, and that is just about all. The Institute does have a Housing Committee whose influence has been felt, especially in its relations with the homebuilders (see Outlook on page 11 for a look at some of its current activities).

Flagellations about the profession's role in housing have come from many quarters. Fran P. Hosken, urban journalist and architectural critic whose work has appeared in such newspapers as the *Christian Science Monitor* and Boston's *Sunday Herald Traveler*, is among those who challenges architects to meet head on the professional facts of life. "Architects, even with the best intentions and greatest social concern are being pushed aside; their contributions are not wanted by society. Their product, or architecture, is increasingly a luxury or prestige item frequently used for advertising, such as corporate office buildings or luxury hotels, etc.," writes Mrs. Hosken, an associate member of the Boston Society of Architects.

But more to the point, she says, "The area where architects recently have contributed least but which is most important to society—in the United States and in any organized form of society anywhere—is in housing. Housing, I believe, is the most important social concern that architects are uniquely qualified to deal with; it is also the area most neglected by practitioners at present because, as everyone knows, it doesn't pay." After referring to all the frustrations that go with the building industry, including its obsolete organization and financing methods in this country, Mrs. Hosken adds, "However, I must also say that architects individually have done little to change the *status quo* in housing and nothing specifically as an organized profession."

Well, while I feel that she and her fellow critics have some legitimate arguments, they protest too much. Things are changing. "The Architect's Stake in Housing," the overall title of the December JOURNAL, is just one indication. The most significant point that emerges is that the profession must come to grips with the economics of the situation. Developments underway are in the area of mass housing in general and in modular housing in particular. This is not to say that the results have all been successful. A look at the illustrations of the article on industrialization, including Operation Breakthrough, indicates that design is indeed getting short shrift. I might hasten to add, however, that this is one area of architecture where I strongly feel that the overall planning is far more important than the appearance of a single building, as is so well illustrated in Chicago's South Commons, also seen in this issue.

As the months go by, the JOURNAL will be devoting more and more attention to housing, including the activities of the National Policy Task Force (see the September Institute Page). We will attempt to examine the basic issues and to underscore a commitment that allows housing choices for all—and for me this means not only that minorities can live near their jobs, wherever they may be, but also that people of all income levels can find the amenities they want should they, say, desire to reside in the heart of downtown.

ROBERT E. KOEHLER

### ACKNOWLEDGMENTS

23 — Karl H. Riek  
26 — Jeremiah O. Bragstad  
27 — Karl H. Riek

33 — above right, US Air Force  
36 below left, right, 37 — Hugh N. Stratford  
42 — Ed Dull  
43 — Edmund Y. Lee

### NEXT MONTH

When four Russian architects came to the United States in September under a cultural exchange program, Bess Balchen, associate editor of the AIA JOURNAL, was selected to accompany them on their visit to seven cities. Mrs. Balchen, in effect, wore two hats: that of a reporter and that of a hostess. Her impressions of the impressions of the Russians and of the architects in the host cities, along with her own photographs, is the subject of the leadoff article.

Also in January: a review of just about everything you need to know about how to help the client plan the dedication of his building; another go-around on fountains in winter, an article inspired by the one we ran last December; a Ministudy of a Project, this time a systems manufacturing facility in Boulder, Colorado; and the Architectural Education section, which this time brings a photographic report from Kent State University's "Architecture 1980" conference.

### ASIDES

The November *Fortune* has an article by Gurney Breckenfeld entitled "The Architects Want a Voice in Redesigning America," which we highly recommend. It is followed by a portfolio of houses which architects have designed for themselves, assembled by Walter McQuade. The nice thing about the latter is that they are not the gimmicky residences that are normally shown in this kind of presentation by a nonarchitectural magazine.

Getting back to Breckenfeld's article, the abstract on page 2 of *Fortune* is interesting in itself. It summarizes:

"The impact of architects on 20th century America has been disappointingly small, and the architectural quality of most new building has ranged from mediocre to deplorable. Shunted aside for too long by builders and developers, architectural firms are involved in less than half of the annual dollar volume of construction contracts in the U.S.\* Now a number of leading architects are determined to break out of the old cage and reshape both their business and the policies that govern urban growth. As 'practical idealists,' says John Portman, the designer and developer of Peachtree Center in Atlanta, architects 'must take command of physical growth in a new and vigorous way.'

"Like Portman, architects in increasing numbers are becoming entrepreneurs, with part ownership and therefore greater say in projects they design. Several firms have either gone public or merged with large corporations, thereby acquiring a financial base for expansion. The larger firms are spreading out not only into development but into the related fields of construction management and city and regional planning. Most important of all, architects are beginning to realize that the commanding issues of our times, such as a national land use policy, are their rightful purview. And that ought to result in good for both the profession and the nation's environment," the abstract concludes. □

\* According to figures developed by the AIA JOURNAL staff, architects account for 80 percent of the total building volume other than heavy construction and one- and two-family houses.

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## Design to Get Big Play as Homebuilders Converge on Houston; AIA Prepares Program

The tentative schedule for the annual convention/exposition of the National Association of Home Builders next month reveals that of the 62 programs listed, 27 will be devoted to some aspect of design, planning and construction. And for the fourth consecutive year, the AIA Housing Committee will make a major presentation before the homebuilders.

The January 23-27 sessions to be held in Houston's Astrodome will cover such topics as land development, remodeling, apartments, leisure homes, Department of Housing and Urban Development programs and financing.

The AIA program on "Better Design, Better Building, Better Profit" is set for Monday afternoon, January 24, and will be repeated on Tuesday. It will demonstrate how good design simplifies the building process and means more profit by featuring three projects: a condominium, a single-family house

and an apartment complex utilizing a government program.

NAHB's Institute of Environmental Design, in which a number of architects are active, will meet on Saturday, January 22, the day preceding the official opening of the convention/exposition, which normally draws in the neighborhood of 50,000 participants and several hundred exhibitors.

One of the major concerns of the environmental design group this year will be consumerism. In addition, this arm of NAHB, in conjunction with the AIA Housing Committee and HUD, is undertaking a survey of architects to determine their office characteristics, methods of operation, and forms of contract documents and fees. The results will be published in the AIA JOURNAL.

When this survey is completed, a similar one will be conducted among related professions to determine their like characteristics.

## International Symbol Aids Handicapped, Identifies Barrier-Free Facilities

Eighteen percent of the population of the United States is restricted because of such barriers as high stairs and narrow doorways. To help correct this situation, the International Symbol of Access identifies facilities which have eliminated barriers.

The symbol, contributed by the Scandinavian Design Students Organization, is used to identify doorways wide enough to allow a wheelchair. It shows where ramps are located and marks restrooms that have support bars. The symbol indicates drinking fountains and telephones within reach of a person in a wheelchair and alerts attention to elevators designed for the use of the handicapped. It shows parking spaces that are sufficiently wide to allow transfer of wheelchairs to and from automobiles.

Recommended to the Assembly of Rehabilitation International by the International Committee on Technical Aids, Housing and Transportation, the symbol has been officially adopted. It is hoped that the symbol and all it represents will be an increasingly familiar sight in public buildings, assuring the handicapped a less restricted life.

## OAE Wins Second San Francisco Election

By a vote of 13 to 12, the Organization of Architectural Employees has won a second election supervised by the National Labor Relations Board, this time in the office of Rex Whitaker Allen & Associates of San Francisco. As reported in the November AIA JOURNAL, OAE lost four of the five elections on its first go-around. (This month's Institute Page is devoted to employer/employee relations.)

*continued on page 12*

## Excellence in Concrete Design Hailed As PCI Names 11 in Awards Program

Eleven buildings have been selected as winners of equivalent top awards in the 1971 Prestressed Concrete Institute's Awards program by a jury headed by Robert F. Hastings, FAIA, outgoing president of the AIA.

Other jurors were Gordon R. Arnott, president of the Royal Architectural Institute of Canada; Oscar S. Bray, president-elect of the American Society of Civil Engineers; William W. Caudill, FAIA, principal of Caudill Rowlett Scott of Houston; and J. Caldwell Wilson, president-elect of the National Society of Professional Engineers.

Excellence in design using precast and prestressed concrete to achieve esthetic expression, function and economy was the prime consideration in judging.

Pictured here is one of the winners, the Lyndon Baines Johnson Library and Sid W. Richardson Hall, University of Texas, Austin, designed by Skidmore, Owings & Merrill in collaboration with Brooks, Barr, Graeber & White. The jury declared the complex as "esthetically pleasing" and an "outstanding building composition." Skidmore, Owings & Merrill also won an award for the American Can Building in Greenwich, Conn.

Other architects who are winners are I. M. Pei & Partners: American Life Insurance Building, Wilmington, Del.; William Morgan, AIA, in association with Forrest M. Kelley, Jr., AIA: Florida State Museum, University of Florida, Gainesville; Marcel Breuer & Herbert Beckhard and The Nolen & Swinburne Partnership: Headquarters Building for the Department of Housing and Urban De-

velopment, Washington, D.C.; The Eggers Partnership with James Associates: Indiana University Libraries, Bloomington; Savin Wycoff Phillips, Inc.: Memorial Medical Center, Sterling Heights, Mich.; Owen F. Smith, AIA: Office Building, North Carolina Farm Bureau Federation, Raleigh; Barrett Daffin & Figg: office facilities for their firm in Tallahassee; and Hugh Stubbins & Associates in association with Stonorov & Haws: Philadelphia Veterans Stadium.

The other winning design is for the Stafford Road Interchange, Pacific Highway, Washington County, Oregon. This overcrossing of a six-lane interstate freeway was engineered by the Oregon State Highway Division.



Reinforced concrete walls of the Lyndon Baines Johnson Library enclose a 100,000 square foot floor area. The library is complemented by the smaller adjacent Sid W. Richardson Hall.

## Giant Step Taken Toward International Reciprocity at Amsterdam Meeting

Under the sponsorship of the National Council of Architectural Registration Boards, 25 architects from 10 countries accepted in principle a resolution which will broaden international reciprocity at a meeting held in Amsterdam recently.

The practitioners established an International Relations Conference of Architects, open to any interested country, which will meet yearly to consider mutual problems of reciprocity. The group plans to study and make recommendations concerning a methodology for arriving at acceptable international standards of architectural education, at a definition of standards of professional training and experience (exclusive of discipline) beyond academic qualifications and at specific conditions to be recognized in particular regions and countries.

For additional information, contact William J. Geddis, FAIA, The Architects Collaborative Inc., 46 Brattle St., Cambridge, Mass. 02138. Geddis serves as chairman of the International Relations Committee of the NCARB.

## Good News to Transportation Planners, Automatic Train Control Successful

The San Francisco Bay Area Transit System will be open to traffic next March. The most advanced train control system in the United States will operate 105 trains simultaneously around the 75-mile network.

Engineers now declare that the automatic train control is not only feasible, but it works. Having been tested on a 27-mile segment using a fleet of prototype cars loaded with electronic test gear, the system's first train control loop is in and working. For the next months, electrical engineers will continue installing and testing sections of the system, and by the time the first commuter gets aboard there will have been hundreds of trial, test, checkout and practice runs.

Actual research and development work began seven years ago. Parsons Brinckerhoff-Tudor-Bechtel, BART designers, developed performance criteria for a working automatic train control system, drafted contracts with

four electronics firms for conceptual design, supervised 18 months of testing and wrote final performance specifications.

## Reprints of Prisons Article on Hand

Because of the enthusiastic response to Bess Balchen's article on "Prisons: The Changing Outside View of the Inside" in the September issue, the article has been reprinted. Copies are available at 50¢ each, with a minimum order of \$1. Address requests to the Editorial Department, AIA JOURNAL, 1785 Massachusetts Ave. N.W., Washington, D.C. 20036.

## Highrise Buildings Research Organization at Lehigh Represents Nearly 400 Groups

A major international research organization concerned with all aspects of planning, designing and constructing tall buildings has been established jointly by the American Society of Civil Engineers and the International Association of Bridge and Structural Engineers. Some 650 professionals from many disciplines are members, representing close to 400 organizations located in 34 countries.

Lehigh University, Bethlehem, Pa., is headquarters for the new group, where the organization's first worldwide conference will be held August 21-31, 1972. Dr. Lynn S. Beedle, structural engineering authority, is chairman of the ASCE-IABSE Tall Buildings Group, as the organization is presently called.

Major objectives of the new organization include the elimination of duplication of research on tall buildings, early utilization of completed research on multistory structures and initiation of cooperative new research on problems relating to highrise buildings. Initial funding is from the National Science Foundation and the American Iron and Steel Institute.

## State Department's Design Chief; Long Service in Government; Educator Too

As chief of design and construction for the office of foreign buildings for the Department of State, Thomas A. Pope was involved in embassies, ambassadorial residences and

related buildings in many lands. Joining State in 1951, he died September 12 at 62.

Pope was an architect for the Navy Bureau of Docks from 1924-49, and was honored by the Association of Federal Architects for his work during that period. A native Washingtonian, he also had taught architecture at his alma mater, Catholic University, until 1960.

## Honorary Member, Indiana Leader

Thirteen years ago, Donald E. Gibson, Hon. AIA, joined the staff of the Indiana Society of Architects. It was in recognition of his contributions to architecture, especially for his successful efforts to establish a school of architecture at Ball State University in Muncie, Indiana, that the society's executive director was named an honorary member of the Institute this year. He also devoted time and attention to the reform of Indiana laws concerning the practice of architecture. Gibson, 38, died suddenly on October 16.

## Australian Architect, Well-Known Author

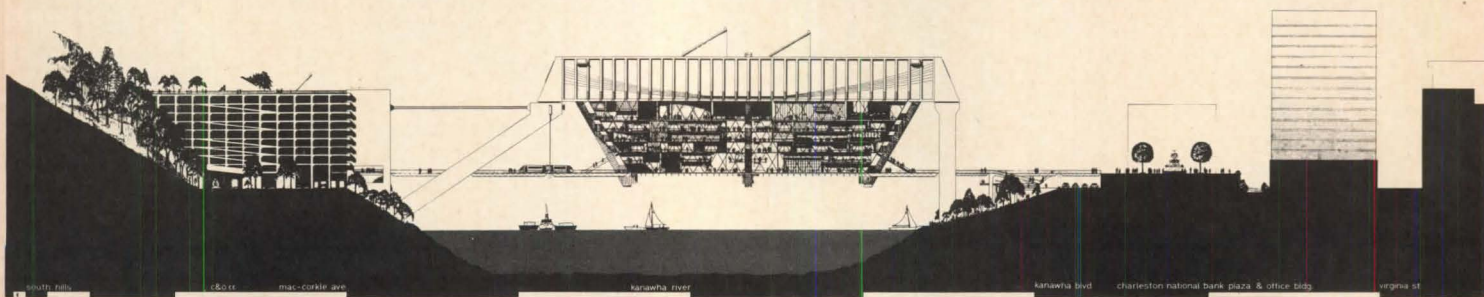
The name of Australian architect Robin Boyd is particularly familiar to his American colleagues because of the numerous articles he had written for professional publications. An Honorary Fellow of the AIA, he died on October 12 at the age of 52. He designed the Australian displays for Expo '70 in Osaka and for Expo '67 in Montreal.

## Moholy-Nagys' Daughter, Environmentalist

When Sibyl Moholy-Nagy was given the Architectural Critics' Medal posthumously (having died in January) at the 1971 AIA convention in Detroit, it was accepted upon her behalf by her daughter Claudia. Miss Moholy-Nagy, director of the Victor Gruen Foundation for Environmental Planning in Los Angeles, herself passed away on September 21 at the age of 35.

Said a foundation spokesman: "Under her guidance the library has doubled its resources and has become a unique reservoir of information on environmental affairs in our community. The environmental education research program was developed and directed by her." *continued on page 50*

## A Modern "Ponte Vecchio" is Proposed Across the Kanawha River in Charleston, West Virginia



A river-spanning shopping center across the Kanawha River in Charleston, West Virginia, is proposed by Tinsley A. Galyean Jr., AIA. The shopping center would be comparable in size to a city block: 10 stories high, 200 feet wide and 600 feet long. At left is an eight-story garage which would utilize air rights over C&O Railway tracks. Fastened to the garage with high strength cables are hinged arms to support the bridge on the south bank. On the north are upright supports. A walkway for pedestrians and a roadway for minibuses would extend from the garage to Charleston National Bank Plaza. River traffic would be able to pass beneath the bridge. With land in the central business district scarce, the architect would make use of the river and revitalize the downtown as well. He estimates that construction costs will be about \$30 million, commenting that the proposal has community support and has captured the interest of major development corporations.

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## Employer/Employee Relations

by ARTHUR T. KORNBLUT, AIA  
*Administrator*  
*Department of Professional Services*

The profession of architecture in 1971 witnessed a major development in employer/employee relationships. Graduate and licensed architects in the Organization of Architectural Employees culminated a two-year effort, which began with OAE's establishment in 1969, by bringing the realities of National Labor Relations Board-ordered elections to five architectural firms in San Francisco (see Nov., p. 6). The results of the September elections are difficult to evaluate. Employees in four offices voted to reject the OAE as their collective bargaining agent, while employees in one office voted in favor of formal unionization. In October, a sixth office voted to unionize.

What does this mean? Were the results in the four offices merely a manifestation of the professional employee's traditional aversion to unionization, or were the results due to efforts to rectify the concerns which created the situation in the first place? Basically, the concerns involved three areas: monetary compensation, portable fringe benefits and professional recognition.

Increased salaries are important. Despite the recent imposition of a wage and price freeze, the profession must recognize that higher salaries and, correlatively, increased levels of compensation to be paid by clients to enable increases in salaries and benefits, are necessary if the profession is to attract sufficient talented new blood. The levels of compensation and fringe benefits stated in OAE publications would require a substantial increase in the level of compensation billed to clients for professional services. How often has the architect been subjected to comparisons between his wage rate and that of the unionized skilled and semi-skilled construction tradesman? If the design professions are to survive, these comparisons must be more favorable.

In the area of fringe benefits, if the AIA is to develop adequate portable medical, income continuation and life insurance programs, principals of firms within the AIA will have to participate in Institute-administered programs for portability to be possible. The AIA can establish a professionwide pension program, but there too a substantial number of firms must participate for it to be viable. Fringe benefits should be considered as part of the basic means of compensating employees as members of the profession.

The third major area of concern is professional recognition. The employed profes-

sional is not requesting to preempt his employer in the eyes of the public or the client. He is asking that his contribution to projects, whether as a specialized member of an office team or as a provider of general skills, be recognized. This acknowledgment can take many forms. For example, it is not unreasonable for team members to be named in publications about a project. In any event, the employed professional should not be relegated to a back office role, with all public recognition and accolades going to the firm's principals.

The AIA Board of Directors in April reaffirmed that the Institute is, and shall remain, an organization for both employer and employed architects. In September, the board committed the AIA to a broad program which addresses itself to the many-faceted problem of employment relations. To solve it, the Institute can serve as the mechanism, but it will require the voluntary participation of both employers and employees.

The Institute has already undertaken programs to find a solution to the problem. The efforts of officers and staff, board members and three special task forces have been directed toward the development of professionwide employment standards which cover office and hiring practices, wage and salary administration, holidays and vacations and other elements of employment. Endeavors are underway also to develop standard professional position categories for architectural offices and salary ranges for those positions. It has been recognized that nationwide standards will be difficult to develop and even harder to apply. Every effort, therefore, has been made to include regional and local considerations.

For the immediate future, the Institute is exploring ways in which professionwide portable insurance benefit and pension programs can be developed. As noted, success will depend upon the voluntary abrogation by a substantial number of firms of present in-house plans and prerogatives, enabling the AIA to establish and administer truly portable fringe benefit programs.

The San Francisco experience may seem irrelevant to many architectural firms, but history indicates that it will only be a matter of time until they too will be subjected to similar pressures from employees. It is time for the AIA to take the initiative and provide leadership in employer/employee relations. □

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# THE ARCHITECT'S STAKE IN HOUSING

**THE BASIC ISSUES, THE REAL COMMITMENT:** No more urgent challenge awaits the architects of America than that offered by the subject of this issue of the AIA JOURNAL.

If I could have one wish as president of The American Institute of Architects, it would be that I could persuade all of my professional colleagues to join me in launching a great crusade to convince the people that this country can afford to provide good housing and community facilities for all of its citizens.

When I say "good," I do not mean "decent, safe and sanitary," I mean first-rate—the kind of housing you and I would be happy to live in; the kind of community you and I would be happy to have our children grow up in. And I mean a range of housing and community types that responds to the variety of lifestyles that are found among us, and the changing lifestyles of each of us throughout our lifetimes.

And when I say *all* of its citizens, I mean people of every income level, and not just low income (or middle or upper income groups). Please note, too, that I have not said "good low cost housing," but rather "good housing." It is almost fair to say that there is no such thing as low cost housing; where existing government programs are involved, there is only low priced or low rental housing.

Before we can convince our fellow citizens, of course, we have to persuade ourselves that we should, as professionals, undertake an awesome new kind of civic responsibility. And that would require changing some long-established attitudes and habits of mind.

To begin with, we have to face the bitter truth, once and for all, that as architects we are *not* responsible for the sorry present state of housing and living conditions of all too many Americans. As architects we have, in fact—and alas that it is so!—had all too little to do with most of the housing that exists in this country today. All too much of it has been built without benefit of an architect, and where one is involved, his design is too often the product of processes quite beyond his control rather than the creation of a design professional responding to complex and varied human needs.

We have to accept the fact that design alone cannot solve the housing problem. The history of architecture is filled with examples of the amenities for living that architects can achieve through design when there is an enlightened client, when there is sufficient budget for the intended purpose, when intelligent land use planning provides dividends for human enjoyment as well as profits for developers. At Radburn and Sunnyside, Chatham Village and Baldwin Hills, our AIA Gold Medalist Clarence Stein was showing the way more than 40 years ago to using less land for more human benefit. But we cannot apply the design concepts very widely without more clients like Stein's Alexander Bing unless there are major changes in our present processes. This issue of the JOURNAL presents some impressive examples of current architectural



accomplishment in housing which were possible only because the architects were able to manage the processes so architecture could serve humane purposes. More often, architects are less fortunate, and the processes successfully resist architectural management. Design alone is not enough.

We should learn to understand, to respect and to use the creative potential of economics in the development of new processes that would put the objective of quality housing within the reach of all Americans. We have to interest ourselves—seriously interest ourselves—in the whole question of housing costs: what they are, where they are, how to manipulate them. We should have to find ways to make economics *serve* rather than *inhibit* the human processes of architecture.

And in a major reversal of our traditions and practices, we have to be willing to step forward without having been asked. We can no longer wait for “the client” to come to us. We will have to give up the luxury of feeling that there is nothing we can do about the housing problem until it is presented to us in the form of an architectural program. We have to become ombudsmen—architectural counselors to the public—and for this service we can seldom expect to be paid. We have to volunteer.

Finally, we have to be willing to push for effective alternatives to the status quo, even at the risk of alienating some of its beneficiaries; even when they are our clients or our prospective clients. All of us, I think, recognize that new concepts of land use and financing are the key to any solution of the housing problem. And such new concepts are sure to run counter in many cases to the interests of many established institutions and many powerful individuals (though less so than many of them might fear). We must be willing to assess alternatives, as we do in analysis of any architectural problem, without any preconceptions as to solutions. At the same time, we must in this instance assume—as normally we cannot—that existing constraints to the production of good housing can be removed. We must be prepared not only to recommend radical changes in existing economic and political processes, but also to assist in the invention of new processes designed to encourage environmental quality.

I believe that the new role of the architect in housing is to tell the truth in public: to say, loud and clear, and over and over again, many things they have long understood which the public does not.

Construction cost is not the significant cost of getting people housed. The significant costs are interest and taxes, which together account for some 50 percent of total occupancy cost, and utilities, which account for about 15 percent. Materials are about 10 percent, and labor can be estimated at around 5 percent. The cost of money and of using land are the key issues. Therefore, the “breakthrough” we need if we are to get more housing is in the realm of financing, not design, not technology. In support of these statements, let me quote an analysis of available statistics developed by my partner Karl Justin, AIA, for an article published recently in the *New York Times*:

“According to a report prepared for the President’s Committee on Urban Housing in 1968, a rough breakdown of monthly occupancy costs shows that debt service costs account for about half of monthly occupancy costs. More than half of this debt retirement cost is made up of interest charges. The fraction varies with interest rates, size of down payment and terms of the mortgage. But the foregoing figure of half is about right at current rates for a 30-year mortgage. Thus the actual ‘homebuilding cost’ represents one-quarter or 25 percent of monthly occupancy cost (one half times one half).

“How is the ‘homebuilding cost’ distributed? According to a citation in the Congressional Record of October 29, 1969, on-site labor accounts for 18 percent of homebuilding cost. Call this 20 percent, attributing overhead and profit to this item. If on-site labor is 20 percent of homebuilding cost, and if homebuilding cost is 25 percent of monthly occupancy cost, then 5 percent of monthly occupancy cost represents on-site labor.”

In other words, if we could, through design or technology, reduce the construction cost of housing by 25 percent (an almost unimaginable feat), the savings in occupancy cost would be 6.3 percent—25 percent of 25 percent. But even those who are most optimistic about the role of lower construction costs in reducing housing costs look largely to reduced on-site labor costs through industrialization of building for the prospective savings and acknowledge that lower materials costs are not likely. So Justin’s analysis of the prospects for savings in on-site labor costs is pertinent:

“It must be acknowledged that some on-site labor costs are hardly subject to transfer from the site. Examples would be clearing and demolition, grading and excavation, installation of site utilities, construction of foundations, landscaping and finished sitework. Let us say, for the sake of approximation, that these items equal conservatively 20 percent of on-site labor, the remaining 80 percent being on-site labor over which we have an option whether to apply on-site or off-site. Then 80 percent of the 5 percent of monthly occupancy cost which represents total on-site labor leaves us with 4 percent of monthly occupancy cost in on-site labor that we have a choice about. Suppose now we make a truly great breakthrough that permits us to reduce on-site labor costs by 25 percent. By all odds, this would be a savings of more than is currently hoped for by even the most optimistic. And for such a breakthrough to be valid, it would have to be effected without a corresponding increase in materials cost due to the off-site shift; otherwise we are playing a shell game. In any case, a 25 percent saving applied to the 4 percent on-site labor cost would give us a 1 percent saving on monthly occupancy costs.”

If we could redirect the public and governmental preoccupation with construction costs to the really significant components of housing cost, we might begin to get somewhere with the problem of housing America, even with the goal of *good* housing for all Americans and more options in lifestyles and environmental quality. We might then be putting the case for amenities, even for many kinds of amenities, in a more rational context. Closet doors or landscaping or open space or recreational facilities—or even glazed brick and airconditioning—might be seen in truer proportion to the total cost of housing.

If new kinds of public incentives could be developed to encourage better housing at lower cost to occupants for Americans of all income levels, perhaps subsidies for housing might achieve the same degree of public acceptance long accorded to postal subsidies or now accorded, say, to airline subsidies.

If we would make the attainment of a humane and pleasant living environment of their choice for all Americans a 10-year national objective—as we did with putting a man on the moon—we could do it. Make no mistake about it: If we really want to and if we make the gigantic commitment of national will and national resources (including money) that the job requires, such an objective can be reached.

The beginning is public understanding of the real issues, and that requires a massive communication effort. I call upon the architects of America to undertake it. MAX O. URBahn, FAIA

# ECONOMICS: SOLUTION FOR SURVIVAL

by NED H. ABRAMS, AIA

**In a day when potential clients are wondering if an architect is really necessary, especially in the area of mass housing, it behooves the design professional to develop a competency which involves far more than a discussion of a fee schedule. He can give the client something that an electronic tool and its nonarchitecturally trained programmer can never equal.**

Mass housing is an area of concern for which The American Institute of Architects has castigated itself and where the basic criticisms have been directed for the wrong reasons. The July 1, 1971, issue of the *Engineering News Record* succinctly points out that concern is not synonymous with competency. It is our observation that it is the lack of competency in mass housing which should be the concern of architects rather than the lack of housing.

Despite the nature of the architect's client, whether he be private (both nonprofit or profit motivated), military or public agency, basic economics exist which must be understood and respected if housing is to be created as actual housing instead of prolonged conversation. It is imperative that the architect be aware and that he take steps to be informed of the economic parameters and the manner in which these parameters affect his design as to both quality and quantity. Our discussion here concerns only low, moderate and middle income mass housing under federally insured programs, with a minimum of 100 units per project. We are not concerned with luxury housing, no matter how large the project.

Since economics is the key, we should start at the architect's office. The first thing required of the architect when he has the opportunity to design a mass housing development is the ability to establish his fee with the client. The initial step in making a profit on one's architectural work is to refrain from giving the profit away while negotiating the fee. In any case, it is vital that the architect know of the statutory limits permitted and that he secure all of the available fee possible.

Very few fees for federally insured work are determined by the standard AIA schedule. In the case of the sophisticated client who has had similar work done before, it usually becomes a shopping expedition on his part. Strangely, this happens even when the owner may have a definite reason for selecting a particular architect. There seems to be a foregone conclusion among developers that the easiest way to secure lower fees is to discuss the project as being only the first in a long series. Our conclusion, after many years and many clients, is that when there is the

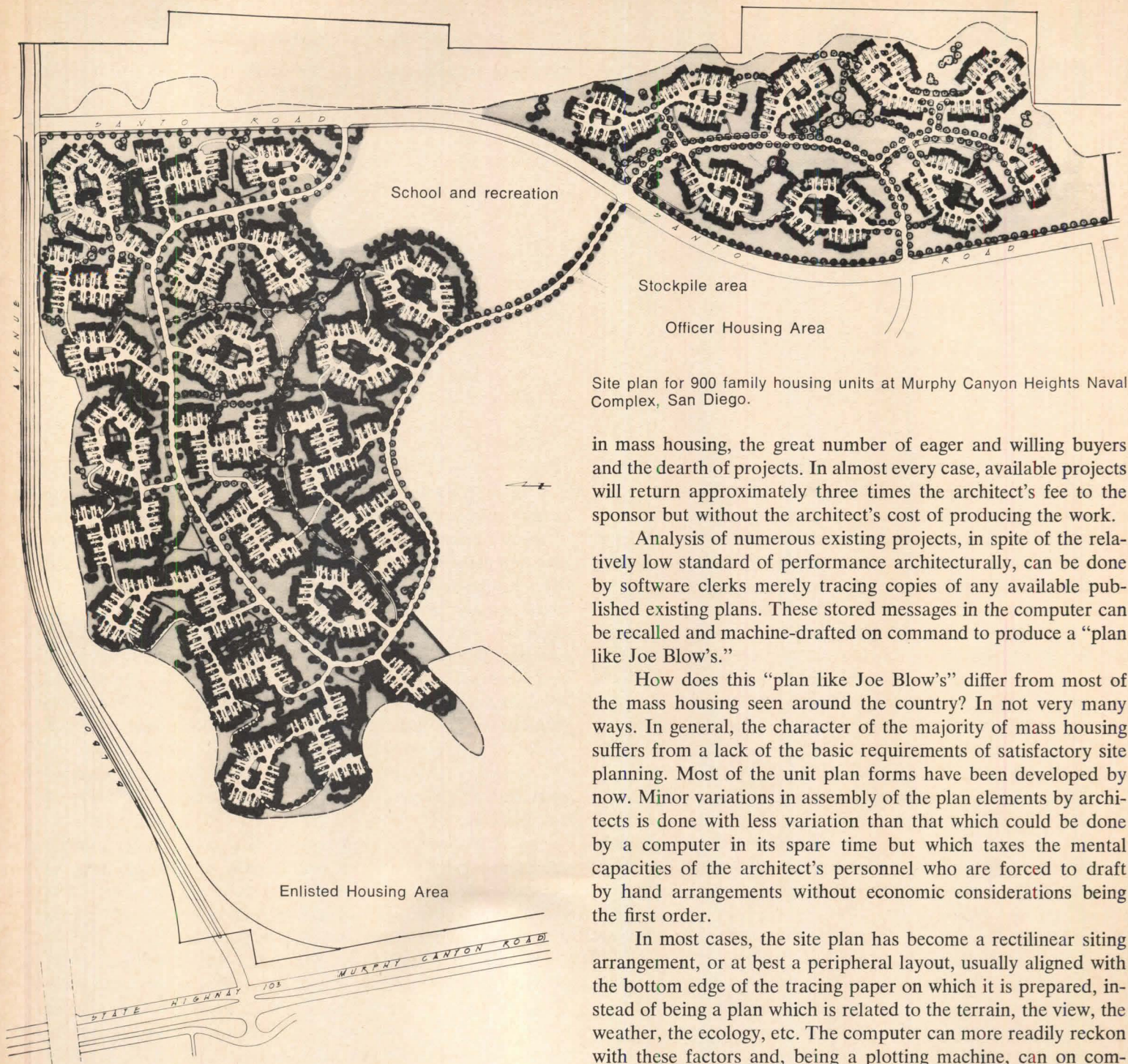
"carrot" treatment about future work, one should remember that the "stick" is always in the background and that it is best to let the later jobs take care of themselves.

Where the client is a nonprofit organization with a whole series of projects, we have found also that there is great experience in negotiating fees and no lack of hesitancy in suggesting that there will be much future work with great prestige for the architect. These attributes are translated by the client as being exchangeable for a lower fee right now. The sad fact, attested to by innumerable architects, is that many times the client's entire investment is the fee which the client *owes* the architect. Since land options are usually secured for little money, the architect's work is generally what is needed to demonstrate the feasibility of the project. If abandoned under the conditions indicated above, there is little recourse for the architect except a lawsuit to recover his fee.

Perhaps we have been excessively exposed to developers in the worst sense, but we have come to find that nothing improves the character of a client more than having *his own* money invested in our work via the initial retainer before we do anything except talk to him about our qualifications.

These qualifications are the same as those required of any professional who is a specialist in any field or of an architect who is a specialist in a certain direction, such as educational buildings, hospital work or shopping centers. In many cases, the professional knows more about his client's business than the client does. This does not mean that he can teach or operate or sell goods. It does signify that the architect must know all of the things which cause his client to arrive at his decisions: why, how and how much and what kind of return is expected for a dollar of expenditure in any of many categories of capital expense, maintenance, operations, social services, resale and return to investors, including tax shelter situations—and not excluding what the architect's fee should be.

By our interpretation and as we have previously stated, economics means an understanding of all of the factors by which the client can determine whether his project is feasible. It is an understanding of the relative value of the land and of the construction and of all the pertinent fees, together with the cost of financing the construction during the interim stage as well as the amounts necessary to satisfy the debt service, operation, maintenance and administration so that a profit will be returned to the investor. It is an understanding also of how each of these items affects the



Site plan for 900 family housing units at Murphy Canyon Heights Naval Complex, San Diego.

in mass housing, the great number of eager and willing buyers and the dearth of projects. In almost every case, available projects will return approximately three times the architect's fee to the sponsor but without the architect's cost of producing the work.

Analysis of numerous existing projects, in spite of the relatively low standard of performance architecturally, can be done by software clerks merely tracing copies of any available published existing plans. These stored messages in the computer can be recalled and machine-drafted on command to produce a "plan like Joe Blow's."

How does this "plan like Joe Blow's" differ from most of the mass housing seen around the country? In not very many ways. In general, the character of the majority of mass housing suffers from a lack of the basic requirements of satisfactory site planning. Most of the unit plan forms have been developed by now. Minor variations in assembly of the plan elements by architects is done with less variation than that which could be done by a computer in its spare time but which taxes the mental capacities of the architect's personnel who are forced to draft by hand arrangements without economic considerations being the first order.

In most cases, the site plan has become a rectilinear siting arrangement, or at best a peripheral layout, usually aligned with the bottom edge of the tracing paper on which it is prepared, instead of being a plan which is related to the terrain, the view, the weather, the ecology, etc. The computer can more readily reckon with these factors and, being a plotting machine, can on command define the boundaries, delineate the contours, establish the setbacks and align the buildings from a data bank to adjust to the terrain, even if no two buildings line up with each other.

The machine plots on an x-x-y-y axis basis and automatically determines all points of location by the coordinate method, just as the engineer in the field does. It computes all of the earthwork while plotting the site plan. It measures the quantities of roads, parking, paving and walks as these items are being created by the designer with a light stylus on a display screen. This light stylus is used also to correct lines or design in preparation for a final phase. In addition, the computer delineates each subtrade on a separate drawing if necessary, meanwhile storing in its

**Mr. Abrams** heads his own Sunnyvale, California, firm which specializes in architecture and site planning and the economics of both. His article on "A 'Design System' That Produces Contract Drawings" appeared in the *AIA JOURNAL* for March 1970.

rent so that rents may be compared with what may be achieved in the market, which is a true test of feasibility of the project.

The architect should know which program and situation to recommend to his client when his client knows only that he wants to do something, but not what. Unless the architect knows the objectives of his clients on a financial level, neither he nor they can be sure that the architectural solution will satisfy the requirements of the problem. Because each client's problems are different, it is impossible to generalize about the solution to any specific one, except to state categorically that unless architects learn the economics of architecture, there will be package developers and aerospace contractors who will believe that the architectural part is simple and who will crank into their computers all of the possible parameters and have canned answers for ready resale.

Lest this appear to be in the dim future, it is only necessary to realize the tremendous leverage which exists for the sponsor

prodigious memory previous schemes which can be recalled for meshing if desired.

This mechanical monster (to architects) will draw the buildings in detail, write the specifications, compute the heating and cooling with respect to the locations it has established for the buildings, and not only make the final drawings but also produce itemized material takeoffs at the same time, while checking the plans automatically for interferences between systems. Sounds impossible? It is here now and is being done by one hotel chain, with its own architect rendering such advice as may be necessary.

Every aerospace supplier has access to programmers and equipment already either paid for or in reserve, requiring neither learning nor understanding of the problems which the architect thinks he has in design, nor caring in the least. The solutions are arrived at by solving mechanically the economics which is constantly being compared with the graphics. Both are being conformed on a continuous basis toward a better solution. In this way, a 100-unit project can be conceived, bid and let in less than two weeks, all without the need of the services of any architect whatsoever.

The fact that the buyer does not pay the architect's fee matters not one iota to him; neither does the fact that his overall cost is the same as though he did hire an architect. The differences are buried in the programming, readouts and additional costs for administration. The reason he does not care is that he gets more than he did from his architect in about one-twentieth of the time and has confidence in the result both economically and constructionally. He already knows that it is all right architecturally, for he has copied all the best plans he could find. And moreover, the machine-produced siting is apt to be better than hand-produced siting. The Department of Housing and Urban Development's Operation Breakthrough is not too far from this either, insofar as concept is concerned.

Unhappily for this sad tale, the architect who obtains a commission to produce mass housing does all of the same things. He sites, assembles, makes rough takeoffs and attempts to estimate the costs; but he does not have, nor will he ever be likely to have, these electronic tools at his command as leftover equipment and personnel from some more majestic endeavor. He has

only two choices: either fight them or join them. As for joining them, who needs him, except in the most perfunctory way? He knows less and cannot remember as well as the computer; so in this market, unless he fights, he is doomed eventually to oblivion as a mere appendix on the housing body.

In order to fight, the architect requires first to understand the problem of his client. Even the computer must be given directions. The architect's forte is that he can symbolize the client's architectural aspirations into a design idiom more accurately, more reliably and more flexibly than a nontrained programmer, *if he has the other requirements.*

The architect must learn economics at whatever cost. He must become a superior site planner. He must learn to be a negotiator for his client, resolving conflicts between different federal, state, county and local agencies and determining what is paramount while keeping other matters subservient. He must be flexible enough to adapt his design to fit all of the impinging criteria while still satisfying his client's basic needs. He must learn to work in close coordination with other professionals and especially with other architects. As Benjamin Franklin remarked, "If we don't hang together, we shall all hang separately."

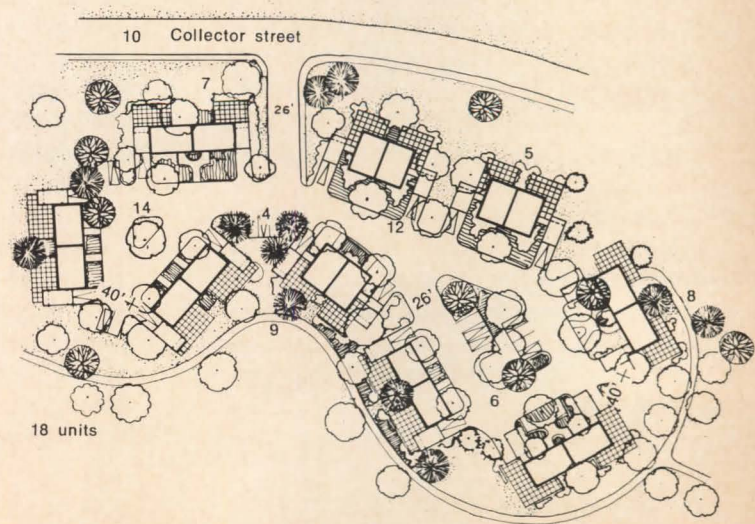
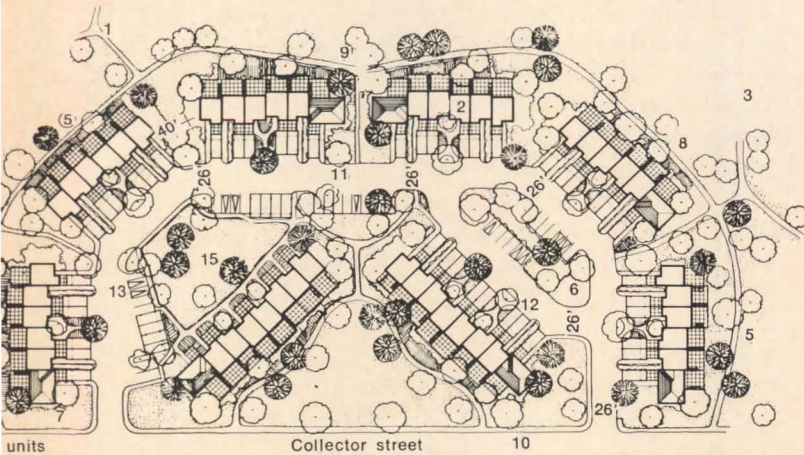
Finally, he must move his methods of work into the 20th century by new techniques, systems and machines for production of his documents. The aerospace competition can afford to pay the computer-oriented architectural graduate better than twice as much as an architect can, and there he will never be called upon to do manually in a week what a computer can do in less than an hour.

Just think how easy it will be for the machine when we all go to metric system measuring. It will be a cinch for it and a madhouse for us. We no longer have time for every man in the office to reinvent the wheel on every sheet of paper on a daily basis.

The day of the artistic craftsman, creating his architectural masterpiece at a leisurely pace for a generous fee, is long gone, especially in mass housing. To survive, architects must wear many hats: businessman, economist, construction consultant, designer and site planner. Unless he does, concern will never replace competency, either by man or machine. □

The two cluster concepts shown below are from a site planning study, with Abrams as architect and Ken F. Mitchell as land planning consultant and landscape architect, for the Department of Defense (Sigmund I. Gerber, director, Family Housing Standards and Design).

- 1 Walks within open space provide access to school with a minimum of street crossings
- 2 Staggered units relieve row house monotony
- 3 Placement of playgrounds, active recreational areas and connecting walk patterns are designed to invite friendliness and compatibility
- 4 Guest parking islands and bays are unobtrusive to placement and screen landscaping
- 5 Planting screens, walls or fences contribute to individual privacy
- 6 Landscaped island can be contoured to enhance visual appeal
- 7 Patios are buffered with adequate structural or shrub screening
- 8 Landscaping of individual patios are simply designed to relate to overall landscape treatment
- 9 Clusters interrelate to tie into a continuous network of open space
- 10 Interior collector street links off-site circulation network to interior building clusters
- 11 Interior loop street removes turnaround problem
- 12 Varied landscape treatment within the cluster enhances individuality
- 13 Guest parking is convenient to living units served
- 14 Introduction of planted island in auto court relieves "compound" appearance
- 15 Interior entry court is accomplished by staggering cluster units away from auto court alignment



# ST. FRANCIS SQUARE: ATTITUDES OF ITS RESIDENTS

by CLARE COOPER

**Do the basic design decisions made by architects of housing developments actually coincide with user needs? An attempt was made to find an answer in a two-phase study initiated in 1967 by Clare Cooper and Phyllis Hackett under grants from the US Public Health Service and the Farrard Fund of the Department of Landscape Architecture, University of California, Berkeley. They investigated in depth two moderate income housing projects in San Francisco, one of them being St. Francis Square. The first part of the study was an analysis to determine why and when design decisions are made; the second comprised interviews with the residents. The results of the questioning of dwellers at St. Francis Square are reported here by one of the researchers.**

San Francisco's St. Francis Square is a moderate income housing development which was financed under Section 221(d)(3) of the US Housing Code and sponsored by the International Longshore Workers Union and the Pacific Maritime Association Pension Fund. The 299 garden apartments are the design of San Francisco architects Marquis & Stoller with Lawrence Halprin & Associates as landscape consultants.

The three-story buildings, containing mostly two- and three-bedroom apartments, are grouped around three interior landscaped courts. Two streets, Buchanan and O'Farrell, were closed to form a superblock with peripheral parking. Completed in 1964, the development is run as a tenant-owned cooperative with a full-time resident manager and a board of directors elected by the occupants.

Perhaps the most eloquent evidence for the success of St. Francis Square is the fact that most of the residents have lived there for four years or longer and that there is a waiting list of several hundred families who want to move in. An interview survey conducted with a randomly selected sample of 123 families (out of a total of 299) suggests some of the reasons for the success of this particular environment. Asked why they had initially moved to the Square, most residents mentioned the reasonable monthly payments and the opportunity to buy their own apartments. Many referred also to its proximity to downtown and to the fact that the development is racially integrated. Interestingly enough, almost two-thirds of the families were paying less rent before moving to the Square, indicating that their economic reason for changing residence relates to good value for money rather than cheap rent.

After living in the Square for a while, residents found its

chief advantage to be its quality as a place for raising children. Not only are children welcomed (as they are in only one-third of San Francisco rental units), but the environment enables them to play, explore, visit friends and walk to school in complete safety. Observations indicate that the children are by far the chief users of the open spaces, that they never stay long in one place and that use of specific play equipment rarely takes up more than 10 percent of their time spent outdoors. Like all children, they play anywhere and everywhere and not just where the designers indicated "playground" on the plan. St. Francis Square is an environment which allows this to happen safely and with minimal intrusion on adult privacy.

A chief objective of the project was to provide an attractive living environment for middle income families in the city as an antidote to the drift to the suburbs. Although one-fourth of the residents have plans to move to a single-family house, the remainder are pleased to have found a green and quiet spot in the city and intend to stay.

In order to provide quality landscaping and attractive street furniture, the designers deliberately skimmed on the budget for the interiors of the apartments. Seventy percent of the residents rate the landscaping as "very important" when asked to evaluate such features as rent, location, convenience, landscaping, etc. They are especially pleased to have a green and attractive view from their living rooms. More than 90 percent of the residents think that the way the outdoor areas look makes a real difference in how they feel about the place. When asked which they would have preferred, given the option at the design stage, trees or a larger living room, trees or a larger kitchen, etc., more than 60 percent opted for trees.

Both in landscaping and in the construction of the dwellings, the materials chosen by the designers were selected with the knowledge that this was a development in which residents were purchasing their homes. They argued that people who were buying rather than renting would be more careful of their environment and would teach their children to appreciate it too. Therefore, they could afford to use slightly less hardy construction materials and finishes than would be true in a straight rental

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**Miss Cooper** is assistant professor of environmental behavior in the College of Environmental Design, University of California, Berkeley. Her book *Easter Hill Village*, concerned with resident reactions to the design of a public housing project in Richmond, California, will be published by the Free Press next year.



development. The assumptions apparently proved to be correct, and the Square is notable for its excellent upkeep. More than two-thirds of the residents believe this is due to their vested interest and pride in the surroundings.

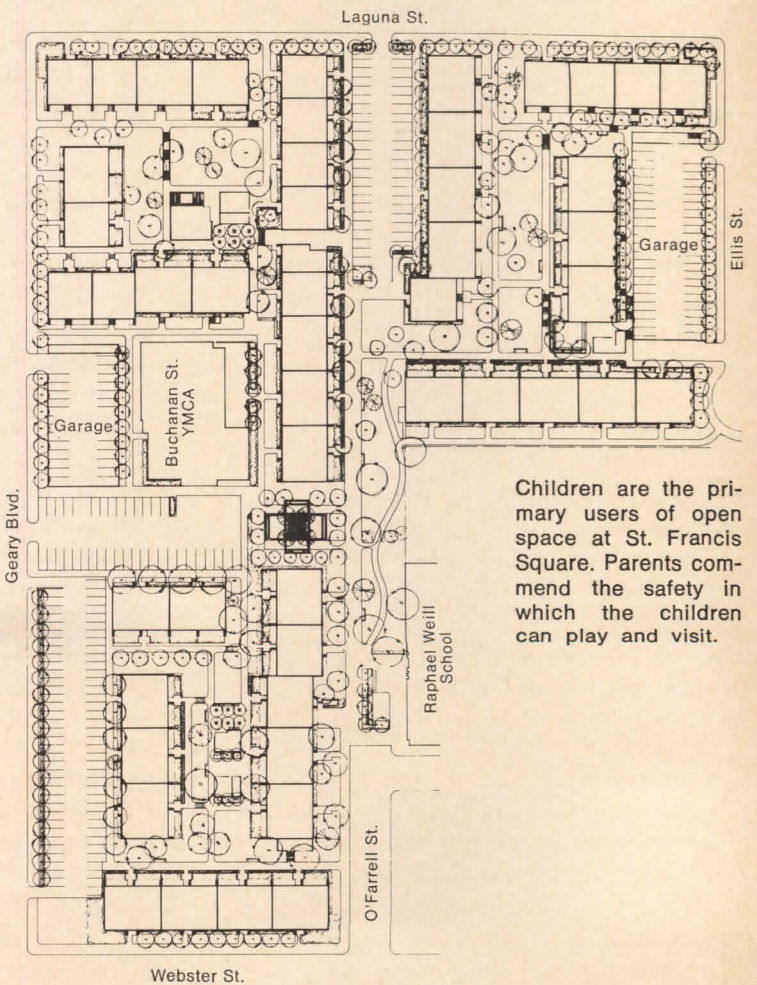
In terms of a social environment, St. Francis Square is viewed by almost everyone living there as a friendly place. Many residents initially met on the stairs, in hallways, at mailboxes and on pathways. As the designers had hoped, these spaces were indeed conducive to casual encounters.

The cooperative nature of the community starts with the stairway group. Aggregates of six apartments are arranged around a three-story stairway, each with its own back and front door, fire escape and mailbox. This is the primary social group beyond the family itself; one of its members is selected to represent the others at co-op meetings. Many residents reported that they get together with other families to decorate, paint or clean their shared hallway and access areas.

Proximity can also lead to friction, and some families complain of litter dropped on stairs and of bicycles left blocking the way. But by and large, neighborliness predominates among the six families on each stairway. More than three-fourths know all five other families well enough to call upon them in an emergency. Just over a half know at least one family well enough to invite to a party or to ask a favor such as babysitting. As a whole, the Square is characterized by an intense web of visiting and socializing. The number who know no one well enough to visit is only 2 percent, whereas those who know five or more families is 60 percent. Undoubtedly the layout, including the closing of through-streets to create a superblock, has had considerable effect on day-to-day living patterns. People feel that the arrangement encourages walking and casual encounters and at the same time discourages large numbers of strangers from wandering about.

Parking in peripheral lots necessitates a fair amount of walking back and forth to the apartments. It is evident, however, that the attractive landscaping, quiet atmosphere and pleasant views encourage people to walk around for pleasure, to stroll rather than just to walk purposefully to the parking lot or garbage shed. In the morning hours, mothers are there with young children, and older people stroll with dogs; on summer evenings, older children and working adults are the frequent users.

The central sitting plaza was conceived of as the place where residents would gather to chat and meet each other, but



Children are the primary users of open space at St. Francis Square. Parents commend the safety in which the children can play and visit.

less than 10 percent use it. Perhaps this is because the plaza is not particularly attractive (bounded on two sides by the blank end walls of buildings) and is often exposed and windy. Most people sit in one of the three interior squares, half of them in squares other than the one they live in. This is further evidence that residents use the entire site and feel comfortable in areas that would not be thought of perhaps as "home territory."

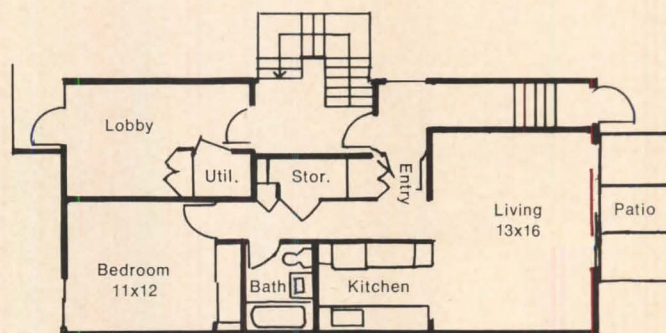
Residents were asked to indicate on the site plan those areas where they felt that they "belonged." Two-fifths of them indicated the whole of St. Francis Square, or the great majority of it. About a third felt that they belonged only in their particular square within the development, and a fourth saw themselves as belonging only in their own apartment or the building in which it is located. Most of the latter group were non-English speaking who did not yet feel enough at home to venture outdoors a great deal.

Just over half the residents can name areas where they do not feel comfortable. These tend to be places where strangers come into the Square such as the entrance of the YMCA building and the sidewalks which bound the site. Ironically, the YMCA was incorporated into the original plan in order to encourage people from outside to come in and use it, affording a link between the Square and the wider community of the Western Addition. Most of the residents, however, resent the intrusion of strangers into their territory.

The peripheral sidewalks are avoided at night because of the high frequency of crime in this part of the city. But inside the Square itself, people evidently are not so concerned about crime. About half said that they walk through the outdoor areas

at night. About two-thirds of the residents thought that if a person were attacked at night and called out for help they would be heard (or seen) by neighbors who would come to the rescue. Some added that this in fact had happened on a number of occasions.

Jane Jacob's observations in *The Death and Life of Great American Cities*, about "eyes on the street" and the fact that frequent pedestrian encounters help to create a sense of community and mutual trust, are more accurate than many of her critics have recognized. Surveyed in a parallel study, residents of Geneva Towers—comprised of two 20-story slab buildings—were asked where they felt that they "belonged." Three-fifths of them responded "in my apartment," and most of the rest replied, "nowhere." When they were asked if people would come out to



One bedroom: 550 square feet

## THE ARCHITECT'S RESPONSE TO THE STUDY

by ROBERT B. MARQUIS, FAIA

Post-design evaluation by architects has been largely nonexistent or, at best, haphazard. We seldom study other people's buildings in depth and usually visit our own only when a leak or some other malfunction develops. Even when architects undertake such evaluation, they are poorly equipped to do so, lacking time, objectivity and proper techniques.

When architects are confronted with the design of a new building, they visit similar structures and interview employees and future users. With this superficial information, hard work, talent and intuition (thank God for intuition), they are able, sometimes, to design a good project.

Often the architect thumbs through past issues of architectural magazines or books without ever leaving his office as he seeks information on a particular building type. These references, in general, deal with the technical and functional aspects of design, i.e., how to plan libraries, how to arrange seats, how to allow for projection equipment in an auditorium. There is very little "hard" material on users' attitudes. How does it feel to be in the

building? How often does one go there if he has a choice?

Thus most of our design attention is focussed on the functional and the esthetic. Yet in the final analysis, our buildings must be designed for the real client: the student, the children, the resident, the prisoner, the patient, *the user*. This is why, in my opinion, the long talked about but relatively recent work being done in user need studies is of such value to architects.

Clare Cooper and her associates at the University of California have produced two studies that should have a major influence on the design of moderate and low cost housing developments. The first part of the study, *Analysis of the Design Process at Two Moderate Income Housing Developments*, was issued in 1968 and is obtainable from the Institute for Urban and Regional Development, University of California, Berkeley, California 94720. When Claude Stoller, FAIA, and I started the design work on St. Francis Square over 10 years ago, there was very little information available. We interviewed potential residents, talked to realtors, neighborhood people and redevelopment officials and tried to draw conclusions from similar projects, although we found hardly any that were comparable socially, geographically (in the heart of the city) or economically. We worked largely in the dark and by intuition.

The resulting project, St. Francis Square Cooperative Apartments, fortunately turned out to be a tremendously successful one. It has now been in use since 1963, has received major awards for design and has been published internationally. It is shown to visiting dignitaries and has been used as an example of how moderate and low cost housing should look and work.

The project was sold out in six months prior to completion and has had a waiting list since its inception. It is racially, economically and socially integrated. In short, it is a successful community.

Today there are under construction and on the drawing boards in San Francisco alone 2,000 units of what Justin Herman, then director of Redevelopment, called "St. Francis Square-like units." I would not wish to hazard a guess as to how many are being planned throughout the country. And yet, how many architects designing such housing have studied this successful project in depth? How many know of Clare Cooper's two studies?

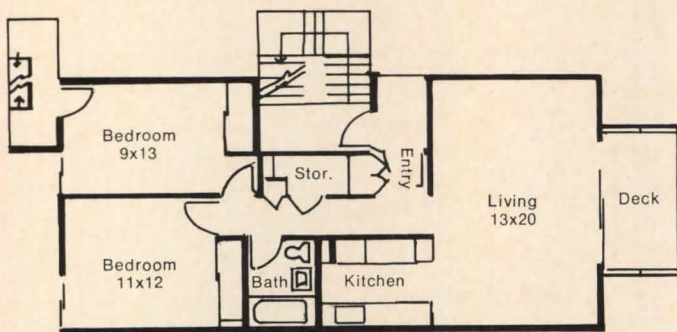
In my opinion, the most important lesson to be drawn from our St. Francis Square experience was our deliberate early decision to invest a large portion of our effort in the total environment rather than in the individual units or buildings. This proved to be, as Clare Cooper's study shows, our most valid assumption. We were constrained by an extremely

help if someone were attacked in the outdoor areas, more than 80 percent replied with an emphatic "no."

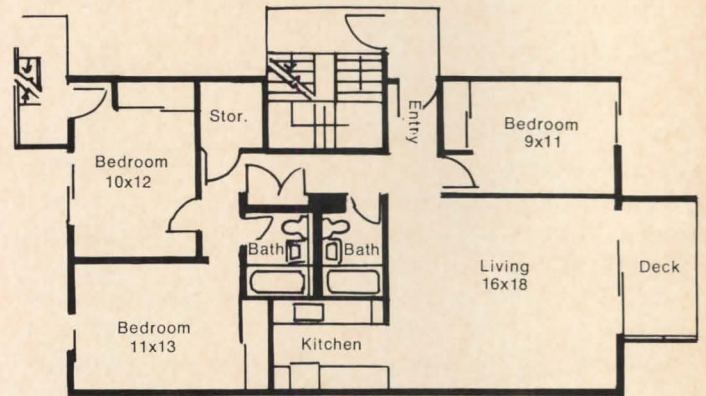
At St. Francis Square, three kinds of facilities are provided communally: parking, garbage and trash areas and laundries. In the original design, garbage sheds with collection cans for six families were provided outside the back door of each building, and there was a communal trash area in the center or at the end of each square. In the two squares where the trash areas were placed in full view of all apartments, they proved to be an eyesore and were relocated against the end walls of buildings by a work team of residents. Many of the garbage sheds at the back doors were similarly relocated because the smells annoyed residents with adjacent patios or balconies. The sheds were relocated in service areas in the corner of each square adjacent to the

laundry room and maintenance store. This move means that some residents have to walk farther, some 350 feet. Far from being a hardship, some residents view this as an opportunity to get out of the apartment, to wander through the square and to see what's going on.

Communal laundries were provided so that space in the kitchens could be reduced, more total units afforded and construction costs reduced. The designers felt, too, that the laundries might be a place where women could meet with each other. Assuming that mothers might bring young children with them, a play area was provided outside the laundry room in one of the squares. The use of the laundries for socializing has not materialized. Relatively few residents report meeting people through conversations in the laundry, and only a fifth say that they stay



Two bedroom: 840 square feet



Three bedroom: 1,050 square feet

limited budget, and every design decision had to be weighed on a scale of benefits; when these favored the total environment and the residents as a whole opposed to the individual unit, we followed this direction.

Individual "architectural" features were de-emphasized. Massing of buildings, spaces between units, outside spaces enclosed by units and movement through the project all became paramount. Split level plans and other complex arrangements were rejected in favor of simple units: three stories high, six units to a central stairwell (three on each side) with these linked into buildings and arranged as subcommunities of approximately 100 units around and facing into a central space. Pitched roofs and complicated fenestration were abandoned; much money and effort were spent on decks, terraces, landscaping, walks, fences and graphics.

Some of these choices, deliberately made, have come back to haunt us, such as insufficient storage space, the small size of units and, most important, the lack of dining space in the kitchen. On balance, however, the design decisions and the priorities we assigned to them proved to be correct.

The sponsor's chief interest was to produce a project that would demonstrate that redevelopment, which at that point in time was called "Negro removal" by its critics, could be used to provide moderate cost housing.

Up to then, it had only resulted in expensive highrise units. There can be no doubt that we succeeded in this objective as the entire housing element of the subsequent redevelopment in San Francisco's Western Addition Two and Hunters Point is devoted to moderate and low cost housing with garden-type units.

In fact, there are many who credit or blame, depending upon their politics, St. Francis Square with saving redevelopment in the city, stating that if this example had not been produced, further redevelopment would have been stopped at the polls.

The sponsor's other objective was to combat the trend of middle income families moving from the cities. How successful we have been in achieving this objective is put in some doubt by the study, but it cannot be questioned that this desire led us to some interesting and valid design decisions. In order to design a project that would retain some of the advantages of suburban living in the central city, we made important decisions about density, traffic and the relationship of the individual units to the project.

We decided that the most economic way to take care of the required cars (one per unit) was in parking lots and to place these generally on the periphery of the project. Recognizing that people would be forced to walk some distance to their units, sometimes in the rain, we decided that the advantages far out-

weighed the disadvantages. They were economy of construction, reduced height for the three-story walkup apartments, parking lots that could act as buffers on busy streets and, most important of all, the elimination of the need for vehicular traffic into and through the project.

Thus we were able to have the through-streets vacated. The vacated streets made it possible to develop a superb block with three blocks of housing and the school in the fourth one. Children could play and ride their bicycles without ever crossing a street; walks, sitting areas and a variety of spatial experiences could be linked together; and the three blocks of housing could be knitted more easily into one community.

In order to strengthen this concept, units were mostly designed to face into the blocks. Each central stair also opens into the central spaces, the density having been determined by the three-story limitation.

Clare Cooper's study of resident attitudes shows how well these design decisions worked; it also points out where they failed. I do not wish to present such studies as a panacea. They cannot be fed into a computer to get a successful design. There is no substitute for talent or intuition. If properly used by the architect, however, such studies provide a valuable tool to evaluate past successes and, more important, past failures. □

there while the clothes are in the washer or dryer. The majority of children who use the play area come there on their own.

A communal feature which was not provided due to the limited budget was an office or meeting room, and a converted ground level apartment has been used for these purposes. The architects are currently designing new office and meeting facilities to be located on one of the Geary Boulevard parking lots.

Unlike most multifamily housing developments where residents like their apartments but complain about the design and maintenance of the outdoor areas, the reverse is true at St. Francis Square. Very few residents have any adverse reactions to the site planning; only 2 percent mentioned poor play facilities and only 1 percent complained about parking or maintenance. But when asked what they would warn prospective residents about, most place "problems with the apartment" at the top of the list.

One of the biggest problems revolves around the activities of cooking and eating. The kitchens are rated by the majority of the residents as too small, even though they find the actual arrangement of facilities to be convenient. In one-bedroom apartments, the kitchens are 8 feet 11½ inches by 7 feet 7½ inches; in the two- and three-bedroom apartments, they are 9 feet 2½ inches by 7 feet 7½ inches. The problem is compounded by the

feet in the two-bedroom and 16x18 feet in the three-bedroom apartments) do not seem to vary with the real needs of the families accommodated. One cannot necessarily agree that a family of four requires four times as much living room space as a family of one, but it does seem that they would want more than the 1.4 to 1 ratio indicated here. About a third of the residents think that their living room is too small, especially since it has to double as a dining room. Those with complaints are mostly larger families where the living room accommodates a variety of activities simultaneously, such as playing, studying, watching TV, serving dinner, etc.

In four-fifths of the households there is at least one person who has to study at home. Some use the bedrooms, some the living room and in households where two or more have to study, both of these rooms are used. In just under a tenth of the apartments, one of the bedrooms has been converted into a study.

Another problem is lack of space for hobbies. Some believe that the lack of a garage is the chief difficulty; others mention that poor soundproofing inhibits the playing of musical instruments and stereos. Not having a garden or yard is a problem for those with green thumbs.

Lack of storage space is another difficulty encountered in



To provide an attractive environment in the city, designers of St. Francis Square had to skimp on interiors. Residents like the green view from the living rooms, and more than 90 percent of them say that the outdoor areas make a tremendous difference in their feeling about the place.

fact that no dining area is provided in either kitchen or living room. In most households, the dining table is placed in that part of the living room which is closest to the kitchen. There are pre-school children in a third of the families, and the carpeting causes problems with spilt food which is difficult to clean up. When asked what extra room they would choose to have added to the apartment if this were possible, the first choice is for a dining room. The architects wanted to provide a dining area in the kitchen, but 10 years ago the Federal Housing Authority worked on a "room point count" system and would not allow (count) such space toward mortgage maximum.

Living room sizes (13x16 feet in the one-bedroom, 13x20

apartment living, especially for bulky items which in a single-family house are often kept in the basement or garage. There are no dead storage lockers or other spaces for keeping trunks, suitcases, skis or other rarely used things. Despite a fairly generous supply of closet space, cleaning items such as brooms, mops, vacuum cleaners, pails, etc., are frequently kept on the balcony or on the patio. About a half of the families at the square own one or more bicycles. Because there is no lockable storage space and there is the possibility of unattached bicycles being stolen, these too must be kept inside the apartment or on the patio or on the balcony.

Although residents regard the balconies as important out-

door space, a tenth have enclosed them with glass paneling and sliding doors to enlarge their living rooms by this much space. Although not specifically designed to be modified in this way, the shape and design of the balcony fortuitously allows this remodeling at no great expense. For most people, however, the balcony or patio is much too valuable a space to be enclosed. Most feel that these open spaces are private enough for their needs. In order of importance, the chief uses are: sitting outside; gardening and raising plants, barbecuing, doing small domestic repair jobs, building or repainting furniture, having parties and keeping children in. Even if rarely used for any specific activity, most people believe that this semiprivate outdoor space makes the apartment "seem bigger," enabling them to wander out for a little fresh air or to call out to children below or to watch some activity in the square. These spaces form pleasant halfway points between completely private and completely public space and thus become psychological bridging points between the two.

As well as functioning as bridges, the patios and balconies are also barriers that separate the private interior from the public open space. The existence and clarity of this separation is a crucial element in the success of multifamily housing, providing not only a degree of visual and aural privacy but also (at ground



Interiors are attractive, but there is no dining room. Most people would choose one if they could make an addition to their homes.

level) making burglaries a more hazardous undertaking. In row house public projects such as Easter Hill Village in Richmond, California, and Hunters View in San Francisco, where no fenced yards or patios separate the fronts of dwellings from completely public space, breaking and entering via ground floor windows is a fairly common occurrence.

More than two-thirds of the residents of St. Francis Square said that they would not trade in their balcony or patio for extra interior space, such as a larger living room or more storage space. The only features for which more than a few people would have traded the balcony/patio were space for a washing machine, private garage, separate dining room and a larger kitchen.

In view of the fact that the construction costs of St. Francis Square were only \$11.50 per square foot (in July 1962) and that relatively low cost materials were used, it is hardly surprising that two-thirds of the residents report hearing sounds from neighboring apartments and from the public halls and stairways. Most do not feel that this is any great problem, however, and consider that some noise is inevitable in apartment buildings. Some feel that a low degree of sound from next door or upstairs is actually pleasant. Those who are bothered tend to be older and without children. Few people mentioned being bothered by traffic noises, despite the fact that most of the bedrooms face onto busy streets.

In terms of outside noise other than traffic, the chief problems seem to arise from older children at play, groups of teenagers singing or shouting at night and dances and band practice at the YMCA building. Almost everyone reports hearing young children and toddlers playing in the squares in the daytime, but very few find this bothersome. In fact, when asked if there were any sounds that they rather enjoyed hearing, residents cite children playing as the most important; others include music, people, parties, fire engines, lawn sprinklers, dogs, rain and crickets.

The decision to provide a variety of apartment sizes at St. Francis Square is an important determinant in accommodating a population that varies in family size and in the life cycle's stage from young single adults to elderly couples. People can move within the development as their space needs change. About a tenth have moved since coming to the Square, most of them in order to have more bedrooms and some to be in different locations. The fact that there is a variety of outlooks and sizes and locations gives the residents a freedom of choice as their needs change. The decision to move within the development rather than elsewhere not only relates to equity in their property but is also an indication of satisfaction with the living environment.

Residents include many who were attracted to the development by the socializing or community-based activities and by the heterogeneous nature of the population. At the time of the survey, over two-fifths were racial or ethnic minorities (28 percent black, 15 percent Oriental and 1 percent Mexican-American.) Only half of the families were "standard" nuclear ones: 21 percent were single-parent families, 10 percent were childless couples and 11 percent were nonmarried adult households. To live at the Square residents have to conform with government regulations for housing financed under section 221(d)(3) of the Housing Code. A family of four cannot earn more than \$9,200 gross. The occupation range of employed residents suggests that this does not necessarily result in a narrow homogeneous group. One-third of the male household heads, for example, are in managerial positions and about a tenth each in professional, clerical or sales jobs; just under a tenth are laborers, factory operatives and private household workers.

In designing an environment which combines the esthetic advantages of suburban living with the convenience of an inner city location, the creators of St. Francis Square seem to have hit the spot with the present residents. It is a success because its residents are part owners and because it provides a total environment which is pleasing and functional. Undoubtedly one of the key decisions was to concentrate more energy and money on the site plan and landscaping rather than on apartment interiors and to create an environment that is both safe and interesting for children. Recent evidence of its social and economic viability is the announcement that the St. Francis Square Co-op is considering becoming the sponsor of a new housing development for moderate income families in the Mission Redevelopment Area of San Francisco. □

# TECHNOLOGICAL ASPECTS: TIME FOR A REDIRECTION

by RUDARD A. JONES, AIA

**In predicting user needs and planning our activities for the betterment of human life and particularly human habitation, architects not only have to look for new tools but also ways by which to improve the utilization of those already on hand.**

As architects we have been concerned recently with the importance of user needs as a basis for housing design. Perhaps our interest has stemmed from a growing knowledge of the sociological and psychological impacts of inadequate housing and from a realization that our efforts have been insufficient in this area. No one will deny the significance of such a point of view; on the other hand, we would be equally at fault if we were to lean so far toward consideration of user needs as to forget some of the technological aspects.

As used here, design means the term in its entire process. In addition to including the arrangement of space and other considerations, it involves the selection of materials, components and systems on the basis of their performance for a specified use and level of criteria.

Technology is essential in the design process in two ways: to translate the user's needs into measurable requirements and to provide the answer for the requirements delineated. For example, the user need may be that the housing unit must be comfortable. First, we must have measurable qualities which determine comfort, i.e., air and surface temperatures, humidity, air movement, etc., and accepted limits for these elements. Second, we need the technological know-how to produce these specified conditions.

The same thinking process can be applied to most user needs as follows: 1) determine the needs in general terms; 2) establish the specific criteria; 3) determine the means of measurement; 4) establish the limits which must be applied to the particular problem; 5) devise the specific design solution.

Not all user needs are readily translatable into measurable criteria in technological terms, but a number of the major considerations can be, and these are important to the completion of an adequate design job. In the final analysis, the selection of the building element will be a choice on the part of the designer between how well the performance objectives are accomplished and the cost of achieving those objectives. In this respect the designer will usually have to make a choice between one design solution

and another on the basis of long-term project cost. The time span may be varied. Most likely one might consider the pertinent period for the single-family house as the life of the mortgage, say, 25 to 30 years, while most multifamily units would have a longer life expectancy.

An exploration of selected aspects will indicate technology's importance as a basis for design.

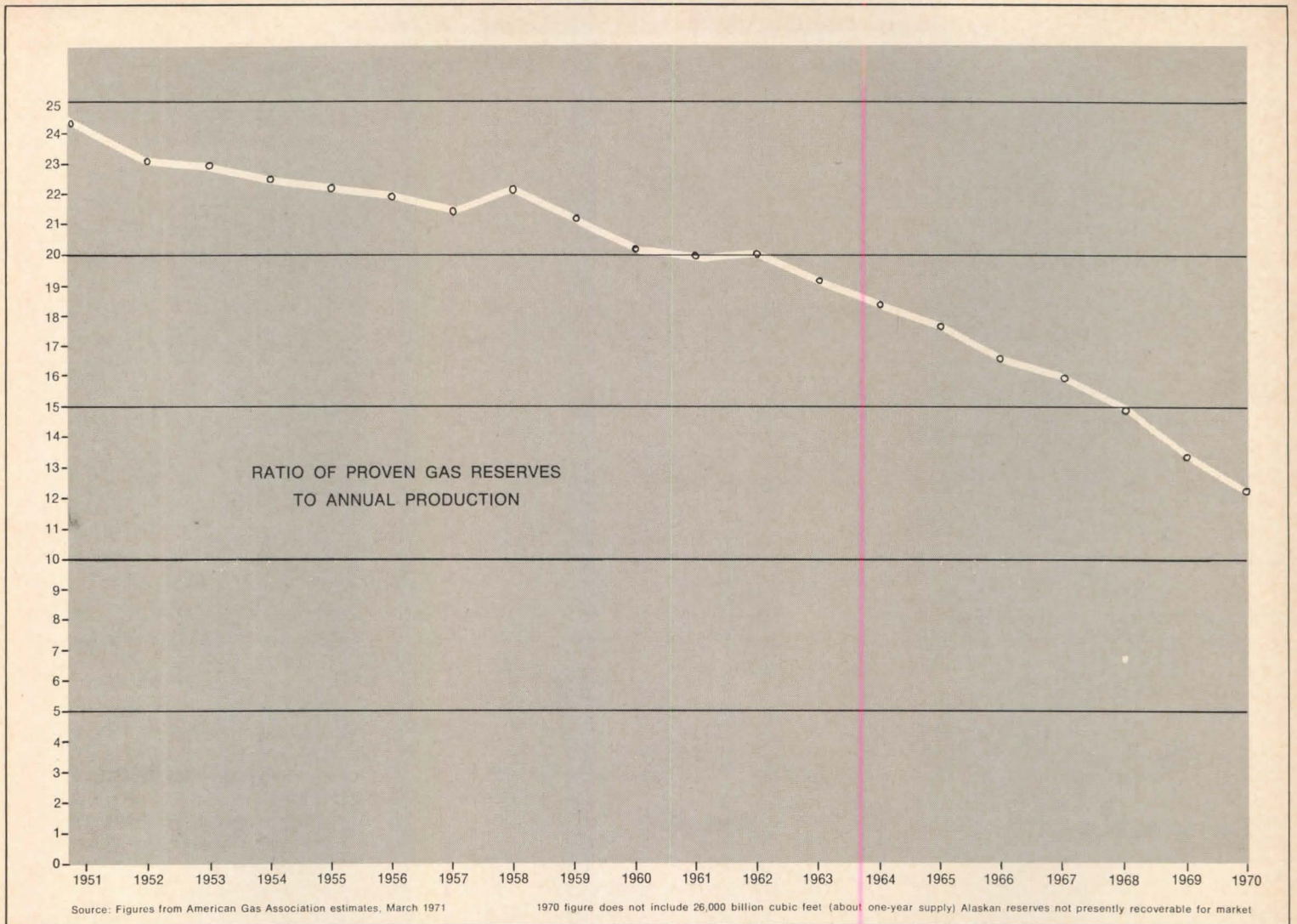
*Energy Conservation:* Housing design will be increasingly affected by the approaching energy crisis. In the past years we have heard some spokesmen proclaim an immediate and drastic shortage of energy sources. Typically, when these predictions did not come to pass, the public was inclined to discount them completely rather than to consider the reasons for the alarms. At the present time, however, evidence is accumulating which indicates an acceleration of the severity of the problem.

Apparently we have reached the point where new discoveries of oil and gas fields have fallen behind the rate of use of these sources of energy. This is particularly true in this country. The seriousness of the coming situation can be realized when we consider that we seek to double the amount of building space in the United States by the year 2000 and that more than half of the energy consumed by commercial and residential customers in our nation is used for heating and cooling that space. Some authorities feel that we can find sources abroad to meet this enormous energy requirement. But we must remember that most other countries also are increasing their energy consumption and that the lesser developed countries will have a greater rate of increase in demand as their populations increase and as they seek to improve their living standard. This may mean that other countries will limit oil exports and make our energy problem more acute than is now projected.

The effects of this energy shortage will be augmented by two current public attitudes: the demand for maximum comfort with convenience fuels and the concern with ecological balance in general and the reduction of air pollution in particular. Professor Seichi Konzo, an authority in the area of heating, sees it this way: As oil and gas sources decline, liquid fuels may be

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Mr. Jones is research professor of architecture and director of the Small Homes Council-Building Research Council at the University of Illinois in Urbana-Champaign.



reserved for transportation needs. In this case society will return to coal as a major source of energy, but most people will not accept the inconvenience that this energy source entails. Accordingly, coal energy will have to be converted to another form, such as electricity, before it is delivered to housing. Parenthetically, it should be noted that little housing built in the last two decades is capable of handling coal.

The generation of electricity with coal as a fuel runs straight into the ecology problem on two fronts: air pollution and the thermal pollution of water. The air pollution problem is made more difficult by the fact that some of the major reserves of coal have undesirably high sulfur contents. Both coal and nuclear power stations produce thermal pollution of surface waters or increase air temperature and humidity through the use of cooling towers. The reduction of these pollutants is bound to increase the cost of energy and is feasible only in macroscale installations. We are in the grasp of a paradox in which the public demands more and more power and, at the same time, objects to the building of more power plants.

The inevitable effects of these various factors are that power shortages will grow and the cost of energy will increase. Some countries now have inverse power rates: As more power is used, the rate increases. It is conceivable that some such energy conservation regulations might be introduced in this country; it is also possible that some limit might be placed on the amount of

### US ELECTRIC POWER

Year	Billion Kilowatt-hours
1912	12
1960	753
1965	1,060
1970	1,503
1975	2,022
1980	2,745
1985	3,639

Source: Federal Water Pollution Control Administration, "Industrial Waste Guide on Thermal Pollution," September 1968

energy consumed per square foot of housing space. This simply points to the need to examine the energy consumption level of the housing that we design and to include energy conservation as a more significant parameter.

If the architect acknowledges the import of the energy crisis, he will take full advantage of all the technological means at his disposal to reduce the impact of the crisis on his client. This will mean more attention to orientation and placement of housing, the drawing together of units in compact forms which will reduce heat loss, a less lavish use of glass, more insulation, the convertibility from presently economical fuels to the energy sources of the future, etc. Clearly, in this instance, technology of energy utilization is one of the parameters of housing design. It is interesting to note that in the case of compensating for the coming energy crisis, the architect has an opportunity to foresee and design for user need before the user is aware of the problem. It would indeed be unusual for a user survey at this time to express a need for energy conservation.

*Water Usage:* Ecologists also tell us that we are facing potential water shortages in this country. No one has a clear picture of the time or severity of the predicted pinch. Part of this problem may be overcome by regulation; application of new technology may also help. Water usage may be curtailed by progressive rates in such a manner as to make excessive use extremely costly. Technology may suggest means by which recycled water

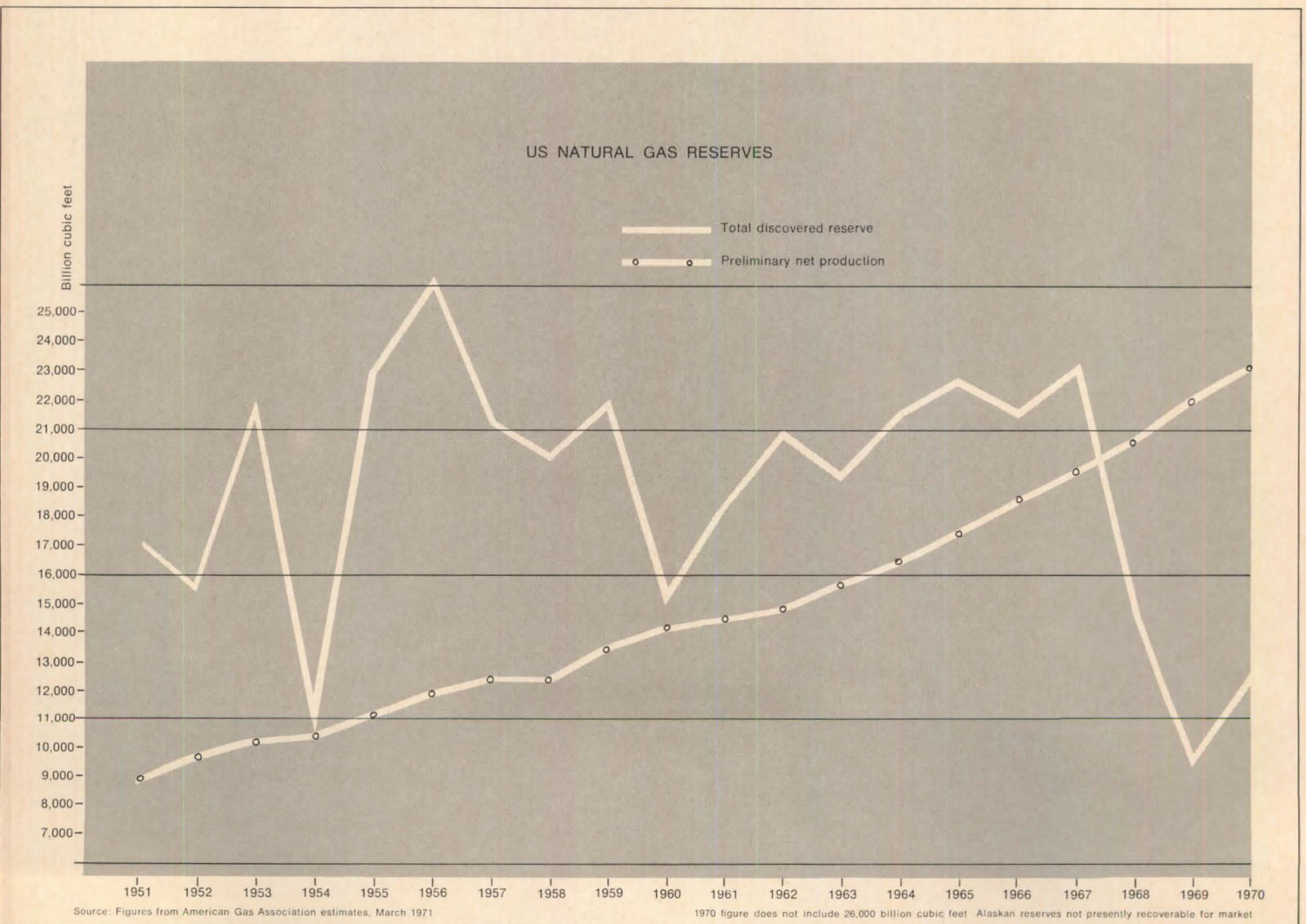
or stored rainwater might be used for lawn watering and for flushing water closets. It is very strange that one of the largest uses of purified potable water is for conveying human wastes. Other experiments have indicated that it is possible to design a water closet having a smaller discharge pipe and requiring less water for flushing.

*Materials:* Technology in this area is in a constant state of flux, although the changes are not always too apparent to the casual observer. The exterior of today's house does not appear to be much different from those of the past, but careful examination of the cladding reveals that only the traditional form of siding remains—the materials are new.

Traditional wood clapboard siding has been replaced by prefinished plywood (sometimes overlaid with a plastics film or resin-impregnated paper for better surface characteristics), by prefinished hardboard, by prefinished aluminum or steel, or by vinyl. The finishes selected for these materials are chosen for long life in an effort to meet the desires of the house owner for reduced maintenance chores and expenditures. Another approach to this goal has been to make greater use of rough-sawn or textured materials which retain an acceptable appearance for a longer period than a smooth finish and which are easily renewed. More often than not these materials are applied in panel form, usually plywood or hardboard.

In fact, with prefinished fascia, soffit and gutter materials,

US NATURAL GAS RESERVES





and with masonry exterior surfaces, as well as various types of prefinished sidings combined with vinyl or aluminum-clad windows and doors, it is now possible to select a minimum maintenance exterior for housing.

A similar materials revolution has been occurring inside the house. The one-piece, plastic tub/shower enclosure is an example of a product of our modern technology which can help to reduce some troublesome maintenance problems.

Most of these new materials are the manufacturer's response to his interpretation of user needs. Unfortunately, the volume of this response makes the architect's job more difficult: He must evaluate each of the new items in terms of its capability to perform satisfactorily. Furthermore, we have not yet organized a feedback system of sufficient scope to permit us to benefit from one another's experience. Each of us must make his own mistakes. We are badly in need of a program which will permit us to pass along our individual experiences with new materials.

*Construction:* Technology is likewise continually changing in the field of construction and erection techniques. In general, the trend is toward moving more and more housing production into the factory. Operation Breakthrough is aimed at promoting the industrialization of housing in an effort to increase the quantity of production. Logic indicates that factory production can be better controlled, can result in better quality and lower prices. These are among many advantages to be claimed, but others can

point to the demerits of industrialization: greater capitalization required, transportation difficulties, limited product lines, etc. As a result, we can find almost any stage of sophistication in the building process in use by our housing producers. Construction ranges from the carpenter with hammer and saw to automated production of three-dimensional modules.

A study of housing production since World War II reveals some interesting facts. For example, some of our most successful mass producers have used relatively unsophisticated methods. In the '50s, Levitt parlayed astute management, precut materials and labor subcontracts into a system which produced more houses per year than had ever been previously accomplished. Others, using panelization or modularization, or both, had successful projects but on a smaller scale.

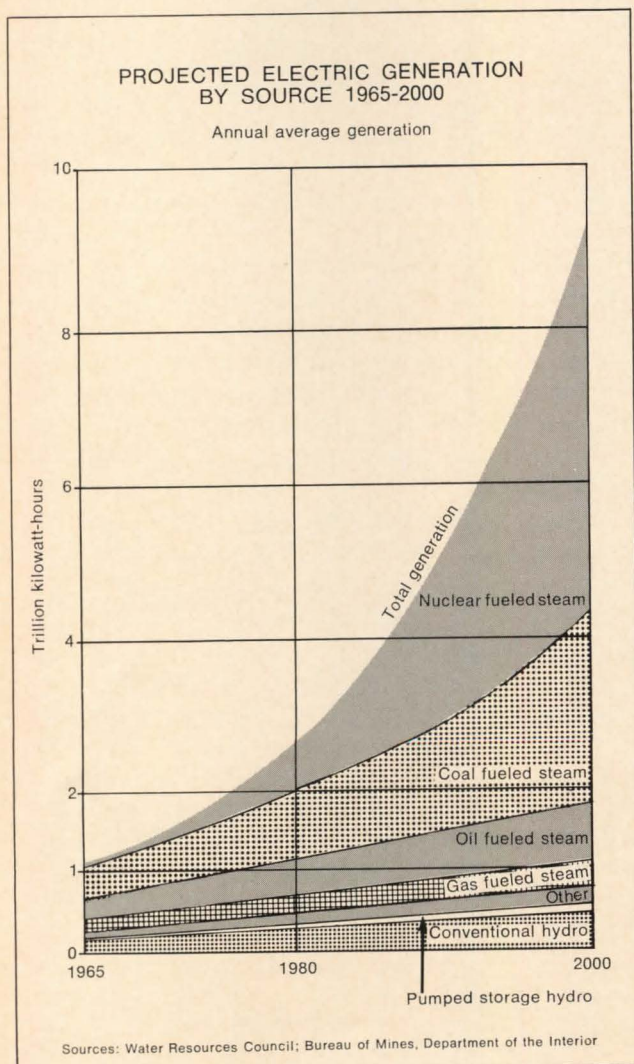
To be thoroughly successful in the design of housing, the architect needs to know the building techniques that are to be employed on the job. Will the builder use precut materials and assemble on site? Will preassembled panels be used? If so, will they be finished on the exterior and/or the interior? Will three-dimensional modules be used? Coordination between the designer and builder is essential if the most efficient building techniques are to be selected for a given project. Fortunately, our new view of the architect's role in the building process offers greater opportunity for the necessary coordination and cooperation.

*Fire Safety:* In recent years there has been a number of examples of tragic loss of life in fires as well as severe property damage. Some of the circumstances of these fires indicate that architects and specialists in fire protection need to take another look at building design with regard to reducing injury to a minimum. This is particularly true in the area of highrise housing design. In a country where the predominant housing form is single-family, one- or two-story houses or lowrise apartments, usually of frame construction, it is natural that the establishment of a means of escape from the building has traditionally been the primary consideration in fire protection.

However, it is obviously unrealistic to talk about escaping from the 40th floor of a highrise apartment building. In many cases the elevator shafts are unsafe; in fact, the current idea is that, in case of fire, elevators should be programmed to go to the main floor to be available to carry fire fighters to the level of the blaze. This means that all escape will be on foot. Fire protection specialists are suggesting that we should be designing "areas of refuge" that are readily accessible to the occupants. It appears that one of the best measures would be to design each dwelling unit as a refuge, thereby making escape necessary only for those who are in the immediate area of the fire. Another major concern is to improve protection against smoke, both by selecting materials for reduced emission and by introducing better barriers.

The interrelation between fire technology and design is very close. Architects should be watching and participating in the new developments in this important aspect of building design and technology.

We have been disenchanted with technology to a degree in recent years; we have blamed it for causing some of our problems and for not curing other ills. However, any rational examination indicates that if technology has failed, it has done so primarily because we have asked it to solve the wrong problems. This is a time to redirect rather than to abandon technology. A more careful study of user needs is one way to correct our direction, but it is not enough. Neither architects nor users have had sufficient foresight to predict the shortcomings of some of our housing design when placed in differing cultures, but perhaps a new technology can be an important aid. □



# INDUSTRIALIZATION: BASIS FOR A FRUITFUL WAY TO PRACTICE

by S. PORTER DRISCOLL, AIA

**Is there a role for the architect to play in modular housing? There most certainly is, and a rewarding one it can be too. But the practitioner has to forego some of the conventional norms and learn the rules of a brand new game—at least for him.**

We live in a dynamic society where change is the rule—change at an ever-increasing rate. As architects and as citizens we must be able to change with change; otherwise, we become at best an anachronism and at worst a totally obsolete element. The architect is aware of great changes and movement within the profession: changes largely external in their genesis and imperfectly understood, yet of great number and magnitude. The design scale has changed from that of single buildings to major parts of a city, the client from an individual to a committee or several committees; and the design group itself is often changed in size and composition. As changes occur, things rarely become simpler.

Through the centuries the architect/master builder has been identified with a relatively small number of generally excellent buildings, some of which have reached the status of high art. During this time he has served early priesthoods, royalty, the established church, Renaissance merchants, the “robber barons” of the late 19th century and, most recently, industry and governments of various sizes. The nature of his work has slowly evolved from that of designer and builder to that of designer alone. The relationship with his client has changed from the lifelong association between the architect and his patron common in Renaissance Italy to the brief, single-building relationship prevalent today.

The current conventional framework of client-architect-builder wherein each contributes skill or money to an ad hoc organization to perform a specific task, usually to create an individual structure, is well understood, functions well in most cases and will continue to exist. This type of organization and practice is particularly suited to the creation of small numbers of relatively large projects such as medical centers, universities, government centers, etc. The large majority of distinguished buildings designed in the past 100 years were produced this way.

This conventional framework is not notably successful when applied to high-volume production of smaller buildings such as housing. The ad hoc grouping of builder/developer and architect on a project-by-project basis has created some creditable designs where both parties have possessed skill and ability. However, one can easily see in any city that this is the exception rather than the rule. Many architects have tried to work with low-volume, small-margin builders, and both have found to their mutual dismay that it doesn't work. It is not that they haven't really tried; it is mostly a problem of economics and lack of a common goal and purpose. In reaction, builders have been described as money-



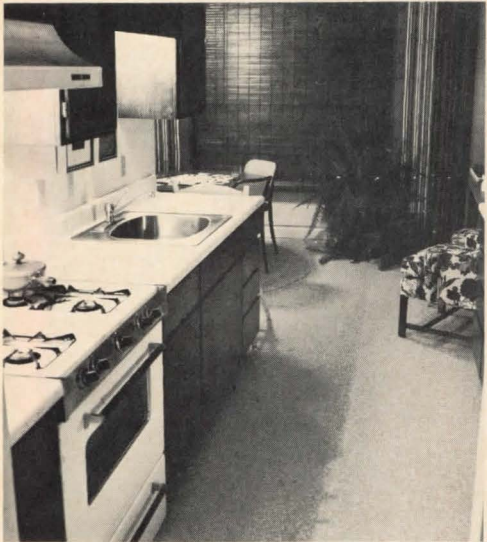
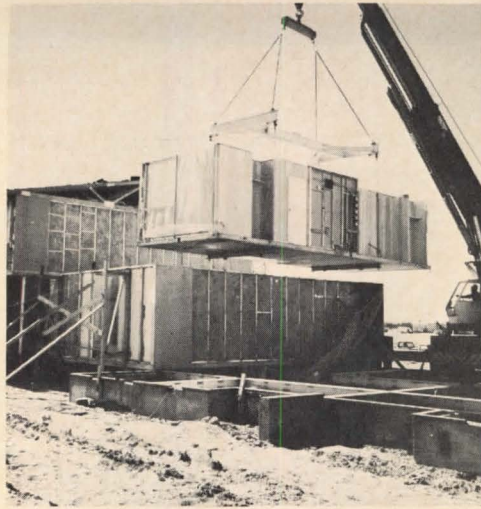
grubbing opportunists and architects as dreamers out of contact with reality.

This acrimony is largely unwarranted and need not exist if the builder and the architect are able to establish a rapport and a satisfactory methodology for coordinating design and construction. Accord in these matters generally arises from a broad knowledge of the work of the other person as well as respect for him and his problems. Regrettably this accord rarely has an opportunity to develop in the ephemeral ad hoc relationship common in conventional practice.

The architect and his housing design skills can be most effectively utilized in an organization which provides a continuing working relationship with the group that actually produces the housing. It is possible for the industrialized housing producer to have all the necessary skills as actually a part of his organization. Some do, some don't. Probably it is best when they do. The architect's work as part of a group of this type is different in many ways from his usual practice. There are certain traditional services that he does not perform in this new organization because these tasks can be done more effectively by someone else within the group. A simple example of this would be the existence of a purchasing department which can provide instant and

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**Mr. Driscoll**, formerly with the Department of Housing and Urban Development, recently became vice president of product research and design for Stirling Homex Corporation, headquartered in Avon, New York. The past five years he was director of HUD's Architectural and Engineering Division, serving in effect as chief architect for the Federal Housing Administration.



Hugh Gibbs & Donald Gibbs are architects for this prototype 200-family project at George Air Force Base, Victorville, California. Utility core modules were produced in General Electric's factory in nearby Apple Valley. GE's Re-entry and Environmental Systems Division was selected as a joint venture with Del E. Webb Corp., which erected the housing on site.

accurate estimates of material costs during the early design phases, and then, as the design is crystallized, competitively bid the materials finally decided upon. The same is true regarding the other materials of housing: land, money and skill. The group, to be truly effective, must have representatives of all disciplines concerned and should be as nearly balanced as possible.

We are all familiar with the way a project comes into being in an architect's office and progresses through its many stages to the completion of the building and the occupancy by the owner. A similar process is followed in industrialized housing organizations. The main differences are in the groups as described above and the rapid in-house looping process of analysis, design and pricing. Let's examine how a project would pass through an industrialized housing organization where there is a need to design a new product similar to present production.

The need for a particular kind of housing in a certain quantity is identified and the information relayed to the design arm of the company for its assessment of the ability of the organization to produce the kind of housing required. The design arm analyzes the problem, develops the program and the sketches describing a response to the housing need. The sketches, showing housing and the particular site design, are reviewed by marketing for accuracy of response, by manufacturing for producibility and by cost accounting for price. The resulting assessments are given to the design arm for design refinement and the subsequent preparation of presentation drawings. As a result, the design, the price and the date of completion can be presented as a firm proposal to the client. When there are client comments, they are

incorporated into the conceptual design, and the revised drawings are again submitted for client review and approval after checking by manufacturing, installation and cost accounting internally. This process is quite precise and can be rapid, although not always is this the case. When speed is necessary, it is possible with a group long accustomed to working together.

The second stage of design begins with the "client drawings," which are the customary architectural and engineering contract or working drawings for a project. These are prepared simultaneously with the production drawings, which are the equivalent of shop drawings. The design arm is engaged in giving the same instructions in two different languages. These are appropriate to the intended use of the two types of drawings which serve as cross checks for constructability. Conventional architectural and engineering specifications are also developed simultaneously with materials lists for production. During the development of the drawings and specifications, checks are constantly made to insure design control and accuracy. Upon completion of the drawings and specifications, they are subjected to an internal review and are presented to the client for his comment and approval. Upon acceptance, a firm agreement is reached as to what is to be built, when it is to be completed and what it will cost.

Since these decisions, or agreements, are binding on the company, the production of modules is scheduled through the plant to meet the timetable of field construction necessary to deliver the job on time. This calls for precise timing as well as a high level of quality control because construction errors can cause costly delays. In a small firm the design arm of the com-

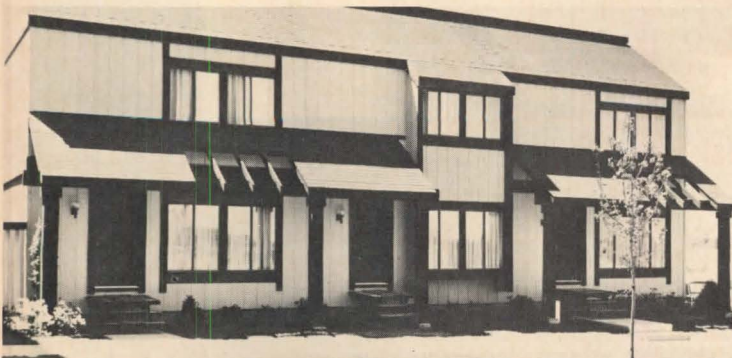
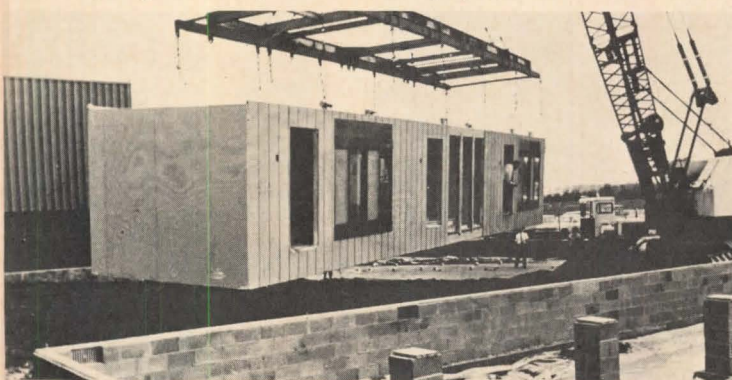
pany will normally exercise the quality control functions, both in the plant and on site. For larger organizations there is often a separate quality control group which works in close relation with design, production and field construction elements, but which reports to none of them. This makes for extremely efficient operation and a minimum number of errors, but it can reduce somewhat the architect's intimate relationship with field construction. If this is indeed a problem, it can and should be corrected by visits to sites during the construction period.

There are, of course, pros and cons to this system and this type of operation, as there are to everything. The advantages include intense and concentrated detailed attention to design in all of its ramifications far beyond that feasible in the more conventional practice. It is not uncommon to spend hundreds of thousands of dollars in design and prototyping before a product is offered on the market. Other advantages are precise quality control, speed of delivery and certainty of cost. These are important factors and appeal to many clients bruised by the uncertainties of conventional construction.

This description of design and construction has practically no relationship to the practice of architecture as described in Ayn Rand's *The Fountainhead*, where the solitary hero was creating in a vacuum dominated by his own genius. Is this "architecture by committee?" Indeed it is, but it is a committee with a difference. It is not a committee of architects or engineers; it is a committee of many different disciplines, each contributing to the design and construction process as his skills permit.

Does this mean that the architect is any less active or powerful in the design process? To the contrary, it does not diminish him or his contribution in any way, but it does place upon him responsibility to establish his own position and to be heard among his peers. There is no special position such as the architect usually enjoys in conventional practice. Traditionally, he speaks of design, budgets, cost/effectiveness of buildings and their elements to his client who often knows relatively little about these

Operation Breakthrough's first completed homes, manufactured by Levitt Building Systems, are found in Kalamazoo, Michigan. Perkins & Will of Chicago are site planners for the project.



subjects. The architect's judgment is often correct, but there is no real test of it until the building is bid and built.

In the design of industrialized housing, judgments are examined closely by all concerned and tested if there is a reasonable doubt long before any construction is begun. As a member of the organization, the architect is privy to many of the former's trade secrets and confidential information which would not be divulged to any consultant. This privileged position enables the architect to make a more significant and realistic contribution to the design process. Furthermore, he can call on any of the skills within the organization on a continuing basis.

There is no unanimity of opinion among industrialized housing producers as to the desirability of a company design arm over the use of architectural consultants. Both are used to good effect. This writer obviously prefers the former approach and feels that it is a great vehicle for architects to significantly, and perhaps profoundly, affect the built environment.

The existence of in-house skill does not preclude the use of consultant architects by the design arm of an industrialized housing organization. This is often done and most probably will continue on an ever-increasing scale. Specially skilled architects will be used as design consultants for product and project design as well as for research assignments of various types. In this way the professional design arm of an industrialized housing organization can maintain its flexibility and avoid in-house looping of ideas on what can be a closed circuit. The resultant design is thus a product of independent design skill blended with the experience and knowledge of the in-house design staff.

In the case of project design, architects are often used as consultants by the design arm of the industrialized housing organization. This association generally begins on an ad hoc basis for the purpose of a single job, but it can develop into a long-term relationship. The experience of the English systems builders has indicated that they and independent architects can work together to produce distinguished housing. There is no reason to believe that we in the United States can or will do less. As a consultant to the industrialized housing organization, as part of the professional staff of the industrialized housing producer or as consultant to the design arm for project design, the architect has a wide range of roles. This will involve architectural design in housing to the degree it has never been utilized before. This professional design input will improve the quality of housing. It can; it must. □

Stirling Homex has erected 275 units of modular housing in 31 days at Rochester Institute of Technology under a \$5 million contract.



# REMODELING: YES OR NO?

by L. JANE HASTINGS, AIA

**As the Book of Ecclesiastes reminds us, "To everything there is a season, and a time for every purpose. . . . A time to break down and a time to build up." And so it is with remodeling.**

Several years ago I was one of some 50,000 others involved in a mass exit from a football game when a handsome young woman stopped me and said, "I'm sure you don't remember me. I'm the owner of that wonderful utility room." She was right; I hadn't recognized her, but I had no difficulty remembering her first telephone call to me. It took place shortly after I had established my own practice with the usual hopes and expectations of a young architect. When I answered the phone, she said, "Please don't hang up. You're the fourth architect that I have called, and I do need help." It sounded like a final desperate plea, and I assured her that I would be out to take a look.

The district was one of the best, the house one of the ugliest in the city. But that was not the problem. The interior was surprisingly large, comfortable and convenient, with the exception of circulation in the kitchen and a great need for a utility room on the main floor. Five children, four of whom were preschoolers, demanded so much time that their mother could no longer manage the daily chores without a better arrangement. A relatively easy and inexpensive solution was found: a new utility room (an old bedroom) expanded into a new playroom plus a backyard deck which provided the only practical outdoor play area for the young ones. True, the house retained the same unattractive facade, but inside was now a mother who was still busy but also happy.

There is something very special about remodeling work. The architect can take what appears to be the most impossible of situations and by using vision, a fresh approach and imagination perform the magical. I have always felt that without question remodeling jobs can be the most rewarding and the owners the most appreciative of clients. What could be better than resolving or correcting what has been seen as a hopeless situation? Unlike those for new work, clients for remodeling often are resigned to only modest expectations. What delight, then, to discover what the architect has been able to accomplish.

New work does have the great advantage of freedom. Your hands are not tied by an existing structure, and frequently the choices and decisions are much more open, the client approaching the project with an unclosed mind and a feeling of excitement. Just about the opposite is true of the remodeling client. The architect is treading on special soil. He is dealing with the owner's security symbol: his home. Whatever he says about it, like one's child, only he may criticize it; no one else has that privilege. No matter how simple, awkward, inconvenient or unattractive it may be, the home is still central in the lives of those it shelters. It may contain memories of childhood days for some; for others, reminders of the children that have been reared and

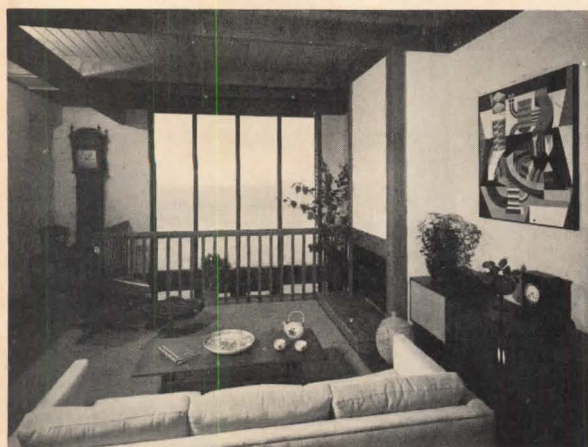
have moved away. Even the yard which may have the appearance of an unkempt weed patch can have its sentimental plants and places. So the question of remodeling, whether to do or not to do, carries with it considerable emotional and personal baggage quite beyond the technology and economics involved.

I am sure that there are as many reasons to remodel as potential remodelers—neighborhood, school, view, trees, a good buy, convenience—but the question still remains for each individual case, whether to do so, to what extent and in which direction. I find that people tend to know little more about their property than the information offered on the tax statement, the assessed value and legal description, abbreviated by a code that obscures the facts. Other information is usually neighborhood hearsay or hopeful expectations. There is the charm of that undeveloped site across the street or next door, the owner seldom able to visualize what might happen if development there were to occur. Or the fluctuating value of property is not realized—zoning, existing improvements and maintenance, each having their impact on the present and future. Then there are the specifics of the site to be considered: view, orientation, exposure to weather, soil conditions, topography and relationship of property value to present use.

Once satisfied that the site warrants additional investment, what about the condition of the existing structure? Sometimes in spite of imagination and vision, the best solution is to start over, either because no satisfactory answer can be arrived at or the house is in such a bad structural state. There is also the scope of the proposed work. Are we just updating a few things or are we considering what amounts to changing life patterns? Of course, budget is a big item at this point and the kind of investment required to obtain the desired end result. Perhaps the owner can afford the money, but there remains the decision as to whether the property warrants it. These lines can become very fine at times, a challenge to the architect in assisting his client as how best to interpret these variables.

And then there is the matter of esthetics. Utility may have been satisfied, but how much farther should one go in making changes more directly visual in purpose? Such an investment may be elusive in terms of dollar value, yet once made can add much to the owner's pride of ownership and overall security of his effort.

So far our list is relatively simple to deal with, as research and observation along with experience allow one to come up with reasonably dependable answers. But the factor of the owner's emotional involvement with the project may not be as easy to resolve. Sometimes the architect must take delicate routes to point out tactfully that what the client thinks he wants is not what his real need is. I recall one client whose preoccupation with the provision of facilities for a disabled child entirely neglected the potential for achieving a more satisfactory environ-



ment for the family as a whole. Some careful directing of attention to this bias eventually led to a far more satisfactory and balanced remodeling program which all could enjoy.

The project in mind may be completely out of balance with the end result and its likely cost. Recently a woman conferred with me about extending a wall out a few feet to add more closet space to two of five bedrooms. It involved removing a brick bearing wall, tearing up a patio, possibly destroying a beautiful native tree, requiring extensive roof work and getting involved with existing plumbing. The kitchen, on the other hand, would have been substandard for an old-fashioned efficiency apartment. Both the front and back doors came directly into the dining room and the only hall was tight, long and dark. When I suggested that kitchen improvements and a good circulation system would be the best way to realize a return on any investment and more directly serve her needs, she responded with the comment that the kitchen didn't bother her because she had no enthusiasm for cooking. And with good reason! That kitchen would have caused Julia Child to retire her apron. Still this woman was willing to put a good deal of money into closets when a little organized housekeeping could easily have solved that problem.

Most difficult of all, however, are those times when the only conclusion that the architect can come to is to declare the project hopeless, the structure basically unsound and full of rot and that the only reasonable solution is to start from the beginning and completely rebuild or sell out and buy elsewhere. You had been called upon to hear their hopes and dreams and, in turn, have

betrayed them, even proposing that they give up their home and security. It is a painful decision for all concerned; yet in the long run it is better faced than postponed or pretended away. I have had clients who took such advice and who later told me that what appeared at the time to be so impossible worked out to be the best solution after all.

Some jobs, of course, lend themselves to renovation and additions with a good deal more grace than others. Such a job was the Karrow residence. The site was a steep, tight, urban beach lot with clay soil noted for being a slide area. There was an existing World War II vintage two-story residence which had settled considerably. The clients were a young married and childless couple with enthusiasm, energy, a modest budget and a respect for their architect. The challenge was to enlarge and enhance the existing structure as an asset to its choice waterfront property as well as to provide comfortable and interesting living space. Due to existing below minimum required side yards and bad soil conditions to the west, the only direction for expansion was up. A new floor was created at the former roof height, allowing a sloped ramp approach to the new entry which replaced the former steep mountain-type trail and steps. The only additional horizontal work required was space for a stair tower connecting the new level with the former living area. Basically all exterior openings remained in place with a new sash framed by

**Miss Hastings**, who has won awards for her remodeling work, maintains a private practice in Seattle.

eyebrows and blinders for weather protection, privacy and visual extension of volume. The interiors, plumbing and kitchen were completely renewed as well as the structure leveled and re-sheathed in cedar siding—all this within a limited budget.

When should the owner begin to think of a renovation project? An ideal time to take such a look, including the search for a better plan and working arrangement, is when appliances, fixtures, flooring and so on need replacing or major repair. Perhaps what is needed is development of a master plan in which all the work may not necessarily be taken on at once but can be fitted in over time and in response to budgeting factors.

Another logical time to remodel is when the family requirements and circumstances change. The size of the family is either on the increase or decrease; income has possibly moved upward, allowing for a few desired luxuries; mortgage rates have become attractive; or perhaps building is slow, and a favorite contractor is available. All or any of these reasons can have an influence that says, "Move," or "Hold off."

Timing is an important factor in remodeling. People will buy a house which satisfies most of their needs but seldom all. They purchase and move in with additions and alterations already in mind. It is a mistake, however, to start immediately on such work. They need first to learn to live with their new family environment, perhaps allowing at least a two-year breaking in period. The seasonal cycle will expose any deficiencies and assets with respect to light, weather and relationships with the site. As for internal arrangements, an item with top priority at the time of purchase may, with time, assume a quite different status and be replaced by something that had gone totally unrecognized

at first. As one client told me, "Give me another year, and several of the little things that I said I could not tolerate will have become part of my life. On the other hand, areas which I thought would work well will have become more impossible with each passing month." Of course, there is always the situation when work must be done before the new owner moves in. In such cases, a good deal of analysis and soul-searching should go into the proposals. A little trust in luck would also be a helpful additive.

Some owners wait too long, however. They have delayed, hoping for that ideal moment to make the move and then they discover that suddenly their newly added space, for example, has been created for children no longer at home or scheduled soon to go on their way. The pleasures that remodeling in time could have provided have been replaced by a sense of disappointment that what could have been a shared pleasure is instead a somewhat vacant gesture.

My own experience is that each remodeling job comes with its own special set of qualities. Some require a considerable range of service; others may take only an hour or two to point out modest changes for a more workable arrangement. Admittedly, the income to the architect is modest, and I try not to be too analytical about balancing hours spent against dollars received. But I can recommend with enthusiasm the potential in such work for exercising tact, understanding, sympathy and sound reasoning as professional services. And I can add as well the observation based on my practice that, while a good remodeling may not be able to save a marriage or cure a sick child, it very possibly can help. □



The remodeling is achieved chiefly by upward expansion, as is indicated by the before and after photos on both these pages. The added top level provides for a master bedroom and living room. The old second level becomes a new-mid level with the living room converted to a dining room and with the rear deck expanded. The first level remains unchanged.



# SOUTH COMMONS: UNCOMMON URBAN RENEWAL

by WILLIAM MARLIN

**Since its opening in 1967, just three miles from the heart of the Windy City, this ongoing project has demonstrated that proper planning—visually and socially—can produce a livable community for a range of people in terms of income and age.**

Street lamps are still wrapped in chicken wire on Chicago's Near South Side. But in this renewal district of high-density decay and diminished commitment, urban ills are finally being challenged. Not by edict but by good design.

South Commons, three miles from the busy, booming Loop, is a privately developed, \$25 million new town in town. The 30-acre, close-grained community includes two- and three-story for-sale townhouses, clustered around a private commons and play area; four-story maisonettes for moderate income families; five-story lowrises for middle and upper income families; and, breaking the horizontals, 21-, 24- and 27-story apartment towers, several given over to moderate income occupancy.

Along a north-south mall, a 28,700-square-foot community center accommodates a school for children through the third grade; an interdenominational church run by the Church of Christ; a gymnasium, meeting rooms and a day care center. Opposite this is a three-building shopping center which incorporates a food store, a drug store, medical offices and a variety of other specialty shops.

Taken together, these buildings occupy only 18 percent of a parcel once encrusted with over 180 rundown tenements; 26 percent is given over to parking for 1,000 automobiles; 11 percent is devoted to streets. And what remains is that urban rarity: real open space. Landscaped courtyards, lawns, pools, places to be alone and think, places to walk the baby and to play, places to party. Full of personal options, not to mention 1,619 dwelling units, one can think of South Commons as a recycled slum—an urban amenity. Or an act of faith in its city's future—planned faith.

Begun in 1966, due for completion next year, this community hangs together: visually, functionally and, the real test, socially. There are problems. Chronic crime, for one. Watching out for children, keeping them occupied. (Sound like the suburbs?) There have been grumblings about "subtle forms of discrimination," e.g., the children of moderate income families must pay a nominal charge to use the swimming pool.

More serious is the physical separation of the three types of housing: The moderate income, four-story maisonettes and one low income highrise are clustered together just across Prairie Avenue from an early public housing project, Prairie Courts (Keck & Keck). However, the project is itself a rarity. Something went wrong. It is good design, and the South Commons cluster relates well to it, helping to bridge a barrier which, only 10 years ago, might have been marked by a chainlink fence.

Everything considered, South Commons has it all over the Bucolics Anonymous boredom of suburbia, where restrictive zon-

ing, the referendum and Supreme Court ruling earlier this year effectively bar a racial, economic and housing mix. In contrast, diversity by design and a well-distributed high density are what make South Commons an important prototype for a nation faced with beefing up its housing stock. And, no less urgent, the humanity of its built environment.

When developers James McHugh and Daniel Levin purchased the seedy slum parcel from Chicago's Department of Urban Renewal in 1965, they were given some marching orders. First, their community must have social scale. This meant moderate income rentals and community facilities to make it accessible to the neighborhood families who have done without decent housing for so long. Second, it must have visual scale. This meant architecture, planning and landscaping coming together to serve the more hidden, human dimensions of life in an economically and racially balanced community. Simply put, given urban renewal land, try renewing the right things for a change.

Looking around, the developers had only to glance south of 31st Street along Michigan Avenue and South State. There they saw the glass, steel and brick discipline of Mies' Illinois Institute of Technology campus, but it reflected the poverty and dereliction of decades around it. Beyond that, there were the Robert Taylor Homes along the Dan Ryan Expressway, but so unlike Prairie Courts—inert brick housing blocks. Over from the newly purchased parcel were Michael Reese and Mercy Hos-







The model illustrating how South Commons will appear when completed is in sharp contrast to the overall view of the site before construction began. The photo is looking directly north toward the Loop.

pitals, both expanding, their emergency wards overcrowded, outpatient clinics at the crunch point, reminders of the grievous gap between the health needs of a neighborhood and the accessibility of adequate care.

What the Near South Side needed was intensive treatment in the most comprehensive terms. Primary or preventive care would no longer do; rigor mortis had already set in.

Determined to create a community where the lingering better instincts of the inner city would take root, McHugh and Levin sat down with architects (Ezra Gordon-Jack M. Levin Associates; Solomon, Cordwell & Buenz Associates) and sociologists (Morris Janowitz, University of Chicago; Paul Mundy, Loyola University) to consider what an audit for success at South Commons must include. The objective, a synthesis of the social and visual—such a synthesis, at city scale, the major task of architecture in our time.

The bull sessions started. Hard questions came. The ones we have refused to ask for so long. How do you create harmony and diversity? How do you work such intangibles as “the quality of life” into the economic realities of real estate? Are you going to be able to make diversity pay? How far can you go providing amenities before they curb the cash flow? What about the interface between South Commons, nearby housing projects, neighborhood schools and the police? Is the city as a whole going to pot so fast that we shouldn’t even bother? What are the options? For South Commons? For Chicago? What could be done with 30 acres to prove the inner city is worth staying in and, in the case of proposed luxury units, moving back to?

The very fact that such questions were pondered as basic to business success indicates the high benchmarks used in surveying the future of South Commons. This was a whole new concept of “break even,” one which many speculators up in the Loop, currently licking clean every zoning envelope they can find, haven’t figured.

It is a sobering irony that while South Commons has been putting down roots—roots of commitment to the city as a way of life—Loop developers are pulling them up, strip mining streetscapes with new Eight-Hour Buildings that turn off with the typewriters at 5 o’clock. Call that commitment? Or instant cash? One can’t help but wonder about the fragile moral hinge on which the futures of South Commons and the city turn.

This is why South Commons must be counted a success. Forget esthetics. When we talk about city building today, the last tragedy we discuss is mere bad taste. In a place like Chicago, where the biggest building is invariably the next one, we must think about the effects of scatter-shot urban growth on how the city works in human terms. Ad hoc improvisation, no matter how “Chicago School” a new building may be, is signaling urban impotence throughout the nation. Impotence in the form of increased social and environmental costs. Impotence in the form of basic services unable to keep up with demand. Impotence in



Two- and three-story townhouses—72 in all—with three and four bedrooms, are provided for sale. They are arranged in clusters around open play areas and grassy malls.



the form of chaos and inconvenience. Impotence in the form of corporate exodus to the suburbs, taking jobs and people with them when they go.

What is left is a city, like Chicago, which must build big precisely to pay for the vacuum which ill-coordinated planning, not to mention substandard design, has sealed. Which must uproot the evidence of history and culture to make way for the next office building and plaza. Which must eventually lay down beside and whimper in pain with the urban qualities it has vanquished. To the extent South Commons has rehabilitated those qualities, we almost must count it an act of faith—one which has paid off in human and economic terms.

South Commons has shown that it is possible to attract the wealthier white suburban families. In fact, over 10 percent of the units are occupied by people who used to live in places like North Shore Glencoe and Evanston; 23 percent moved from the city's North Side, one reason being that rentals are about 25 percent cheaper in the middle and upper income range; 63 percent of the tenants came from the Near South Side itself, from Hyde Park and the South Shore; 4 percent moved from out of state.

Now complete are 679 deluxe apartment units, 331 moderate income units and 72 for-sale townhouses. Underway are 207 deluxe units, another 312 moderate income units in the 27-story tower financed under Section 236 of the National Housing Act and 18 more townhouses.

The moderate income units range in rent from \$95 a month for a highrise studio up to \$175 for a four-bedroom, two-level maisonette. Living in these are students, nurses, young marrieds, many with children, and the elderly. These were 221(d)(3) financed.

Higher income units, with 220 financing, range in rent from \$130 a month for a highrise studio up to \$425 a month for a three-bedroom maisonette, the upper tier of apartments with 20-foot ceilings. Living in these are teachers, engineers, doctors, lawyers, ministers, writers, artists and, yes, architects.

The for-sale townhouses are conventionally financed and

start at over \$45,000. Of the 72 completed, 70 had been sold at this writing.

This diversity of design, as we have called it, figures out at 60 percent white and 40 percent nonwhite, the ratio initially suggested by the Department of Urban Renewal. Incomes range from under \$7,000 to over \$60,000 a year.

A visitor sees and senses the spontaneity. Senior citizens, singles, young marrieds, parents, children, grandchildren—an easy rubbing of elbows and lifestyles. Dan Levin, sounding a bit like an experimental mathematician who has stumbled on a new equation, says, "This completes a spectrum that makes South Commons a truly balanced community. Its variety of housing and the parklike environment have attracted virtually every social, economic and racial group."

To be sure, his equation is not all pluses. M. W. Newman, editor of *Inland Architect*, observed that "the mathematics of reality is one of the present ironies afflicting this well-intentioned project, whose hang-ups seem to reflect society's problems quite as much as its own. One inevitably must question some of the basic thinking that went into it, beginning with the obvious fact that there is little place in it for the poor black families who used to live there."

Levin doesn't avoid this issue by replying, "You have a whole segment of society which can't afford housing. Eventually society is going to have to afford housing, even for these people. That means subsidies more varied and flexible than the restrictions we had to work with."

Going through the 221(d)(3) maisonettes and highrises, one won't find airconditioning, and there is only one laundry for each pair of buildings. Only the for-sale townhouses have central airconditioning, along with a certain isolation one resident called "aloof." But Levin, while acknowledging the criticism, insists,

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**Mr. Marlin**, a freelance critic and former Chicagoan, now writes on architecture and the urban arts for the *Christian Science Monitor* and is a frequent contributor to the *AIA JOURNAL*.

"You have to consider that there are natural differences between people. Highrise living is different from lowrise. With varied income groups, you're going to have differences. Another factor was the very strict budget. And we had to face the fact that mortgage financing is, at this point, easier to get when housing of one type is concentrated in one area.

"Despite these limitations, we have tried as best we know how to bring in a cross section of people. Recognizing and accommodating natural differences between them is not the same as saying we tried to isolate these differences. In fact, we had to 'design in' ways for many people to meet, communicate and cooperate, which is why the commons, mall and community center are so vital. Abridging natural differences, while at the same time recognizing that they do exist, was fundamentally a problem of good planning."



The terrace of the Community Center leads to the South Commons branch of the Drake Elementary School, seen in the background.

What Levin calls "natural differences" really came into play in providing quality education for the children at South Commons. The primary school, which will eventually extend through the sixth grade and accommodate up to 300 children, is a branch of the nearby Drake School, whose playfields border on the community. Although some black families living at Prairie Courts have complained that the South Commons branch is an attempt to segregate its youngsters, students are drawn from the entire neighborhood, including Prairie Courts. It is the first time that the Chicago Board of Education ever leased private facilities for public instruction.

The question nagging both black and white parents—and probably the developers—is what will happen when the children transfer to the all-black Drake School nearby? Will classes be transferred intact? Will educational standards be maintained? Or, "After three years here, hadn't we better move?"

Understandably, even the most liberally oriented parents are concerned. Realizing that most had never even seen the Drake

School, the South Commons Music Theater—one of many activities sponsored by the McHugh-Levin funded Community Foundation—had a production of Gilbert and Sullivan in the Drake auditorium. Over 1,200 people, including many from South Commons itself, attended. Hopefully, more such efforts to stabilize the relationship between South Commons and the surrounding area will increase understanding, allaying fear with greater familiarity. How well this succeeds will show up in the rate of lease renewals over the next several years. And determine South Commons' future as an experiment in social planning.

In view of this, it is only good business that the developers have practically bent over backwards to catalyze commitment. They underwrite a monthly newspaper for the community. Their foundation supports all kinds of activities. The church is busy promoting greater understanding between residents and those in

the ghettos around them. Ostensibly ecumenical, there is a faction which feels the church has been almost too liberal. And one minister was obliged to leave. A group called Citizens to Improve Community Living meets every month to hear out complaints and forge cooperation, one aspect of this being a continuous dialogue with neighborhood police officials. For the grim realities of ghetto life persists.

South Commons is an alternative to the causes of those grim realities. An alternative by design. The sound insulation between apartments could be better. The swimming pools more accessible. The concrete work less careless. The esthetics slightly less cretin. But, as was noted earlier, the last tragedy we discuss is mere bad taste. And it should be remembered, too, that architecture—in its total sense—is not just designing good spaces in buildings but designing good spaces between them. Diverse spaces. Spaces that tenants sink their teeth into and feel part of. These are to be found at South Commons and, for all its problems, the sense of place so vital to securing a city's future. □

# MOBILE HOMES: THE THIRD ALTERNATIVE

**So-called mobile homes, the oldest form of industrialized housing, are playing a role of increasing importance in public housing policy. They offer a third choice to people who for one reason or another prefer them to apartments or single-family dwellings. They are not really "mobile" since many are put on site and never moved again. Just where to put them is one of the chief difficulties. It is here that the architect can contribute through the planning of mobile home parks that offer the amenities of a conventional housing development.**

Many people have a mild disdain for mobile homes, looking upon their inhabitants as gypsies who move from place to place, as unfortunates who will find other dwellings as soon as circumstances permit or simply as vacationers who really enjoy some measure of roughing it. The same people view the mobile home park as a place of alienation from the community. The belief that mobile home dwellers are isolated transients tends to establish certain attitudes on the part of the detractors.

First, there is a concern about the culture which is housed in such a container as a mobile home; next there is the feeling that the inhabitants of "mobile towns" do not accept their share of civic responsibility; and finally there is the rejection of this kind of housing as hurtful to the esthetic environment. Regardless of these negative attitudes, mobile homes appear to hold hope for solving some of our housing problems.

Mobile homes may have had humble beginnings back during the Depression when the trailers descended upon California from the nation's dust bowls and in the housing shortage days of the '40s when they provided makeshift shelter, but today things are different. Like them or not, they are an important factor in today's housing market. And in the future, their blending with modular dwelling units will very likely play an even greater role in total plans for community development. Apparently, mobile homes not only have come a long way but they "arrived" when President Nixon in April 1970 publicly acclaimed them for having ameliorated the housing crisis. In the same month, Jeh V. Johnson, AIA, presented testimony for The American Institute of Architects before the House Appropriations Committee, Subcommittee on Independent Offices and the Department of Housing and Urban Development, stating: "One sees increasingly the device of local zoning used to exclude multifamily housing and mobile homes and in the process those families who have no other choice."

The Mobile Homes Manufacturers Association calls a mobile home a "transportable structure built on a chassis and designed to be used as a dwelling unit with or without a permanent foundation when connected with the required utilities." The difference between a mobile home and a travel trailer is that the latter is smaller and can be towed and operated independently of utility connections. Usually a mobile home is 12 feet wide, 60 feet long and 12 feet high. But there are larger ones, and there are also units which consist of two or more parts that may be separately towed and combined horizontally at the site. Until

recently, most states prohibited units wider than 12 feet on the highways, but at least 14 of them now authorize 14-foot wide homes to be transported, and models of this width are being produced increasingly. The mobile home of today is too large to be towed by an automobile, and MHMA recommends that a professional moving company be used for their transportation.

As size and amenities of mobiles have increased, the "mobility" feature is de-emphasized. Sheldon M. Futernick, a Detroit mobile home park developer, says that they should be called "manufactured homes." Indeed, mobile home manufacturers are increasingly going into the production of mobile modules which can be used to make garden apartments, town houses or highrise apartments. The Electric Heating Association reports a study made of 33 mobile home manufacturers, 90 percent of whom sell modulars to mobile home dealers.

What kind of people live in mobile homes? Robinson Newcomb in *Mobile Home Parks, Part 1: An Analysis of Characteristics* (Washington, D.C.: Urban Land Institute, 1971; a recommended study, which will be followed by a related ULI publication on mobile homes as land users) states: "The points usually stressed in discussions of the characteristics of mobile home occupants are their youth, or age, small size of household, low income and low socioeconomic status." The economist, however,

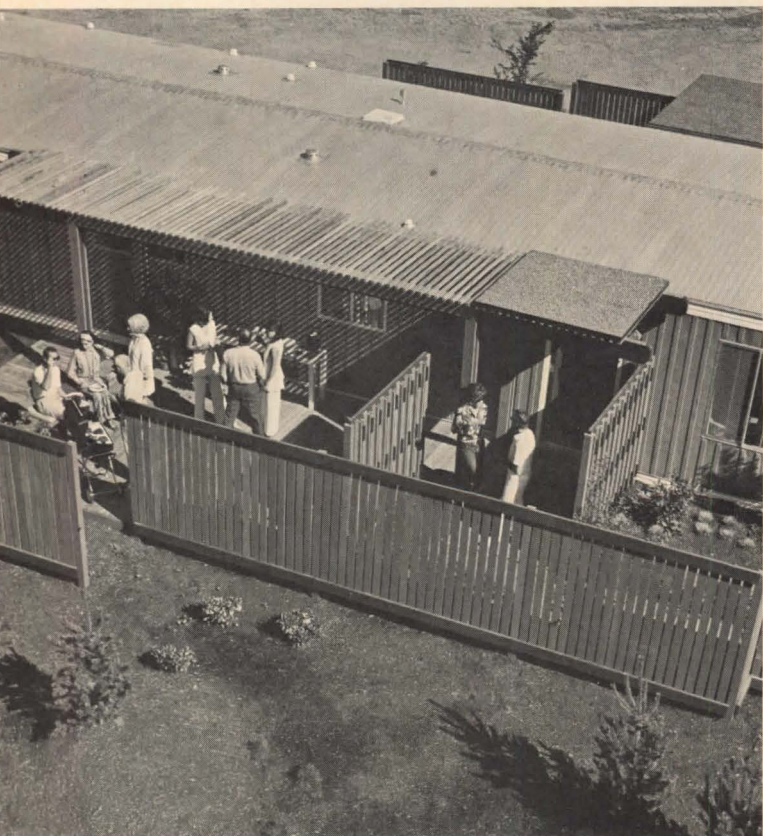
Alex Pierce, AIA, is designer of the all-wood garden complex in the two views here. Underwritten by Western Wood Products Association, the mobile home park near Tigard, Oregon, upgrades the environment.



has found a wide dispersion of characteristics. "Old as well as young, moderately large as well as small households, people with high as well as low income, do occupy mobile homes." He says that if people are given free choices between mobile and other types of homes, "those choosing mobile homes would on the average differ relatively little from those choosing other types of units," such as single-family dwellings and apartments.

Another useful study of mobile home residents has been made by Margaret E. Woods and Earl W. Morris and is reported in *Housing Crisis and Response: The Place of Mobile Homes in American Life* (Ithaca, N.Y.: New York State College of Human Ecology at Cornell University, 1971). They say, "The trend toward mobile homes, insofar as one exists, seemingly is concentrated among younger families, smaller families and families with moderate incomes. . . . So far as the data at hand are concerned, one can only say that, given a particular combination of family characteristics and housing needs, a substantial number of families can be expected to turn to mobile homes." They find a close similarity between characteristics of new apartment dwellers and purchasers of mobile homes, "thus supporting the assumption that mobile homes compete with apartments more than with conventional single-family houses." The researchers find that the mobile home, a third housing alternative, is being used increas-

Outdoor living around a single 20x60-foot mobile home at King City Estates is made more attractive because of the arrangement of patio, screens, fencing and sunshades. A carport is on the opposite side.



ingly by young households of moderate means, and, in some areas, by older, two-person households.

Interestingly enough, a survey conducted in 1969 and reported in the September issue of *Trailer Topics and Mobile Home Life Magazine* found that only 10 percent of the families studied gave economy as a reason for living in a mobile home. Being close to location of work was cited by 46 percent as the most important reason. The Cornell study comments, "The preference for the mobile home style of life seems to be well substantiated by the general lack of plans to move among those age 35 and older and the choice of another mobile home as a destination residence among sizable proportions of the older age groups."

Although MHMA has called a mobile home a "transportable structure," the association's annual *Mobile Homes* often carries articles on the landscaping of mobiles, which is rather a permanent amenity. It would be difficult to move all those recommended "outdoor living rooms" with their terraces, patios, plantings and climbing vines. But whether mobile or stationary, there has been a tremendous growth in the mobile home market in recent years.

Back in 1930, 1,300 units were reported shipped as compared with 90,000 in 1961. According to the Bureau of Domestic Commerce, mobile home production this year will increase to 450,000 units, up about 40,000 from 1970. Some economists see a climb in the next few years to between 500,000 and 600,000 units. A 1969 Department of Commerce study found that 48 percent of all new homes built in that year were mobiles. They represented 94 percent of the homes under \$15,000, 79 percent of those under \$20,000 and 67 percent of those under \$25,000. It is estimated that more than 6 million Americans live in mobiles. Undoubtedly, the mobile home industry is a major force in the housing market.

The MHMA states that acceptance of this kind of home is due to at least three factors: increase in size, comfort and quality of the mobiles; increase in the number of people in the age brackets of 20-34 and 55-74 who find the mobile home appropriate for their lifestyles; and the price. Newcomb cites two factors that have contributed to their success: factory fabrication where the industrialization process of production has made possible the development, application and enforcement of processing standards designed to achieve stipulated levels of performance in use and flexible portability of the completed unit to site on its own wheels, ready for occupancy as soon as utility connections are made. Newcomb also points out the problems. Factory fabrication does not always conform to local building codes and a mobile home can be transported only a limited distance before cost becomes a controlling factor. Also, stresses on the home in transit can be so severe that units develop chronic leaks or go seriously out of square.

In the last decade, price per square foot for mobile homes has declined while the cost of conventional housing has soared. Newcomb points out that any study of comparative costs of mobile home, apartment or traditional house where standardized

measures of price per square foot of living space or monthly cost per room or bedroom are used can yield only rough guides. Mobile homes on site and complete with furniture, carpeting, draperies and major appliances have sold typically for \$8.50 to \$10 per square foot of living area. Prices are not directly comparable with the conventional single-family house, however, because of land, the cost of which can vary considerably. But even without standardized guides to measurement, "It is obvious," Newcomb declares, "that larger, more fully equipped and more structurally sound mobile homes have, in recent years, become available within a price range in which houses have become increasingly scarce." Depending upon the number of units and equipment, a mobile home can cost between \$4,000 and about \$35,000.

A publication of the Department of Housing and Urban Development, *HUD Challenge*, in its July 1971 issue mentions some of the disadvantages of the mobiles in the housing race: Some people are offended by their appearance; they are sold with high interest chattel financing; only in the past two years have they benefited from federal legislation; and zoning boards generally try to prevent their entry into a community. There is also the lack of adequate mobile home sites, problems in reselling used units and the question of durability. And there is the emotional question of taxation. Some people think mobile home owners are not paying their fair share. The Cornell study by Morris and Woods reports a variation of laws and regulations pertaining to mobile homes in the United States. Mobile home owners do pay taxes, such as the sales tax which is applied on the purchase. Some states are studying the possible inequities in taxes between mobile homes and other housing, and the MHMA is working with the State Assessors Association to devise equitable tax procedures. "The settlement of this one issue," say Morris and Woods "might not win unqualified acceptance of the mobile home in all communities . . . but it would remove the strongest premise of their rejection."

The HUD article points out that mobile homes cost less to construct and install on site than any other housing offered today. The cost saving is given to the buyer in the form of lower down payments and monthly payouts over much shorter periods of time than is available to the buyer of the conventional house. Even so, low income families find mobile homes too costly. Few of them have the funds for the down payment, and even if they make that, the monthly payments are more than they can easily afford. "The monthly outlay might total \$170 to cover loan installments on a \$6,000 unit, park rent, taxes, maintenance, utilities and insurance." That would represent 33 percent of a \$6,000 annual income and 50 percent of a \$4,000 one. Many communities are reluctant to provide land for poor families to use as sites for mobiles. If an investor does develop a park that meets with community approval, the mobile home owner may have to pay as much as \$250 to \$300 a month in payments on his home and on the rental for parking space.

Recently there have been developments which may help to overcome the difficulties mentioned. The Cornell study reports that the large proportion of mobile homes have been financed by indirect loans through dealers, with commercial banks and large-scale companies the principal purchasers of dealer contracts. "The most encouraging signs in mobile home lending are those which suggest a changeover to the use of simple interest . . . which would preserve the prime advantage of consumer finance, the relative ease of obtaining loans and at the same time benefit borrowers by allowing a more rapid rise in equity and eliminating prepaid charges."

Significantly, too, the federal government now recognizes mobiles as housing. HUD's Title I mobile home loan insurance program went into effect in 1970. It provides for FHA insurance on 12-year loans up to \$10,000 on new single units, or on 15-year \$15,000 loans on two attached units. The minimum down payment is 5 percent on a home priced up to \$6,000 and 10 percent on the amount over \$6,000. The law requires a much lower



The Meadows, a 356-unit mobile home park on Irvine Ranch in California, is the design of Riley/Bissell/Associates. A main attraction is the community center and clubhouse which provides both indoor and outdoor recreation. It has such amenities as a laundry room wing, a huge kitchen, dining room and a roofed tournament shuffleboard court.

rate of interest on these loans than lenders can get under customary mobile home lending practices; therefore, the program has seen little use to date. Secretary George Romney's request for authority to set maximum interest rates to meet money market conditions was turned down by Congress last year, but HUD reports that he will include a request for such authority again in recommendations for housing legislation.

Since late 1970, the Veterans Administration has guaranteed loans for both mobile homes and owners' lots. VA may set the interest rate to meet market conditions. There may be a maximum loan of \$10,000 on the mobile home or up to \$17,700 where a suitable lot is purchased. VA anticipates a probable 1971 volume of more than 13,000 guaranteed loans.

Also under recent legislation, federal savings and loan associations are authorized to lend up to 90 percent of the home for periods up to 15 years and up to 90 percent of the value of a used mobile for up to eight years. Newcomb reports that at present roughly one-third of new units sold to consumers are bought for cash, including some financed by the buyers through arrangements of their own. The remaining two-thirds are financed

through the dealer on the security of a conditional sales contract or similar arrangement. Not having any sound basis for calculating depreciation, some lenders have given only short-term loans. Indeed, some people have thought that the average life of a mobile was no longer than the typical seven-year chattel loan.

But something is being done about durability. After July 1, 1971, all mobile homes built by the members of the MHMA and the Trailer Coast Association (on the West Coast) must carry a seal which certifies that the mobile has been constructed in compliance with the American National Standards Institute's Standard A119.1. Six years in the making, the standard covers construction of the body and frame as well as plumbing, heating and electrical systems. The requirements are that the manufacturer build to established guidelines and provide a margin of safety. Some 30 states have already adopted the standard.

Probably the biggest problem of the mobile home industry is just where the owner of a mobile can put his home. Woodall Publishing Company, which issues an annual *Directory of Mobile Home Communities*, reports that vacancy factors are minimal and site rentals are increasing. "The unplanned and uncontrolled development of any kind of siting for mobile homes can lead to the conditions many communities fear: tracts of slumlike areas which decrease the value of nearby land and require expenditure of public funds to remedy," is a point stressed by Morris and Woods in the Cornell report. Harry Manley, Chicago's assistant zoning administrator, is quoted in a *New York Times* article dated October 4 as saying, "Under present zoning, you simply

of the so-called conventional type with landscaping, medical and recreational facilities, shopping areas, clubhouses/community centers and other such amenities.

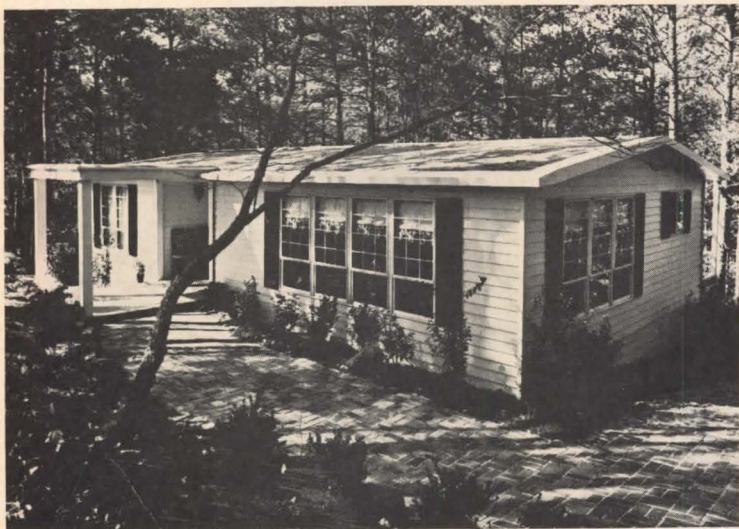
The MHMA in conjunction with the Mobile Home Research Foundation sponsored seminars this fall in cities throughout the country to interest architects and engineers in the development of mobile home parks. A major impetus to their growth is HUD's program of insuring mortgages on them. Under Section 207 of the National Housing Act, FHA can now insure loans up to \$1 million, covering 90 percent of value. In high cost areas, the maximum mortgage can be \$1.45 million. The maximum for space for the dwelling is \$2,500 or \$3,625 in high cost areas. Projects can have up to 400 spaces under these dollar maximums, and neighborhood amenities can be included. HUD has issued the *Mobile Court Development Guide* (Washington, D.C.: US Government Printing Office, 1970) for use in processing projects financed with mortgages. The guide sets forth minimum planning and construction guide criteria to assist FHA insuring officials in arriving at well-informed risk determinations.

Newcomb concludes that the mobile home is doing two things: It is cutting costs and "it is encouraging builders to develop communities that resemble old-fashioned towns in terms of 'neighborliness,'" thus meeting social as well as financial and physical needs. The Cornell study states that the mobile home provides as many benefits as could be desired in a single response to the housing problem, including good quality, low cost, owner occupancy, flexibility of location and rapid response. Its effectiveness, not fully realized, is due to the fact that it is a "stepchild" of housing and "does not fit well into our established housing institutions." The mobile home is only a single technique, but it is a complementary one, whose failure to be recognized is due to "defective observation and analysis of a housing problem."

An assumption has been made that families who live in mobiles are sometimes estranged from the life-support systems of the larger community, from those institutions which have been invented to integrate people into the activities of society. These families are often not only separated from the systems, but they are isolated sometimes from the responsibilities of citizenship. It is not only a matter of not always paying real property taxes, but rather a deep-rooted rejection by many people who have interpreted habitation of a mobile home as a "gypsy" way of life. Associate Director of the Institute for Urban Policy and Administration at the University of Pittsburgh has said, "The old view of the down-and-out families with a lot of kids has created an image that dies hard." He continues, "There are some \$35,000 mobile homes. Many are moved to a site and not moved again." But middle class affluent suburbs continue to fight mobile homes.

It is clear that national public policy recognizes the mobile home as a legitimate third alternative to solving the housing problem and accepts it in theory. But it is at the local level that public policy has to work in practice. Citizens have been slow to accept the mobile home, their disdain turning on the esthetics of the mobiles and the parks in which they are assembled, as well as on the failure of local legislation to place full responsibilities of citizenship on the mobile home inhabitant.

The mobile home is here to stay, however. It would appear that the architect has two immediate roles. The first is to collaborate with others to improve some esthetic qualities of their design. The second is in the creation of well-planned mobile parks and subdivisions which can be integrated into the total community process. It is not only the matter of hooking in the utilities of the mobile home, but of connecting the lives of the individuals and families into the community. MARY E. OSMAN



Chosen as "Mobile Home of 1971" by *House & Garden* magazine, this 24x45-foot dwelling is sited at Lake Lanier, Georgia.

can't build a mobile home park in Chicago." The same article cites cities whose planning commissions have banned mobile home parks because "they contribute nothing to the cost of the school system their children use." Many communities just don't want the parks, sometimes for esthetic reasons.

Big companies are beginning to invest in parks, however. The National Association of Home Builders, some of whose members are eager to develop parks, has produced a film which features several attractive parks, describing them as worthy of endorsement by zoners. The barriers for zoning are breaking down as it is increasingly realized that mobile home parks need not be eyesores but can be a community asset. Dade County, Florida, has adopted a mobile home ordinance which sets a minimum of 30 acres for any mobile home development, with no more than 7.5 homes allowed per acre. Parks are beginning to have all the features of a well-planned housing development

# THE MYTH AND THE MANSARD: WHERE DO WE GO FROM HERE?

by CLOVIS HEIMSATH, AIA

**Architects must discard the housing legend and get on with some experimentation which will lead to the creative solution of habitation. Here is how one firm endeavors to put its philosophy into practice by viewing the custom single-family dwelling as a place of significance for such exploration.**

One of the unique qualities of mankind is his ability to retain myths, passing them on largely intact from one generation to another. The architect is a great myth-passer, and no greater one doth he espouse than the myth of his effect on housing. A good myth must have a ritual. Fortunately for the architect, a fine housing ritual exists.

A client seeks out an architect and together they design a house. When the architect suggests that the cost of a custom house will run from \$20 a square foot in Texas to nearly \$30 in Connecticut, the owner is shocked and gestures toward the door. Reassuringly, the architect performs a sprightly leap to the door and sinking slowly to the floor with arms akimbo pleads with the owner that his indiscretion be forgiven. The conference resumes with cost conveniently ignored. A cough or gulp may rekindle the owner's displeasure as the architect reacts to each added fireplace, each bedroom "that should be at least as big as the one we have now" and each appliance that the architect surely realizes is essential.

The next part of the ritual is warm glow in late evening because the not-so-young architect delights in the younger men in his firm working to all hours to make this house an *award winner!* The final ritualistic acts we know too well: the bids over the budget with the owner genuinely shocked this time and suggesting withholding payment; the redrawings of a far smaller house (perhaps a better one) now only grudgingly accepted by the owner. The myth, as taught in architectural schools, ends differently, of course. The school myth has the architect brandishing the cost sheet before the awestruck owner and speaking the immortal words: "If you don't like it, you can leave" or perhaps "How dare you question cost when we are dealing with art" or the updated version, "If you don't dig it, man, . . . it!"

From the pages of architectural magazines, housing is reformed, so the myth goes, by the unique giant designer who towers above conventions, cost worries and sin.

I can see this giant clearly in my mind's eye. He has the size of Paul Bunyan, the assurance of Palladio and Wright and, hark,

the reflection of the sunset on his face as he marches into the golden west. With a sigh I see him trundle away. Looking at housing again today, however, I am hoping he will stay over the mountain long enough for us to make some changes. One thing is for sure about the myth: Only architects and their clients believe in it. Developers have gone along without this architect in housing for quite some time, if you please, while they have busied themselves building one giant mansard-roofed apartment building from one end of the country to the other. Fortunately for everyone, while the giant is over the hill, the mansard is almost finished. What next for the architect? For the developer?

Only a new *philosophy* of housing will keep the architect in housing. A tough little book, *A Single Society*, by Donald Canty is the kind of message that changes things really. He subtitles his book "Alternatives to Urban Apartheid," and he shocks us good. Without becoming a book reviewer, let me quote the first sentences. "I find it astounding how comfortable we can be sitting atop a volcano. Perhaps a mile from where I write, on a white hill in Washington, are streets of such fear, such tension, such intense and frustrated rage that an eruption is eminently possible at any moment of the day or night." And off he goes like many another keen mind, shouting for us to involve ourselves in today's real problems and to look beyond the secure but debilitating myths.

The architect is a well-trained professional, better equipped than almost any other to be in housing. Only in him do you find a businessman who has also taken three to five years of design theory. Only in him do you find an educated designer active in business. He should be a most respected member of a home development team, but he is too often a nonparticipant.

The architect must see himself as a leader in the housing business and train himself to be one—no nonsense. He must establish a philosophy that makes housing not an esthetic exercise for the patron few but a moral commitment to a mighty problem. Most people in the world are ill-housed, including a great many Americans. Most housing, frankly, is designed in a rudimentary way to fit accepted standards of suburban residential mediocrity or governmental edict, and few architects decipher their rightful place in the process.

A philosophy of housing for tomorrow and today must start from the vantage of Canty and his call to urban involvement. We must be involved not as a hangover of white middle class liberalism but in recognition of the dimension of housing problems today and of the fact that housing cannot be separated from the urban scene. The myth-dismissing fact is that significant housing is multifamily housing and that the problem of commu-

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Mr. Heimsath is president of the Houston architectural and planning firm of Clovis Heimsath Associates which is active in systems design as well as in housing. He is a member of the AIA Housing Committee.



nity supersedes the problem of the individual family. Open up the floodgates of the housing issue and look at the dimension of the problem! Housing costs are determined not only by building costs but by local regulatory bodies, and, more significantly, by the cost of money both long term and interim. The effect of housing on the community, particularly in large projects, will effect the tax base of the city, the distribution of utilities, the racial and economic profile of the neighborhoods, transportation, schools and on and on.

Clearly there are far more variables than design in housing. Yet architects have been marching into 20th century mechanized battle with Don Quixote's spear. A philosophy of housing for today and tomorrow must recognize the real forces that affect man's habitation and deal with them boldly. A philosophy of housing must concentrate on the multifamily aspects of the problem that link housing with planning.

A philosophy of housing must define all the costs and begin to control them. A philosophy of housing will be realistic in evaluating the facts of housing today and creative in seeking solutions. In both areas, the practical and the creative, we need more workers in the vineyard. More architects should become contractors; more architects should work in large building corporations and government agencies. On the other score, more architectural theorizers should concentrate on housing.

The story of Moshe Safdie as described in *Beyond Habitat* is apocryphal. Maybe there really isn't a Moshe Safdie at all, but the book surpasses the man, for here is architectural theory written in terms of our mechanized corporate society. Hurrah! yet much more needs doing in creative solutions to the full spectrum of housing problems. Surprisingly, in this full spectrum there is a new significance in the custom single-family home. It is the place for creative experimentation; a realistic look at housing shows few other places for such experimentation. Surprisingly, in the full context of housing the innovative custom home has more significance, not less. In a sense, becoming broader in philosophy, the architect loses none of his enthusiasm for what he is doing in housing already; rather he develops a balanced view of what indeed he can affect with design.

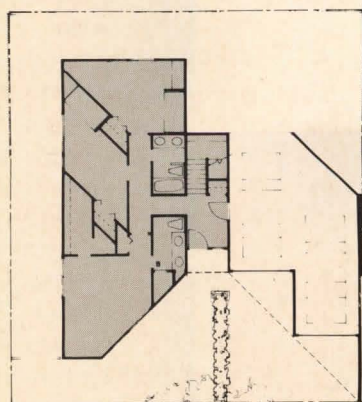
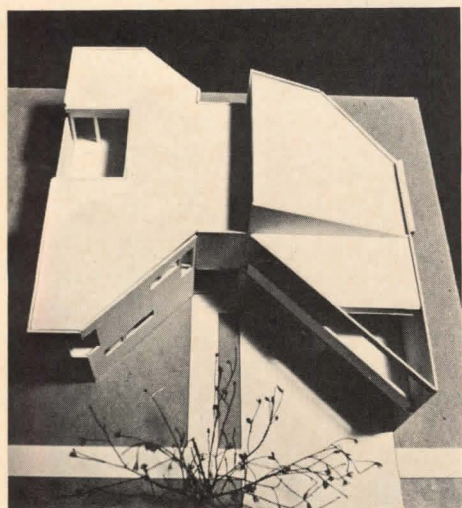
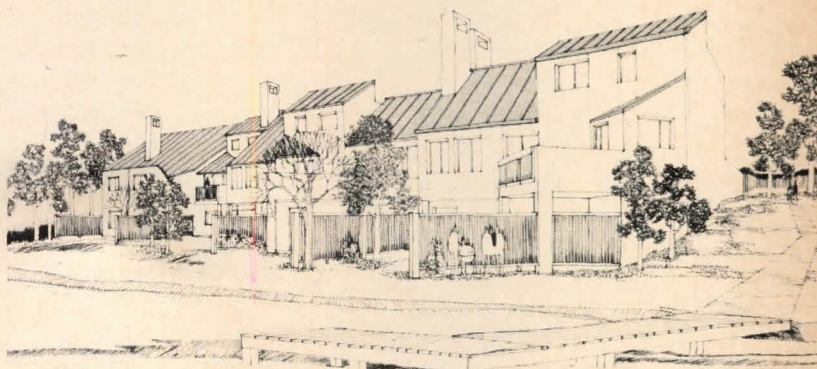
The philosophy I speak of is of deep concern to me and my partner, Joseph W. Santamaria, AIA, as we try to structure our firm toward tomorrow. It is an approach rather than a completed fact, but already it has changed our goals and operation. We see buildings as an outgrowth of land planning, and land planning a form of systems design. We are active in systems for the very reason that we must be to be significant in housing. Our planning analysis is compatible with systems analysis. For ex-

ample, placement of buildings affects the patterns of the people who inhabit them. The frontier of our philosophy concerns the simultaneous use of multifamily housing projects. We are developing a methodology of approximating the use patterns of people in housing projects throughout the day for all members of the community simultaneously. Such a simultaneous use model could humanize the design of low income housing overnight.

To broaden our effectiveness in housing, we are developing new ways of working with contractors and builders. The first step was a simple one: We told our new housing clients that we would only do the work if we could bring a contractor into the picture early and negotiate the job rather than bid it. This simple shift has changed the control we have over cost because we commit the contractor after design development drawings to a close approximation of the final cost. We have found our jobs in the budget with far less anxiety on everyone's part.

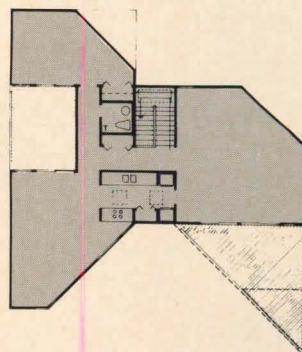
We are working toward ownership in a home building company because finally the architect will have to have ownership in a company if he is to control price. We are beginning a relationship in a particular neighborhood at Jonathan, a new town in Minnesota, where we are teaming up with homebuilder Scott Watt to develop a land planning, design and construction package. In another package project, we are developing a low income housing system based on integrated furniture and a double grid arrangement of rooms.

More important than specifics, however, is the philosophy that leads us into housing. It will be philosophy finally that replaces the myth. It will be the view the architect has of himself that will make him relevant. The architect should be the creative spark in the housing explosion, but he must be much more than an esthetic arbiter if he is to ignite the imagination of developers, contractors, bankers and government officials—the heavy members of his building team. □



FIRST FLOOR PLAN

0 2 4 8 FT



SECOND FLOOR PLAN

0 2 4 8 FT

Experimentation with form and double-grid interior space is possible in custom homes such as the Jeremy Head residence. This house is being built in a joint venture arrangement with a contractor. Such experimentation has immediate multifamily adaptation, as in the quadruplex found in the new town of Jonathan, Minnesota.

# RETROSPECT: SOME UNDERLYING THEMES

by ABRAHAM D. LEVITT, AIA

**The editorial consultant for this issue of the AIA JOURNAL does a summing up—and speculates a bit about what lies ahead.**

The interpretation of signs is one of the oldest “sciences,” and like its sister sciences, astrology and teacup reading, the interpreter has great leeway. Seriously, however, having read the foregoing articles, what signs or signals are the authors making in talking to us about the future of the profession, and how are we to interpret them? To give you an example of how signs have been misinterpreted, I must go back in history.

The question has often been asked, “Did the English people who lived during the Industrial Revolution realize that they were in the midst of an Industrial Revolution?” The answer is that they did not—especially the architects. The English practitioner of 1771 went along carefully designing eclectic buildings related to medieval themes. In fact, as you know, under the influence of John Ruskin and others, a new or “contemporary” style arose: the Gothic Revival. Nostalgic as we find Victorian Gothic, it did not truly mirror the developments of that age. The true signs of those times, the flapping leather belts driven by enormous flywheels, were thought of merely as means to help Victorian civilization move infinitely along its ordained path. The inhabitants of England in 1771 did not foresee that our entire world civilization would react to those flapping belts, causing new desires and aspirations among men and leading to political upheavals, mass migrations and two worldwide wars.

To return to 1971 and the contemporary architect, what are we to make of what we have read in this issue of the AIA JOURNAL? We have been told, for instance, that we must learn to conserve energy with regard to fossil fuels: power, etc. Are we ridiculous in extrapolating from this that the surge of systems construction and carefully controlled factory production is more than a response to production problems and featherbedding; that it is actually the realization by a large segment of the population, the construction industry; that we must conserve energy in the form of human labor, building materials and time? Such an extrapolation is not ridiculous, and if we realize this fact, then we realize that such efforts as Operation Breakthrough (good or bad) must be appropriately funded, depoliticized as much as it is possible in this political world and seen as an element in a crisis.

At the “Rap Session on Housing” at the AIA convention in Detroit last June, we were asked how an architect can turn into an instant developer and, of course, get rich as a result of this metamorphosis. Many were irritated when I said that we must strive to learn and relearn our own trade thoroughly so that the architect can become an absolutely essential member of the development team rather than depend upon an “instant” formula. What I did not say and what the authors of the preceding

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Mr. Levitt is project development officer of the Welfare Island Development Corporation, a subsidiary of the New York State Urban Development Corporation. A frequent contributor to the AIA JOURNAL, he is a member of the Institute's Housing Committee.

articles spell out are the *new* disciplines the architect must learn to understand in order to practice his evolving profession.

For instance, Institute President Urbahn begins by making a positive point when he calls upon architects to “respect and use the creative potential of economics.” In other words, the architect must learn to use economics as a tool to further design rather than be frightened of economics as an obstacle to carrying out an architectural program.

We go on to read about a nonprofit organization whose aim is to show profit—what else is feasibility?—a new phenomenon of our day. On the industrialized housing scene, we must develop the ability to evaluate the spate of systems coming through, most of which have not been subjected to the test of time—and it is *your* building which must stand up and *your* client who must come back to you for another project on the strength of your recommendations for *this* job. In addition, we are told that the architect need not be frozen out of the industrialized housing package.

Concerning the mobile home, the architectural profession will finally become interested and will design a good one; but when we consider the implications of a mobile home city, then we are in another ball game; the tax problem, the age gap, the imposition of a mobile population's lifestyle on a stabile core.

With regard to user needs and desires, it has been very helpful to have an in-depth study on this subject in an architectural magazine. The architect, whose knowledge—or lack of it—can “make or break” a housing project by responding or not responding to consumer needs, should have the opportunity to read about these matters in his own journal. For instance, the startling statement that even low income families would sacrifice indoor living space and amenities for well-designed outdoor space and trees has to be made known to us if we are to respond.

This month's JOURNAL has been given over entirely to housing, and this is another sign—a sign of the general gathering of forces within the Institute to focus on housing and related urban problems, which is the architect's way of dealing with social responsibility. The AIA National Policy Task Force and the Housing Committee are working on a policy that would embody many of the principles enunciated in the foregoing articles. It is hoped that this policy will be publicized by the membership to our local and national legislatures. This includes proposals for new towns, public development corporations and other new tools which can be utilized besides technology.

Future issues of the JOURNAL, I understand, will follow up with more presentations intended to help architects deal with specific problems in the area of housing and shelter. For instance, the field of rehabilitation has been touched on in this issue, but the great controversy of rehabilitation versus bulldozing—is there a middle way?—which is at the heart of the inner city problem will be dealt with in some detail at a later date.

So at the end of 1971, we prepare ourselves for the problems and, hopefully, solutions to be found in the new year. □



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"or equal"  
usually ends  
up in...

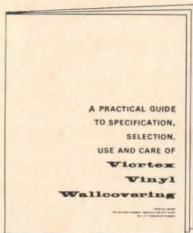
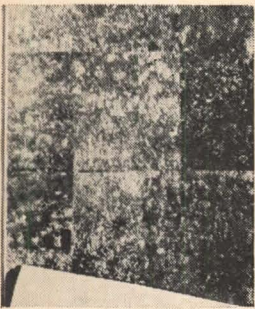
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outlook from page 12

## Newslines

■ **The earthquake** that shook California last February is featured in a 16mm sound and color film, "Coping with Quakes," available from the Portland Cement Association. The 15-minute film emphasizes the performance of concrete structures in the quake zone. Available for rental at \$5 per week or for purchase at \$104 per copy from PCA, A/V Communications Section, Old Orchard Road, Skokie, Ill. 60076.

■ **John-Robertson Cox, AIA**, of Philadelphia has been commissioned as research architect for the National Center for Energy Management and Power, University of Pennsylvania. The architectural phase of the project will involve research into the design of housing systems with fully integrated solar heating and thermal energy storage capabilities.

■ **Guided architectural walking tours** were enjoyed by more than 1,200 people in Chicago's Loop during the past summer. Offered by the Chicago School of Architecture Foundation, the tours are conducted four times a week.

■ **Four new stamps** issued by the US Postal Service on October 29 hail historic preservation in this country. They depict Decatur House, Washington, D.C.; the Charles W. Morgan, last of the 19th century wooden whaling boats; the San Xavier Del Bac Mission, near Tucson, Arizona; and San Francisco cable cars.

■ **Walter H. Lewis, AIA**, Professor of Architecture at the University of Illinois, received the Building Officials and Code Administrators International's Albert H. Baum Award for "outstanding contribution to the building inspection profession."

■ **President Nixon's recent appointments** to Washington, D.C.'s Fine Arts Commission include Nicholas R. Arroyo, AIA, who replaces painter William Walton. Mr. Nixon reappointed Cloethiel Woodard Smith, FAIA. Both architects reside in the nation's capital.

■ **A second Globe Theater** is planned for England. The first, financed by William Shakespeare, was built in London in 1613 and was destroyed by fire. Plans and specifications for the new one, prepared by authorities on Elizabethan theater, are for sale. The proposed project with restaurant, museum and conference facilities is estimated to cost about \$2.8 million. Developers may direct inquiries to John Rogers, Shakespeare Globe Development Co., 440 Barking Road, London E13, England.

■ **The first planning grant-offer** to study the development of a special facility to accommodate vertical and short takeoff and landing (V/STOL) aircraft has been awarded to New Jersey's Department of Transportation by the Federal Aviation Administration. The project is a master plan of a V/STOLport to serve New York metropolitan and northern

New Jersey areas. It will also determine the feasibility of linking such a facility with cities located within a 500-mile radius.

■ **New York City's effect on climate** is being studied by the National Weather Service. The work will be done in cooperation with New York University's department of meteorology and will make use of computer technology to examine 102 years of precise measurements of temperature, precipitation, wind movements and storm activity.

■ **Design of a rest station for hikers** and bicyclists to be located in a park is the subject of the annual High School Design Competition co-sponsored by the East Bay Chapter AIA and the Women's Architectural League.

■ **Producers' Council, Inc.**, has named John K. Bowersox, managing director since 1967, as executive director of the Washington-based organization and an AIA affiliate. Its new president is John R. Baldwin of Armstrong Cork Company.

■ **Construction industry recommendations**, 15 in all, which seek problems confronting all segments involved, are being distributed by the Construction Industry Affairs Committee of Chicago (CIAC), of which the local AIA chapter is a member. The packet is available at \$2 a copy by writing CIAC at 228 N. La Salle St., Chicago, Ill. 60601.

■ **Computers in architectural science** is a topic covered in a recent publication of the Department of Architectural Science, University of Sydney, Sydney 2006, Australia. The university issues other reports and reprints of interest to the architect.

■ **Mobile homes** are being used in several cities as temporary housing for persons displaced by urban renewal, reports *HUD Challenge* in its November issue. At first the plan was opposed by local residents "because they felt it would create a shantytown." Atlanta's Housing Authority now uses 200 mobile homes for this purpose, emphasizing that they are for local residents on a temporary basis.

## Deaths

J. GARRY CLAY  
*Roanoke, Va.*  
THEODORE R. CROMAR JR.  
*Silver Spring, Md.*  
CLAUDE M. HANSEN  
*Billings, Mont.*  
F. D. PARHAM, FAIA  
*New Orleans*  
ARTHUR J. SCHWARZ JR.  
*St. Louis*

## Members Emeriti

WERNER W. DORNBERGER  
*Austin, Tex.*  
ANDREW E. EGERESSY  
*Haddon Heights, N.J.*  
LEIF EIGILD JORGENSEN  
*Arlington, Va.*  
FRANCIS PALMER SMITH, FAIA  
*Atlanta*

# Indiana State University Chooses Electric Space Conditioning for New Apartment Building



Married Students Housing Unit III contains 112 units for married students attending Indiana State University.

**PROJECT:** Married Students Housing Unit III, Indiana State University, Terre Haute, Indiana. ARCHITECTS: John A. Curry & Associates, Inc., Terre Haute. CONSULTING ENGINEERS: Stuart, Phillips & Associates, Inc., Terre Haute.

**DESIGN CHARGE:** To design an apartment building for married students attending Indiana State University with 64 one-bedroom, 40 two-bedroom, and 8 three-bedroom units.

**DESIGN RESPONSE:** Architect John A. Curry designed a four-story structure of textured concrete containing 112 apartments and a full basement. The building has four wings, two containing the 64 one-bedroom apartments and two the 40 two-bedroom apartments. Each floor also has two three-bedroom apartments and laundry facilities. Outdoor parking is provided for 224 cars because, Architect John A. Curry explains, "our studies showed that many student couples own two cars." The basement has a mechanical room, incinerator room, and a room for storing baby carriages, bicycles and motorcycles, which is also used as a play area for

children in the building. The rest of the basement is used by the University for storage and repair shops.

Married Student Housing Unit III is one of four apartment buildings for married students attending ISU, two of which are heated and cooled electrically. Each of Unit III's 112 apartments contains a living room with dining area, a bathroom, and an alcove for the kitchen. All of the apartments are heated by electric baseboard heaters and cooled by through-the-wall electric air conditioning units. A central electric water heating system is equipped with demand-limiting controls. Range hood exhaust fans are equipped with 30-minute timers which can be overridden manually if the tenant wishes to exceed the 30-minute limit.

The electric space conditioning system was selected on the basis of a feasibility study which indicated that it would cost less to buy, install, and operate than equivalent systems using a flame fuel for heating. Actual experience with the electric system over two full heating seasons and one cooling season shows that operating costs are well within the estimated figure, Mr. Curry reports.

Gentlemen: Please send the complete series of Electric Heating Case Histories as they become available to me at the following address:

Name and Profession: \_\_\_\_\_  
 Firm, University or other affiliation: \_\_\_\_\_  
 Address: \_\_\_\_\_  
 Zip Code: \_\_\_\_\_

**1 CATEGORY OF STRUCTURE:**

Residential—Apartment Building

**2 GENERAL DESCRIPTION:**

Area: 117,601 sq ft (includes unheated basement)  
 Volume: 1,007,128 cu ft  
 Number of floors: four and a full basement  
 Number of occupants: 336  
 Number of apartments: 112  
 Types of rooms: Each apartment has a living room with dining area, bathroom, kitchen alcove and one, two or three bedrooms

**3 CONSTRUCTION DETAILS:**

Glass: single and double  
 Exterior walls: 6" poured concrete, 1½" rigid insulation (R-6), gypsum board; U-factor: 0.12  
 Roof and ceilings: built-up roof on concrete deck, 4" rigid glass fiber insulation (R-16), acoustical tile ceiling; U-factor: 0.058  
 Floors: concrete slab  
 Gross exposed wall area: 42,000 sq ft  
 Glass area: 7528 sq ft

**4 ENVIRONMENTAL DESIGN CONDITIONS:**

**Heating:**  
 Heat loss Btuh: 2,081,540  
 Normal degree days: 5699  
 Ventilation requirements: 6000 cfm  
 Design conditions: -10F outdoors; 70F indoors

**Cooling:**  
 Heat gain Btuh: 1,680,000  
 Ventilation requirements: 6000 cfm  
 Design conditions: 95F dbt, 78 wbt outdoors; 75F, 60% rh indoors

**5 LIGHTING:**

Levels in footcandles: 10-50  
 Levels in watts/sq ft: 1-3  
 Type: fluorescent and incandescent

**6 HEATING AND COOLING SYSTEM:**

Each apartment is heated by electric baseboard units and cooled by electric through-the-wall air conditioning units of 1 or 1½-ton capacity installed in the living room. Electric unit ventilators are used in the laundry areas on each floor.

**7 ELECTRICAL SERVICE:**

Type: underground  
 Voltage: 120/208v, 3-phase, 4-wire, wye  
 Metering: primary

**8 CONNECTED LOADS:**

Heating, Ventilation & Cooling (125 tons)	753 kw
Lighting	245 kw
Water Heating	200 kw
Cooking	1142 kw
Other	75 kw
<b>TOTAL</b>	<b>2415 kw</b>

**9 INSTALLED COST:\***

General Work	\$1,881,524	\$16.00/sq ft
Elec., Mech., Etc.	709,437	6.03/sq ft
<b>TOTALS</b>	<b>\$2,590,961</b>	<b>\$22.03/sq ft</b>

\*Building was completed 9/69

**10 HOURS AND METHODS OF OPERATION:**

24 hours a day, seven days a week, year-round.

**11 OPERATING COST:**

Period: October 1969 through September 1970  
 Actual degree days: 5945  
 Actual kwh: 2,978,000\*  
 Actual cost: \$31,466\*  
 Avg. cost per kwh: 1.06 cents\*  
 \*For total electrical usage

Month	Degree Days	Demand	kwh	Amount
10/69	333	414	163,200	\$ 1,900
11/69	772	504	219,000	2,407
12/69	1106	516	256,800	2,625
1/70	1443	696	321,600	3,336
2/70	1024	666	325,200	3,277
3/70	815	504	244,800	2,564
4/70	329	474	214,800	2,357
5/70	123	432	219,600	2,322
6/70		504	264,000	2,953
7/70		540	284,000	2,830
8/70		540	240,000	2,495
9/70		492	225,000	2,400
<b>TOTALS</b>	<b>5945</b>		<b>2,978,000</b>	<b>\$31,466</b>

**12 FEATURES:**

A wall-mounted thermostat in each apartment controls the operation of the baseboard heating units. The through-the-wall cooling units are equipped with integral thermostats.

**13 REASONS FOR INSTALLING ELECTRIC HEAT:**

A feasibility study indicated that it would cost less to buy, install, and operate an electric heating/cooling system than equivalent systems using a flame fuel for heating and electricity for cooling. In addition, each tenant would have his own heating and cooling system with individual control over the temperature.

**14 PERSONNEL:**

Owner: Indiana State University  
 Architects: John A. Curry & Associates, Inc.  
 Consulting Engineers: Stuart, Phillips & Associates, Inc.  
 General Contractor: F. A. Wilham  
 Electrical Contractor: AAA Electric Co.  
 Mechanical Contractor: Christman Co.  
 Utility: Public Service Indiana

**15 PREPARED BY:**

James A. Syester, Commercial Sales Representative, Public Service Indiana.

**16 VERIFIED BY:**

*John A. Curry*  
 John A. Curry, AIA

*William A. Phillips*  
 William A. Phillips, P.E.



**NOTICE:** This is one of a series of case histories of buildings in all structural categories. If you are an architect or consulting engineer; an architectural or engineering student; an educator; a government employee in the structural field; a builder or owner, you may receive the complete series free by filling out the strip coupon at the left and mailing it to EHA. If you are not in one of the above categories, you may receive the series at nominal cost.

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## books

**Architecture versus Housing.** Martin Pawley. New York: Praeger, 1971. 127 pp. \$7.50 hardbound; \$3.95 paperbound.

One soon discovers that this book was written around a single relatively obscure British monograph. Called "The Architectural Belief System and Social Behavior," it was published in 1968 by Alan Lipman in the *British Journal of Sociology*. The paper, which this reviewer has not seen, apparently observes the obvious: that a great many architects believe that environment affects behavior. Whether Lipman takes some sort of stand on his own findings is not clear, but apparently Pawley has been waiting for some time to hear this. Our profession is, unfortunately, at this most indecisive moment, littered with people breathlessly waiting for *authority* to explain us to ourselves and/or confirm our worst suspicions.

The book begins with an adequate but not relevatory history of housing in the Western world. The interesting part starts on page 81 with the chapter "Breakdown of a Theory." Here Pawley uses two classic examples of housing gone wrong: the 1950's government-built housing blocks of Caracas and Lagos.

These examples *are* striking, but confusing. The Lagos housing failed because of bad management: delays, relocation and repurchase. There's no mention of any postconstruction evaluation of the design itself. This is not to say that the design was good, but simply that we don't know. The Caracas situation is a little clearer due to a United Nations report. The project was so dissimilar to any cultural experience ever encountered that the results were actual social disorganization, riots and even a few deaths. Again it is difficult to separate management from design. None of the inhabitants had ever paid rent before nor understood why they had to. At the same time, the housing is a Corbu copy of the most sterile variety that quite obviously offers none of the subtle and complex social interactions that the *barrio* did.

Enormous confusion follows the case studies. Pawley states, in a hedgy way, that these disasters occurred because the architects believed that "a manipulable relationship exists between architecture and behavior." This remains to be proved and, even if true, is trivial. For one thing, believing this does not mean one has to design with it in mind; for another, even granting the willfulness to do so does not guarantee good results. There is the question of enough valid research data (slim at the time) and, besides, good data can easily be wrong, as everyone in the man/environment field freely admits.

To confuse matters more, Pawley tacks off

sideways to show how all this environment and behavior stuff is a direct descendent of the International Style movement (Gropius, Loos, et al.), which is rabid nonsense. The International Style was just that—a style. It had no more meaning than any other "style" has had, except that it came at an unfortunate confluence of historical events—a time of nihilism, despair and moral collapse in Europe—and mirrored it perfectly. Man/environment research is, if in any way connected, a reaction *against* the arbitrary nature of style itself, perhaps catalyzed by that particularly nasty and inhuman vintage. The International Style was weak to begin with, requiring as it did a testy band of medieval scholars churning out tortured logic about how nifty machines were. It became widespread for two unfortunate reasons: Everyone was a bit dazed by recent events and the world suddenly needed a lot of buildings.

These are the muddy waters surrounding the case studies. Another version: These examples, used to discredit the possibility that environment affects behavior, did so on a scale never before attempted. It was all negative, to be sure, and nearly ruined the societies where perpetrated, but nevertheless "worked." To site examples which so clearly prove the opposite of what one claims is strange indeed.

As far as attributing to the architects the methodology of manipulating behavior



through design goes, a glance at the photo shows that they were simply following a style, plodding along in their supremacist way like most architects of the period, without any real notion of why they were designing the way they were. Actually, Donald Appleyard published a study in 1969 on the Caracas housing planning process, noting that some of the planners often made assumptions about user reactions. How conscious these were (before asked) is not clear, and the assumptions differed from planner to planner.

Once into his scourge, Pawley quickly exhumes the slightly paranoid threat of determinism, a trivial issue since the 17th century. Trivial because, if in fact *this is* a deterministic world, there's no point in attaching values to it; no amount of free will could change

### About This Month's Books

This issue contains more book reviews than is our usual custom. The reason is that in recent months a variety of provocative books have been published in the area of housing. Further, we were unable to cover all the many facets of housing in one monthly publication, and some of the books reviewed here are concerned with aspects of the subject to which it was impossible to allocate space elsewhere. By no means is this a bibliography of the so-called "best" books; it is simply an overview of some recent pertinent publications offered with the hope that the reader will be inclined to read more on the subject of housing.

things. The point is that environment *does* affect behavior, more in some people than others. Breakfast affects behavior. So does marriage. So the architect's weighty burden is not so bad; he shares it with cooks and marriage counselors. But not believing in the architect's part in the process will not make it go away.

Having dispelled the "behaviorists," Pawley turns to the "libertarians," those architects who advocate choice and variety in the environment. He dismisses them as well. Yet, just as soon as it seems that there is no pleasing the man, he hits upon two bright promises.

One is the prospect of "environmental education," or as he states it, "encouraging the 'mass client' to develop his individual creativity." This reviewer could not agree more, although there would surely be much quibbling over details. Pawley seems to have some sort of do-it-yourself program in mind, which is fine but skips an important step, namely, making people conscious of how the environment affects their behavior. He wouldn't like that part. Yet it makes no more sense to ask people to shape their own environment than to have architects do it if "the environment affects most people just beyond the focus of awareness," as Robert Sommer has noticed.

The other prospect, and the main one, is the work and *mise-en-scène* of the Archigram Group. This is how the book ends—in an abrupt shift, not with a bang, but with unguarded fascination over Archigram's toys. Obviously a victim of fashion himself, Pawley is ready to rush into this "style" without discovering how its artifacts might make people feel and behave, ready to duplicate and multiply the horrors he has so thoroughly documented. The heavy-sweet tone of *The Greening of America* is present, with photos of Woodstock blended with "instant city" and space suit environments.

Actually, domes, inflatables, pods, etc., are great fun, and the real beauty of them is their inextricableness with the "access to tools" philosophy of the *Whole Earth Catalog*. At least in America this has always been a do-it-yourself affair, meaning that whoever

The reviewer is executive secretary of the Association of Collegiate Schools of Architecture at AIA headquarters.

wants one gets one and vice versa. And if you find it unsatisfactory, you can discard it cheaply. It has appealed to date to those few souls who, even if not fully conscious of the alternatives or implications of making spaces, at least have the guts to guess for themselves. Pawley, on the other hand, concludes by outlining a way of institutionalizing this new and bold style of living so that everybody will get one.

The book has one heart-gulping photograph: Percy Jenkins, crying and poised, ready to jump from his housetop unless the city refrains from clearing the site for redevelopment. In the end, Percy conceded defeat and was led away weeping. Faced with the prospect of instant city, he might have jumped. DAVID CLARKE

**History of the House.** Edited by Ettore Camesasca. New York: G. P. Putnam's, 1971. 432 pp. \$22.50 until Jan. 1; afterward, \$25.

"The history of the house is the history of civilization," says Sir Robert Matthew, a past president of the Royal Institute of British Architects, in a foreword to this handsome volume. The book is weighty (no one would want to read it in bed), but its approach is not. Edited by Ettore Camesasca, it is a compilation of writings of an international group of professors and of senior staff members of various universities, institutes and museums. Originally published in Italy, the book is translated by Isabel Quigly. The superb photographs, many in color, and the illustrations and diagrams are integrated with the informative text.

Matthew is correct when he says that it would take "a sizeable library" to tell the story of the house, but this work seems to have been selective and at the same comprehensive enough to give the reader a background of information not only about houses, but also about furnishings and decorations which make them homes. Even the individual elements of the house are covered, including such particulars as windows, doors, bathrooms, kitchens, nurseries, kennels and cages for pets, courtyards and gardens and heating.

The evolution and development of the house is covered, spanning the thousands of years that divide primitive man's prehistoric huts from the modern dwellings of such influential architects as Erich Mendelsohn, Mies van der Rohe, Richard Neutra, Frank Lloyd Wright, Le Corbusier and others. Broad in its sweep of time, the book also ranges through a geographical span. It reaches from the Tibetan houses, closed to the world, to the open simplicity of Alvar Aalto's Finnish homes to the discipline of Philip Johnson's home in Connecticut.

There are physical descriptions of a great variety of dwellings and the way in which they influenced succeeding designs. Probably the most interesting aspect of the volume, however, is the study of the way in which the houses reflect the social mores of the people who inhabited them.

The book would make an appropriate gift for some architect's client, if he feels inclined to show some appreciation for mutual understanding and respect. Or better yet, a grateful client might give it to the architect.

**The American Heritage History of Notable American Houses.** Marshall B. Davidson. New York: American Heritage Publishing Co., 1971. 383 pp. \$16.95 until Jan. 1; afterward, \$19.95.

The AIA's own Octagon House is represented in this comprehensive history of America's most significant houses. With it are pictured and described in historical context those houses which have contributed to our architectural heritage.

Beginning with our legacy from Europe, the book moves on to consider Georgian and Federal classics and houses influenced by "Greeks, Goths and Tuscans." The chapter on "In Search of Style" is particularly intriguing. The volume concludes with a study of homes of our own century which includes reference to houses of the future. The epilogue is about "Ghosts of the Past," and here the demise of once famous structures is mourned and a simple plea made for wise preservation.



**Low Income Housing Alternatives: Observations from a Community Leaders Seminar.** Edited by Robert M. Beckley. Milwaukee: University of Wisconsin-Milwaukee, School of Architecture, 1970. 39 pp. \$3.

"Housing produced by the building industry and as supported and subsidized by local and federal government agencies does not meet the needs of low income families, large families nor families with needs and desires which differ from those of white middle class society. There is an obvious need to look for alternatives to the design of housing for special interest groups who have been excluded from decent housing because their needs do not meet the norms established by society."

This statement furnished the framework for a seminar/workshop held at the University of Wisconsin-Milwaukee in 1970, the purpose of which was to propose recommendations for the design of low income housing. The summary report presents the deliberations of leaders from various minority and special interest groups in Milwaukee who worked with the faculty and students of the School of Architecture to come up with

concrete proposals. At two sessions per week for four weeks, the participants questioned assumptions and policies. They concluded that adequate housing should be viewed as a human right in an affluent society; that the process of acquisition of housing is as important as the product; and that the adequacy of housing shapes one's attitude toward society.

Some of the statements are controversial; for example: "If middle class America objects to the lifestyles of the poor, perhaps they should pay people not to be poor." Except in the case of welfare recipients, seminar participants agreed that housing is subsidized rather than families but that the reverse is more desirable. The family then, as suggested in *A Decent Home*, the report of the President's Committee on Urban Housing (Washington, D.C.: US Government Printing Office, 1969), has greater choice in housing location and type with a resulting better distribution of low income families. Also the onus is removed from federally subsidized projects with greater acceptance by neighborhoods; the market is expanded for new housing which encourages developers and lending institutions to increase the rate of housing supply; and given "fair housing legislation and enforcement, the market for slum housing would be greatly increased, forcing slum landlords to renovate or rebuild" to capture the housing market.

The participants believed that this major recommendation would have a profound effect on existing government programs. They envisioned the Federal Housing Administration continuing its role of encouraging construction, but "much of its work would be eliminated and mechanisms would have to be established to reach people directly who qualify for housing subsidies." The attendees at the seminar thought that a major question remaining, however, would be whether the housing industry would respond to the special needs of nonstandard families.

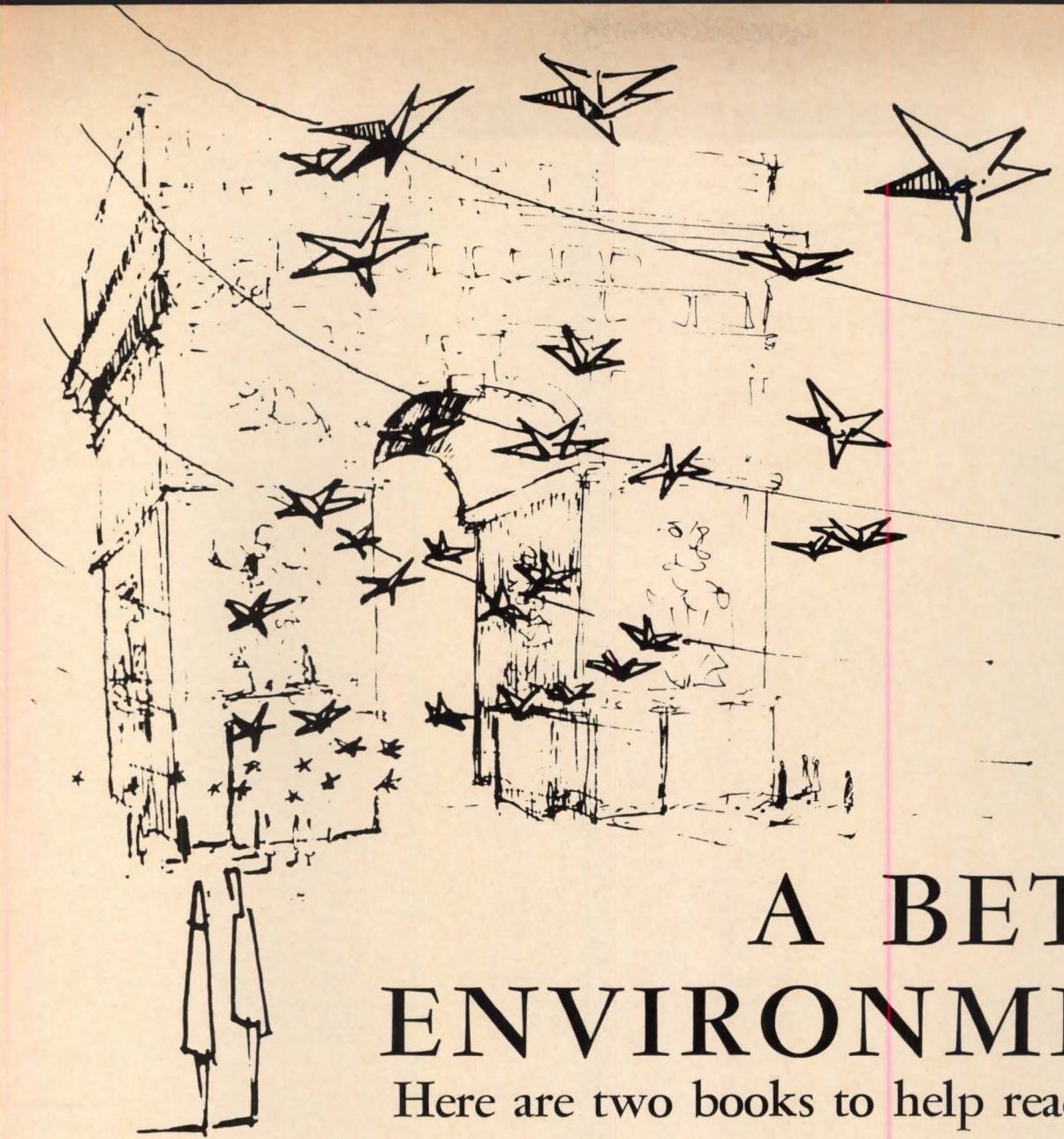
Participants found a "tyranny of the white middle class value system" with economic, cultural, ethnic and racial segregation patterns in existence that are reinforced by present building patterns. "What is not perceived," they reported, "is that many low income families have low incomes because they are not 'typical' in the middle class white tradition."

Housing needs vary, and the participants found the idea of the minimum standard requirements of the Department of Housing and Urban Development which affect size, distribution and kinds of space simply reflect what is conceived of as minimum needs of a so-called typical family. Moreover, the participants said that Operation Breakthrough's proposals for performance requirements are based on conventional concepts of "activity distribution, room designations and use and family composition" and come close to specifying the same old minimum standards previously established.

Given the constraints of subsidized housing, the participants made several recommendations in the matter of choice. First, assuming that only conventional housing is available to low income families, what can be done to make this housing more adaptable

*continued on page 57*





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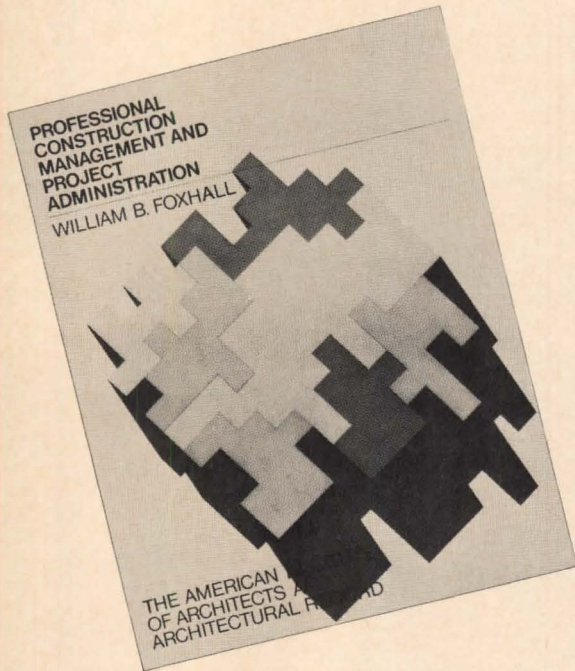
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Professional Construction Management and Project Administration—a hardcover volume—has been published by the AIA and Architectural Record at a retail \$15.00. Special price to AIA members is \$12.00. To obtain your copy of Professional Construction 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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to the peculiar needs of a nonstandard family? Seminar participants recommended that subsidies extend to include furnishings. They suggested a furniture allowance as a "necessary investment for making housing built to minimum space standards livable" and that this allowance possibly be part of "the financing package" of construction or rehabilitation. They went on to suggest that government support be given for research into the manner in which better designed furniture can be achieved, noting also that benefits would accrue to moderate income families.

The participants also recommended a choice in interior space arrangements. Rather than people adapting to space, why not have space adapt to them? They thought that housing should be designed so that the interior space could be subdivided according to the wishes of a family and that the minimum standard for space apply only to overall size or square footage of the unit. It was recommended that client contact groups be established to help residents determine alternative interior arrangements to fit their lifestyles.

Another choice involves client participation. How the site is to be developed is of concern to the homeowner. "Would residents be willing to trade a half-bath or finished basement for a community recreation center?" The seminar participants expressed the view that many people would sacrifice dollars from their personal dwellings for community related facilities. They recommended that

pre-resident community groups be established to determine what possible options would be most desirable to all and that the residents be encouraged to express their own lifestyles and needs.

A controversial report this is, but also a provocative one. It's small in number of pages but big in mind-teasers. MARY E. OSMAN

**Building with Nature.** Richard Neutra. New York: Universe Books, 1971. 223 pp. \$18.50.

Neutra worked until the end of his life in April 1970 to make architecture a link with the natural world and to have it enrich the lives of its users.

This book, first published in a German edition early in 1970, is an overview of his architecture of houses. He writes about his experiences with clients and his concern to keep their wishes and needs in mind in his designs for their dwellings. Neutra designed many architectural types—churches, schools, libraries, hospitals, hotels—but the architecture he considered most challenging was the individual house. His philosophy is summed up in an essay printed here called "The Individual Counts."

The text and the accompanying photographs and floor plans show the sweep of his residential architecture—from the deserts of California to the Swiss Alps. They all seem to form part of a continuum. As the book suggests, perhaps the Research House in Los Angeles, now the seat of the Institute of Survival through Design, shows best how the newest and oldest of his projects are in tune

with each other. Built first in 1932 and rebuilt after a fire in 1963, the house demonstrates Neutra's theory that "our living spaces should not be separated too much or too long from the green world" of nature.

**The Illustrated Guide to the Houses of America.** Edited by Richard M. Ballinger and Herman York. New York: Hawthorn Books, 1971. 259 pp. \$13.95.

An overview of American housing from the traditional colonial mansion to the cubistic retreat. Divided into geographical sections, the book is made up of contributions by a number of America's builders and architects, with an overall introduction by Ballinger. There are 223 photographs which add to the book's attractive format and complement the text.

Among the AIA members who have written various chapters are Henry D. Norris of Atlanta; John Anderson of Bellevue, Washington; Richard R. Leitch of Newport Beach, California; and Herman York of Jamaica, New York.

This book gives a prospective homeowner a survey of houses in this country and will be of practical assistance to him. It's also great fun just to read.

**Activities and Attitudes of Public Housing Residents: Rockford, Illinois.** University of Illinois at Urbana-Champaign, Committee on Housing Research and Development, 1971. 92 pp. \$4.

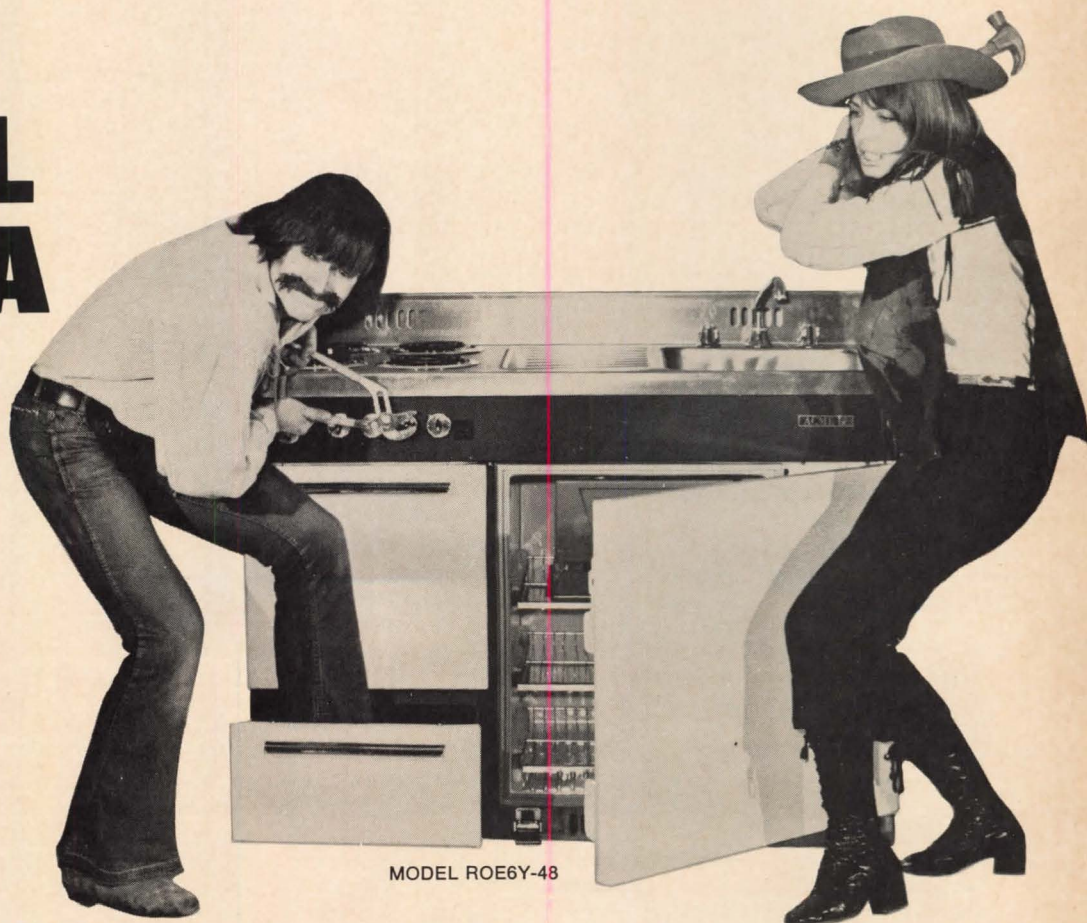
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project in Rockford, Illinois. A study was made to determine the designer's expectations of how residents would use the site compared to actual use and the attitudes of residents toward their housing environment.

The researchers make two sets of recommendations, one for Orton Keys and the other for future housing. Among those for the latter are: The level of car ownership should be surveyed to determine parking needs; parking facilities should be provided for bicycles and motorcycles; curbs should have ramps to facilitate use of wheelchairs, etc.; natural topographical features should be used to full advantage; efficient methods of trash and garbage collection should be provided; the best possible materials should be used in construction to lessen maintenance problems and cost; dwelling units should incorporate as much storage space as possible; lockable exterior space should be provided; and provision should be made for separate family activities to occur simultaneously without disturbance.

**Housing Action: A Guide for Doing Something about Housing Problems in Your Community.** Cambridge: OSTI Press, 1969. 144 pp. \$1.50.

This research report, prepared under a contract with the Office of Economic Opportunity, informs people of low income about strategic group action that can be taken to help correct slum conditions and keep rents down. It is useful as well for those who want to build low and moderate income housing to develop the community economically and to provide adequate and decent housing for its people.

**Operating Costs in Public Housing: A Financial Crisis.** Frank deLeeuw. Washington, D.C.: Urban Institute, 1970. 63 pp. \$1.25.

Operating costs of public housing have risen so rapidly that a crisis has ensued. This report endeavors to establish the relative importance of such factors as general price and wage inflation, tenant characteristics, building age and number of units in rising costs. With data from 23 cities, it attempts to establish an aggregate picture of the present public housing rent system. It suggests current and possible future trends in the factors influencing costs and rents. Its findings are useful to those concerned about public housing in general.

**Home Ownership for the Poor: A Program for Philadelphia.** Charles Abrams, with the assistance of Robert Kolodny. New York: Praeger, 1970. 225 pp. \$13.50.

The authors of this study commissioned by the Philadelphia Community Renewal Program believe that people who own their own homes have a greater stake in the community than do renters. Addressing themselves to this point, they propose innovative programs that concern ownership, many of which can be implemented at the local level.

The book is a study of the low income and minority housing problems of Philadelphia. It is also a catalog of recommendations for new approaches to home ownership with suggested financial arrangements that these programs require. It will provide pointers

for every large city concerned with the critical problem of housing for the poor.

The authors are the noted planner, the late Charles Abrams, and Robert Kolodny, an instructor in urban planning at Columbia University's School of Architecture.

**Apartments.** Washington, D.C.: National Housing Center Library, 1971. 78 pp. \$5.

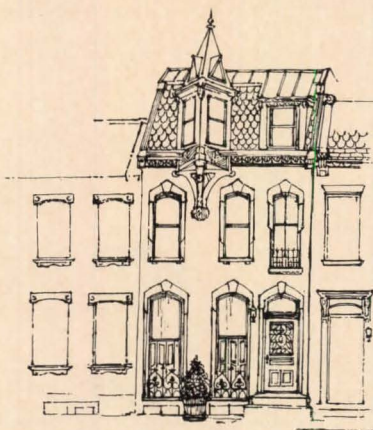
This is the seventh edition of a bibliography prepared by the National Housing Center Library. It includes a selected list of references to books, pamphlets and periodical articles on the subject of apartment houses published through July 1971.

**Housing: Mass Industrialization.** Harvard Graduate School of Design and the National Urban Coalition. Cambridge: Harvard Graduate School of Design, 1971. 96 pp. \$5.

The proceedings of the 13th Urban Design Conference, Development Forum-8, held in Cambridge May 6-8, 1970.

**A House in the City: A Guide to Buying and Renovating Old Row Houses.** H. Dickson McKenna. New York: Van Nostrand Reinhold, 1971, 159 pp. \$12.95.

People who want to live in the city and shun the hinterlands will take special pleasure in this book. Here an AIA member who has had experience in remodeling a number of city houses, including his own in Brooklyn, New York, tells the reader what he needs to know about finding, evaluating, buying, renovating and living in city row houses.



The long narrow box that is the usual city row house has different problems and possibilities from the suburban or country house. With straightforward explanations, McKenna shows the reader what many people have done to make such houses comfortable for contemporary living. His text is supplemented by hundreds of photographs, drawings and plans. The appendix gives a sequence of procedures for a typical renovation.

**Regulation of Modular Housing, with Special Emphasis on Mobile Homes.** Frederick H. Bair Jr. Chicago: American Society of Planning Officials, 1971. 104 pp. \$6.

No single land use seems to generate the controversy that the space for a mobile home does. As this useful manual from the American Society of Planning Officials indicates, the report will doubtless raise hackles. It will offend some communities who want their safeguards against mobiles and who will

think the recommendations here are too loose for the mobiles. It will irk those in the building industry who think the mobile should be considered distinctly from other modular housing. But the ASPO simply recognizes that mobiles form a substantial part of low and moderate income housing and that sensible regulations about them are long overdue. If considered without bias, the report is decidedly in the public interest.

Planning consultant Bair has three major areas of concern and he considers them all in depth: general regulatory considerations, construction standards and land use regulations. He forecasts future use of mobiles and other modulars and makes some informed judgments about them.

This is the final report in a series of three on modular housing, including mobiles, that have been issued by ASPO. The first is *Mobile Homes and the General Housing Supply*; the second, *Modular Housing, Including Mobile Homes: A Survey of Regulatory Practice and Planners' Opinions*.

The architect engaged in the design of a mobile home park will find this report of tremendous assistance.

**Housing Systems Proposals for Operation Breakthrough.** Washington, D.C.: US Department of Housing and Urban Development, 1970. (Dist. by Supt. of Documents, Government Printing Office, Washington, D.C. 20402). 590 pp. \$5.25.

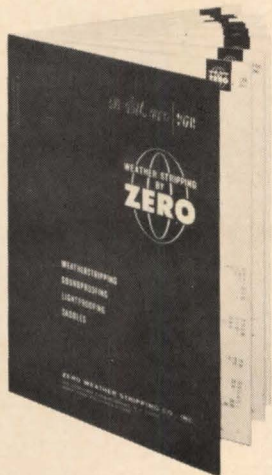
Press releases concerning this book called it HUD's "most ambitious publication to date" and predicted that it would be a "best seller in the housing field." One of its values is its quality as a reference point for future housing development because it provides an overview of current technology.

Operation Breakthrough was inaugurated in order to demonstrate solutions to the problem of providing quality housing in large volume. This rather massive tome presents the major concepts in each proposal generated by the program. It does not editorialize nor make any judgments about the merit of any particular project. What we have is a summary of 423 housing systems proposals submitted for Operation Breakthrough, including the 22 which were selected for contract negotiations on nine prototype sites. The concepts are broken down into various pertinent categories, including the kind of materials proposed, building methods, production estimates, etc. There is a brief description of each proposal included, and illustrations where suitable graphics were available. The appendices provide an alphabetical index of housing system proposers as well as a geographical one.

The book is a valuable reference work. The technical data was prepared by the Building Research Advisory Board of the National Academy of Sciences. Its editor, Ralph J. Warburton, AIA, HUD's special assistant for Urban Design, and those associated with him on the publication are to be commended for the manner in which they have compressed an enormous amount of information into one easily comprehended whole. It is certainly a book to be kept close by for ready reference if one's concern is housing.

*continued on page 60*

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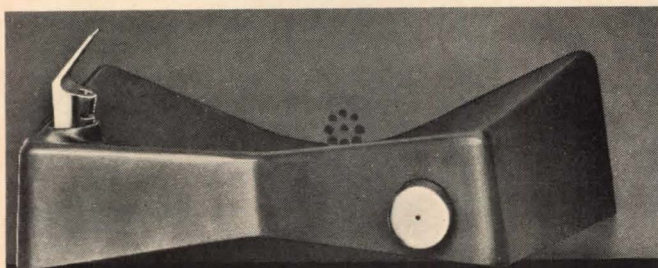
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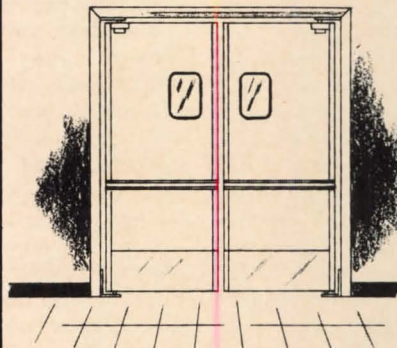
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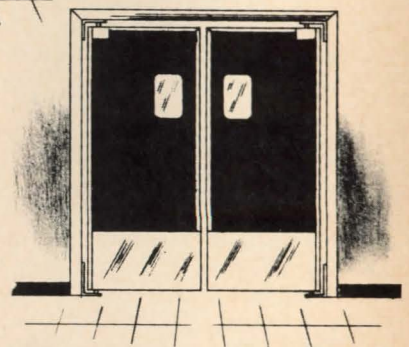
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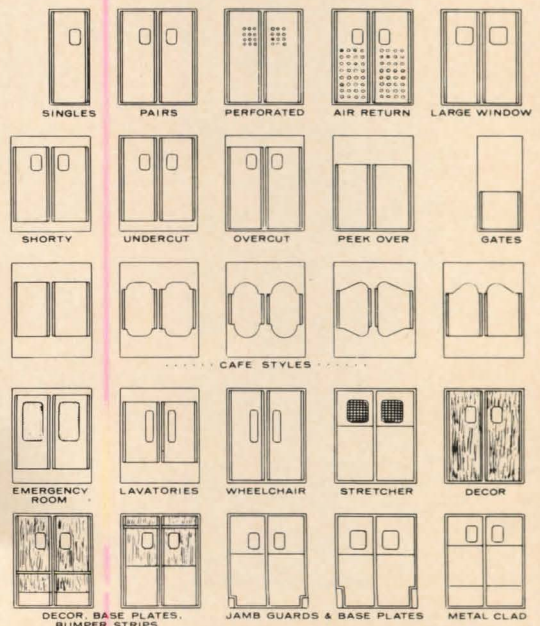
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**Housing and Economics: The American Dilemma.** Edited by Michael A. Stegman. Cambridge: MIT Press, 1970. 517 pp. \$15.

Here in one volume are some 20 scholarly and perceptive articles by experts who are concerned about the economics of a housing policy.

The book is divided into four sections, each of which is introduced by an essay that provides an analysis of the papers that follow. The sections are called Macro and Micro Contexts; The Components of Housing Costs; Evaluating Housing Programs; and On the Horizon. Such subjects as land planning and the property tax, housing effects of a guaranteed annual income, neighborhood change and industrial efficiency are covered. All relate to applied economic analysis.

The editor declares that in spite of many books and articles that focus on the so-called urban crisis that none of the recent ones presents "penetrating analyses of low income housing policy." Nor do they, he says, help in an evaluation of the many "housing solutions" being offered. He calls for keener insights into the strengths and weaknesses of such proposals and has compiled this book with this view in mind.

**Recording Historic Buildings.** Compiled by Harley J. McKee. Washington, D.C.: US Government Printing Office, 1970. 165 pp. \$3.50.

This publication's aim is to serve the needs of those who are concerned with the problems of architectural recording and the pres-

ervation of historic structures. Based on more than 30 years of experience in the Historic American Buildings Survey, the present edition incorporates new materials on the principles and standards for recording historic architecture.

It is not simply an instruction book useful to those who record historic buildings professionally; it is also a source of considerable information on such subjects as architectural photogrammetry, proper photographic recording, specialized recording techniques, etc. New sections have been included to discuss the HABS inventory, landscape architecture, area studies, historic districts, history of planning, civil engineering and industrial archeology.

**City Appearance and the Law: A Manual to Assist in the Development of Ordinance-Based Visual Improvement Programs in Smaller Cities.** Charles N. Carnes and C. M. Smart Jr. Fayetteville, Ark.: City Planning Division, University of Arkansas, 1971. 140 pp. No price given.

This is a welcome addition to the growing literature on visual pollution in cities. The book covers four basic community appearance problems: 1) weeds and other vegetation; 2) refuse and litter; 3) outdoor storage; and 4) utility wires and equipment.

While the approach and scope of the report, financially aided through an urban beautification and improvement demonstration grant from the Department of Housing and Urban Development, are not as broad as

the title would imply, nevertheless it contains solid proposals and model ordinances to attack the subject areas mentioned. The report is good evidence of the increasing cooperation between urban design and the law.

**Site Planning.** 2nd ed. Kevin Lynch. Cambridge: MIT Press, 1971. 384 pp. \$10.

This second edition of a work published in 1962 is over 100 pages longer than the original. There is much updated information on the art of site planning and new material on such topics as ecology, psychosocial analyses and design methods. Also there are added photographs and an amplification of the cross-reference system in the margins. The first edition was praised in the architectural press; the second will very likely be just as widely received as a book of inestimable assistance to anyone who is concerned about the external physical environment.

**Making the City Observable.** Richard Saul Wurman. Minneapolis: Walker Art Center; Cambridge: MIT Press, 1971. 96 pp. \$7.50 hardbound, \$3.95 paperbound.

This is a kind of *Whole Earth Catalog* for the city. It's a catalog of projects, books, ideas, guides, maps, etc., to make the city observable. For example, there is information about the National Air Photo Library in Ottawa, the New Haven census study, subway maps of Manhattan, the Boston Society of Architects' guidebook called *Boston Architecture*, Mexico City's metro graphics, the Group for Environmental Education, Inc., Frank Williams' three-dimensional urban models, etc., etc. It attempts to outline a syllabus for urban communication through the juxtaposition of some 80 objects. For Wurman, "Making the city observable implies allowing the city to become an environment for learning." Altogether, a most intriguing idea and a spiffy book.

Brought out in book form by the MIT Press, the publication is also a special issue of *Design Quarterly*, a periodical of the Walker Art Center in Minneapolis. Wurman, whose fertile brain thought of all this, is a partner in the architectural and urban planning firm of Murphy Levy Wurman in Philadelphia and currently a professor at the City College of New York.

**Environmental Physics: Acoustics.** B. J. Smith. New York: American Elsevier, 1970. 138 pp. \$9.45.

A technical book from the British point of view which contains current information on the measurement of sound; aural environment; room acoustics; structure-borne sound; airborne sound; and the three main bases for the determination of criteria: hearing damage, speech interference and annoyance.

**Illustrated Glossary of Architecture, 850-1830.** John Harris and Jill Lever. New York: Clarkson N. Potter, Inc., 1971. 78 pp. \$12.50.

This is the first American edition of a book published in England in 1966. In addition to the written text, there are 224 plates which add to the book's usefulness. Although the American student of Colonial architecture may not find vernacular terms, the glos-

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sary is of value because it defines terms of architecture in general use for the study of British architecture until about 1830.

**Museums: In Search of a Usable Future.** Alma S. Wittlin. Cambridge: MIT Press, 1970. 300 pp. \$15.

Dillon Ripley of the Smithsonian Institution remarks in the foreword to this book that a museum has been called a "social planetarium." Not only does it serve as a collecting and retrieval point for man's evolution over the years but it "can and should reflect the present, thus acting as a reflection of our age."

In this comprehensive study, Dr. Wittlin details just what a museum is. An account of the historical roots of the museum is given and its present functions are examined.

This is not a book on how to design a museum, but an architect who is concerned about the structure which will house a collection will find it helpful because of its attention to all aspects of a museum's function. The chapter on a "Twelve-Point Program for Museum Renewal" is particularly pertinent. The author underscores the fact that mere exposure to exhibits doesn't result in learning.

**Architectura Navalis Mercatoria: A Facsimile of the Classic Eighteenth Century Treatise on Shipbuilding.** Fredrik Henrik af Chapman. New York: Praeger, 1971. 102 pp. \$25.

First published in Stockholm in 1768, this classic has been published in many editions.

The bicentenary edition is dedicated to the memory of Henrik af Chapman, the pioneer who turned shipbuilding into a science. The handsome book will give great pleasure to those interested in the history of naval architecture as well as to 20th century model builders.

The present edition is in two parts, containing also Chapman's *Treatise on Shipbuilding* which was completed several years after *Architectura*. With the detailed foldout plates in the latter and Chapman's explanatory text in the former, we have, as the introduction states, virtually a manual of design of various types of craft of the mid-18th century. Featured are not only merchant ships, as the title suggests, but a number of warships of various types. Selected parts of a 19th century translation into English by James Inman of the *Treatise* have been extracted. Data for such items as cost, armature, dimensions, etc., of individual ships are grouped for each plate and printed by it.

**The Acropolis.** R. J. Hopper. New York: Macmillan, 1971. 240 pp. \$10.

This beautiful book about the "upper city" of Athens gives the reader an insight into "the glory that was Greece." The ancient Greeks looked to the Acropolis for defense in time of siege and for protection by the gods.

As Hopper relates, the construction of the buildings of the complex and the creation of its art evolved against a background of history. Here is that history from the prehistory

of myth and sage to the high point when the Periclean Acropolis was built, and then on through its decline and to its rediscovery by 19th century travelers and archeologists.

There is a detailed account of all the buildings—the Parthenon and the Erechtheum and all the minor structures. There is a section on the exquisite sculpture and other works of art, and an epilogue.

The Acropolis "is a battered remnant compared to its original state, but in view of the many vicissitudes of fortune it is surprising so much remains, surviving so many perils, and still facing two more, the feet of tourists and atmospheric pollution," says Hopper.

The magnificent photographs, which contribute greatly to the book, are by Werner Forman.

**Civilizing American Cities: A Selection of Frederick Law Olmsted's Writing on City Landscapes.** Edited by S. B. Sutton. Cambridge: MIT Press, 1971. 310 pp. \$12.50

Olmsted's writing in the first chapter of this anthology focus on his general views of urban society, landscapes and city design. The following section concentrates on specific considerations, namely, his commentaries on plans for San Francisco, Buffalo, Chicago, Montreal and Boston. The final section concerns exurban solutions to urban existence.

In the editing, as the editor states, some historical content has been sacrificed, but the distillation "helps to sharpen the focus upon Olmsted's understanding of and solution for urban spaces." □

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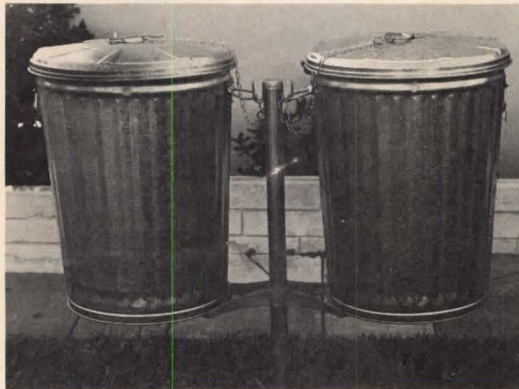
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# letters

## National Institute of Building 'Silence'

The title is not the result of a misprint; it is a deliberate warning directed to those responsible for the establishment and running of the proposed "National Institute of Building Science." I enthusiastically welcome the proposal of such an institute, as it is high time that we as a nation catch up with other nations who are ahead of us in this field.

The first burning question is as follows: Will the proposed institute *communicate*? I have had, and I believe many of my colleagues have also, painful experiences trying to get building science or building research information from those who, supposedly, have it.

Governments or their agents have no right to withhold data for six to nine months or whatever it takes to make it obsolete. The

only exception is when the nation's security is in danger. This is not normally the case with building science or building research information. On the contrary, the lack of proper arrangements for disseminating such material may endanger the nation. It may cause urban, rural, environmental, social and various other deterioration in the country, which could otherwise be elevated or be progressing more reasonably if the necessary data would be readily and immediately available. In this respect we can learn from the medical field, or even from agriculture.

A great deal of effort, talent, money, equipment is wasted by stubbornly sticking to old dusty rules of secrecy and senseless prevalence of formalities devoid of meaning and promoted by unthinking or jealous executives. In many aspects of national or private life we have now realized that we cannot afford to waste available resources: We simply are not as rich as we thought. Why, then, are we so stubborn when it comes to building, building science, building research, building technology, building codes, building information, building for *all* of us?

It seems to me that there is an opportunity for all of us to improve the situation. This chance is being presented by the pending bill on the establishment of a National Institute of Building Science. Those who have anything to say in defense of the user, in defense of quality and in helping to make the building industry serve the people for whom it really exists — all these should speak now in order to get this proposed institute off on the right foot. We still have a chance to learn past and present mistakes from our neighbors and from other nations; and these mistakes are impressive. The new institute should be established with the specific provision and obligation for speaking up to the consumer, for the public, to communicate freely and not to become, like some fear, another "Institute of Silence."

TIBOR CSIZMADIA

Director of Research  
Building Industrialization Research  
and Development, Washington University  
St. Louis

## Cheers for October

The October issue on regional development is particularly fine, especially Albert Mayer's "the region and regional development quality are now also the invisible client"; and Paul Spreiregen's "Man and nature could be one in their richest forms."

CHARLES WILLIAM BRUBAKER, FAIA  
Chicago

## Setting the Record Straight

If any of your readers were intrepid enough to read my review of *AIA Building Construction Legal Citator* in the September issue, they may be understandably confused about one point. The first line of the fourth paragraph omitted a few words, leaving the balance of that paragraph in conflict. The first sentence should have read, "What this arrangement *does not* tell us, however . . ."

MILTON F. LUNCH  
General Counsel  
National Society of Professional Engineers  
Washington, D.C.

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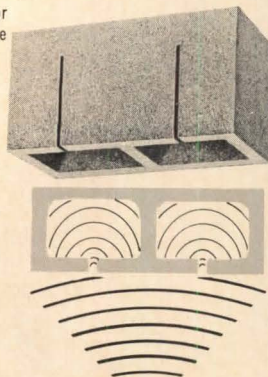
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# events

## AIA State and Region

- Jan. 6-8:** Grassroots Conference East, Statler-Hilton Hotel, Washington, D.C.  
**Jan. 13-15:** Grassroots Conference West, Arizona Biltmore Hotel, Phoenix  
**Jan. 17-19:** Grassroots Conference Central, Royal Orleans Hotel, New Orleans  
**Jan. 27-29:** Iowa Chapter Convention, Johnny and Kay's Hyatt House, Des Moines

## National

- 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  
**Jan. 26-30:** Society of Architectural Historians Annual Meeting, San Francisco Hilton Hotel, San Francisco

## International

- Jan. 8-9:** International Symposium on Institutions for a Post-Technological Society, Museum of Modern Art, New York City

## Awards Programs

- 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 Headquarters, 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: AIA Headquarters, 1785 Massachusetts Ave. N.W., Washington, D.C. 20036.

- Feb. 15:** Entries due, R. S. Reynolds Memorial Award for Distinguished Architecture with Significant Use of Aluminum. Contact: AIA Headquarters, 1785 Massachusetts Ave. N.W., Washington, D.C. 20036.

## Fellowships and Scholarships

- Dec. 15:** Applications due, AIA/AIAF Scholarship Program. 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.

## Call for Papers

- Mar. 31:** Submissions due, Analysis of the Architectonical Work of Carlos Raul Villanueva. Contact: *Revista Punto*, Division de Extension Cultural, Facultad de Arquitectura y Urbanismo, Ciudad Universitaria, Caracas 104, Venezuela.

## Tours

- Apr. 6-28:** Architecture Tour of Japan. Contact: Kenneth M. Nishimoto, AIA, 285 S. Los Robles Ave., Pasadena, Cal. 91101. □

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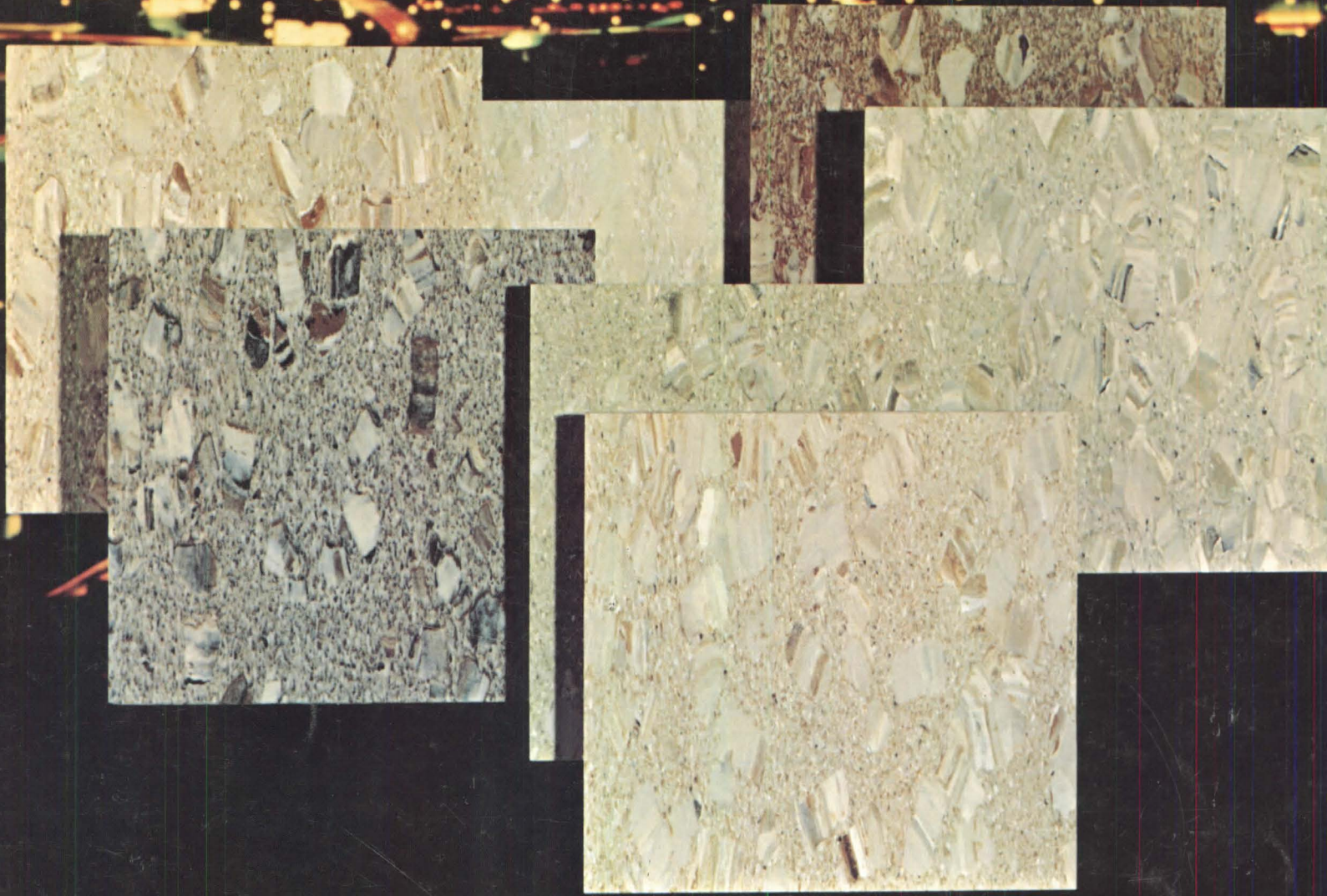
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Consult Sweet's File or write for samples.  
Azrock Floor Products, 556A Frost Bldg., San Antonio, Texas 78205