# JOURNAL

Jonas Clarke Junior High School Lexington, Massachusetts Flooring installed 1970

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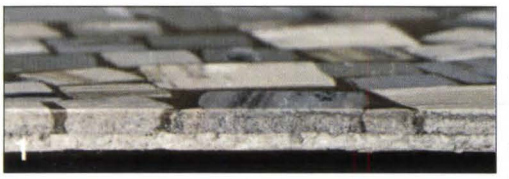


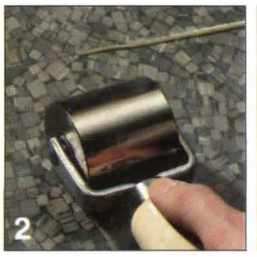


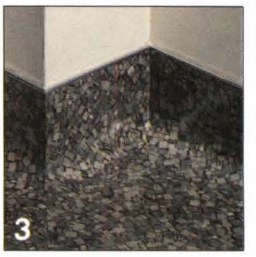


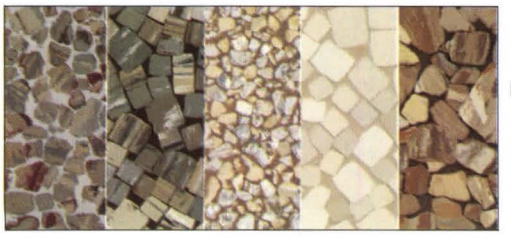

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# CONTENTS



## Hawaii



**Cover:** Photograph by David Franzen of the Iolani Palace, built in 1882 (page 79).



The AIA JOURNAL, publication number: ISSN0001-1479, official magazine of The American Institute of Architects, is published 14 times yearly at 1735 New York Ave. N.W., Washington, D.C. 20006. **Subscriptions:** for architects; students and faculty of architecture schools; libraries; building construction trade associations and building products manufacturers, in the U.S. $24 and in Canada $32. For all others, in the U.S. $30 and in Canada and other foreign nations $40 a year. Single copies, $3 each. Publisher reserves the right to refuse unqualified subscriptions. For subscriptions: write Circulation Department; for change of address: send Circulation Department both old and new addresses; allow eight weeks. Quotations on reprints of articles available. Microfilm copies available from University Microfilm, 300 N. Zeeb Road, Ann Arbor, Mich. 48106. Referenced in *The Architectural Index, Architectural Periodicals Index, Art Index, Avery Index to Architectural Periodicals.* Second class postage paid at Washington, D.C., and additional mailing offices.  VOL. 71, NO. 3.

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# DAKOTA TO PUERTO RICO DEVELOPMENT.


Dick Havekost, Vulcraft General Manager, Florence, South Carolina, at Plaza Carolina, San Juan, Puerto Rico.

# EVENTS

**April 1-2:** Seminar on Structural Design of Industrial Buildings, University of Wisconsin, Madison, (Department of Engineering & Applied Science).
**April 2:** Workshop on Passive Solar Heating, Middlebury, Conn. Contact: Connecticut Society of Architects, 85 Willow St., New Haven, Conn. 06511.
**April 2-3:** AIA Energy in Design: Techniques Workshop, New York City and Pittsburgh. (Repeat workshops April 14-15, Greenville, S.C.; April 16-17, Armonk, N.Y.) Contact: Brenda Henderson at Institute headquarters, (202) 626-7353.
**April 2-3:** AIA Energy in Design: Process Workshop, Richmond, Va. (Repeat workshops April 23-24, Argonne, Ill.; April 30-May 1, New York City). Contact: Brenda Henderson at Institute headquarters, (202) 626-7353.
**April 14-16:** Workshop on Wind Tunnel Modeling Criteria and Techniques in Wind Engineering Applications, Gaithersburg, Md. Contact: Timothy A. Reinhold, Building Research B168, National Bureau of Standards, Washington, D.C. 20234.
**April 14-17:** National Solar Energy Building Design Studio-Workshop, Iowa State University (College of Design), Ames, Iowa.
**April 16-17:** Conference on The International Style in Perspective, Harvard Graduate School of Design, Cambridge, Mass.
**April 17-20:** Annual Conference of the Environmental Design Research Association, College Park, Md. Contact: EDRA 13 Organizing Committee, 1401 Marie Mount Hall, University of Maryland, College Park, Md. 20742.
**April 19:** Seminar on Computer Graphics in Architecture and Engineering, Boston. (Repeat seminars April 21, Chicago; April 23, Los Angeles; May 17, Washington, D.C.; May 18, Houston; May 20, Denver.) Contact: George S. Borkovich, Editor, The Paper Plane, 3400 Edge Lane, Thorndale, Pa. 19372.
**April 19-20:** Course on Introduction to Federal Projects and Historic Preservation Law, Chicago. (Repeat courses June 7-8, Denver; July 19-20 and Sept. 13-14, Washington, D.C.) Contact: Office of Personnel Management, Management Sciences Training Center, P.O. Box 7230, Washington, D.C. 20004, or Advisory Council on Historic Preservation, 1522 K St. N.W., #430, Washington, D.C. 20005.
**April 23-24:** AIA Energy in Design: Practice Workshop, Providence, R.I. Contact: Brenda Henderson at Institute headquarters, (202) 626-7353.
**April 26-30:** Solar Energy Conference, Albuquerque, N.M. Contact: Angela Cheung, Technical Programs, American Society of Mechanical Engineers, 345 E. 47th St., New York, N.Y. 10017.
**April 29-May 9:** Second Annual Energy Tour to France, sponsored by Commasariat à la Energie and *Mother Earth News*. Contact: Linda Bouwkamp, Jordan College Educational Travel Service, 360 W. Pine St., Cedar Springs, Mich. 49319.
**June 6-9:** AIA National Convention, Honolulu, Hawaii.

# LETTERS

**More About Mr. Nelson and Mr. Wolfe:** A thousand accolades for George Nelson! His outstanding abilities, experience, insight and perception, reinforced by lightning humor, become flashing saber strokes that slash Tom Wolfe's media chic look-at-him costumes into ribbons, exposing his naked mendacity and malignance (see Dec. '81, page 72).

Wolfe's costumery befits the standup entertainer he is, entertainer with a Yale Ph.D. He victimizes professionals and others, especially those addicted to and enamored of handsome entertainers, talk show hosts, portentous newscasters and other tube gurus.

Was it at Yale that Wolfe learned so well the canons of aggressive humor? Picaresque Wolfe dispenses a mixture of calumny, half truths and full lies, slightly diluted in racy language and a few facts, that entertains empty architects and unknowing others. This merchandise, and his previous scripts, have sold for many dollars. That pale Shade, standing beside the River Styx, saying, "Honorable, shmonorable, it makes money, yes?"—that cannot be the Shade of Elihu Yale, can it?

*Norman N. Rice, FAIA*
*Philadelphia*

Tom Wolfe's *Bauhaus* has got to be the greatest book about architecture to enter the mainstream since Ayn Rand's *Fountainhead*. Finally, the public is beginning to pronounce "architects" properly and take a greater interest in the built environment. Mr. Ed and his horse have, hopefully, galloped into obscurity.

Whether an architect agrees or not with Wolfe's rhetoric is not so important as the fact that we, architects, are being placed on public view, warts and all. This is a great opportunity to garner some marvelous, positive P.R. for our profession. We should not be so concerned defending the Bauhaus theories, or other movements, so much as to prove what we are doing today is good.

Most architects are followers. The so-called postmodern movement is sufficient proof.

The disturbing element of George Nelson's critique is the energy spent defending the Bauhaus and downgrading Wolfe. Space and time would have been better spent analyzing the positive aspects of his book.

Here is an opportunity to expand the public awareness of architecture. Hopefully, Wolfe will continue to write about architecture.

*F. Louis Wolff, AIA*
*Ft. Lauderdale, Fla.*

**Computers in Architecture:** I seriously question the wisdom of a crash program of education on computers in architecture (see AIA JOURNAL, Dec. '81, page 13, and MEMO, #617, page 3). Computers are very complex and sophisticated machines. For the first time in human history, we have a device that, with appropriate programming, can be anything we want it to be. A copy machine makes copies, a vacuum frame allows us to make composites of overlays, and that is all they do. A computer can be a word processor, a structural designer or an electronic drafting machine—sometimes all at the same time. This has been the hardest point to get across to people uninitiated to computers.

I became interested in computers in my second year of architectural school (1971), and it was the focus of my studies during the remainder of my education and the years since graduation. My research and work has revealed to me that the computer is literally only limited in application to the depths the human mind can reach. What we see now is only a small fraction of the potential that exists. That potential promises, with intelligent, rational and creative utilization, to completely do away with the practice of architecture as we know it today. Granted, this is long term, and many millions of dollars will have to be spent to realize it, but the potential is there nevertheless.

Now that we are on the threshold of something this promising, are we going to pull the same stunt we have with the energy crisis? Certain knowledgeable people have predicted for 20 years the very energy crisis we are dealing with today. Instead of listening and planning wisely, we continued on our merry way until things got bad. When we finally woke up, we threw things together to tide us over until we could get enough research to make intelligent decisions.

The use of computers in architecture is an area of practice filled with much ignorance, resistance and false preconceptions. The problems are not simple and the solutions will not be simple. If the Institute can devote its time and energies to compiling comprehensive information about the true possibilities of computers, keeping in mind the long term, the pro-

*continued on page 11*

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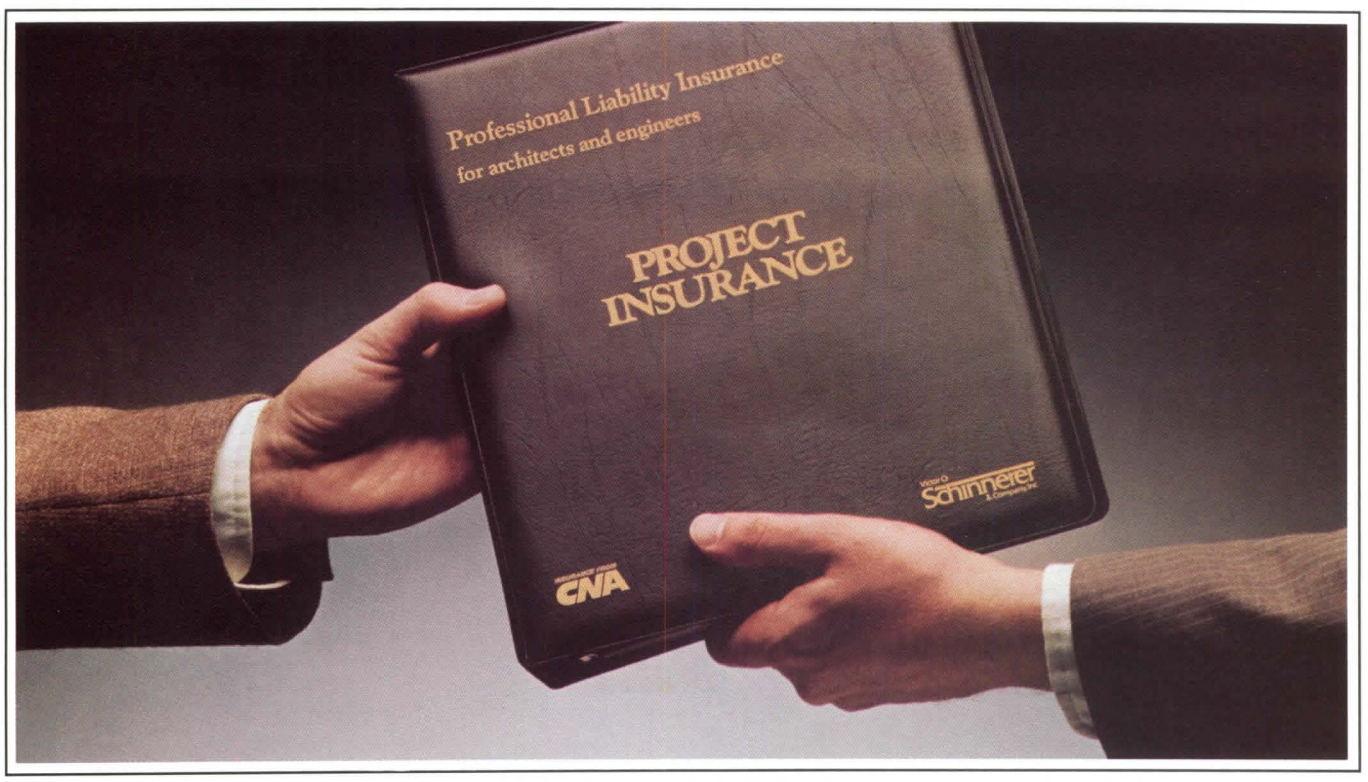


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**Letters** *from page 6*
fession will be better served than by any quick fix. What the Institute might accomplish with a "crash program" could be an increase in the confusion that already exists. Universities do not teach computer science that way, and neither should the Institute. The focus should be on quality.

*John H. Cato Jr.*
*Associate Member, AIA*
*Douglas, Ga.*

**Still More *on Bidding*:** I read with considerable interest Bernard Grad's comments about architects bidding for work (Dec. '81, page 6). When I established my small practice in Maryland in 1973, only state projects were bid for A/E services; today we find that we must bid for state, county and city projects as well as private sector commissions for churches, colleges and commercial buildings, new and existing.

The local board of education negotiates directly for legal, accounting and insurance advisory services without bids, and the Maryland department of general services has recently begun requiring architects to submit a bid bond with their quotation for services. These actions are a clear indication of the current low esteem that our profession enjoys.

*Landon M. Proffitt, AIA*
*Frederick, Md.*

**Mitchell/Giurgola's AIA Headquarters Design:** Your good article about Aldo Giurgola (Jan., page 13) revives an erroneous impression about Mitchell/Giurgola's competition-winning design for the AIA Headquarters building. That design was never submitted to or considered by the District of Columbia Fine Arts Commission.

Here is what actually happened: After much study we concluded that the winning design was not a building big enough for long-term future needs. This was a fault in the original program, not in the architects' design. It was also apparent that the narrow width of AIA property on the east side was preventing a better plan solution.

A decision was made to buy the property adjacent to the east side, known as the Lemon building.

This resulted in a series of actions: (1) A fund-raising campaign to enable the AIA Foundation to buy the Octagon House and garden property and restore the Octagon House. (2) More than $1 million was contributed by AIA members for this purpose. (3) The property was sold to the AIA Foundation and procedures were undertaken to restore the Octagon House. (4) Some of the proceeds of the property sale were used to buy the Lemon building property. (5) Mitchell/Giurgola was requested to produce a new design for the enlarged site and for a larger building.

The architect decided not to simply enlarge the winning design but instead came up with a completely new solution, as dictated by the changed program.

This was the design that was first seen by the D.C. Fine Arts Commission and rejected as "being out of keeping with the Octagon." I repeat—the competition-winning design, generally praised by critics—was never considered by the commission.

The architect revised the design again, but when this was also rejected by the commission on similar grounds, the firm withdrew. *William H. Scheick, FAIA*
*Beaufort, S.C.*

(Mr. Scheick was the Institute's executive vice president from 1961-69—*Ed.*)

**NCARB's Multiple Choices:** Where are the architects licensed in other countries and attempting to practice in the U.S.? How many have given up the profession and are working as "interns" or drafters after trying unsuccessfully to pass the tests required for registration by the National Council of Architectural Registration Boards?

I consider the multiple choice test, the major method used by NCARB (see Oct. '81, page 40), a high speed reading test that must be passed before one has a chance to demonstrate aptitude, knowledge and talent in architecture. Even native Americans have problems responding to this kind of test. People whose primary language is not English face a much greater hurdle.

*continued on page 12*

**Letters** *from page 11*

In my education and work experience —including six years of college and several years of practice as a licensed architect in Europe—I have found the ability to answer multiple choice questions has little to do with one's ability to function as an architect.

Is a sophisticated grasp of English necessary in a profession whose important ideas are best expressed by drawing? That is our real language, the one in which we express our imagination and fantasy.

Talent and intelligence have no borders. Foreign architects should get credit for their experience abroad and encouragement to continue here in the career they love.

I would appreciate hearing from architects with foreign licenses who have passed the multiple choice test.

*Ana Sterner*
*330 Thorman*
*San Antonio, Tex. 78209*

**On Labeling Architects.** After reading Robert Campbell's article, "Five Maxims on Energy and the Design Response" (Jan., page 62), I noticed that Mr. Campbell had thoughtfully divided architects into three groups: the "Prismacolorists" (purveyors of "arcane theory" and "kooky" design), the "Martians" (apparently those who dabble in bizzare forms) and the "workaday" architects (the "real problem solvers").

Understandably excited, I began to wonder into which group I fell. I thought "Prismacolorists" might be appropriate, but I had often used pencil or even an occasional ink marker. Dejected but undaunted, I tried the category "Martian," but alas, I remembered I had often used forms which were quite common and not at all reminiscent of the Red Planet. Desperately, I turned to the last category, the "workaday" architect. That seemed appropriate since I worked every day. Unfortunately in the course of some "workadays" I had often used "arcane theory" to do "kooky" designs using very unusual forms which solved problems very well, and on top of it all, I presented it using prismacolor.

Disappointed and annoyed in having wasted time worrying about my lack of category, I wrote this with the hope that Mr. Campbell would consider limiting himself to ideas and not capricious and malignant labeling. It clouds his argument and degrades the reader.

I was surprised that such a respected magazine would permit the publication of such imprecise writing, particularly with an article the editors claim to be without hype.

*David Dugas*
*Lafayette, La.*

*Robert Campbell responds:* I wasn't inventing categories of architects but only finding names for categories that I felt were already present in the minds of the speakers at the conference. I suppose all naming is reductive, but without names for things, writing is impossible, and I think mine were clear enough. The editors' headline didn't claim that my article was "free of hype," but rather that the conference was. I admit to being capricious and malignant.

Your January issue carried the only unslanted story on energy I have seen in the past few years of biased, self-serving, salespitch- and vanity-filled tales on the subject. Please pass on to Robert Campbell my enthusiastic and commending comments on his report of the Denver conference where he gleaned the essences of truth, some of which were more revealing, perhaps, than intended. I shall use his information locally to provide a proper perspective of the subject.

*Robert Ingle Hoyt, FAIA*
*Santa Barbara, Calif.*

Congratulations to Robert Campbell. It is obvious he has great skill at operating Ernest Hemingway's special "machine." The five points made by Mr. Campbell

*continued on page 16*

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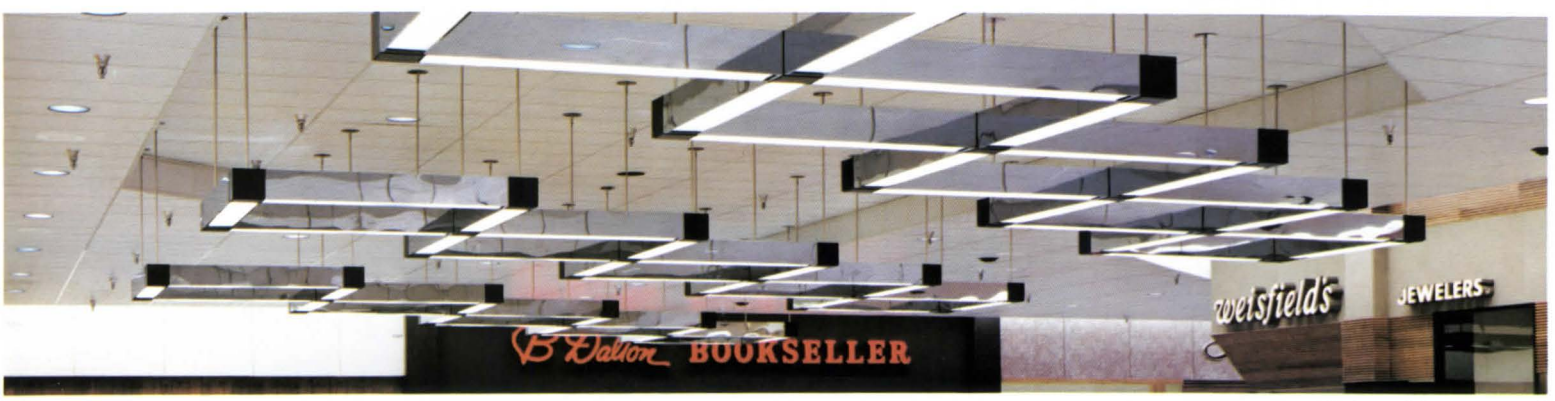


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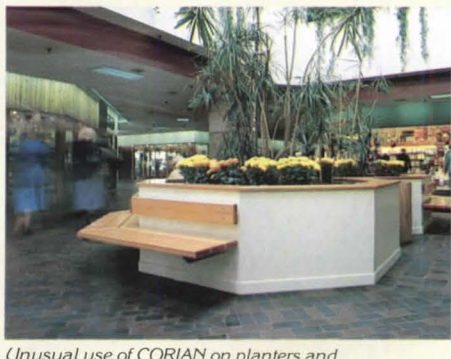
*Vanity counter and bowl are one-piece molded CORIAN in the Mark Hopkins, San Francisco. J. Ray Baker, designer.*

*CORIAN steps and tub surround in the Presidential Suite, Red Lion Inn, Seattle. Tom Lyons, designer.*



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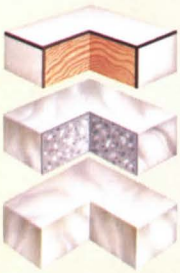
# designs apart– show their age.



*thin plastic laminates must be glued to a substrate for support*

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**Letters** *from page 12*

ring like fine crystal after he has rolled up his sleeves and pulled these ideas out of the effluent of almost 10 years of the energy consciousness movement. It is truly gratifying to see these ideas emerge from such a disease-ridden industry.

These ideas are important for the benefit of the client and the advancement of the profession. Indeed, they are important for the continued quality of the built environment.

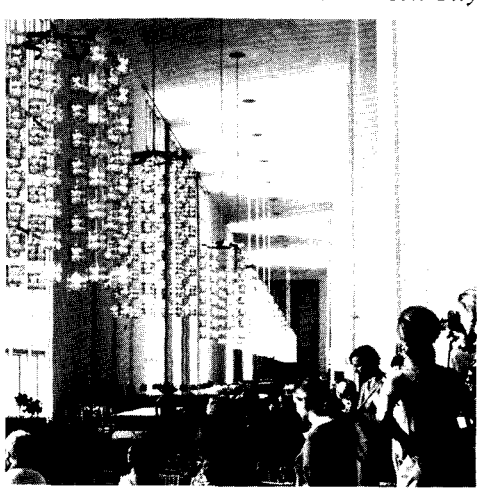
*James R. Stutzman, AIA*
*Indianapolis*

**Kennedy Center Chandeliers:** In your article about the Kennedy Center (Aug. '81, page 24), on one fact you had been misinformed. The chandeliers and appliques in the Grand Foyer were a gift from Sweden, not Austria. (Austria gave the chandeliers for the Opera House.)

I should know. I spent a week at the Orrefors crystal factory in Sweden where I designed the chandeliers. I was working for Edward Durell Stone at the time. The scale was so large that I requested a large room, and designed with full size paper cutouts on the floor. No one could comprehend the size otherwise.

Even though they hang about two feet too low (I had resigned from the Stone office), I feel they are successful.

*John Crews Rainey, AIA*
*New York City*



**Women in Architecture:** You have done a good job in reporting the present status of women and highlighting the works and lives of some successful women architects (January issue). But we can learn much more from the lives of those whose discouragements outnumbered their abilities and talent.

I would like to solicit personal and professional glimpses from women who have encountered such obstacles for the purpose of writing a magazine article. I will understand the concerns of those who will want to respond anonymously.

*Purnima Gupta, AIA*
*808 Ivanhoe Drive*
*Raleigh, N.C. 27609*

# NEWS

*Government*

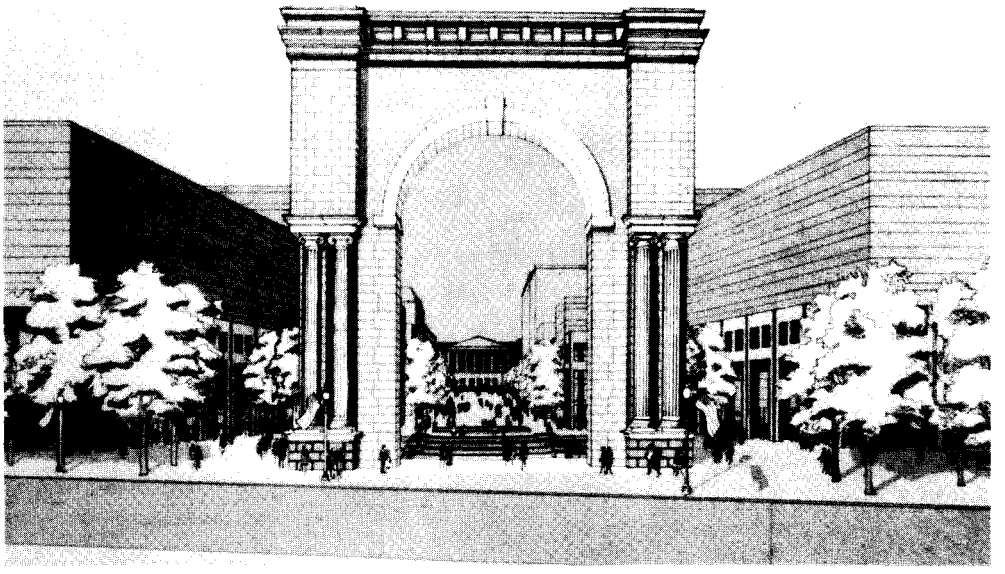
# Pa. Ave.: Owings Resigns, Huge Arch Proposed

Nathaniel Owings, FAIA, has resigned in protest from the Pennsylvania Avenue Development Corporation, ending a 19-year association with the redevelopment of the avenue between the Capitol and the White House.

In a letter dated Jan. 12 to President Reagan, Owings wrote that ". . . the present chairman . . . has chosen to pursue policies and development procedures which have become progressively alien to my convictions." The chairman of PADC is Max N. Berry, 46, a Washington lawyer appointed in 1980 by President Carter. Berry acknowledges a "basic difference in philosophy."

Owings, 77, retired founding partner of Skidmore Owings & Merrill, was appointed chairman of the Council on Pennsylvania Avenue in 1962 by President Kennedy. In the late '60s he chaired its successor commission and in 1972 spearheaded creation of the corporation, a Congressionally funded agency that jointly develops the avenue with private industry. He has served as a board member, board vice chairman and chairman of the advisory committee, and was replaced in the last capacity last fall.

In a development unrelated to Owings' resignation, PADC late last month won preliminary approval from the Washington Commission on Fine Arts to build a 10-story "Arc de Triomphe" (above) across from the National Archives at the foot of the Eighth Street corridor where housing is to meet the avenue. The arch, to be built as a Navy memorial, would contain two floors of museum space in its attic. It would also function as a site for band concerts; acoustical panels would drop from within the arch and the plaza on the side opposite the avenue would accommodate seating. Architect for the arch and plaza is Conklin Rossant.



The Navy memorial has grown in concept from a modest bandshell and fountain. Its client is the privately funded, Congressionally authorized Navy Memorial Foundation. PADC, which has given preliminary support to the arch, is scheduled to vote on it late this month. The proposal also needs final approval of the Fine Arts Commission and sanction of the National Capital Planning Commission.

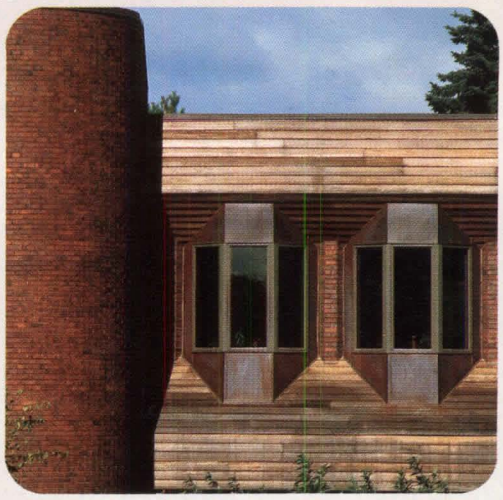
Owings, who hasn't seen the proposal for the arch, says that the quality of architecture being considered all along the mile of PADC's jurisdiction is "inferior," and that "there is no one on the board or staff qualified" to make esthetic judgments. He is particularly concerned about plans for housing. Although there is apparent agreement that housing is a necessary ingredient, Owings and Berry diverge about whether to pursue government subsidized rental housing and therefore mix low- and moderate-income units with market housing. Berry says that "no government agency can afford the half-million dollars" subsidized housing would require. Owings says, "You don't voluntarily give it up before you have tried."

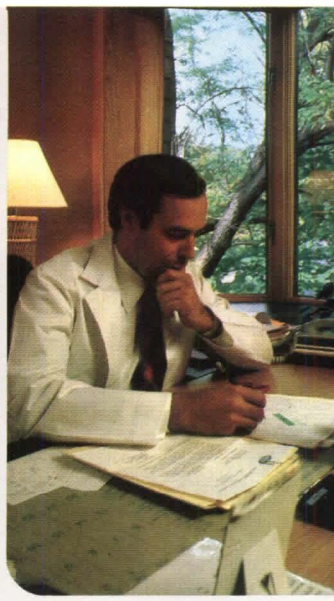
PADC's 1974 general plan included a design by Hugh Jacobsen, FAIA, for a four-block complex with walls of commercial space on its perimeter and row houses descending in concentric circles to a ground-level central plaza on its interior. There were to be 1,420 housing units over an archives storage service building, some 250 of them designated for low- and moderate-income families.

In August 1980, the corporation hired Edward Larrabee Barnes Associates, together with preservation consultants Anderson Notter/Mariani and economic consultants Hammer, Siler, George Associates, to test the specifics of the '74 housing plan against current market conditions. The team was asked to assess the '74 plan and propose modifications, if needed.

Barnes bowed out of the job late last year and declines to talk about it, and PADC has not released the full report based on the team's findings. But George Notter, FAIA, says the current proposal incorporates existing structures and was approached from a design standpoint as transition from the monumentality of the avenue into the finer grain of Washington's downtown to the north.

*continued on page 25*





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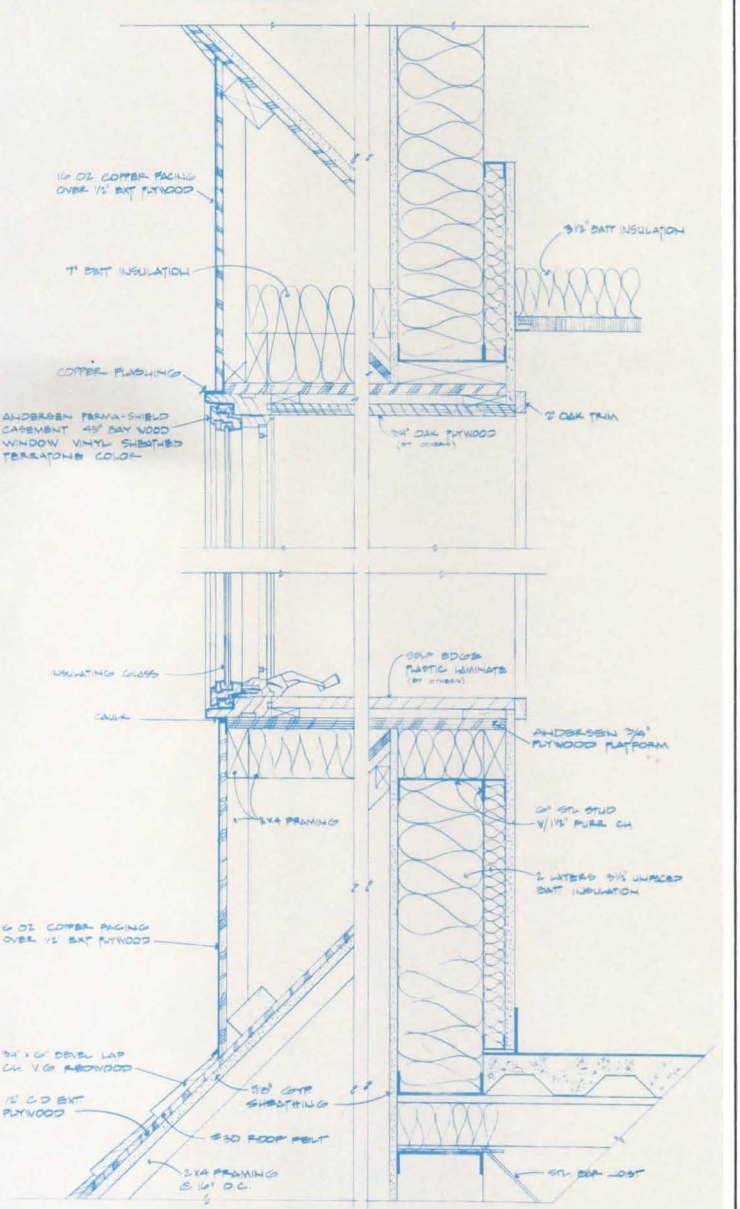
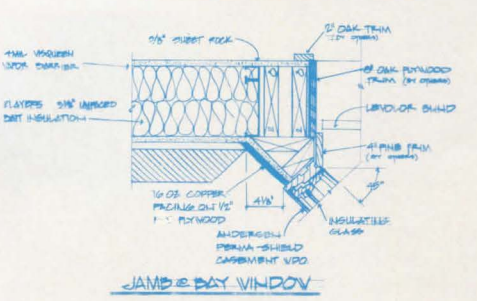



PARTIAL WALL SECTION @ BAY WINDOW




JAMB @ BAY WINDOW

St. Croix Valley Clinic
Stillwater, Minnesota

Architect: Stanley E. Brown, A.I.A.
Denver, Colorado

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*Circle 12 on information card*

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*Circle 13 on information card*

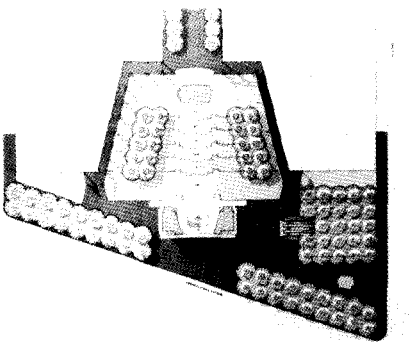
**Government** *from page 21*

A "preliminary" summary of the report by the PADC staff calls for 1,350-1,500 units, does not mention subsidized housing and states that the area "remains a competitive site for smaller-sized condominium housing units in high or midrise buildings. . . . Given current market conditions, the [area] is not a competitive site for rental housing."

The '74 plan called for aided housing "when funding is available," says Thomas Regan, executive director of PADC. "Given today's economic climate, that type of funding is not available. We are trying to maintain the '74 range. If subsidies are available, we will set aside a certain portion for lower income families."

Owings proposes a direct appeal to Congress for funds for the full range of housing. "If something is important enough, Congress will finance it. I would fight it out."

At least one Capitol Hill observer who would like to see assisted housing on the avenue is pessimistic about Congress coming through with special housing funds. "The chances are slim," says Robert Peck, aide to Senator Daniel Patrick Moynihan (D.-N.Y.), among the instigators of the 1962 avenue plan while at the Labor Department. "To the extent that anybody is going to put up a fight for [assisted housing], the issue is going to have to be broader than just Pennsylvania Avenue. PADC's intent was always to come in under existing programs, and I think it might be dangerous to the whole PADC plan to ask for housing funds."



*Site plan shows the avenue on the diagonal, the arch and its plaza bordered by buildings of as-yet-undetermined design.*

Housing proponents see Pennsylvania Avenue as a showcase for the concept of dispersing assisted housing into middle class neighborhoods. Says planner Frederick Gutheim, "Breaking up the projects may be the most important step that can be taken right now to reflect the experiences we have had with various types of subsidized housing. The main thing we have learned is don't jam it together."

At the same time, some have questioned whether the Pennsylvania Avenue corridor offers support facilities favorable to a good family housing situation. Says Dorn McGrath, chairman of the George Washington University department of planning, "Inclusion of assisted housing at the low level of the market just as a token could work a hardship on the people."

But the District of Columbia's housing director sees changes in the area. "As downtown has developed and will be developed in the next several years, it will be a habitable environment for families," says Robert Moore. He admits that the present economy makes subsidized housing very difficult, but says, "I have not seen the financial issues worked through to show that it is impossible."

Planner McGrath says he has long been concerned about the "ease with which long-range planning has managed to back away from the quest to provide downtown dwellings as well as monumental and commercial buildings. And PADC has an obligation to tie very carefully to the whole downtown."

Adds Owings: "Housing is the basis of American society and the symbol the avenue needs. I don't believe we are in any emergency. Let's sit still until we can do it right. Short term economies involve long term horrors."

*Government continued on page 28*

# KAWNEER.

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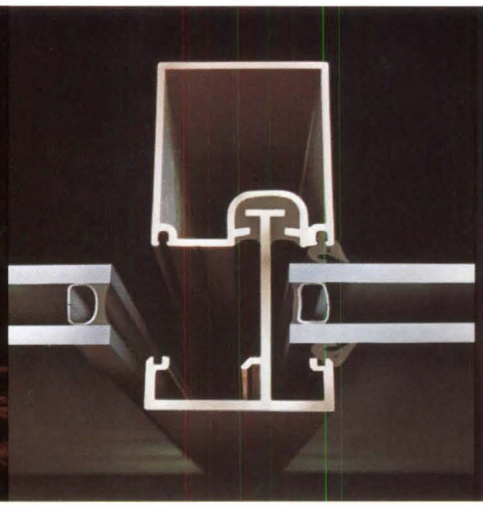

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**Kawneer**

**The designer's element**

*Circle 15 on information card*

**Government** *from page 25*

## Reagan's Urban Approach Stresses Enterprise Zones

In his state of the union message, President Reagan outlined a new role for the federal government in community development. Through what he called a "new federalism," key urban programs would be gradually transferred to states and localities. In their place, the Administration is proposing a variety of economic incentives to lure businesses to blighted urban areas designated as urban enterprise zones.

The new federalism plan calls for the gradual transfer of 43 federal community development, transportation, social services and education grant programs to state and local governments. Among them are the urban development action grant and community development block grant programs and community facilities loans. (The plan also calls for an "equal swap" of the medicaid program to the federal government and aid to families with dependent children and food stamp programs to state and local officials.)

For the 43 grant programs, a $28 billion trust fund would be established annually for four years and would be financed by existing federal excise taxes and a portion of the oil windfall profits tax. After four years the fund would decrease as the supporting taxes were phased out. Eventually, the states would assume total responsibility for the programs.

The Administration's major initiative to help inner cities is the urban enterprise zones program. An idea born in Britain, the program would offer special incentives to new businesses locating in economically depressed areas. Under the Administration's plan 25 zones would be established the first year; up to 75 in three years. The program requires no federal appropriations, but the tax incentives are estimated to cost $245 million to $332.5 million the first year. The program would first focus on large urban areas, with zones selected by HUD based on state and local recommendations. Zones could be in existence for 20 years.

The tax incentives for the zones would include:

- a special investment tax credit geared to the life of depreciable zone property. The plan would allow a 3 percent credit on property depreciable in three years; a 5 percent credit on property depreciable in five years, and a 10 percent credit on the cost of the construction or rehabilitation of commercial, industrial or rental housing structures in the zone;
- a nonrefundable, 50 percent wage credit based on salaries paid to unskilled workers;
- a 10 percent, nonrefundable wage credit on salaries paid to other employees, calculated against a maximum of 2.5 times the unemployment insurance wage base;
- a 5 percent, nonrefundable wage credit allowed to employees on salaries earned in zones;
- a provision permitting operating-loss carry over for the life of the zone or 15 years, whichever is longer.

State and local governments would be required to take a number of actions to stimulate private investments, such as instituting tax and regulatory relief, recommending the exemption of federal regulations, improving local services or shifting the provision of city services to private firms. States and localities could develop their own incentive packages by changing zoning laws, occupational license laws, rent control, usury laws, permit requirements, building codes, state and local minimum wage laws.

The Administration's proposal, while based on legislation introduced last December by Representatives Jack Kemp (R.-N.Y.) and Robert Garcia (D.-N.Y.), would allow more federal, state and local deregulation. For example, the Labor Department would be allowed to relax or eliminate minimum wage requirements in enterprise zones upon the request of either the participating state or local government. Agencies would be instructed to consider and avoid "significant detrimental impacts" on public health, safety and welfare.

The President's speech also mentioned proposals for dismantling the Department of Energy and repealing the energy tax credits for businesses and industry and called for the enactment by Congress of a "responsible" Clean Air Act.

Concerning the Department of Energy, President Reagan in his state of the union message said that the Administration's budget plan would "realize major savings by dismantling the Departments of Energy and Education." The dismantling is a reshuffling of programs to other departments and a funding reduction.

The plan places the bulk of the energy programs into the Department of Commerce; some into the Departments of the Interior (federally owned energy resources) and Justice (regulatory activities) and calls for the creation of an independent agency, the Federal Energy Regulatory Commission.

Since the Administration believes that "efficient energy use is being effectively encouraged by rising energy costs and the economic recovery program," the proposed funding for solar and conservation programs during fiscal year 1983 is substantially reduced from the previous year. Proposed funding for conservation and solar programs is as follows: for conservation research, $18 million in FY '83 compared to $144 million in FY '82; no funding for buildings and community systems, compared to $48 million in FY '82; for solar and other renewable energy, $83 million in FY '83 from $248 million in FY '82; for energy conservation grants, $4 million in FY '83 from $240 million in FY '82.

The Administration's rationale of letting the free market determine energy development is also behind its recommendation for the repeal of energy tax credits. There are currently four business/industrial tax credits; for renewable energy investment, hydroelectric investment, biomass property and alcohol fuels production. Many industrial solar equipment manufacturers, designers and contractors reportedly claim that without the credits, most projects are not economically feasible and some say that tax laws are biased in favor of nuclear and fossil fuel development.

As for the Clean Air Act, authorization expired Sept. 30, 1981. The original 1970 law required EPA to establish safe concentrations for seven major air pollutants. The key issue in the reauthorization will be whether or when air quality standards are set by EPA.

At this writing, the Senate Environment and Public Works Committee is examining the law section by section, amending it when necessary. A rewrite of the act has been introduced in the House by Rep. Thomas A. Luken (D.-Ohio), which would delay from 1982 until 1993 the deadline for meeting various clean-air standards and would block at least for two years any action to control fluorocarbons. The bill would also leave intact current provisions outlining how national clean air standards should be set; eliminate federal authority to withhold federal highway and sewer funds if a state does not meet the deadline for achieving clean air, and allow EPA to waive on a case-by-case basis the requirement that new construction be banned in areas that have not met the clean-up deadline. The House bill, as originally introduced, is supported by the Administration.

## Reagan's Budget Continues Cuts In Energy, Housing Programs

The Reagan Administration's proposed budget of $757.6 billion for fiscal year 1983 calls for substantial cuts in the fields of housing, energy, the national endowments for the arts and humanities, transportation and historic preservation. Proposed funding for community development is virtually the same as in '82, but actual outlays will decrease.

The proposed funding for community development block grants is $3.5 billion, which includes $2.4 billion for large cities and urban counties and about $1 billion for the small cities program. However, since funding for the program was reduced

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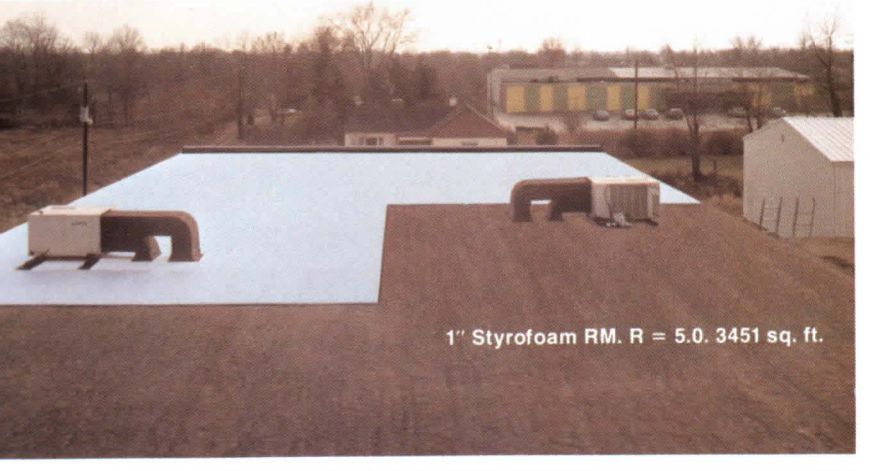




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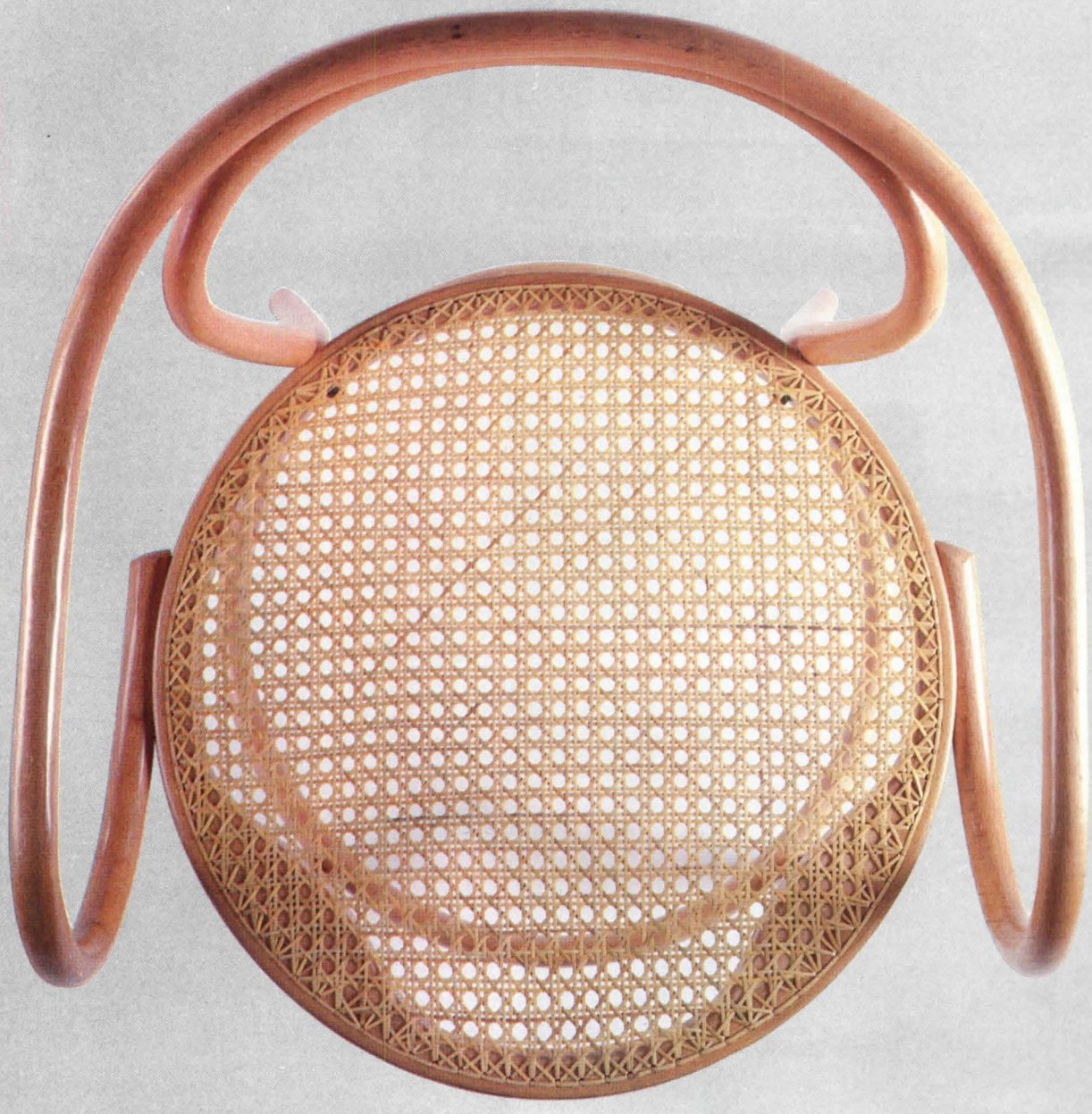

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*Circle 17 on information card*

**Government** *from page 28*
in FY '82 by $240 million, actual outlays in '83 are expected to drop by $244 million. The proposed funding for urban development action grants is $440 million, the same last year.

The budget proposal includes funding for a new program, the rehabilitation block grant program. It is designed to replace the section 312 rehabilitation loan and the section 8 moderate rehabilitation programs, which the Administration calls "too expensive and ineffective." Basically, $150 million in grants would be available to states and cities for up to half the cost of rehabilitating small rental properties. An estimated 30,000 units would be rehabilitated at an average of $5,000 per unit, with the first grants occurring in 1984.

As for direct housing assistance, the proposal calls for a decline from $6.6 billion in FY '82 to $3.9 billion in '83 (although actual outlays are expected to increase to $8.9 billion in '83 from $8.2 billion in 1982, due to prior commitments). Funding for new construction of subsidized housing would be discontinued except for some section 202 units for the elderly and handicapped.

Proposed funding for other community development programs includes $16 million for the neighborhood reinvestment corporation, which provides technical assistance. This is an increase of $2 billion over fiscal year '82 funding. The Pennsylvania Avenue Development Corporation would receive $12 million and the urban homesteading program would receive $12 million.

HUD's solar energy and energy conservation bank would receive no funding, and the Administration is proposing the recision of outlays from prior funding.

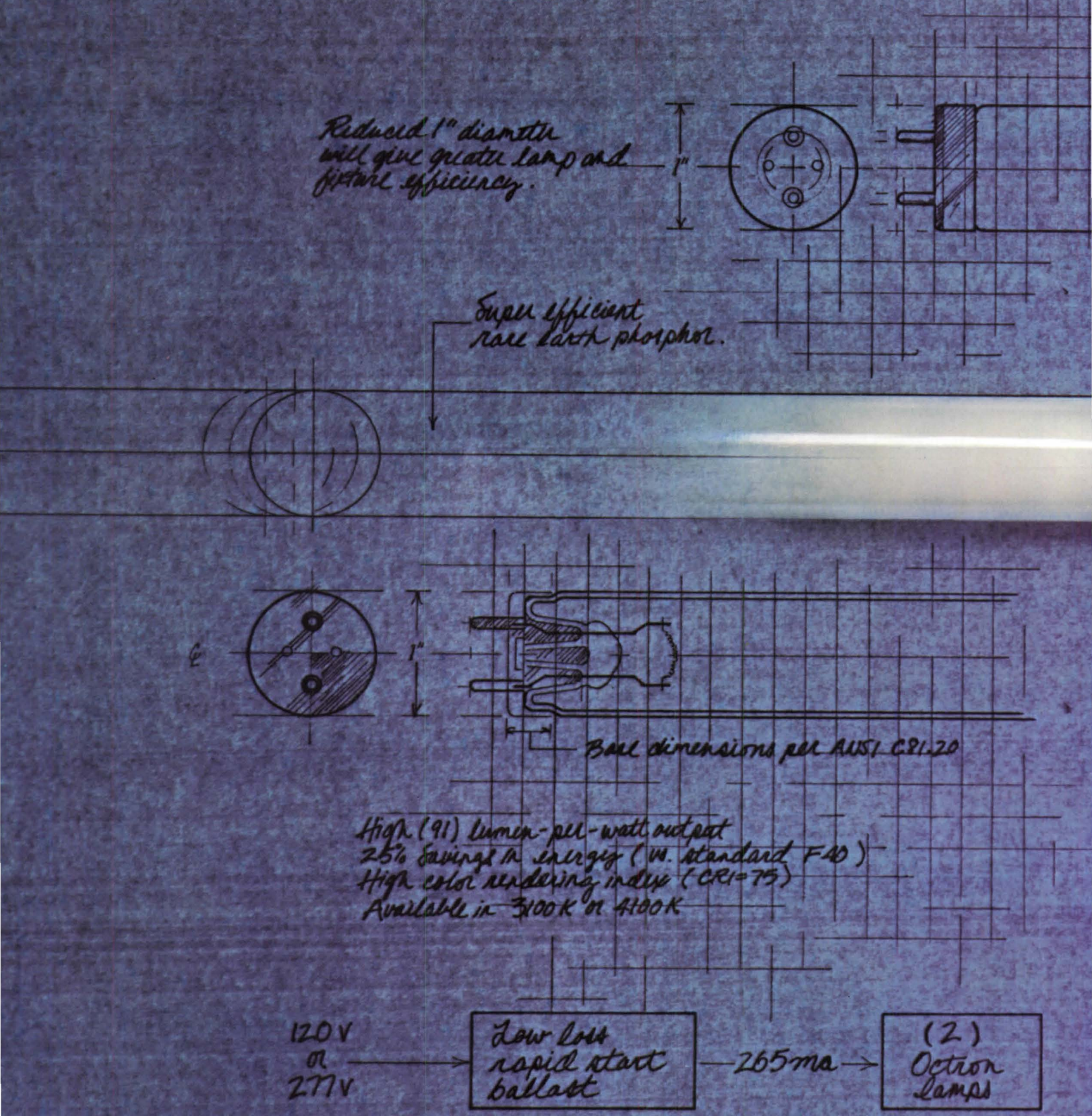
For energy, the budget includes a proposal to dismantle the Department of Energy and transfer federal energy programs to the departments of Commerce, Justice and Interior and calls for creation of a "federal energy regulatory commission." Funding for conservation would be reduced to one-eleventh of its 1982 level or $18 million and for solar to 39 percent of its 1982 level or $83 million (see previous story for details).

The proposed funding for the National Endowment for the Arts is $101 million, a reduction of $42 million from FY '82. (Last year President Reagan suggested a 50 percent cut to $88 million. Congress raised the budget to $143 million.) Proposed funding for the National Endowment for the Humanities is $96 million, a reduction of $35 million from FY '82.

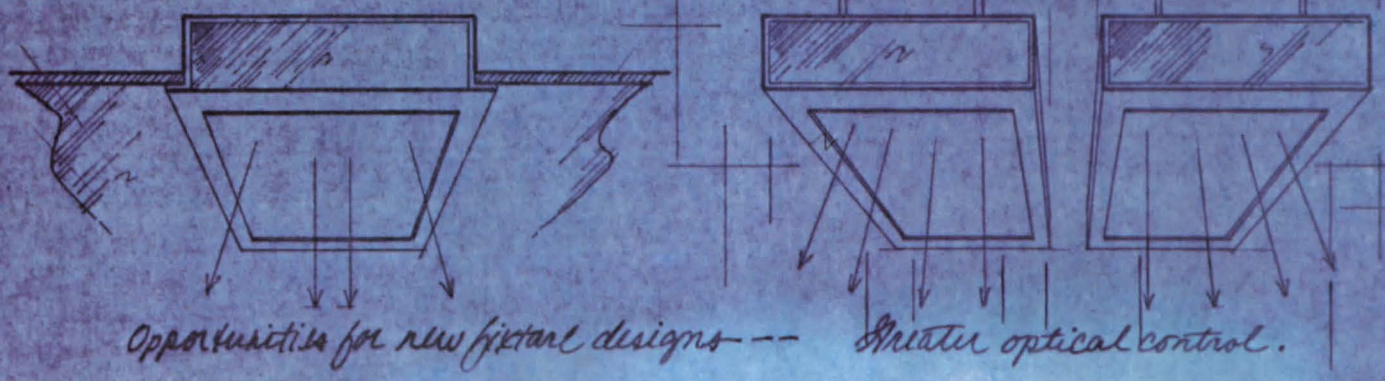
Under the Interior Department funding, no budget authority is requested for the historic preservation fund, which received $25.4 million in fiscal '82. Matching

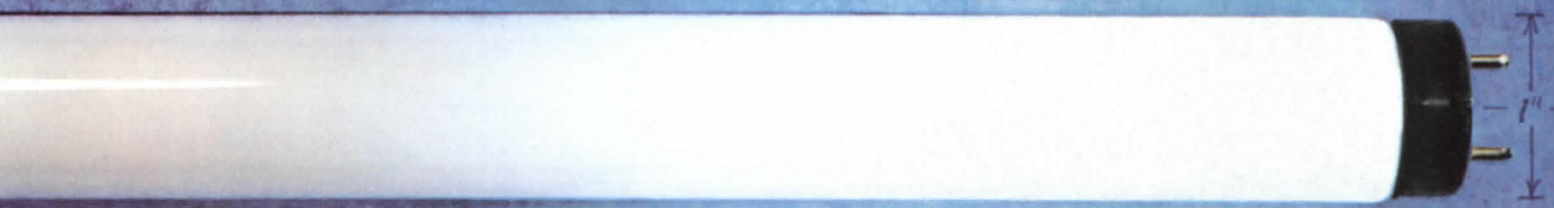
*continued on page 35*

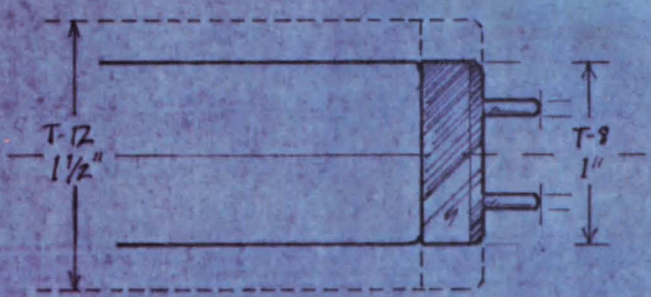
# "We started out to design a better energy-saving lamp.



# And wound up with a whole new lighting system."

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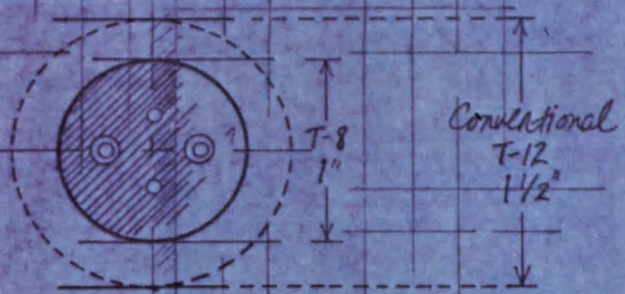


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By itself, it's one of the most efficient fluorescent lamps ever developed. Octron uses up to 25% less energy than standard F40 fluorescents and, at 91 lumens per watt, it easily outshines them. This remarkable lamp is available in two popular color temperatures (3100K and 4100K) with a color rendering index of 75 that far surpasses Cool White, Warm White and Lite White fluorescents.

The secret is an exclusive Sylvania phosphor combination that delivers remarkable light output, color and efficiency when packaged in a small-diameter, 1" (T-8) lamp.

This slim, trim Octron lamp also produces important system benefits. Operating on new 32-watt, rapid-start ballasts, it delivers full light output in existing fixture designs. Octron's geometry also opens the way for greater optical control in new, innovative fixtures. It's more than just another energy-saving lamp. It's the shape of things to come in high-efficiency fluorescent lighting.

For more information about Octron, see your IED Independent Electrical Distributor, or write or call GTE Products Corp., Sylvania Lighting Center, Danvers, MA 01923 (617) 777-1900 ext. 2650.

**SYLVANIA** Industrial/Commercial Lighting GTE

*Circle 19 on information card*

# Manville announces the unbuilt-up roof.

Meet SPM, the latest addition to Manville's roster of roofing systems. And the answer to many special roofing problems.

The SPM single-ply membrane system consists of a single thickness of weather-resistant elastomeric sheeting loosely laid over a suitable substrate, for either new or retrofit applications.

Available in several widths and lengths together with sealants and a complete line of compatible accessories, Manville's SPM system meets a wide range of roofing requirements and simplifies and speeds installation.

The SPM system offers many benefits: Impermeability, easy, clean, all-weather application; no maintenance; flexibility to accommodate building movement; high strength with low weight; and durability and stability for many years of reliable protection.

SPM is backed by 15 years of on-the-roof experience with elastomerics, by the technical expertise of Manville's full-time staff of sales and service engineers, and by the industry's largest research facility, plus Manville's 100-plus years of total involvement in the roofing business.

For details contact Dick Ducey, Manville Building Materials Corporation, Ken-Caryl Ranch, Denver, Colorado 80217, (303) 978-2796. Produced and marketed by Manville Building Materials Corporation.

**Manville**

*Circle 20 on information card*

**Government** *from page 31*
grants to states and to the National Trust for Historic Preservation would be eliminated. This therefore limits direct federal support for the preservation of historic properties to those that are part of the national park system. The Administration's justification is that it has "taken steps to encourage private sector involvement in the preservation of historic properties through the enhancement of economic and tax incentives."

As part of the Interior Department's park restoration and improvement initiative, the Administration is requesting $123.7 million for construction for the National Park Service, an increase of $38.5 million over FY '82 funding. There are 46 projects proposed in 40 parks: for the rehabilitation of water and sewer system, fire and safety improvements in public buildings, reconstruction of unsafe roads and bridges, pollution and erosion control and the preservation of historic structures.

For GSA, the proposal for new construction is $68.4 million of which $22 million is for the acquisition of postal service facilities. Major new facilities are proposed for Birmingham, Ala., ($29.5 million) and Youngstown, Ohio ($10 million). Funding of $2 million is proposed for an extension to the U.S. mission complex at the United Nations and $3.5 million for the Federal Triangle project in Washington. The proposal for the repair and alteration fund is $257 million.

For the Environmental Protection Agency, the Reagan Administration proposes a decrease of $100 million, from $3.7 billion in FY '82 to $3.6 billion in FY '83. Spending for the Superfund hazardous waste site cleanup program would increase 21 percent, from $190 million in '82 to $230 million in FY '83. Grants to build waste water treatment plants would continue at last year's level of $2.4 billion. The Administration is proposing a 15 percent reduction in the air pollution program and an 18 percent reduction in the water quality program.

For the Department of Transportation, the Administration is proposing $3.2 billion for mass transit, $0.3 billion below the '82 level. One major change for the program would be that construction funding would be directed primarily toward modernization and repair of existing "proven" transit systems and that grants for operating expenses are to be phased out over a three year period. The Administration is also proposing the elimination of the federal highway beautification program and reductions for the Amtrak railroad system.

For the Department of Defense, military construction programs would increase by 10 percent over '82 spending, for a total of $7.8 billion.

*The Institute*

# AIA, ACSA Select Esherick for Education Excellence Award

Joseph Esherick, FAIA, one of the nation's foremost practitioners and teachers of regionalism, is to be 1982 recipient of the AIA/Association of Collegiate Schools of Architecture annual award for excellence in architectural education.

Esherick has taught at the University of California at Berkeley for three decades and was chairman of the department of architecture from 1977 through 1981.

He is chairman of the board of the San Francisco firm of Esherick, Homsey, Dodge & Davis. His work has ranged from a series of wood and shingle houses characteristic of the Bay Region, to the brick arches of the Cannery (an early conversion of old industrial buildings into a shopping and restaurant complex), to the bristling, even brutalist, Wurster Hall for the university's college of environmental design.

In a letter supporting Esherick's nomination for the award, William Turnbull Jr., FAIA, called him "the best of Bay Region architecture." Turnbull, one of the architects, along with Esherick, of the renowned Sea Ranch development on the Northern California coast, said: "He is an intellectual bridge from Maybeck and Wurster to the future."

In an issue largely devoted to his work, the respected regional magazine *Western Architect & Engineer* noted that: "When Esherick talks about architecture, the conversation is dotted with references to the workings of the human mind; social problems, urban and otherwise; poetry; the visual arts, and modern mathematics."

However, the magazine continued, "the impression should not be left that he is a dabbler. The concern that he brings to each subject is intense." This was written during a period in which Esherick spent a sabbatical year immersing himself in general systems theory because he felt it had enormous potential for architecture and wanted his knowledge of it to be more than superficial.

During his chairmanship of the department, a time of economic stringency for the university, he installed a building sciences laboratory and re-established a community design center.

Esherick's nominators for the award noted that "his work exhibits marked differences, from project to project, that reflect the differences in the problems each one posed."

The buildings "do not form a uniform style, but they give the impression of the uniform application of human intelligence, guided consistently toward certain ends."

Jurors for the award, the most prestigeous in architectural education, were James I. Freed, FAIA, of New York; Thomas R. Vreeland, FAIA, of Los Angeles; William J. Plimpton, president, Association of Student Chapters/AIA; Janet Marie Smith, student member of the ACSA board; Jaquelin Robertson, FAIA, of the University of Virginia, and G. Holmes Perkins, FAIA, of the University of Pennsylvania, who received the award in 1979.

Other past recipients of the award have been Henry L. Kamphoefner, FAIA, Lawrence B. Anderson, FAIA, Serge Chermayeff and Marcel Breuer.

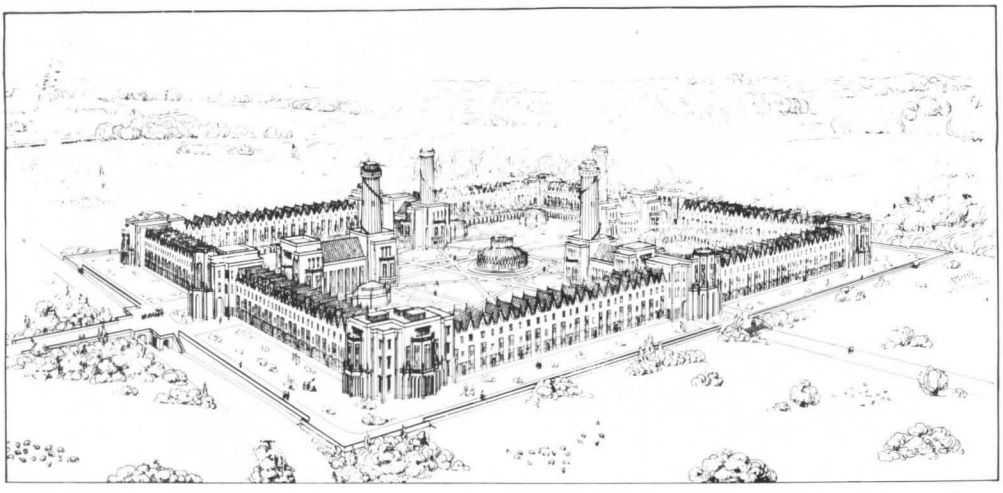
## Medalist: New Harmony, Ind., Preservation Group

Historic New Harmony, Inc., will receive the AIA medal for "individuals or groups responsible for specific accomplishments demonstrating the integration of several disciplines related to architecture."

The group's purpose is to preserve the architectural heritage of New Harmony, Ind., and to encourage significant new architecture. New Harmony contrasts with single-period communities like Williamsburg in that it contains buildings from many different stages of its development.

The town was founded in the wilderness in 1814 by the Harmonists, a group

*continued on page 36*



*Proposed complex for New Harmony, designed by Stedman Whitwell in the early 1800s. Each side is 1,000 feet long with housing situated between public buildings.*



**The Institute** *from page 35*

of fewer than 1,000 Lutheran Church dissenters from Würtenberg, Germany, headed by George Rapp. The keystones of the community were hard work and celibacy, and the group produced an impressive number of dormitories, mills and factories, and cultivated 2,000 acres.

In 1825, seeking a location closer to the markets for its goods, the sect sold the entire town and moved to Pennsylvania. The buyers, Welsh reformer Robert Owen and Scottish philanthropist William Maclure, imported scholars from Europe in an attempt to found an "empire of good sense." Within two years Owen admitted his experiment a failure, but many of the scholars remained, along with Owen's sons and Maclure. They attempted to carry on the tradition and claimed to have produced the country's first kindergarten, vocational school, public school system and library.

In more recent times, Philip Johnson's "roofless" church was built in 1960 and Richard Meier's pottery shed in 1978. In 1980 the town added a visitor's center —the Atheneum, also designed by Meier (see Mid-May '80, page 126).

In 1973 local citizens and government officials began working with planning experts and state officials to develop the city's first comprehensive zoning plan. The plan has helped protect historic buildings from demolition and also created a scenic buffer surrounding the town protecting against speculative development.

The next year Historic New Harmony, Inc., was chartered as a public charity and charged with directing and coordinating the preservation plans. With grants from the Lilly Endowment, the group has been acquiring properties in town for restoration.

The nomination was "based on the foundation's program to present to the public excellent architecture, outstanding works of arts and a program calling attention to those in their broader cultural and historical contexts."

## Medalist: Jean Dubuffet, 'Primitive' Sculptor

Painter and sculptor Jean Dubuffet will receive the AIA medal given to "artists and craftsmen whose work is related to architecture."

Dubuffet produced his first significant three-dimensional pieces, of styrofoam and epoxy, in the mid-'60s, and 12 years ago began to receive commissions for outdoor sculpture related to buildings. His best known example in this country is "Group of Four Trees," erected in 1972 on the upper plaza of Chase Manhattan Bank in New York City's financial dis-

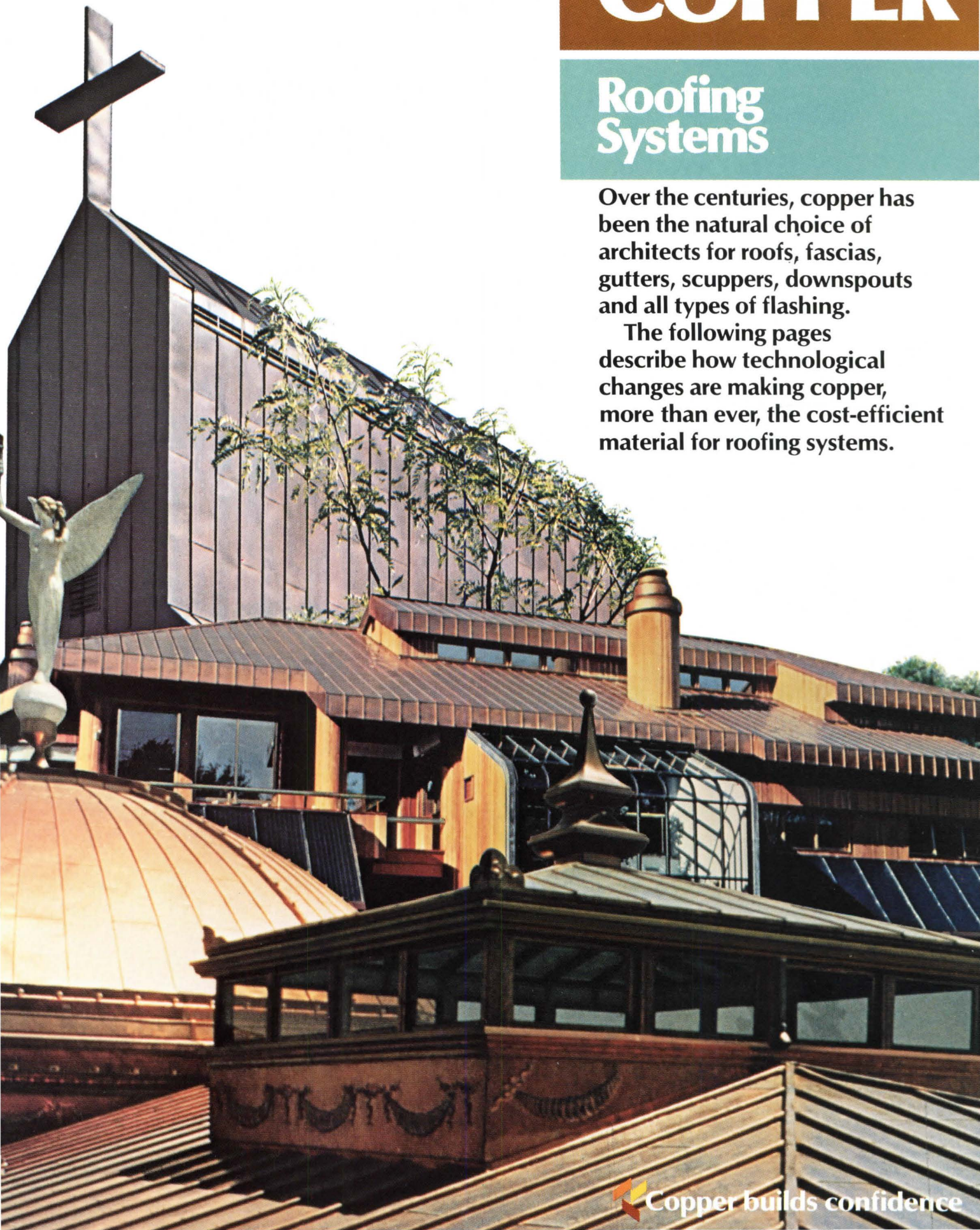
*continued on page 41*

# COPPER

## Roofing Systems

Over the centuries, copper has been the natural choice of architects for roofs, fascias, gutters, scuppers, downspouts and all types of flashing.

The following pages describe how technological changes are making copper, more than ever, the cost-efficient material for roofing systems.



Copper builds confidence

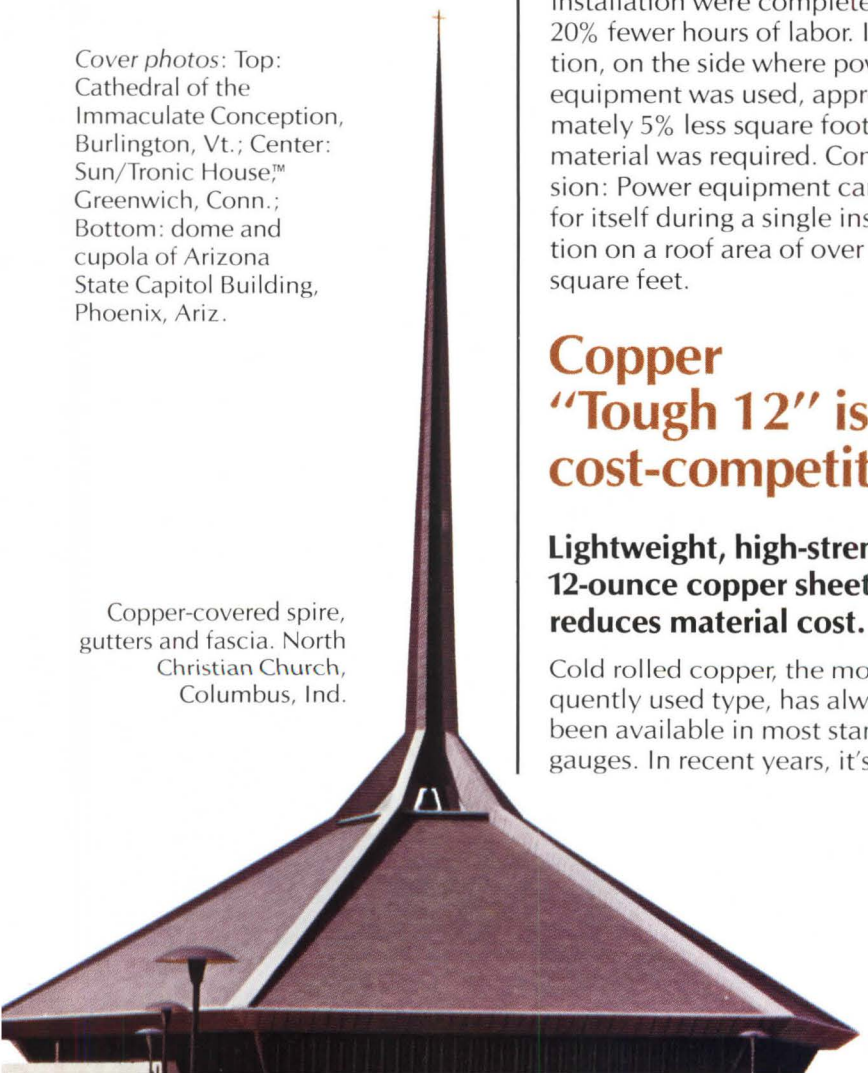
# Copper has low life-cycle costs.

**Long, maintenance-free life makes copper more economical for most installations.**

Copper roofs need little or no maintenance. They're strong, corrosion-resistant and durable. They're fire-resistant.

And modern technological changes are reducing copper's installed cost. New installation techniques plus innovations in copper sheet itself make copper economical to use, requiring far less time, labor and material cost than in the past. Copper's installed cost has never been lower than it is today. Yet you can count on copper to last longer than any other roofing material. Copper's reduced installed cost, combined with its long life and freedom from maintenance, make it the outstanding material in terms of life-cycle costing.

*Cover photos*: Top: Cathedral of the Immaculate Conception, Burlington, Vt.; Center: Sun/Tronic House,™ Greenwich, Conn.; Bottom: dome and cupola of Arizona State Capitol Building, Phoenix, Ariz.



Copper-covered spire, gutters and fascia. North Christian Church, Columbus, Ind.

# Copper installation costs are dramatically reduced by new technology.

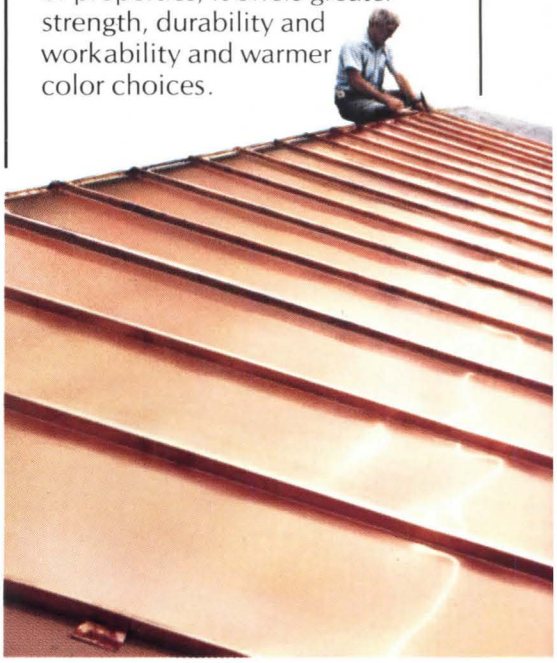
**Today's power pan formers and power seamers create significant savings in labor and material.**

Practical power tools are available today for forming the pans and closing the seams of copper roofs. Tests were conducted using a power pan former and power seamer for half of an 8,000-square-foot roofing installation. Conventional fabrication and installation methods were used for the other half. Results showed that power equipment produced significant labor savings. Shop fabrication was reduced about 60% while field fabrication and installation were completed with 20% fewer hours of labor. In addition, on the side where power equipment was used, approximately 5% less square footage of material was required. Conclusion: Power equipment can pay for itself during a single installation on a roof area of over 10,000 square feet.

# Copper "Tough 12" is cost-competitive.

**Lightweight, high-strength 12-ounce copper sheet reduces material cost.**

Cold rolled copper, the most frequently used type, has always been available in most standard gauges. In recent years, it's been developed in a lightweight, high-strength 12-oz. sheet called "Tough 12." It enables designers to reduce the weight of copper specified for certain applications without impairing performance—and to reduce costs. "Tough 12" is cost-competitive with other roofing materials. It's suitable for numerous roofing and flashing applications. And because of copper's unique combination of properties, it offers greater strength, durability and workability and warmer color choices.



**Comparison of thickness and weight tolerances of cold rolled copper sheet.**

| Ounces per square foot | 12-oz. | 16-oz. | 20-oz. |
|---|---|---|---|
| Theoretical thickness (inches) | 0.0162 | 0.0216 | 0.0270 |
| Minimum thickness (inches) | 0.0143 | 0.0190 | 0.0245 |
| Lot weight tolerance plus and minus percent | 6 | 6 | 6 |

Width, length and straightness tolerances for 12-ounce high-strength copper sheet conform to the values set forth in ASTM Specification B 370 "Copper Sheet and Strip for Building Construction."

# Copper is strong, durable and fire-resistant.

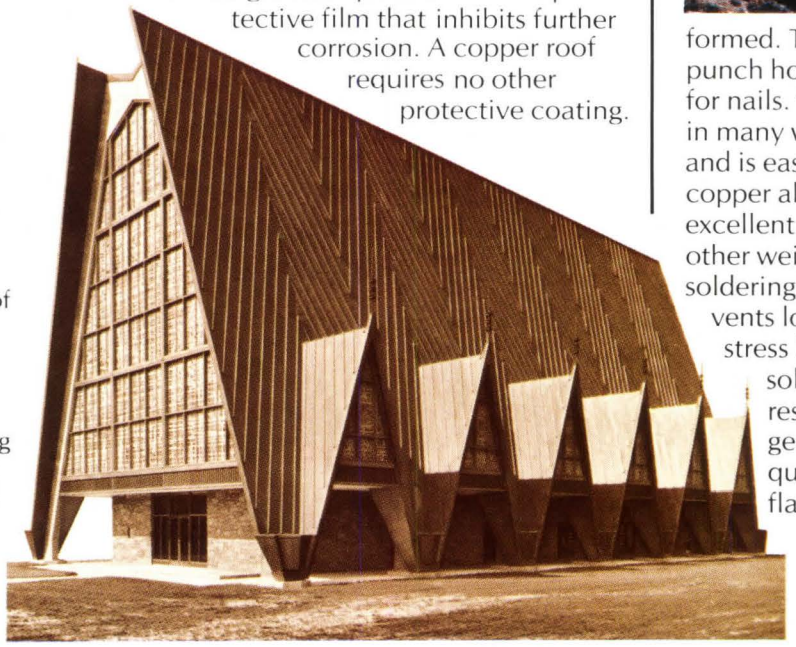
**New copper roofs are lightweight yet offer advantages proven over hundreds of years.**

Copper roofs over 500 years old can be observed throughout Europe. While the copper roof of today is much lighter, it still offers the same strength, durability and fire resistance that builders have learned to respect. Unlike materials that have a lower first cost but eventually need replacing, sheet copper roofing, fascia and flashing last the life of a building, with little or no maintenance.

# Copper resists corrosion from air and moisture.

**The natural corrosion resistance of copper permits its use in a broad range of atmospheric environments.**

From coastal areas to heavy industrial environments, copper resists corrosion. During the early stages of weathering, copper oxide conversion films are formed on the exposed copper. As weathering progresses, cuprous and cupric sulfide conversion films are interspersed with the initial oxide films. These sulfide conversion films range from chocolate brown to black. As they build, the exposed metal surface darkens appreciably. Continued weathering results in the conversion of the sulfide films to the basic copper sulfate patina. This familiar greenish patina acts as a protective film that inhibits further corrosion. A copper roof requires no other protective coating.



Copper batten seam roof plus copper fascia, drainage troughs, scuppers and drain pockets. U.S. Dept. of Labor Job Corps Training Center, formerly a seminary in Glenmont, N.Y.

# Copper is easy to work and join.

**"Tough 12" has the well-known forming characteristics of 16-ounce copper.**

No other metal is as easy to install in new or retrofit construction as copper. Light-gauge "Tough 12" copper, exhibiting copper's traditional characteristics, is easily cut and formed. In addition to its use with labor-saving power equipment for roofs, "Tough 12" lends itself readily to use with hand tools for flashing and trim. Bends, locks and seams are easily

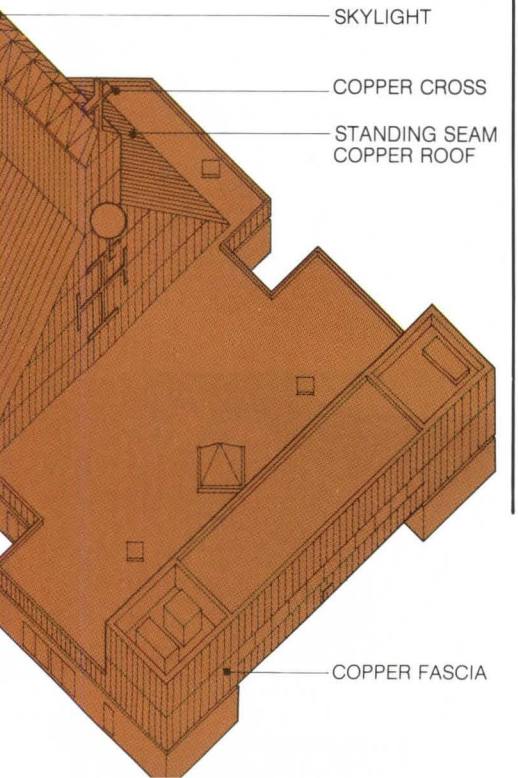
formed. There is no need to prepunch holes in cleats and edgings for nails. "Tough 12" may be bent in many ways for added strength and is easily joined. The 12-ounce copper also exhibits the same excellent thermal conductivity as other weights of copper. Where soldering is involved, this prevents localized heat retention, stress buildup and retarded solder fusion, which often result in warped seams and generally unreliable joint quality in other metal flashings.

Standing seam copper roof. Multipurpose building, Portsmouth Abbey, Portsmouth, R.I.

# Copper contributes warm, beautiful color tones.

### A wide range of colors plus compatibility with other materials make copper the natural choice.

The range of copper's natural colors gives it an attractive appearance during various stages of weathering. When copper is exposed to the atmosphere, it changes in hue from natural salmon pink through a series of brown shades to gray or black, from which the ultimate blue-green or gray-green patinas develop. In industrial and sea-coast atmospheres, the process takes about five to seven years, and in rural atmospheres from 10 to 14 years. For large areas such as roofs, natural weathering is encouraged. If a specific shade is desired, oil can be applied to retard further color changes once that shade has developed naturally. Copper is also aesthetically compatible. Its warmth and beauty harmonize with other construction materials in both traditional and contemporary designs.




# Copper performs well in numerous roofing applications.

### Specified for commercial applications throughout the U.S., copper does all these jobs.

**Roofing**
- Standing Seam
- Batten Seam
- Horizontal Seam
- Shingles

**Edge Strips**
- Double thickness

**Expansion Joints, building**

**Fascias**

**Gravel Stops**

**Mansard Slopes**

**Parapet Linings**

**Snow Flashing**

**Soffits**

**Termite Shields**

**Valleys**

**Water Stops**

**Flashings**
- Apron
- Base
- Cap
- Chimney
- Coping Cover
- Curb
- Head
- Hip
- Reglet
- Pitch Pocket
- Ridge
- Scuttle Cover
- Shower Pan
- Sill
- Thru-wall
- Vent

# Copper is an abundant resource.

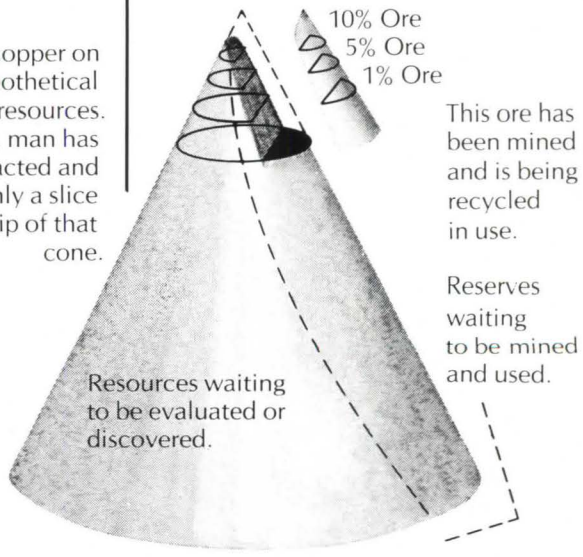
### The U.S. is far more self-sufficient in copper than in competing materials.

Since 1970, the U.S. has averaged 90 to 95% self-sufficiency in copper and copper alloys. No other engineering metal can make such a claim. The total of U.S. resources far exceeds the country's requirements. At present use rates, we still have reserves waiting to be mined, which are plentiful enough to last hundreds of years.

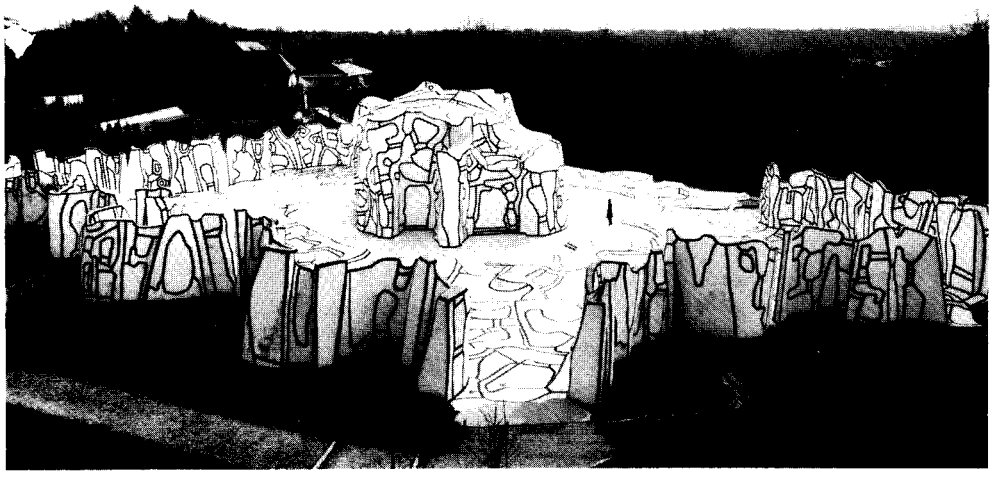
In addition, there's another naturally occurring advantage that no other metal can match: ease of recycling. Almost half the copper used in this country comes from recycled scrap. This copper recovered from scrap is as usable as primary copper refined from ore.

Combining natural abundance with recycling, the U.S. will remain self-sufficient in copper for countless years to come.

Visualize the copper on earth as a hypothetical cone of resources. Until now, man has found, extracted and recycled only a slice off the tip of that cone.




For additional information on copper roofing systems, write:
**Copper Development Association Inc.**
1011 High Ridge Road, Stamford, CT 06905



Courtesy of Foundation Jean Dubuffet

*Dubuffet's Pleasure Garden, France*

**The Institute** *from page 36*

trict. The 42-foot-high sculpture looks papier mâché, in contrast with Skidmore, Owings & Merrill's aluminum and glass skyscraper of 1961.

In 1942 when he was 41 years old, the French-born Dubuffet left his family's wine business to take up painting full-time. He previously had studied art and art history, had become personally close to artists in the surrealist movement and had become interested in the art of the mentally ill. His philosophy of art has been called "firmly anticultural, almost brutally primitive, suspicious of analytical processes." His early paintings dismiss any regulation of dimension, spacial relationships and color. His series of monumental sculptures, as described in his nomination, "shun completely the superficial aspects of architecture such as scale, proportion, texture and color, [but] have nevertheless suggested some remarkably clear insights into the essential nature of architecture's fundamental aspects: space, volume, surface and structure."

## Medalist: British Historian Sir John Summerson

The winner of the AIA award for "illustrators and recorders of architectural accomplishments" is British architectural historian Sir John Summerson.

Born in 1904, Summerson has written numerous books examining architecture, architects and particular buildings, with the most widely known being *The Classical Language of Architecture, Heavenly Mansions* and *Architecture in Britain 1530-1830.*

In *Heavenly Mansions,* Summerson wrote, "Architecture, past, present and future, is indivisible and a writer on the subject must pry as best he can equally into Gothic niches and the offices of practicing architects. Both have some bearing on the architectural thought of tomorrow."

Educated at Harrow and University College in London, Summerson received honorary degrees from Leicester, Oxford, Hull, Newcastle and the Royal College of Art. Since 1945, he has been curator of Sir John Soane's Museum, a private collection of art and antiques. He has served as assistant editor for *Architect and Building News.* In 1976 he received the Royal Institute of British Architects' royal gold medal for architecture and in 1934 the RIBA silver medal for architectural writing. He was knighted in 1958.

Those nominating Summerson said, "The nomination is based on the value and lucidity of his writings on architecture and his effective work as curator of the Sir John Soane Museum. . . . We feel that he has greatly enriched our intellectual appreciation of architecture."

## Medalists: 'Oppositions' And 'The Plan of St. Gall'

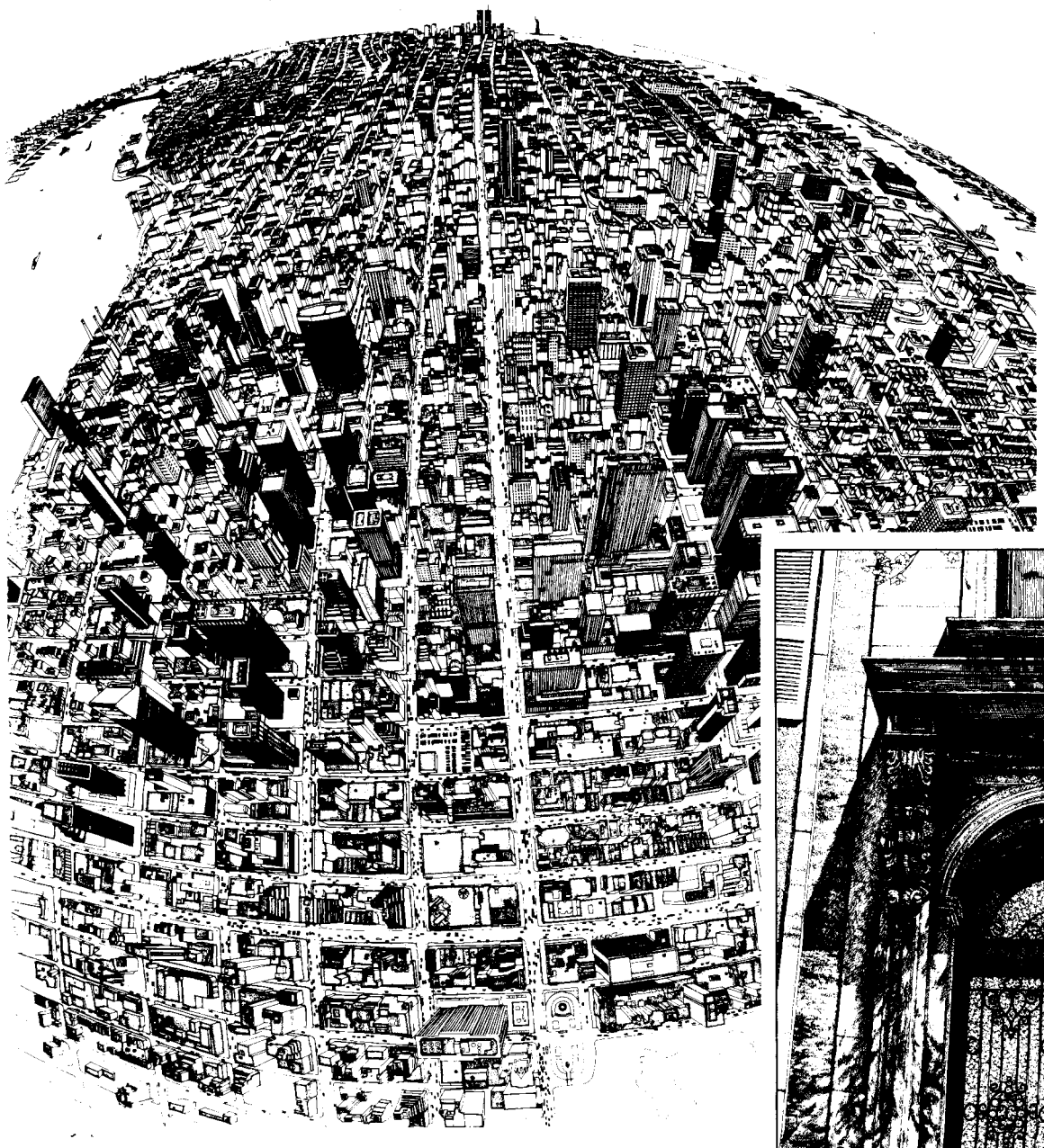
*The Plan of St. Gall* and the quarterly journal *Oppositions* will receive AIA's medal for "individuals or organizations responsible for a specific project related to architecture."

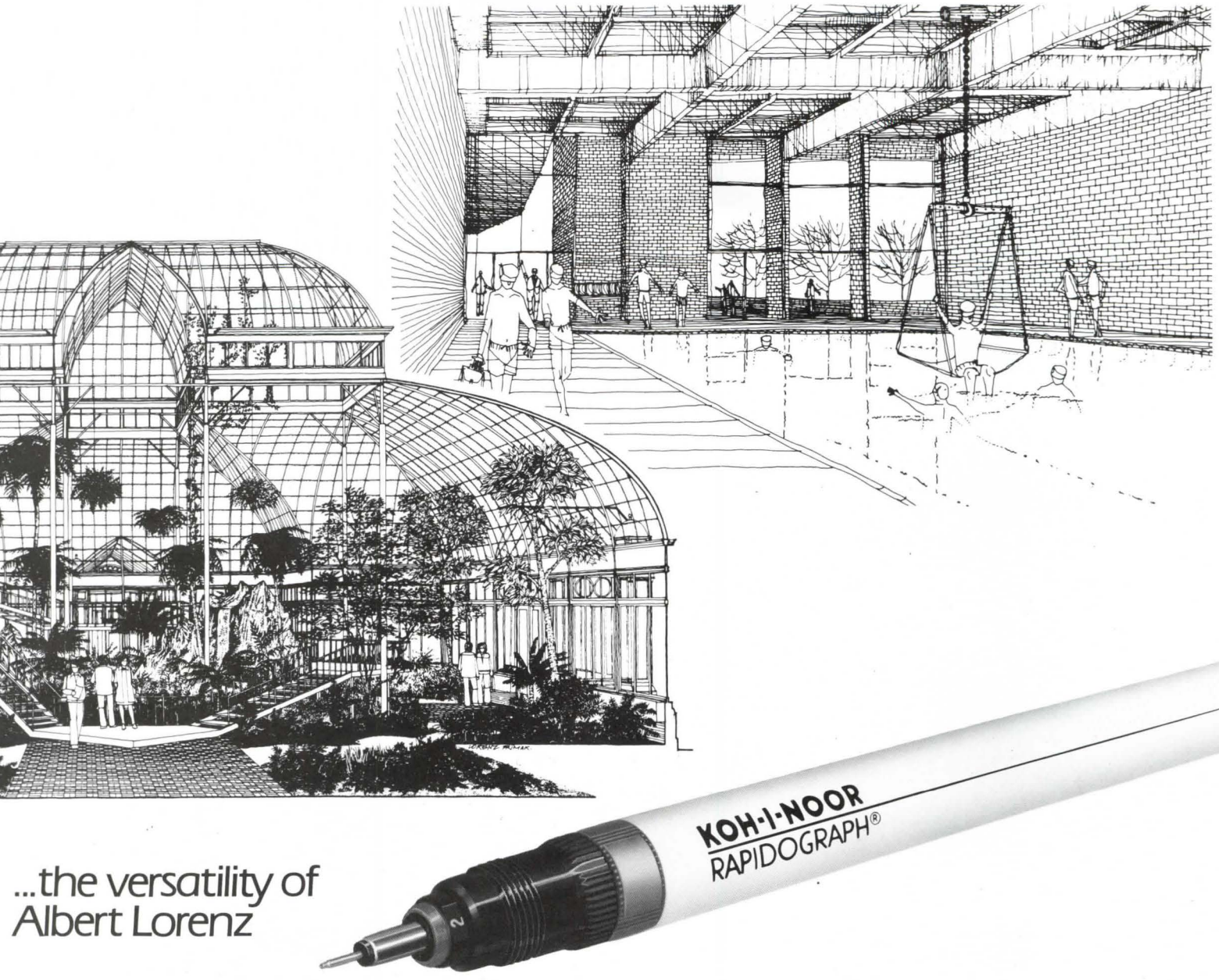
Published by the University of California Press, *The Plan of St. Gall* is a 1,062-page, lavishly illustrated, three volume book detailing the life in a 9th century monastic village. Through 20 years of work art historian Walter Horn (professor emeritus of the history of art, University of California, Berkeley) and Ernest Born, FAIA, of San Francisco recreated the plan of the entire village from a 30x44-inch drawing. The plan was saved by an unknown monk in the 12th century who used the back side to inscribe a copy of the "Life of St. Martin," and has been stored in the Abbey of St. Gall in Gallen, Switzerland.

The authors refer to the plan as "possibly the most accomplished architectural creation in the age of Charlemagne." It encompasses a church, cloistered resi-

*continued on page 45*

# Rapidograph® Renderings






# ...the versatility of Albert Lorenz

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AIA-3-82

*Circle 24 on information card*


# A feature-by-feature comparison with other operable wall systems shows Spacesetter™ is the one designed for the long run.

Spacesetter operable walls perform so reliably and look so permanent, they're unlike any other system in their price range.

Spacesetter panels have wrap-around finishes instead of bulky vertical trim where panels join. And hidden fasteners replace face-mounted hardware for a smooth, permanent look in meeting facilities, educational, foodservice and other multi-purpose areas. These features, standard on Spacesetter, aren't even available as options from the competition.

In addition, Spacesetter systems use commercial pass doors, eliminating the unattractive and potentially hazardous thresholds found on most others. They also have the only panels you can specify that give you the safety advantage of a Class "A" flame spread rating plus the added strength of resilient "Z" bar reinforcements.

There are many more features, like all metal frame construction, that give Spacesetter the outstanding durability to provide your designs with interior space flexibility for years to come. To find out more about the extra value you get with Spacesetter, contact the company that's first in walls that move. Write Modernfold, Box 310, New Castle, Indiana 47362. Or call (317) 529-1450. In Canada, write P.O. Box 399—Station E, Toronto, Ontario M6H9Z9, or Telex 27-2285.

**Modernfold**

An **American-Standard** Company

*Circle 25 on information card*

**The Institute** *from page 41*
dence for 77 monks and 50 other buildings, such as schools, guest quarters, medical facilities, bath houses and privies, numerous agricultural structures and workrooms for cooking and manufacturing.

The first volume is basically an introduction entitled "Previous Literature, Origin, Purpose & Special Problems"; the second volume records the details of monastic life; the third a scholarly agenda with list of illustrations, catalog of titles on the plan, index, glossary, bibliography and appendices.

Because so little is known about domestic establishments in the Middle Ages, the book is heralded as a major document on the history of monasticism and 9th century culture.

*Oppositions* was established to provide a "new arena for architectural discourse." The articles critically examine either a building, a book or a theoretical position or address the evolution of new models for a theory of architecture. To further promote the discourse, the editors have regularly held forums on specific ideas discussed in the journal. *Oppositions* has been described by Ada Louise Huxtable in the *New York Times* as "a weighty, often opaque, and occasionally brilliant attempt to come to terms with the more complex and abstract issues of the uneasy art and architecture of today."

There have been 21 issues of *Oppositions* since the Institute of Architecture and Urban Studies began publishing it in 1973. In 1976 The MIT Press became copublisher. The journal has a staff of 13 with Peter Eisenman, Kurt W. Forster, Kenneth Frampton, Mario Gandelsonas, Anthony Vidler as editors; Julia Bloomfield as managing editor, and Massimo Vignelli as designer.

## Medalist: The MIT Press, For Editorial Achievements

The MIT Press will receive AIA's medal for "individuals or organizations who have inspired and influenced architectural practice."

In 1932 James R. Killian Jr. founded the Technology Press, an editorial arm of John Wiley & Sons. In 1962 it became The MIT Press. Now The MIT Press publishes 75 new books annually and at least 25 reprints in paperback from a list of 1,200 hardbound books.

The publishing house is divided into seven topical sections: architecture and urban studies; engineering and technology; life-health sciences; business and economics; physical sciences and mathematics; social sciences and humanities, and visual communications. Published within each discipline are professional, reference and scholarly books; graduate and undergraduate tests, and books for general audiences.

Among its published authors in architecture and urban studies are Walter Gropius, Arthur Drexler, Henry-Russell Hitchcock, John Summerson, Denise Scott Brown and Robert Venturi. Last summer, the Cambridge, Mass., publishing house brought out the first of six projected volumes of Le Corbusier's *Sketchbooks,* reproducing the original artworks page by page. In a review of volume one, Josep Lluis Sert called the series an "indespensable" reference to understanding the roots and sources of Le Corbusier's ideas.

Other future plans in the architectural field include copublishing with foreign publishers and museums, as well as with the Architectural History Foundation and the National Trust for Historic Preservation; commissioning multivolume reference works, and launching a series of monographs on architecture.

The MIT Press has previously received awards recognizing its editorial achievements, design, artwork and production. The nomination for the AIA medal said, "The MIT Press has continuously published significant and serious books in architecture over a span of many decades."

## Nine Named Honorary Members For 'Distinguished Contributions'

Nine men and women have been selected to receive honorary AIA membership during the Institute's annual convention in June. The individuals, chosen for their "distinguished contributions to the architectural profession or its allied arts and sciences," are:

- Peter H. Borgemeister, executive vice president of the Connecticut Society of Architects since 1970;
- Eleanor Ketchie Brassel, assistant to the Institute's convention director and an AIA staff member for 25 years;
- James Reed Ellis, a Seattle attorney who was a driving force behind numerous development and civic improvement projects in Seattle and King County;
- Sen. Charles McC. Mathias Jr. (R-Md.), a supporter of the arts, preservation of the physical and natural environments, energy, public housing, urban revitalization and professional liability insurance;
- Hermine Mitchell, Philadelphia architectural designer, who has been active on AIA's environmental education committee and a liaison between that committee and the Women's Architectural League and the architects-in-schools program;
- Jean Gardiner Muntz, with the Nebraska Society of Architects since 1956, first as the state chapter's assistant director and then as executive director;

*continued on page 48*

1. ***Security Savings***
***Glendale, Wisconsin***
*CG-8 Gold Reflective Glass*
*Owner – Security Savings*
*Architect – Torke-Wirth-Pujara, Ltd.*
*Glazing Contractor – Klein Dickert Milwaukee, Inc.*

2. ***Alpha Tower***
***Dallas, Texas***
*SS-8 Silver Reflective Glass*
*Owner – McFaddin/Kendrick*
*Architect – TMHI, Inc.*
*Glazing Contractor – Haley-Greer, Inc.*

3. ***Corning Museum***
***Corning, New York***
*SS-0 Silver Reflective Pattern Glass*
*Owner – Corning Glass Works*
*Architect – Gunnar Birkerts and Associates*
*Glazing Contractor – Kirschner & Sons*

4. ***Royal Trust Bank Tower***
***West Palm Beach, Florida***
*SG-10 Gold Reflective Glass*
*Developer – Olympia & York*
*Architect – Schwab & Twitty Architects, Inc.*
*Glazing Contractor – Alumi-glass, Inc.*

5. ***Cadillac Fairview Towers***
***Calgary, Alberta (Canada)***
*SS-14 Silver Reflective Glass*
*Owner – Cadillac Fairview*
*Architect – S. Zerafa & Chand Kennedy Architectural Grou*
*Glazing Contractor – Dominio Bronze Limited*

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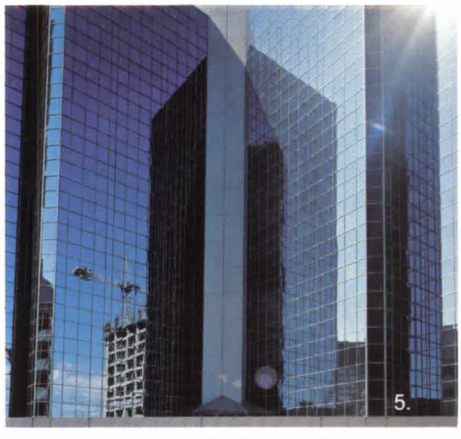
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***Anaheim, California***
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*Owner – City of Anaheim*
*Architect – Dan L. Rowland & Associates, Inc.*
*Glazing Contractor – Cottrell Glass Company*

**The Institute** *from page 45*

• Rep. Dan Rostenkowski (D.-Ill.), a supporter of "issues of critical concern to architects," including historic preservation and passive solar tax incentives, federal construction programs, A/E selection.
• Mary Wingfield Scott, a Richmond, Va., architectural historian and preservationist;
• Lisa Taylor, director of the Smithsonian Institution's Cooper-Hewitt Museum of Design, New York City, since 1969.

The jury included Robert L. Durham, FAIA (chairman), Charles E. Schwing, FAIA, and Thomas H. Teasdale, FAIA.

## Ten Foreign Architects Named as Honorary Fellows

AIA has selected 10 foreign architects as honorary fellows, a title reserved for architects of "esteemed character and distinguished achievement" who are not U.S. citizens and who do not practice in this country.

The honorary fellows, who will be invested at AIA's 1982 convention in Honolulu, are:

• Sir George G. Baines, founder of the multidisciplinary firm, Building Design Practice, in Great Britain. In 1978, he was knighted "for his services to architecture."
• Alexander Ian Ferrier, a principal partner of A. Ian Ferrier, Campbell & Associates in Brisbane, Australia, a member of the faculty of architecture, University of Queensland, and a former president of the Royal Australian Institute of Architects.
• Stanislaw M. Jankowski, who as head of the Warsaw town planning office for 30 years (1946-1976) led the effort to rebuild the war-torn city.
• Swoo Geun Kim of Seoul, Korea, winner of the national competition for the Korean National Assembly Building. He also designed the Korean pavilions at Expo '67, Montreal; Expo '70, Asaka, Japan, and Expo '74, Spokane, Wash. He currently serves as the dean of the college of design, Kook Minn University.
• Padraig Murray, a principal of the Dublin firm of Costella, Murray & Beaumont and past president of the Royal Institute of Architects of Ireland.
• Renzo Piano, winner with Richard Rogers of the competition to design Centre Pompidou in Paris. He has practiced architecture in Milan, Genoa, London and Philadelphia and served as architectural consultant to Columbia, Bucharest and Oslo universities and the University of Pennsylvania.
• Aarno Emil Ruusuvuori, editor, educator and designer of churches, factories and restoration projects in Finland.
• Shozo Uchii of Tokyo, winner of the 1980 R. S. Reynolds Memorial Award for the Treasury of the Minobusan Kuonji Temple in Tokyo.
• Aldo van Eyck, professor of architecture at the Institute of Technology, Delft, Holland, and the University of Pennsylvania, and advocate of behavioral sciences in the design field.
• Abraham Zabludovsky, Mexican architect, author, educator and photographer. His major works include the Rufino Tomayo Museum of International Contemporary Art; Universidad Pedagogica Nacinal, Mexico; Institute of the National Fund for Workers Housing, Mexico, and El Colegio de Mexico.

**Warsaw Rebuilt**—The work of one of the Institute's honorary fellows for 1982, Stanislaw M. Jankowski, is illustrated by the dramatic transformation of the major east-west corridor through the Polish capital, shown in the top photograph in 1945 and above in 1949. Jankowski led a team of architects in this rebuilding project and as manager of the Warsaw general planning department also supervised construction of major housing projects and reconstruction of parts of central Warsaw. The International Union of Architects last year awarded one of its triennial prizes to the "architects of Warsaw" for their work in rebuilding the city. "Jankowski was the one most responsible for this achievement," according to his nominators.

## Survey Finds Disapproval Of Frequent Competitions

Architectural competitions should be held "occasionally" or "rarely," say nearly two out of three AIA member firms and almost all the large firms (25 or more employees) responding to a recent AIA survey. The majority of these firms also find competitions more expensive than other ways of securing work and feel that competition compensation is inadequate.

Sponsored by the AIA design commission and research and policy division, the survey was sent to a random sample of 1,132 AIA firms, of which 370 or 32.7 percent responded, and to a targeted sample of 191 firms with 25 or more employees, of which 58 firms or 30.4 percent responded. The survey explored both negative and positive attitudes toward three types of competitions: traditional design competitions, interview with design concept presentations competitions and developer/architect competitions. The following is drawn from a compilation, by AIA's competitions task group, of the results. (The task group compared the responses from the AIA member firms with the answers of 87 larger firms drawn from both the random and targeted groups.)

Both the AIA firms and the larger firms report as much experience with the two "hybrid" forms of competitions as with traditional design competitions. Almost twice as many larger firms have participated in competitions as have AIA member firms. *continued on page 52*

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**The Institute** *from page 48*

While the majority of respondents views all forms of competitions as more expensive than other methods of architect selection, traditional competitions are regarded as the most expensive. And while the majority of AIA firms reports inadequate compensation, an even greater proportion of larger firms do.

The most frequently cited benefit of a traditional competition (by 60 percent of the AIA firms and 78 percent of the larger firms) is that it serves "as a stimulus to staff morale and an incentive to extend the firm's design skills." This occurs less frequently in the other two types of competitions. The majorities of both AIA and larger firms see competitions as "costly to the firm" and a "harmful diversion of effort from other projects."

Twice as many AIA firms as not prefer interview with design concept presentations over traditional invited competitions; four times as many larger firms do. While approximately one-third of the firms report that they use competitions to expand their business and win commissions for which they otherwise would not have been considered, larger firms have more frequently used competitions to expand their business.

As for the criticisms of competitions, the majorities of both AIA firms and the larger firms find that interviews with design concept presentations and developer/architect competitions provide inadequate design criteria, insufficient compensation and lack of independent professional design evaluation. Concerning traditional design competitions, the criticisms from the majority of the respondents involve insufficient compensation and excessive submission requirements.

As for competitions sponsored by GSA, more firms oppose than support an increase in the number of competitions for federal projects. Reasons for opposing include the expense to architects and the government (41 percent AIA firms, 67 percent larger firms), that competitions are an inappropriate way for GSA to select an architect (36 percent of AIA firms, 46 percent of larger firms), that GSA's record of running competitions is questionable (31 percent of AIA firms, 33 percent of larger firms) and the fact that competitions undermine current Brooks law procedures (24 percent of AIA firms, 43 percent of larger firms). One-third of the AIA firms surveyed support GSA competitions to provide more firms opportunity to receive federal work, and one-fourth of the larger firms support them in order to improve the quality of federal design.

The survey respondents expressed support for AIA positions regarding what

*continued on page 141*

Microphoto (inset) reveals fungus growth on carpet pile after week in control chamber.
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*The Arts*

# Grooms' Cockeyed Cityscape Reopens in Manhattan

The old man on the subway has fallen asleep and is definitely invading the space of the woman in the next seat. Miss Liberty is wearing fire-engine red platform shoes and is clutching a see-through pocketbook revealing her preference for Marlboros. And alligators are waltzing in the sewers.

Red Grooms' "Ruckus Manhattan" has returned to New York City and will be on view in the Burlington House lobby, 1345 Sixth Avenue, through the end of this month. It is the same loony, 3-D environment of New York people and places that first opened downtown in 1975 in the new 88 Pine Street building, attracting 50,000 visitors in 46 days. The current show has several new pieces, including a room-sized, 17-color taxicab that "drives" through scenes of New York City projected on its interior windshield and a tableau depicting the selling of Manhattan Island by a carved wooden Indian to Dutch settlers.

Returning are the Woolworth Building hung with huge gargoyles, a contorted Brooklyn Bridge with busts of its creators, John and Washington Roebling, perched on its Gothic towers, and the decidedly unidentical twin towers of the World Trade Center.

A Tennessean by birth, Red Grooms first got attention in New York in the late '50s as one of the pioneers of performances later called "happenings." A precursor of "Ruckus Manhattan" was the 1968 "City of Chicago," which Grooms called a sculptopicto-rama. The 1975 opening of "Ruckus" was preceded by 13 months of collaboration with Mimi Gross Grooms and a team of 30 painters, welders, mechanics, carpenters, etc., working without blueprints or scale drawings. The slapdash approach creates a world of a quality best described by Grooms himself as "chicken coop creakiness."

"Ruckus" was sponsored by Creative Time, Inc., a nonprofit organization supported in part by the National Endowment for the Arts and the New York State Council on the Arts.

Photographs by Robert Mates/Courtesy of Creative Time


*Groomsian views of Manhattan from the 'Ruckus' show include a swirling newsstand collage, a life-sized, walk-through subway car and a fantastically scaled Woolworth Building that features bas-relief caricatures of F. W. Woolworth and architect Cass Gilbert.*

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**Above inset**: Crossroads Office Park, San Diego, CA Architects: Howard Anderson & Associates, Del Mar, CA
**Right inset**: Bannockburn Lake Office Plaza, Bannockburn, IL Architects: Solomon, Cordwell, Buenz & Associates, Chicago, IL

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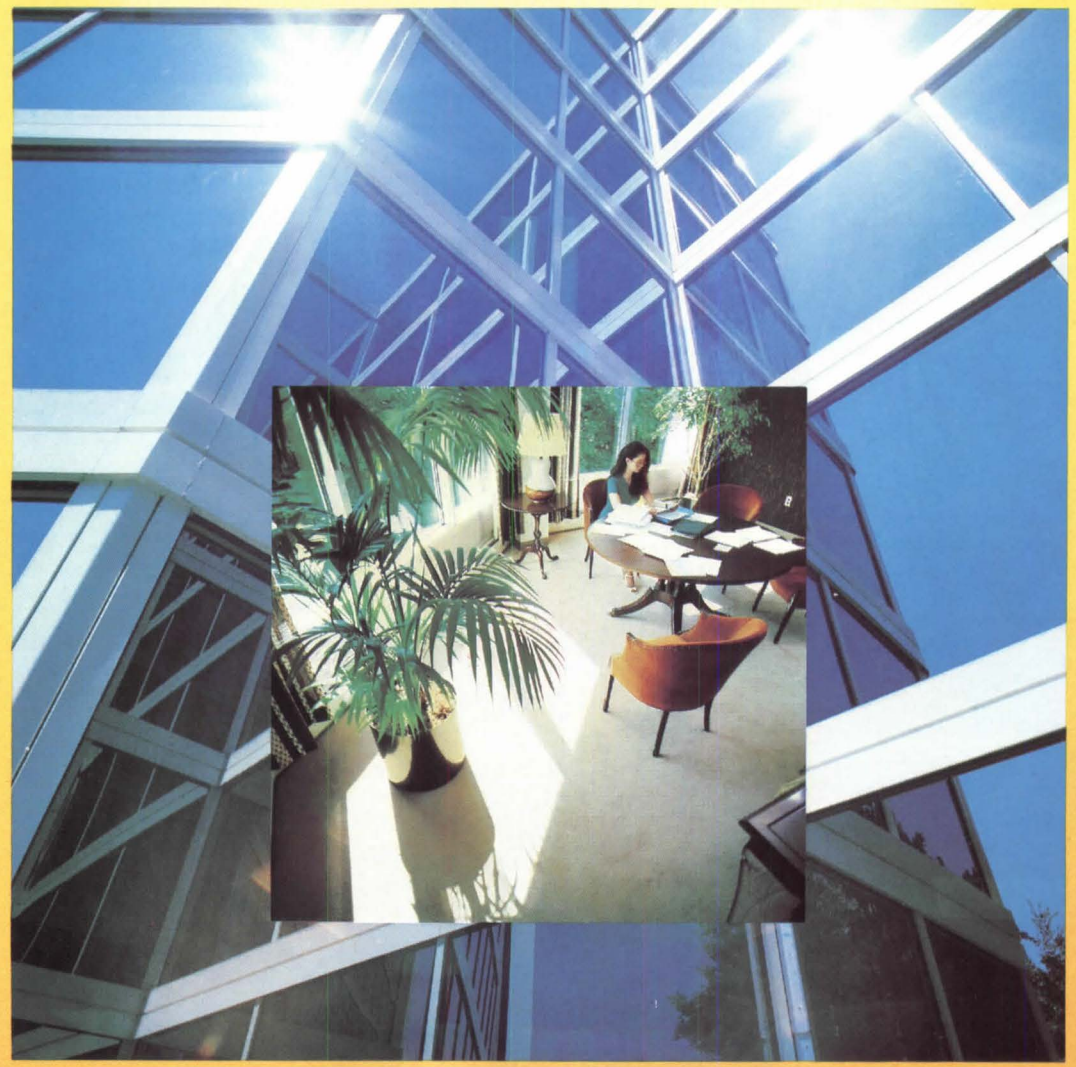

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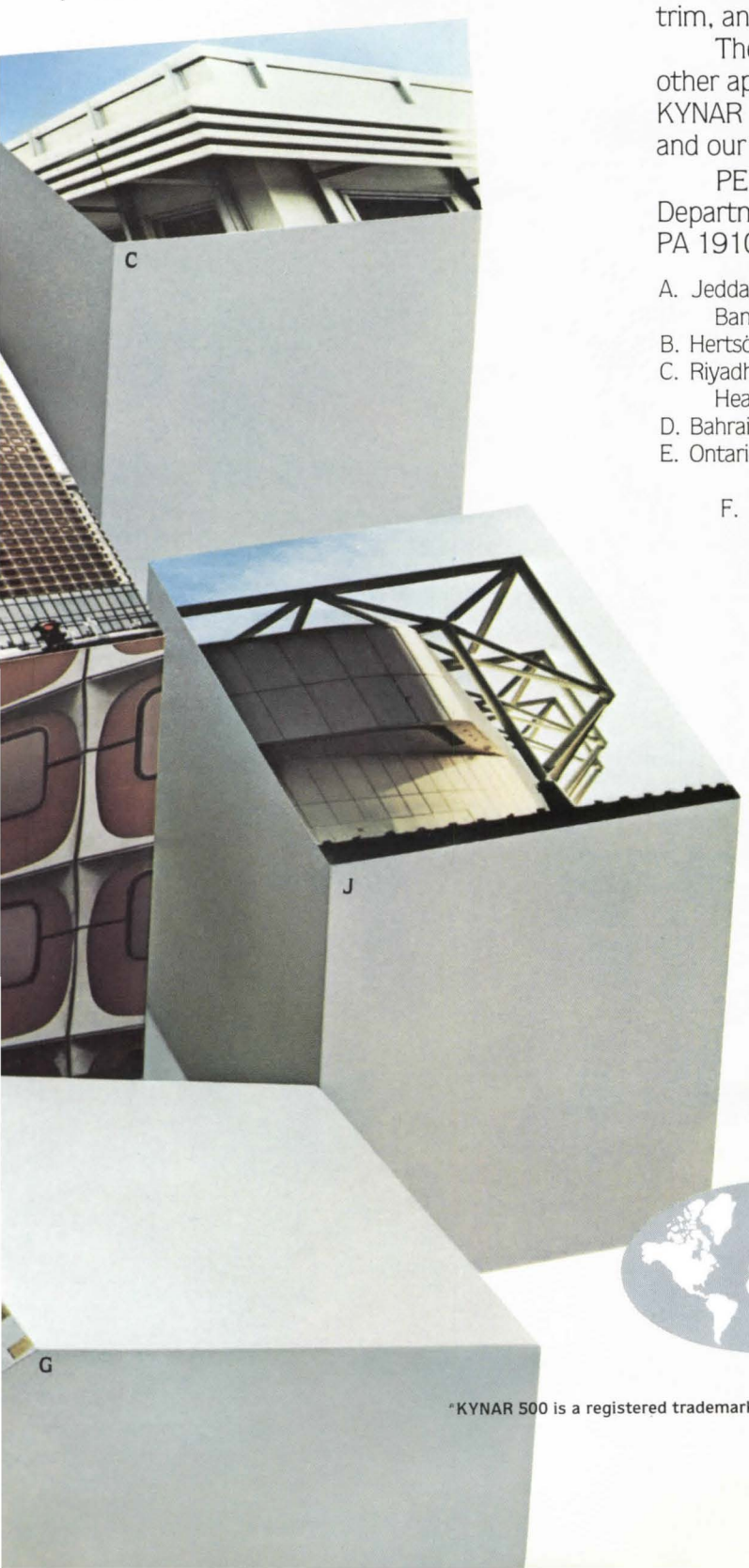


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D. Bahrain. Equestrian Racing Grandstand, 1978.
E. Ontario, New York. Ginna Nuclear Power Plant, 1967.
F. Oakland, California. World Airways Hangar, 1973.
G. Oshima, Japan. Oshima Shipyards, 1973.
H. Dubai, United Arab Emirates. Sheraton Dubai Hotel, 1977.
I. Detroit, Michigan. Renaissance Center, 1976.
J. Kansas City, Missouri. Kemper Memorial Arena, 1975.
K. San Francisco, California. Mount Sutro Tower, 1973.
L. Southfield, Michigan. Prudential Town Center, 1975.
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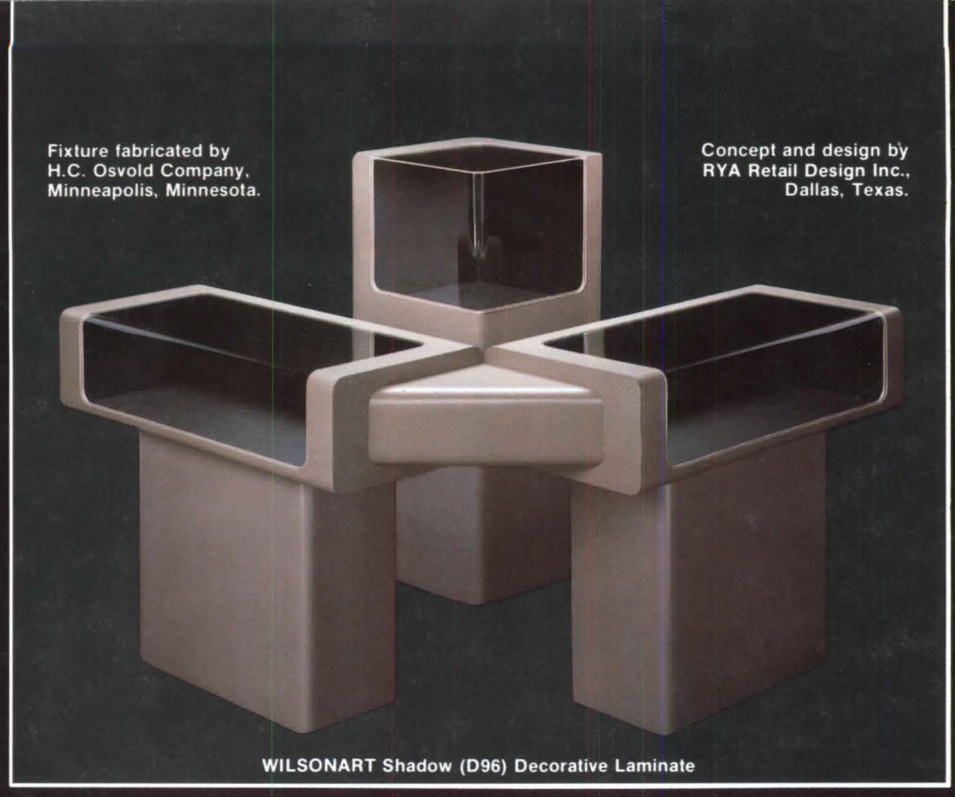


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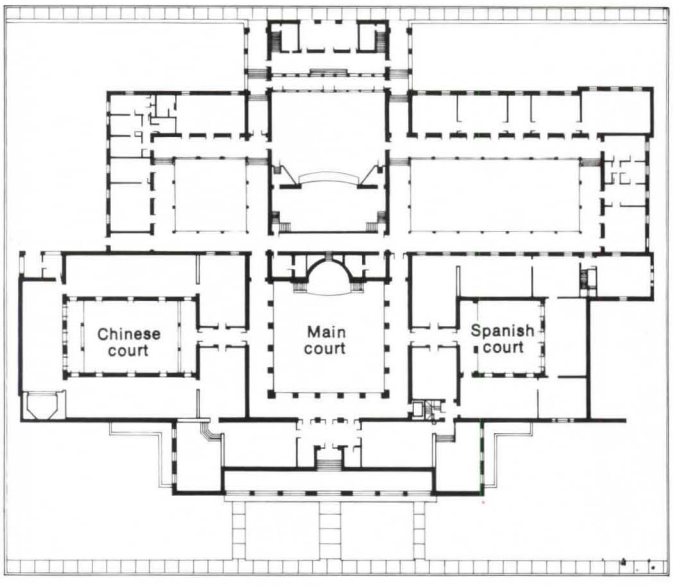
Courtesy of National Aeronautics and Space Administration

This is how the Big Island of Hawaii, with its still active volcanos, looks from a satellite 570 miles overhead. In this issue we take a somewhat closer look at the state of Hawaii, this year's AIA convention site. In doing so we do not deal with the undeniable and irresistible delights that it offers visitors, but with the character of this unique place as a setting for human life. First we look at three very different works of architecture, which have only quality in common, from three different periods in Hawaii's flavorful history. Then we look at that history itself as it has shaped the islands' environment. Finally we look at a state land use law, and a manner of building in response to climate, that are themselves unique to Hawaii. *D.C.*




Drawing by Chris Cullen

Photographs by James Shipsky


# Goodhue's Serene, Rewarding Museum

*An appreciation by James Shipsky*

The first time I passed the Honolulu Academy of Art I thought it was an ancient Hawaiian temple or palace. Eventually I learned that it was a museum and went to have a look. Inside, galleries scaled to residential dimensions made viewing the art on display an intimate and personal experience. Cool quiet courtyards with splashing water, jungly plants, birds and trade wind breezes invited me to linger. I felt a sense of serenity and protection from the outside world. Like nearly everyone who visits it, I loved the academy immediately.

But the academy is neither ancient nor Hawaiian. It was designed in 1925 by a New Yorker, Bertram Grosvenor Goodhue, at the height of his eclectic power. I was shocked when I learned this. In school I had been led to believe that eclectic buildings were a shameful paste-up of details copied from books of historic architecture. I wasn't supposed to find the academy wonderful. The academy challenged me, as a modern architect, "Can you, with your modern approach, design a building as universally loved and personally rewarding to so many kinds of people?"

Does eclectic architecture offer the public something that modern architecture cannot? Or can the principles that make

**Mr. Shipsky,** an architect, craftsman-builder and writer in Cohasset, Mass., was a member of the Honolulu firm of Ossipoff, Snyder, Rowland & Goetz.


a successful eclectic building be applied with equal success to a modern work? I felt the answer might lie in understanding how the academy works its magic.

Over 400 feet long, the academy complex fills a whole city block with magnificent tranquillity. A great primitive Earth Mother of a roof rises 43 feet above street level to shelter the large central pavilion. Lower wings, set back from the main block, extend to each side. The palette of materials is simple and austere: white stucco walls and gray tile roofs. The quiet simplicity of the building draws the landscaped grounds and blue sky into the overall image of the academy.

Walking along the perimeter streets, one can guess little of the contents of the complex. The thick walls, fort-like in their solidity, are pierced by only a few windows and ventilation grilles. The grille patterns are stark and bold, white stucco bars over jet black voids, jungle primitive. The lawn is painstakingly groomed by an elderly, monk-like gardener. Coconut palms, monkeypods, pandanus and lush tropical ground cover are arranged with the restraint of a Japanese garden.

The exterior of the academy induces certain expectations of the experience waiting within: an enchanting time and place sheltered from the present and the hectic city. How does the exterior of the academy do this? The architectural techniques are deceptively simple. The walls are walls: thick and heavy, the quintessence of walls. They look like what they are: two feet thick, built of hand-laid lava rocks, finished with stucco. The irregular rock surface reads through the stucco, producing an honest texture. The construction and massiveness are perceptible. The walls are an undiluted barrier; their basic character is not weakened by numerous openings. The walls possess the power of the symbolic and reach straight into the subconscious. They gratify the senses.

The roof excels at roofness. A steeply pitched hip roof with flaring, overhanging eaves and peak vents, it abounds in promises and stories. This huge hat epitomizes the concept of shelter. It promises protection from sun, rain or any hostile forces from above. The overhanging eaves reach out in welcome. The roof's ocean of mottled gray mission tiles is soothing and hypnotic. The impeccable order and near-endless repetition of tile-upon-tile become ripples on a lake or thousands of tiny arches. All this happens in an instant, the human retina comparing the visual roof texture with the tactile process of handling each tile and placing it correctly to shed rainfall. Thus the roof too uses clear symbols to communicate with the senses and subconscious.

The exterior relationship of building to natural environment makes another promise to the subconscious: The experience to come will be a balance of built form and nature; neither will dominate. The apparent reverence for growing things acknowledges their beneficence to humans. Barred doves and mynahs nest in the roof; windblown seeds sprout in the gutters.

Photographs by James Shipsky

## A ritual entry into the central court.

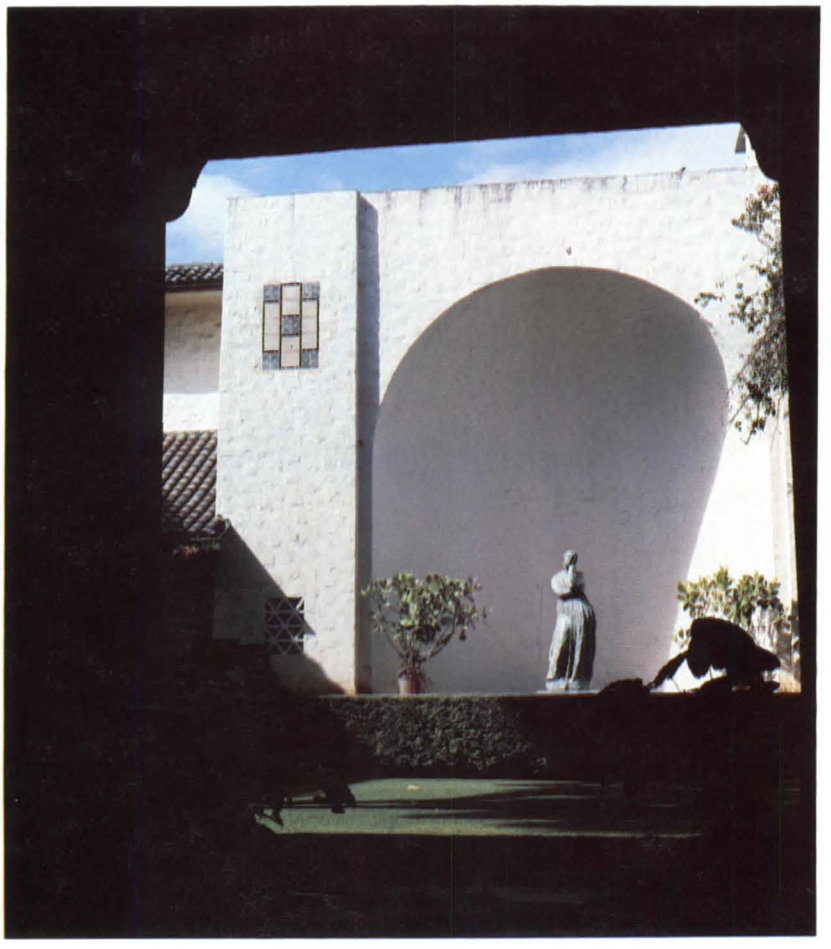
Entering the academy is natural and easy, a simple but masterly sequence of space experiences. A loggia 112 feet wide by 13 feet deep is only two steps above grade. Stone benches in its shade welcome sitters. The screen of piers supporting the loggia roof help shape it into an ideal transition space. Separated conceptually but not visually from the street, it is under the academy's roof but still outside its walls. From the loggia seven steps climb a relatively dark passage through the thick walls. On axis with the stairs, bright sunlight bathes an elevated stage at the far side of a broad courtyard. At center stage La Grande Penelope, a life-size bronze figure, draws you onward while pensively observing your approach. At the top of the stairs a wrought iron gate officially declares that you're in. It's practically an entry rite: passing through a tunnel, moving from darkness to light, climbing to a higher plane, passing through a gate. It feels good.

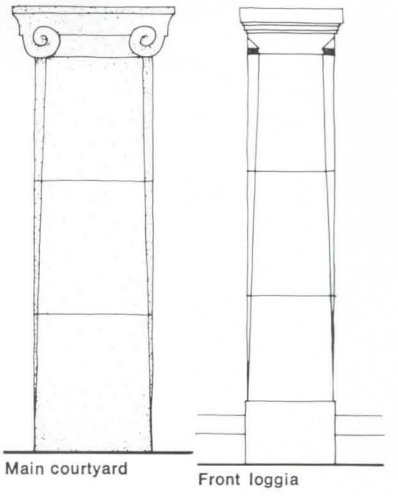
The basic order of the academy plan derives from three formally aligned courtyards. To the east the Chinese Court is encircled by galleries of Oriental and Pacific art. To the west the Spanish Court is surrounded by galleries of American and European works. The heart of the academy is the Main Court in the center. Goodhue boldly allocated over 6,000 square feet smack in the center of the academy to a space not for the display of art.

The Main Court is formed by a cloister walk on three sides and a raised stage on the fourth. The cloister walk links the east and west groups of galleries to the entrance lobby. Massive piers line the inner, courtyard side of the walk; blank walls on the outer sides focus attention inward. The piers possess immense bulk. They are stability itself: benevolent giants 12 feet high by 3 feet square. Whatever they might symbolize, it feels awfully good to pause and lean against one. They create pools of shadow and light along the cloister. The walk is paved with Molokai sandstone in a fitted irregular pattern and roofed with Spanish mission tiles supported on redwood beams.

Within the cloister walk is a space 60x60 feet open to the sky. It's empty space, with an immaculate lawn, off-limits to visitors. A towering mango tree, hedges and beds of greenery are confined to strips bordering the walk.

The Main Court centers and balances the overall experience of the academy. The galleries are places for activity: observing, absorbing, questioning, reacting, responding to the art. The Main Court is Nature and Void. Here it is natural to stroll, to pause, to contemplate.






*The entry (across page) is a procession to the Main Court (left and below) with its bronze La Grande Penelope and massive columns.*

Photographs by James Shipsky

## Sheltered and satisfying side courts.

The Spanish Court is smaller, 40x45 feet, and personal in scale. An octagonal fountain in the center invites visitors to enter and feel at home. Water jets in a delicate spray send splashing sounds into adjacent galleries. An arcade at one side provides a shaded transition space. The opposite wall mirrors the arcade's three Roman arches and thick piers. The third wall links its gallery to the courtyard with four sets of French doors. The fourth wall is blank except for Goodhue's original fountain. Water once cascaded down celadon green and cobalt blue tiles, spilled from a rectangular collecting pool, flowed across the courtyard in a channel ending in a spiral and emptied into the octagonal pool. Plumbing problems developed; the fountain died.

The courtyard is furnished with sandstone pavers, antique garden furniture and art of the Mediterranean: Greek torsos, Roman amphorae and bas-reliefs, Egyptian and Syrian sculpture. A roof-high kukui tree, flowering vines and shrubs, pencil-thin evergreens, potted plants and grass growing in the gaps between pavers moves the art from the realm of sterile display to a lived-with, connected, intimate relationship with the viewer. It's easy to pretend that you're in the courtyard of a residence that you own.

One sitting on the bench near the fountain finds several basic human needs deeply satisfied. The surrounding galleries insulate the courtyard from the outside world and arouse feelings of ex-

treme security and protection. A flattering syllogism convinces the subconscious mind: This place is lovely. I am enjoying it. Therefore I am the kind of person for whom this superb courtyard was created.

Many architectural elements contribute to the success of the Spanish Court. The square plan gives a feeling of stability, as do the symmetry and classical proportions and detailing of the elevations. The pier-arch-pier compositions add rhythm and visual resolution of the force of gravity. The space of the courtyard is contained by the four walls, yet visually linked to the space of two galleries, to the arcade, to the sky above. The symbols of water and octagon address the subconscious. The presence of nature is clearly felt.

If any space in Honolulu can rival the Spanish Court for the sense of well-being it brings, it is the Chinese Court. Similar elements are masterfully combined: loggia, a pool of water (Goodhue's original spouting fountain now a victim of plumbing problems), a combined sense of enclosure and linkage to spaces beyond, art and nature in harmony. The roof structure, window grilles, pierced tile balusters, pool design, furniture and artifacts are Oriental instead of Spanish.

The galleries don't compete with the art. While the academy's

*The two smaller courts around which the galleries are organized: the Spanish, this page; and the Chinese, across page. Both are tranquil spaces, rich in ornamentation and assorted artifacts.*

## 'It clarifies the confusion in my mind.'

exterior abounds in eclectic detail, the galleries depend on subtle techniques to enhance the art: skillful handling of natural light, careful relationships to the outdoors, simple detailing, gallery-to-gallery connections that offer many alternate routes, simple materials, simple rectangular plans and sections.

The academy's construction was economical, climate-wise, durable, and up to date. The gallery floors are smooth-finish concrete, acid stained a deep jade green, scored with a fine three-foot grid and polished to a sheen by 50 years of visitors' feet. The floors are the exposed top of the basement structural system: a one-way concrete pan joist system. The lava stone used for the walls was a locally available material, and the thick masonry acts as a heat sink, giving the building considerable thermal lag. The walls are cool all morning from the preceding night, and the heat of the day doesn't penetrate them until late afternoon, when the academy is closed.

Natural light was provided in all of the museum's galleries. As originally built, seven galleries received diffuse northern light, ideal for art. Six others were provided with indirectly illuminated skylights: clerestory lights above the cloister roof admitted light to the attic; from there it passed through skylights in the gallery ceilings. The attics were also the main element of a convection ventilation system. Attic air heated by sunshine beating on the roof was exhausted from peak vents. Replacement air was drawn from the galleries below, which in turn drew in cool, fresh air from the courtyards.

James Shipsky

Who was the architect capable of directing such an array of architectural devices toward a singularly positive and memorable experience? Bertram Goodhue was a romantic: he preferred a state of consciousness more beautiful and purposive than everyday reality. His architecture helped him answer the universal question, "Who am I?" I think his answer went something like this: "I am a person who appreciates and enjoys beauty. I find the proportions, massing, colors, forms and materials of this work uplifting and gratifying to my mind and senses. These things express the beauty and goodness of life on earth. Sometimes I simply sit and absorb the good feeling they give me. I bring my friends here because this architecture partially tells them who I am, what I'm like, how I feel about being alive. It fosters a frame of mind I want to have in order to further develop myself as a person. This architecture helps me become who I want to be; it brings me peace of mind; it clarifies some of the confusion in my life."

Goodhue once sent a reading list to an aspiring young architect. One book on that list may have had an immense impact on Goodhue's work. *Architecture, Mysticism, and Myth,* by William R. Lethaby was published in 1891, when Goodhue would have been 22. The book describes symbols that were used in temples, palaces, cathedrals, etc. It describes how ancient architecture symbolically expresses early man's philosophical questions and beliefs. I think Goodhue's understanding and skillful use of architectural symbolism gives the academy much of its character.

There is an interesting link between Lethaby's ideas and one of the greatest thinkers of our time: Carl Jung. On the title page of *Architecture, Mysticism, and Myth* Lethaby wrote, "Are there symbols which may be called constant; proper to all races, all societies, and all countries?" This question exactly anticipates Jung's theory of archetypes, which could guide architects in the positive use of architectural symbolism. Our buildings are subconscious symbols. But modern design methods ignore the subconscious; designs limited to the realm of intellect and reason lack deeper meanings.

A work of architecture reveals the architect's attitudes toward life and other people. Goodhue's contemporary, Louis Sullivan, wrote in *Kindergarten Chats,* "Every building you see is the image of a man you do not see." If the meaning of the academy had to be stated in four words, they would be, "The academy loves people." Transformed into stone and wood, space and light, the academy is Goodhue. □

*Above and across page, views of naturally lighted areas in Goodhue's original building. Right, the straightforward and attractive Clare Booth Luce wing added in 1980; its architect was John Hara Associates, Honolulu.*

David Franzen

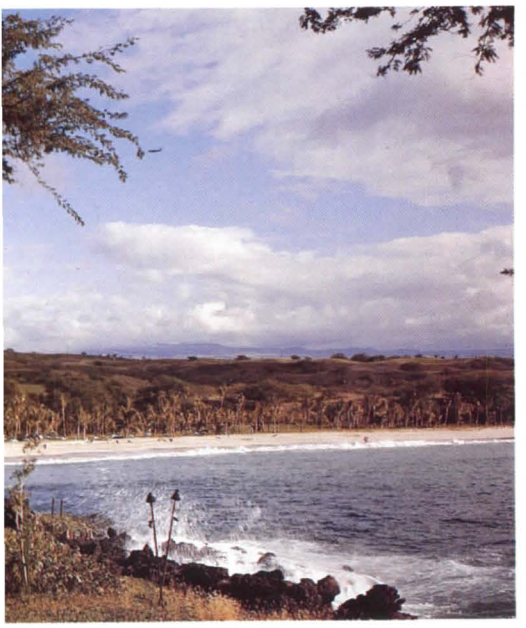
James Shipsky

R. Wenkam

# Evaluation: Alone With SOM on a Tropical Island

*By Stanley Abercrombie, AIA*

R. Wenkam



Few earthly landscapes are so unearthly. The name means "white mountain," but, except for some snow at its summit, Mauna Kea is black as can be, a gigantic mound of solidified lava, deformed, fissured, barren and sloping straight into the Pacific. It is the highest island mountain in the world and along with its still active volcanic neighbor, Mauna Loa, it constitutes most of Hawaii's "big island." "When I first visited the site," says Marc Goldstein, FAIA, of Skidmore Owings & Merrill, "I felt like Neil Armstrong."

Yet a couple of decades ago part of this landscape was made into something close to paradise. The Mauna Kea Beach Hotel opened in July of 1965, won an AIA honor award in 1967, and today—after some gains, some losses—it remains much as it was then, a place where there is almost nothing to offend the eye. All it took was talent and money.

The money, along with intelligent concern for the environment, came from Laurance S. Rockefeller, who had established exemplary resorts in Wyoming, Puerto Rico and the Virgin Islands and who was invited by William F. Quinn, Hawaii's first state governor, to inspect the Mauna Kea site in 1960. For talent Rockefeller turned to SOM for the original building and, for some later additions, to Whisenand, Allison, Tong & Goo, a Honolulu-based firm with an international practice. What Rockefeller and Quinn intended was a fine, small (150-room) hotel that would popularize some neglected land and generate residential development in the hills beyond, development that has been tardy but that has finally begun on a modest scale.

An obvious design mandate was that the bizarre but characterful terrain be respectfully improved, and an obvious design

*Three views of SOM's Mauna Kea as it appeared in 1965.*

Bruce Davidson

Stanley Abercrombie, AIA

## Diminution by addition of another floor.

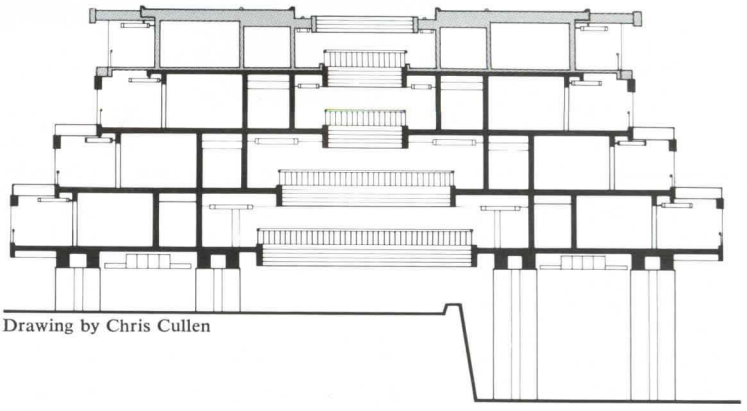
restriction was that all materials had to be brought in by barge (except for palm trees, which were dropped in by helicopter). SOM first responded to the problem with what must have seemed an imaginative and sensitive solution: not a single building, but a village of prefabricated one-room units. Design and design approval progressed to the point of actually constructing a full size mock-up on the site. "It cost better than $200,000," according to Horace Sutton, writing in the travel section of *Saturday Review,* "but after a one night's trial Rockefeller had it leveled."

As Goldstein remembers, the expensive village scheme then went through a slow redesign process of increasing cohesion —duplex units, four-room units and finally the unified scheme that was actually built. This design was the product of interoffice cooperation, with Goldstein and Charles Bassett, FAIA, both of SOM's San Francisco office, being project designer and partner in charge, respectively, and with Davis Allen of SOM New York in the role of interior designer. Allen also was given a free hand by Rockefeller in assembling the hotel's collection of Pacific and Oriental art. Belt, Collins & Associates were the civil engineers; Eckbo, Dean, Austin & Williams were landscape architects; Jean Rosenthal was lighting consultant.

The result was a marvelously open structure stepping down the lava bluff on cruciform concrete columns and taking full advantage of the site's near-perfect climate. Rooms face either the mountain or a crescent of sandy beach, and single-loaded corridors are wrapped around lushly planted atria—*real* atria, open to the sky. Goldstein credits Bassett with two decisions fundamental to the design's success: First, it was Bassett's suggestion that the corridors and rooms *not* be wrapped around the ends of the atria, which made possible the building's powerful end elevations that are direct expressions of the building section beyond. Second, there was, inevitably, comparison of the stepped scheme that was being designed with a more straightforward scheme in which floors were stacked directly above each other; others in the firm pointed out—rightly, no doubt—that the stacked scheme was infinitely simpler to design, to engineer and to construct; Bassett listened politely, then directed that the stepped scheme be used. Without the stepping, of course, the building would have seemed much more foreign to its sloping site.

Another major determinant of the design's success is similarly illogical. The great horizontal concrete bands that dominate the building's long elevations and that contribute so much to their air of serenity are not, except for some stiffening of the frame, serving any structural function at all. Their service, instead, is to unify the innumerable fin walls between room terraces and, from those terraces, to frame the splendid views. The repetition of these identical bands is the one aspect of the design that has been seriously weakened by the 1973 addition of a new top floor of rooms.

The remarkable thing about the addition is that no more damage was done, for architects Wimberly, Whisenand, Allison, Tong & Goo were given a seemingly impossible assignment: to add new rooms on a decreased budget but with no downgrading of quality, and to add them to a carefully proportioned building



Drawing by Chris Cullen

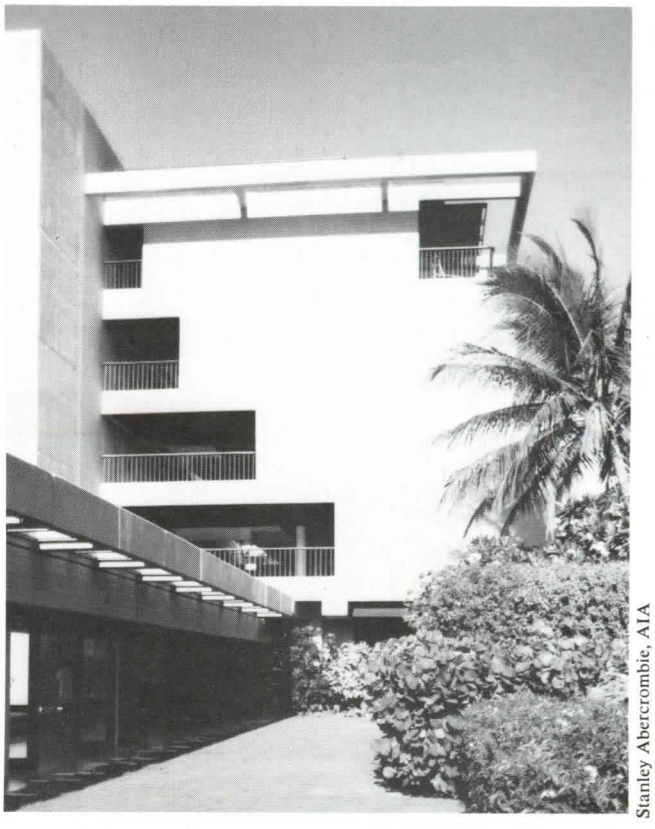
*Left, the Mauna Kea today. The 1968 south wing, by Wimberly, Whisenand, Allison, Tong & Goo, is behind the palms to the right of the original structure. Section, above, shows the original three floors of rooms in black, the fourth floor, added in 1973, in gray. Below, interior atrium and end elevation today.*

Bruce Davidson

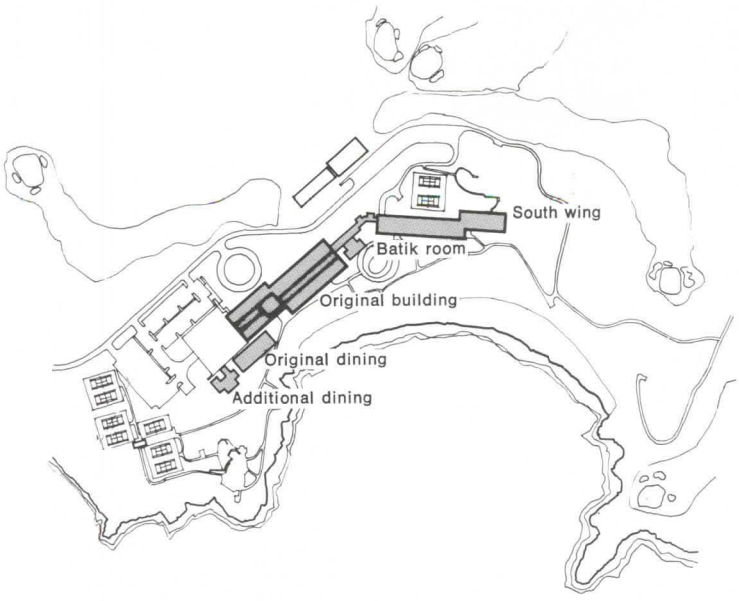
that needed no addition but that Rockefeller, according to George Wimberly, FAIA, considered incomplete. The new floor was not to look like an addition, the architects were instructed, nor like more of the same, but like a planned termination. Building up, rather than out, also satisfied Rockefeller's interest in conserving the natural topography.

The new floor, built of lightweight steel, has been carefully camouflaged to match the concrete structure below, and some very clever planning has retained the stepping section with minimal visual changes in the atria. The rooms, because of budget restrictions, are necessarily lacking a few of the original touches —some of the handsome built-in cabinetwork is missing, and the louvered doors are trimmed in aluminum rather than teak. But the most unfortunate detail is the provision of Rockefeller's desired termination by means of a new horizontal band that is noticeably thinner than the ones below. A more classical, more conventional and—doubtlessly—more convincing solution, given the requirement for change, would have been to make the top band heavier, as a cornice. The lighter band gives the top of the building a slightly wide-eyed, surprised look. And this feeble band is particularly unfortunate when it is wrapped around the ends of the building, becoming a sunshade with nothing to shade and fouling the clarity of the section-as-elevation.

An earlier, larger addition by the same architects had been much more successful. Although not quite as impossible a design task as the fourth floor addition, the job of almost doubling the size of the original hotel with a new south wing must have been difficult. The Wimberly firm discreetly elected not to compete



Stanley Abercrombie, AIA




## A compatible new wing nestled in the palms.

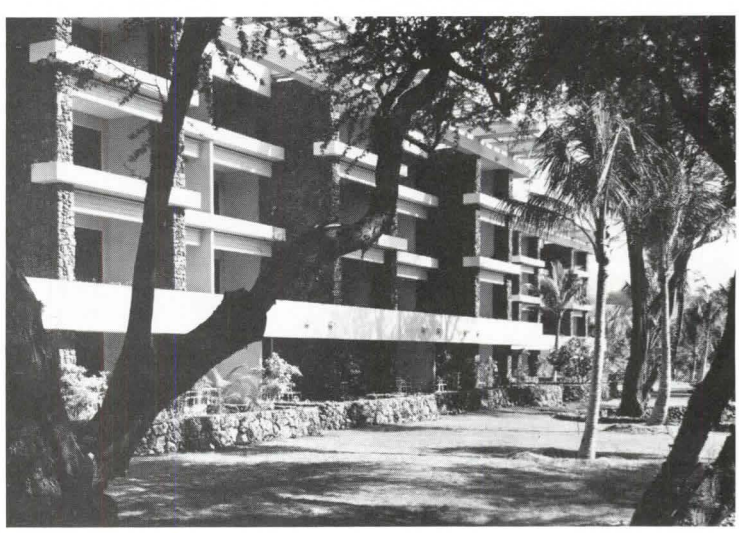
with the original building's domination of the site, but to nestle the south wing into a lower plain, with the new top floor connected by a delightful loggia to the lowest floor of the original. Thus, from the original structure, only this loggia or its roof is evident, and from some parts of the beach, the south wing is almost completely obscured by palms.

When seen, however, the south wing is worth seeing, compatible to the older building without being in the least imitative. While many of the details (stairs, handrails, teak ceiling panels, concrete formboard marks) and the basic palette of concrete and dark wood have been retained from SOM's design, another material, rough lava stone, used only on the interior of the original building, has been given exterior prominence, and concrete sunshades here are rather lacey in character. The south wing foregoes the rigorous logic of the SOM building in favor of a more romantic, picturesque quality. It is different, but a fine building on its own.

Also added by the Wimberly firm have been new dining facilities. As in the SOM design, these are treated as separate wood pavilions, and the quiet Japanese-inspired look of the original pavilion has been replicated. Inside one of these pavilions, however, in a dining facility called the Batik Room, the Wimberly firm has provided a quite unexpected exoticism: a freestanding interior structure of "Ceylon colonial" style. It's surprising, it's just slightly silly, and it's a very pleasant place to eat.

One could hardly hope that such a fine design as Mauna Kea could be doubled in size and be treated more gently. In addition to the generally sensitive new construction, the complex benefits from impeccable maintenance. One potential problem is that the concrete surfaces—and there are a lot of concrete surfaces—are painted. According to Goldstein, it was impractical to use any aggregates but local ones, which made the concrete, without paint, a dreary dark gray. Yet, according to Adi W. Kohler, the current general manager of the hotel, only one thorough repainting has been necessary in the hotel's history.

No longer a Rockresort, the Mauna Kea was sold in 1978 to UAL, Inc., the organization that owns both United Air Lines and Westin Hotels. Under Kohler's supervision, it employs a 36-person maintenance crew for the hotel alone (not including the extensive grounds and the Robert Trent Jones golf course); eight of these are constantly busy with room renovation.



Walton Photography

But our story could not be finished without note of the hotel's extraordinary finishing touches. Surely few architectural undertakings have been so thorough. The work by SOM included complete interior design and graphics programs, as one might expect, but also such details as bath towel designs (based on petroglyphs found near the site), uniform designs for all the staff (unfortunately abandoned for more conventional uniforms) and, most important of all, the extensive art collections masterminded by Davis Allen. Throughout the hotel and its grounds, this art, protected with its own maintenance program, is a fitting flourish for a superb achievement.

*Above, site plan. Above right, looking from the original building to the connecting loggia and new south wing. Right, a detail of the south wing. Far right, the enlarged original building behind a new dining pavilion (at left) and the original dining pavilion.*

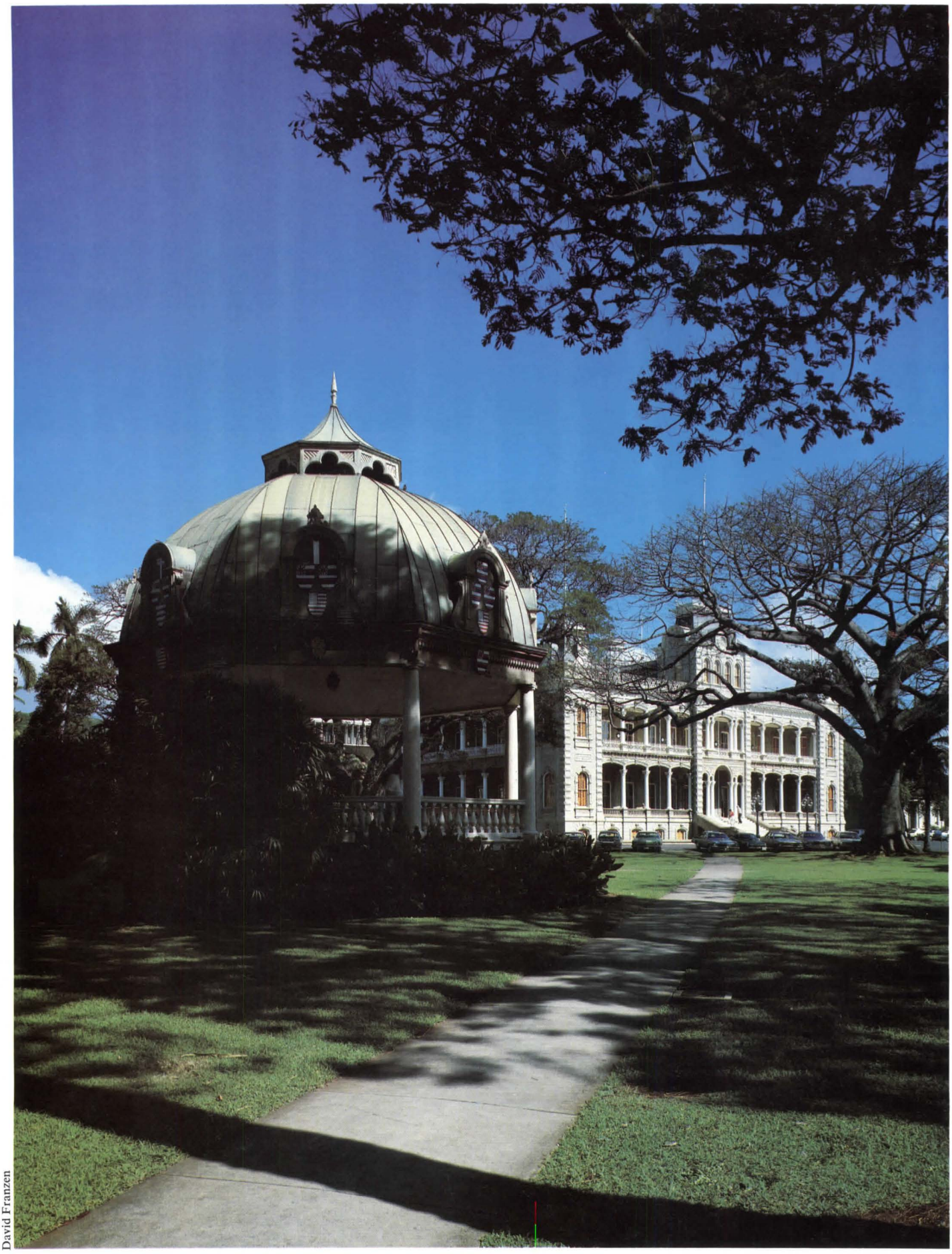
Stanley Abercrombie, AIA

Stanley Abercrombie, AIA

Walton Tregaskis

Stanley Abercrombie, AIA

*A collection of bells from Japan, Ceylon, Thailand and Singapore, top, and the red lacquer Japanese chest, right, are typical of the art collection supervised by Davis Allen. Allen also sketched the uniform designs, above, for the hotel staff.* □

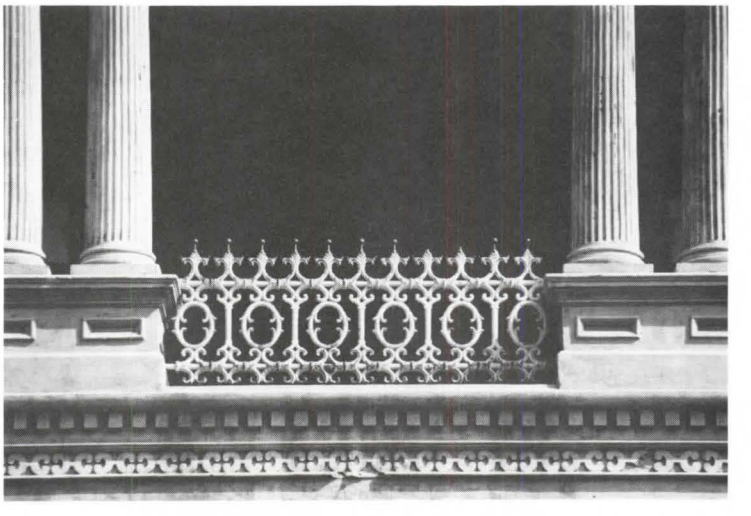


David Franzen

# Victorian Setting for Hawaiian Royalty

*Honolulu's recently restored Iolani Palace is rich in decoration. By S.A.*

David Franzen



Gerald L. Allison, FAIA

At the edge of downtown Honolulu's business district is a remarkable complex of public buildings. It includes the well-known 1967 State Capitol by John Carl Warnecke Associates and Belt, Lemmon & Lo; Washington Place, the governor's residence, built in the 1840s; an 1872 castellated barracks of coral stone; a coronation pavilion built in 1883 and now used every Friday as a bandstand (shown on the previous page), and, most remarkable of all, the Iolani Palace.

The only royal palace in the United States, the Iolani was built in 1882 by King Kalakaua. It was his official residence until his death in 1891, then that of his sister and successor, Queen Lili'uokalani, until the Hawaiian monarchy was overthrown in 1893. Later the ex-queen spent nine months as a prisoner in the palace after an insurrection attempted to restore her rule.

The elaborately ornamented structure was built on the grounds of an earlier (ca. 1840), simpler palace, and the new design seems to have been the work of Thomas J. Baker, who had worked as a builder in San Francisco and arrived in Honolulu in 1876, advertising his availability first as a bricklayer, then as an archi-

David Franzen

David Franzen

Gerald L. Allison, FAIA

*Top left, the entrance elevation, with the 1967 Hawaiian Capitol just visible in the left background. Bottom left, detail of cast iron columns and railings. Above, a view from one of four identical corner rooms on the second floor. Left, the 40x70-foot throne room, recently restored. Above, a plaster medallion of the royal couple.*

Photographs by David Franzen

## Novel technology and water in the attic.

tect—"Plans and specifications furnished at reasonable rates." Baker was contracted "to do all the work done by Architects in like cases" for a fee of 2.5 percent of the estimated cost of $65,000, reasonable indeed. But in 1880 Baker sailed for Australia; he was succeeded by Dublin-born Charles J. Wall, and in 1881 Wall was, in turn, succeeded by Isaac Moore from San Francisco.

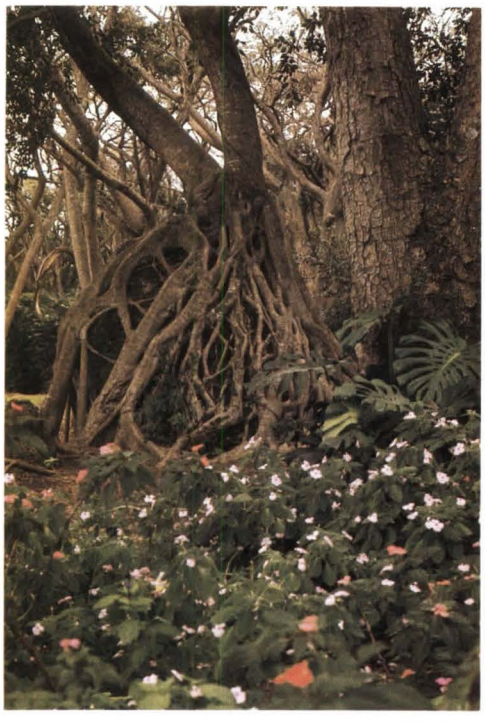
The resultant palace boasted technical features then novel in Hawaii. There was a network of electric bells, "annunciators" and even telephones for communication. There were patent earthenware water closets. In the attic were four galvanized water tanks of 200 gallons each, and, according to historian Charles E. Peterson, "The whole was presumably hooked up to the municipal water supply, the great triumph of 1850, which rescued the city from the desert on which it had been built."

But the most striking aspect of the palace is its decorative work—cast iron, molded plaster, etched and cut glass, floors of wood and marble, elaborate stencilwork, chandeliers, shutters, etc. Now beautifully restored, it's the finest palace this country has ever had. □

*Left above, the top of the central stair. The king's bedroom was on the left of this hallway, the queen's on the right; they were connected by telephone. Far left, glass panels etched with taro plants and Hawaiian ferns. Above, the central stair of koa wood.*

# The Place, Its Past And Its Peoples

*By Forrest Wilson, Ph.D.*



Photographs by John R. Hoke Jr., AIA

There are few islands in the 70 million square miles of the Pacific Ocean and fewer still that will support living, growing things in sufficient quantity and variety to support man.

Some are islands formed of basaltic peaks reaching high enough above the sea surface to intercept passing rain clouds and harvest the precipitation. They have fertile valleys and coastlines fringed by coral reefs. The valley watersheds feed fresh streams that run down the mountain sides to bays and sheltered canoe havens. These are the "high islands," the incubators of ancient Polynesian culture.

There are also some low islands or atolls sprinkled about the Pacific's surface, some sinking and some rising. These are usually formed of coral polyps. Borings taken at Eniwetok in 1952 revealed a solid coral foundation to basaltic rock a mile below the ocean surface. Geologists estimated this represented 400 million years of coral life. If this is true all of human history can be recorded in less than one foot of radioactive Eniwetok coral.

Rainfall is slight and vegetation sparse on these low islands, which are the "coconut and fish" subsistence islands of the comic strips. Sometimes, however, a subterranean movement will reverse, and they will be thrust high enough above the ocean floor to catch rain. The traces of old sea level lagoons can be found on some of these higher islands, three or four hundred feet above sea level. These form elevated catch basins that hoard decaying plant matter, eventually becoming fertile incubators of life.

The Hawaiian archipelago thrust up from the ocean floor about 25 million years ago. It began as a hernia of the lithosphere. The weakened earth's crust could no longer resist the igneous pressure within and ruptured, spewing liquid magma through onto the ocean's floor. A series of volcanos grew in quiet fluid layers to broad turtle-backed undersea mountains. As they neared the ocean surface they heralded their presence into the air with fitful steam explosions. But once above the ocean surface the volcanic mountains settled down once more to a steady growth built of overflowing encrusting layers.

Eventually one stands supreme in mighty triumph of fire over water, six miles above the ocean floor. But it stands for one brief moment before its top falls in and the lithosphere settles beneath its bulk.

The growing cycle has come to an end. Erosion bites into its mighty sides, streams cut deep fissures in its flanks, waves gnaw its edges into cliffs. Ragged shards of mountain ridges now stretch from the sunken caldera to the sea.

Seeds and spores arrive to quicken the destructive work of wind and water. Plants burrow roots into the rotting rock. The volcano will summon occasional gasping erupting fits and starts, explosions and minor burnings but can no longer call forth the intense heat, belching lava, explosive gasses of its youth to resist the encroaching fungus of living things that has taken root, digs, burrows and establishes colonies to do their destructive work.

The chain of exposed and submerged volcanic peaks that forms the Hawaiian archipelago begins at Midway Islands to the northwest and comes to rest, or as restful as volcanos can be, 1,600 miles beyond at a juncture with a great east bound fracture in the earth's crust.

**Dr. Wilson,** a former editor of *Progressive Architecture,* is a professor of architecture at Catholic University.

Forrest Wilson

John R. Hoke Jr., AIA

The seeds and spores brought to Hawaii entangled in the feathers or clinging to the feet of birds, on the winds, in the jet stream or drifting there on floating debris evolved, as did the insects that followed them, into unique forms of life found nowhere else on earth. Separated from the continents of their origin, divided in the islands by wide bodies of water and secluded by the violent changes of island terrain, each plant, insect and living thing evolved uniquely. Small herbs became exotic woody plants, although their continental ancestors had been rather dowdy and plain. Some species from common ancestors grew to occupy different ecological niches. Among the most remarkable were members of the sunflower family, relatives of the lowly tarweeds of western North America. These became small rain-forest trees and shrubs adapting themselves to growth on open lava fields. Others became giant herbs with circular leaves six feet in diameter.

The plants that grew in Hawaii did not develop thorns or spines. There were no natural enemies to eat or trample them. It is thought that a new plant species arrived in the archipelago every 70,000 years.

The roots of Polynesian culture are unknown. Thor Heyerdahl proposes they may have arrived from the Americas. Others say they came from the islands off the southeast Asian coast. Polynesian origins are so confused that after 25 years of investigation seriologists can make no sense of them whatever.

However, individuals and groups of individuals with the cultural and physical traits we now label Polynesian did meet and mix during centuries of exodus. Winds and muscles drove successive waves of migration, urged onward by overpopulation, war and a restless spirit of adventure. Time and time again they boarded their seagoing canoes, cargoed them with people, animals, plants and embarked once more on their restless journeys. All of the islands of the Pacific that could support life were colonized before the elder son of Pepin the Short became king of the Franks in 771 A.D.

The Polynesians played an evolutionary game of Russian roulette, with the strong and the lucky surviving sea and shark. The large Polynesian physique, so impressive to the modestly scaled Europeans, may well have been the result of body build and insulation evolved through the rigors of sea voyages over countless centuries.

*Traces of the Polynesian era: ruins of a place of worship (top), statuary and a thoroughly thatched modern day resort.*

John R. Hoke Jr., AIA

Forrest Wilson

*Above, Iolani Barracks, built in 1870 by Theordore C. Heuck, first architect to practice in Honolulu. Below, a prefabricated house brought around Cape Horn in 1821 by ship.*

Very late in the Polynesian exodus some sailed north above the equator and rode the eastern winds to discover and settle the Hawaiian archipelago. The evidence seems to indicate colonization took place in two distinct settlings. The first probably occurred during the middle of the eighth century A.D., although the remains of a fishing station have been found dating from 124 A.D. with fish hooks lost there very similar in design to those used by the Marquesian Islanders at that time.

More recent migrations appear to have arrived from Tahiti with continued crossings described in Hawaiian chants from the 12th through the 14th centuries. At the very latest the last islands were colonized by Polynesians fully two centuries before the discovery of the Pacific by Nunez de Balboa.

In the early centuries of Polynesian Hawaii, the *kuhuna* (priest, minister, sorcerer or expert in any profession) served as architect, engineer, code official and psychologist. He gave advice about house building, performed the necessary ceremonies before the house was built and after completion and inspected it under construction.

In contrast to houses and canoe sheds, religious structures *(heiaus)* were built of stone. The remains of hundreds of *heiaus* can be found throughout the islands despite the systematic destruction that followed the abolition of the religious prohibitions *(tapus)* in 1819 and the arrival of the Protestant missionaries a year later.

What might be somewhat equivalent to an architect today, if such a being ever did indeed appear in history, was termed a *kahuna kuhikuku pu'uone; kuhuna* as professional adviser, *kuhikuku* because he showed his proposed plan to the chief by drawing or molding it in sand, *pu'uone*. In the case of temples to *Ku* the design award was acclaim or death. If his client won, the architect was acclaimed; if defeated, he was sacrificed with his chief. Hawaiian war was total, and Hawaiian architects had no need for liability insurance.

Captain Cook discovered the Hawaiian Islands on Jan. 18, 1778. It cost him his life. He mapped a path of disaster into the Oceanic world not because he was an evil man but because he was such an extraordinarily skilled, talented and compassionate naval commander. His virtues equipped him to succeed where brutal men failed. The voracious, savage European forces unleased by the age of exploration followed in the wake of his explorations.

During Cook's second voyage to the Pacific, 1773-74, he discovered the largest gathering of wildlife on the planet and was the first to inform the world of its existence. As author Alan Moorehead describes the scene, "The great living cavalcade of life moved from the cold ocean water to the warm during the southern winter and back to the Antarctic again in the summer, breeding and feeding knowing no enemies except those created by nature in the sea itself. It was a landscape of great splendor, life and movement."

There was nothing for man to do in the Antarctic except kill, Moorehead reminds us. There were no plants to be grown and men could not settle there. He could but come, kill and go, and this he did, directed by Cook's excellent charts. The result of Cook's intrusion into Antarctica was a holocaust. In the closing years of the 18th century the catch in northern waters was diminishing. Cook brought news of magnificent new hunting grounds in the far south. He reported seals and whales by the millions ready for the slaughter. The news spread from Le Havre to Hull to New Bedford and Nantucket, and the whaling fleets set sail.

Cook brought European weapons and European goods to the Hawaiian Islands. The archipelago was soon visited by other ships and other sailors. Many traded weapons for native products; some traders actively engaged in their wars.

At no time prior to this were all of the islands under a single ruler. Island economy based on primitive agriculture could not produce surpluses large enough to supply any single ruler sufficiently to take men away from the taro patches to fight wars indefinitely on islands separated by wide channels. No chief was equipped to impose a convincing and permanent defeat upon his rivals.

Yet in one generation after Cook's appearance, Kamehameha I united the islands by means of war. Obviously, the introduction of Western arms made unification possible. It is equally obvious that the unifying chief, Kamehameha, was a remarkable man.

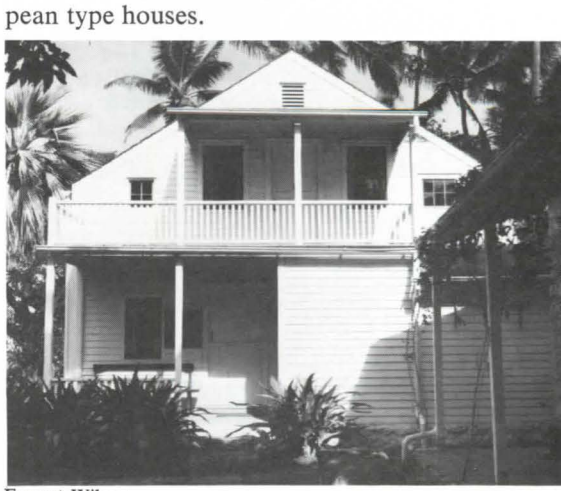
Resident foreigners arrived in the islands as early as 1790. By 1794 the Island of Hawaii had 11 foreigners including Europeans, North Americans and Chinese. By the end of Kamehameha's reign there were 200, including half a dozen who had escaped the British penal colony of Botany Bay in Australia.

It quickly became apparent that the Hawaiian Islands were of tremendous importance to the Pacific fur trade and whaling industry. Ships first sailed to the Pacific Northwest for a cargo of furs exchanged by the Indians for cheap blankets, notions and firearms. They then sailed to Hawaii for rest, relaxation and a few tons of sandalwood in exchange for anything from hosiery or glass beads to gunpowder.

European type houses appeared quite early after initial contact. Isaac Davis and John Young, two marooned sailors who worked for Kamehameha, were thought to have built the first foreign style houses.

John Young's best known construction was his completion of the stone fort at Pakaka point protecting the entrance to Honolulu harbor in 1816. Francisco de Paula Marin, a native of Andalusia, was probably the first dilettante architect and builder in the islands. He was a versatile man who knew the art of manufacturing and setting brick and clay tile. His two-story whitewashed house built on the Honolulu waterfront in 1811 was later used as a hotel and became a familiar landmark. Marin also constructed a stone one in 1809-10 for Kamehameha I.

Later when American traders established themselves they erected frame houses as did the missionaries after 1820. An 1823 visitor described several European type houses.



Forrest Wilson

The practice of prefabricating house frames and shipping them to new lands was common at this time. Large prefabricated buildings were sent to the earliest settlement of New South Wales in Australia before the end of the 18th century. The first prefabricated house erected in Honolulu, according to architectural historian Charles Peterson, came from Sitka, Alaska, on a Russian ship in 1809.

Although Western buildings signaled impending change, one single act heralded the emergence of a new Hawaiian state, and it took place without foreign meddling. The Hawaiians themselves abolished their ancient *tapu* system, the code of prohibitions upon which chiefly power rested and was enforced. They did this not in favor of a new cult but as an act of self-conscious reorganization to adjust to the realities of governing a unified archipelago.

The breaking of the tapus and the arrival of 17 Protestant missionaries on the brig Thaddeus in 1820 irrevocably confirmed the physical form and cultural direction of the Islands for the next century and a half.

At first the missionaries preached in the open. Then a great grass church was built for them on the site of the present Kawaiiahao church in August 1821. The chiefs had several other large grass churches built as the missionaries' influence increased. One of these was 196 feet long and 83 feet wide. It incorporated features such as a pulpit, windows, wide wooden doors and astral lamps. Even though the sides were continually eaten away by pagan cattle, it was a most impressive structure.

In 1840 Honolulu boasted 600 foreigners. The business community included 20 retail shops, four wholesale stores, two hotels, 12 boarding houses and grog shops, seven bowling alleys, four blacksmith shops, three vegetable markets, one bath house, 14 ship's carpenters, three physicians, three tailors, two sail makers, one printer and two cigar makers.

For a short period of time, just prior to mid-century, Honolulu was the most important city in the Northern Pacific. California was then a place of huge ranches and San Francisco a small town of a few hundred people. Sailing ships headed for Honolulu immediately after rounding the horn, delivered their goods, took on Hawaiian sailors, then sailed for the California coast to trade. Hawaiians were prized as crew members, for they obeyed their captains as they did their chiefs and, most remarkably, could swim, which most sailors could not. There are countless log book entries of Hawaiian sailors saving shipmates from drowning.

These were years of swift change. More Americans settled in California during the 1840s. California became an American possession in 1846, was overrun by gold seekers in 1849 and became one of the United States in 1850.

Stanley Abercrombie, AIA

The gold rush brought temporary prosperity to Honolulu. Hawaiian stores sent goods to California, and many Hawaiians went to work in the gold fields. Gold seekers weary of the sometimes dreary California climate vacationed in Hawaii during the wintertime. Hawaiian farmers grew potatoes on Maui and sent them to California for a handsome profit. But the prosperity was brief. The potato boom ended in 1851. Trading vessels began to sail directly to California without stopping in Honolulu. In 1852 California merchants began to crowd their Hawaiian rivals by advertising their goods in Honolulu newspapers.

But the most important contextual change for Honolulu was the introduction of hundreds of prefabricated houses. At the height of the gold rush, port cities around the world were shipping quantities of prefabricated buildings to San Francisco. Many ended in Honolulu, for shortly after the gold rush began the California lumber industry was producing enough housing frames to compete with imports. The market was oversupplied, and prefabricated buildings were auctioned on the docks of Honolulu at bargain rates. Nearly 400 houses were erected in Honolulu in a single year, a tremendous number of new structures in a town of 11,000 or 12,000 people.

But the change of greatest and lasting significance for the islands was the "Great *Mahele,*" abolishing the traditional system of land ownership. In ancient Hawaii land was the prize of birth and war. Although from the reign of Kamehameha I onward, tenants could reasonably expect to remain on the land they cultivated, it remained the king's property, and transfer could not be made without his consent.

Forrest Wilson

*Top, a sturdy 19th century block in Honolulu. Above, the Honolulu Brewing & Melting Co., building (1900).*

Expanding industry, trade, increasing numbers of foreigners and the Christian missionaries, now influential in the Hawaiian government, exerted pressure upon Kamehameha III to change the traditional system of land ownership.

The Hawaiian kingdom was reorganized into a constitutional monarchy. The king agreed to waive hereditary land title in exchange for an arrangement of land ownership that provided security for the chiefs and commoners and revenue for the government.

The king and protestant missionary advisers envisioned a land of independent farmers exercising democratic rights compatible with a monarchy. But events conspired against them.

A researcher traced the "indices of awards" of land for the period immediately following the division of lands. He found that 50 percent of downtown Honolulu was secured by foreigners. There was no mechanism to measure the land or record its division. There were few skilled sur-

veyors and great confusion. Litigation continued in the courts well into the 20th century. There were no practical means of protecting the holdings of commoners. Although one million acres of land were set aside for the Hawaiian people, very few benefited. Only 28,000 acres were claimed by them. The "Great *Mahele*" brought about a "permanency" of land ownership but not in the hands of small holders. Instead of a nation of independent farmers it ushered in an era of huge plantations in private hands.

The whaling industry that had been the basis of the money economy in Hawaii from the 1820s onward declined during the Civil War in the U.S. It revived briefly afterwards, only to die with the loss of most of the American whaling fleet in Arctic ice in 1871. At its height 500 ships or more came to the islands and left a million dollars at a time to circulate. The whaling industry urbanized the islands.

As whaling declined sugar cane growing gained in importance and soon provided the main source of island income. From 1875 until finally surpassed by tourism a century later it molded every phase of island life. The sugar mill and its great high stack marked the center of activity of the plantation settlement, as the spires of medieval cathedrals marked the center of the medieval town.

The administrative offices, hospital and dispensary, plantation store, houses of the clerks and administrators clustered about the mill. Further away were the subsidiary camps of the Chinese, Japanese, Filipino cane workers and the house of the manager set by itself amid spacious well tended lawns.

In 1837 the total export of the island sugar crop was but two tons valued at $300. Between 1841 and 1855 sales averaged 240 tons a year. It was not until the Civil War that exports finally rose to 1,000 tons a year. But after the reciprocity treaty in 1875 sugar growing accelerated. By 1900 Hawaii was supplying 10 percent of the United States' sugar needs.

Sugar is a coarse giant reed requiring sun and water in large quantities. A pound of sugar requires four thousand pounds of water for its growing. But sun and rain are not compatible. The resolution of this contradiction called forth the great energy, ingenuity and organizational genius of the Hawaiian sugar planters. They irrigated some of the hottest, driest land, roamed by thin wild steers and goats, uninhabited by Hawaiians, and made it some of the richest sugar land in the world. It was also the cheapest and easiest land to acquire. They tunneled, irrigated, pumped, built roads and railroads.

John R. Hoke Jr., AIA

Forrest Wilson

*Imprints of ethnicity: Above, a Shinto temple. Right, an early school for Japanese children in a sugar camp.*

Sugar cane soon surpassed all other crops and all other commercial interests in the islands. Every foot of usable land the planters could rent, buy or borrow was put into "sweet grass."

But by the time sugar cane could provide the islands with a favorable balance of trade there were not enough Hawaiians left to work the fields. Cook's officers had estimated there were between 240,000 and 400,000 islanders in 1779. This number had declined to 53,590 in January of 1876. The planters claimed there were no more than 5,000 able bodied men capable of working the fields.

The planters' resolution of this impass laid the foundation for the rich variety of people we call Hawaiians today, for they restocked the islands with people. The planters imported workers from throughout the world, especially from Asia.

In 1890 the U.S. revised its tariff policy to the great detriment of the Hawaiian sugar industry. In the depression that followed, arguments for annexation to the U.S. were renewed and intensified by the American business community.

King Kalakaua died in February 1891. His sister Lili'uokalani became the first queen of Hawaii to rule in her own right and the last ruler of the Hawaiian monarchy. She insisted on the right to rule Hawaii for the good of the Hawaiian people and contended that the "reform constitution" forced on Kalakaua by the business interests was an unsuitable instrument. In 1893 the queen suspended the legislature and prepared to make public a new constitution.

The political and economic climate was extremely complicated. There was intense rivalry between the white businessmen who dominated the economy and the native politicians who retained enough power to obstruct their aims.

Annexation of the Hawaiian Islands by the United States was openly discussed by some of the business community and the "better" classes. Many citizens took actions that can only be described as treasonous. The majority of the Hawaiian people and many of the white residents were against annexation. But the annexationists, representing the economic power of the islands, were not deterred by lack of public support.

The businessmen believed that the monarchy was too inept to safeguard the interests of property and profits. Tensions grew when the queen announced her intention to restore the power of the monarchy. Even members of the queen's cabinet viewed her actions with alarm for they feared they would provoke the annexationists to overthrow the monarchy. They did.

A committee of safety was formed by the business community. It created a provisional government and an armed militia. The queen might have declared martial law, arrested the conspirators and saved her kingdom. She did not do so for fear that an armed conflict would result in the loss of innocent lives.

Although the queen took no further action the committee of safety sent armed companies of militia to take over government buildings. The evening before this action armed marines and sailors from the U.S.S. Boston were landed, and their commander, Captain G. C. Wiltse, openly supported the annexationists.

Queen Lili'uokalani requested the U.S. minister to support her sovereignty. He replied that the annexationists were the only legal government. Finally, after sunset, on Jan. 17, 1893, the queen surrendered. On Jan. 31, the U.S. minister to the islands, at the request of the annexationists who now styled themseleves the provisional government's advisory council, raised the U.S. flag over Honolulu.

The revolutionists, not surprisingly, were immediately recognized by the U.S. counsel. They proposed to join the U.S. and Hawaii. But President Cleveland refused and directed them to restore the monarchy. The revolutionaries ignored him. Instead they declared an independent republic with Sanford B. Doyle as its first chief executive. Doyle, a descendant of Protestant missionaries, inaugurated his regime on July 4, 1894.

The Spanish American war changed the concept of Hawaii in American minds. The islands were now visualized as an outpost of American military power in the Pacific and were annexed. The transfer of sovereignty took place on Aug. 12, 1900.

The sugar planters could now sell their sugar unhampered by American tariff policy, but they also had to buy American immigration laws and universal manhood suffrage, thus opening the door, Lawrence Fuches notes in his book *Hawaii Pono,* to non*haole* (nonwhite) influence.

The sugar planters managed to manipulate the contradictions of an oligarchy operating within a democracy for four decades. Hawaii remained a plantation society with no significant middle class and one political party. Opportunity was sharply curtailed for all except a limited number of whites comprising about 5 percent of the island population in 1900 and nearly 25 percent in 1940.

By 1915 sugar constituted 90 percent of the value of Hawaiian agricultural production with more than 20 percent of the territory's population on plantation payrolls. In 1916 Somerset Maugham visited Honolulu and described it as ". . . a typical western city, shacks are cheek by jowl with stone mansions; dilapidated frame houses stand next door to smart stores with plate glass windows; electric cars rumble noisily along the streets; and motors, Fords, Buicks, Packards, line the pavement. The shops are filled with all the necessities of American civilization. Every

Forrest Wilson

third house is a bank and every fifth the agency of a steamship company . . .

"It is the meeting place of East and West. The very new rubs shoulders with the immeasurably old. And if you have not found the romance you expected, you have come upon something singularly intriguing. All these strange people live close to each other, with different languages and different thoughts; they believe in different gods and they have different values; two passions they share, love and hunger. And somehow as you watch them, you have an impression of extraordinary vitality."

Following World War I there was some discussion of developing the tourist business, and many islanders considered the hula girl in a grass skirt a derogatory image that was not only dishonest but conducive to a bad reputation. But the caricatured hula, the imported ukulele and a peculiar crooning sentimental jazz termed "island music" combined to form the popular symbols of the islands during the 1920s and '30s. They attracted 12,021 tourists in 1923, and eight years later the number had risen to 16,000.

The sugar industry continued to develop in size and complexity. It planned crops in two year cycles with staggered growing and harvesting seasons to continuously employ its newly recruited labor. It managed costly, complicated irrigation projects and did so without government assistance. High transportation costs and extensive fertilization of the land required large capital outlays. The sugar industry maintained research and development laboratories seeking higher yields, and its engineers looked after the sanitation, water supply and plantation housing.

The competition between planters that had forced many independents into bankruptcy during the 19th century gave way to cooperation. Concerted effort was essential to hold control of the sugar industry, manage land, shut out mainland interests and restrict Oriental enterprise.

The industry came to be dominated by a few agencies, or "factors," which lent money, kept books, paid taxes, arranged shipping, recruited labor and provided engineers, chemists and agriculturalists. They created and managed the Hawaiian Sugar Planters Association financed by a tonnage tax on sugar.

The factors were not content to control sugar but felt it necessary to dominate other aspects of the islands' economy. By 1935, Fuches says, over 90 percent of the small retail stores in the islands purchased their supplies through one or another of the sugar factors. By 1911 they controlled transportation, had branched out into the hotel business and had systematically acquired control of the big utilities, principal banks, insurance agencies, financial institutions and wholesale and retail businesses. By 1910 there were three major railroads in Hawaii and each operated without competition.

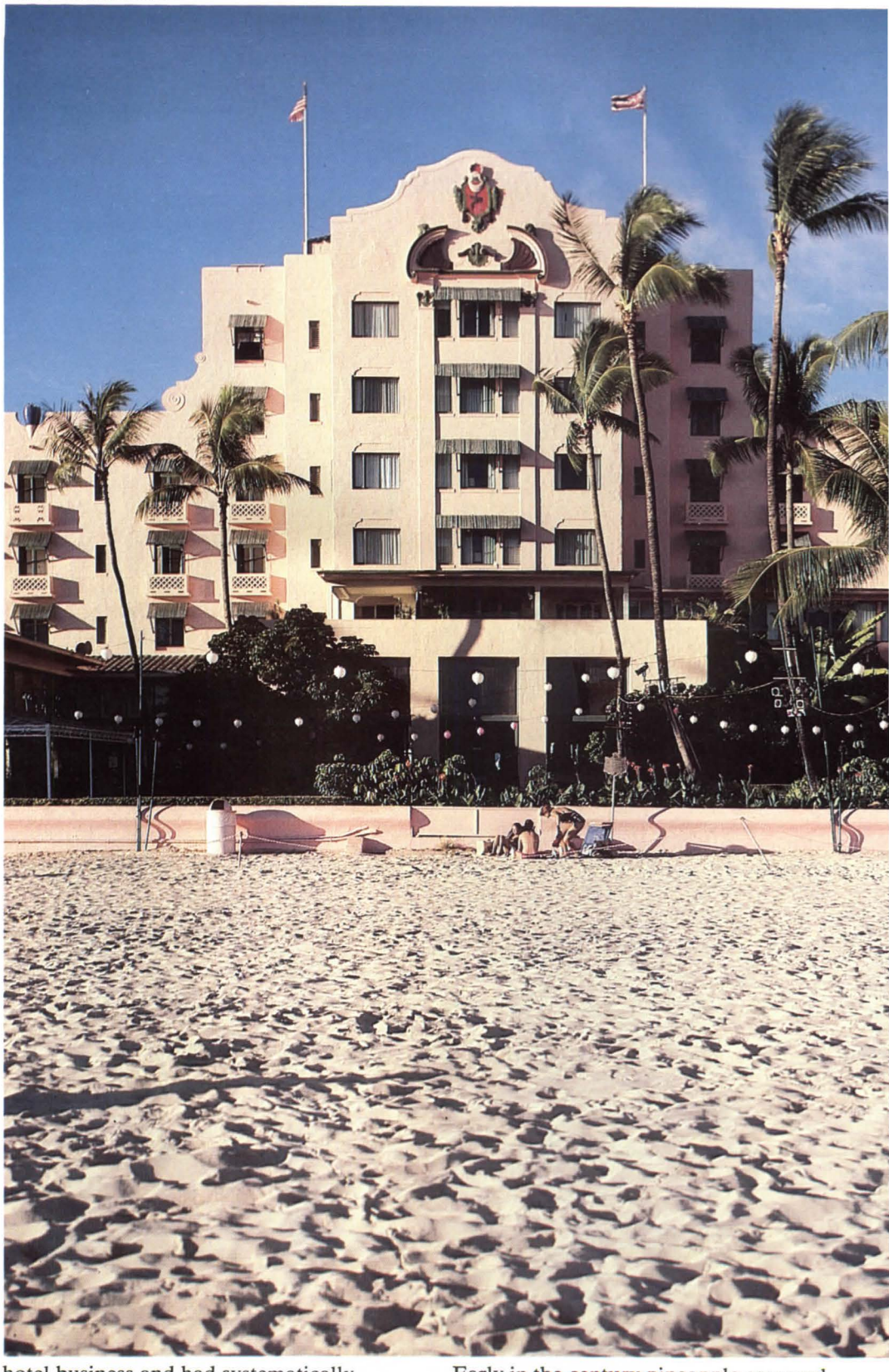
In 1935, by Fuches' count, exactly one third of the directors and officials of the 45 sugar plantations and factors in Hawaii were direct descendants or related by marriage to the original missionary families of the islands.

Early in the century pineapple assumed a major economic importance surpassed only by sugar. James Drummon Dole, as a homesteader, began to grow pineapple in the Wahiwa areas of Oahu in 1900. He formed the Hawaiian Pineapple Co. in 1901 and two years later converted a barn to a cannery producing 1,800 cases of the "golden fruit."

By 1922 the Hawaiian Pineapple Co. was able to purchase the entire island of Lanai for a little more than a million

*continued on page 126*

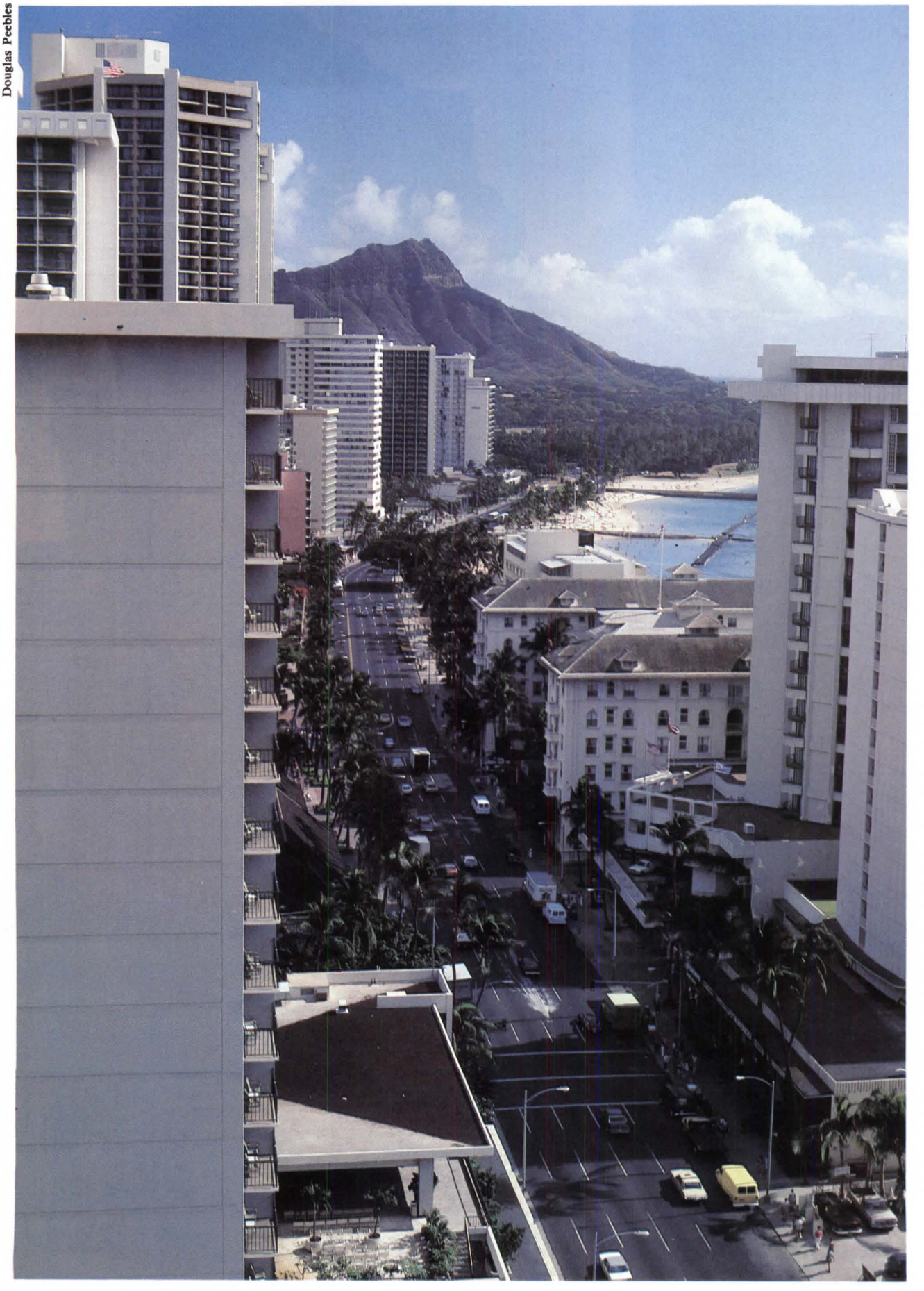
Stanley Abercrombie, AIA



*Left, a sugar mill dominating its environs. Above, Warren & Wetmore's 1927 Royal Hawaiian Hotel, symbol of prewar tourism.*

# Planning vs. Development Pressures

*The latter are winning despite advanced land use laws. By Thomas H. Creighton, FAIA*



Douglas Peebles

Hawaii's general plan, completed in 1955, was a remarkably progressive document with the fault most such plans have: It lacked the potential of implementation. Two years later, however, the legislature passed Act 187, which became known as the state land use law. A recommendation of the general plan, it was passed quietly, without much public notice, by a group of the "revolutionary" Democrats.

The bill districted and thus classified all of Hawaii's land—no matter who owned it—into three categories: urban, agriculture and conservation. (A fourth category, rural, was later added but has been little used.) Every five years the classification (at first temporary, later made more permanent) was to be "comprehensively" reviewed. However, the State Land Use Commission that was set up was empowered to act on reclassification at any time it saw fit, between the five-year reviews.

At first the land use law seemed quite advanced—an entire state determining the best use of the land in the state. After many years and after many arbitrary reclassifications by the commission between the mandatory reviews, evaluation of the statute is more realistic. In the first place, those private citizens whose use of their land had been determined didn't always agree, and some nasty conflicts developed.

But more importantly, no set of criteria had been established to help the Land Use Commission decide among the many options (housing, tourism, essential urban uses, even conservation) and those who wanted to change the classification from what had been established soon became more powerful than those who wanted the original zoning to remain. The two five-year reviews that have been held (by competent, hard-working consultants) both note that undoubtedly the change from agricultural and conservation land to urban uses has been held back—but to a small and declining extent.

From 1961 until the present, Hawaii's land use within the urban category has been determined by a series of planning changes that have largely followed those in the mainland U.S. The great fault has been lack of a determined policy. Two major attempts have been made to determine goals: Stewart Udall's Overview Corporation tried in 1970; the Commission on Statewide Environment attempted again in 1973. Both were unsuccessful. The state now has adopted a general plan—truly general, full of good wishes—intended to be implemented by more detailed schemes for each line department, plans which have been so mauled by the state legislature that they still remain to be adopted.

The City of Honolulu also has a general plan—its second—revised and implemented by the city council after several wordy tries by the planning department. It needs one badly. The new hotels and apartment houses multiply over miles of Hawaii's attractive landscape. Many of the "urban" uses to which agricultural and conservation land was changed was converted to tourist purposes, not at all to satisfy local wants.

The trend was toward big city mainland modernism—without benefit of the creative talents that megalopolis architecture needs in order to have form and visual organization. Most island youths until recently studied architecture in mainland schools, and some returned in theory converted to the newer design fancies. Mainland architects founded practices in Hawaii in some numbers. Few succeeded in designing anything that seemed to belong in Hawaii. Despite the early attempts of such pioneers as Hart Wood, Charles Dickey and even our adopted Bertram Grosvenor Goodhue, Honolulu—the island capital that could have had its own colorful tropical character—had matured as carelessly and as drearily as any other American metropolis.

In 1938 Lewis Mumford was brought to Hawaii by Honolulu's park board to study possibilities. Mumford prepared a literate and informed report, saying that "no other city I know of would yield proportionately such high returns to rational planning as Honolulu." In 1974, however, an AIA R/UDAT found no evidence that the opportunities had been recognized. It reported rather on an "absence of public guidelines" and found "a climate of confusion . . . and inaction."

Our Honolulu city council has been called "prodevelopment" and (with one notable exception) it seems determined to justify the name. It had been intended, after approval of the city's general plan, to allow each section of town to devise a "development plan," translating the overall general wishes into details for that area. For many months the citizens of the individual districts worked on these development plans, holding endless meetings, debating and finally generally agreeing. In most instances they tried to limit new development, to restrict growth to the central city and to the burgeoning district near Pearl Harbor, to save for farming those farming districts that were still green and for other agriculture the remaining open areas. The people of Oahu were rightly proud of the plans that they finally gave the city council for the passage that they both hoped for and anticipated.

But the council, and those who wanted more growth and development, had other plans. The development plans were adopted, but with myriads of additions and changes that were made at the last moment. The mayor, after careful consideration of each plan, with a well-worded statement explaining her reasons, vetoed each plan submitted to her. And then, with a complete change of heart (and with the understanding that each plan would come again before it for the final implementation—that is, changes in zoning) the council approved her veto for all but two of them.

So now the plans are awaiting that last step. They need that final passage, and there will be strong arguments in favor of the bows toward the builder-developers that resulted in those last-minute changes.

Thus the lands of Hawaii, particularly those forming that part of the state known as Honolulu (literally, in Hawaiian, protected bay) have had many changes since they were first occupied by Polynesian settlers a thousand years ago. First, the early simple ownership pattern was altered to accommodate the changes produced by newcomers. Then, not long ago, the land was zoned so that in certain areas only certain uses were permitted. And now, within those allowed uses, local zoning and development make strictures of their own.

What a change has taken place in less than two hundred years from the Hawaii those first explorers saw. From the largely unspoiled landscape, punctuated only by well-organized clusters of thatch-roofed houses, the land rising toward the mountains is now scarred with endless subdivisions and highrise constructions. In central Honolulu, and extending west toward Pearl Harbor and east as far as the land allows, monuments have been raised to the endless thousands of new residents coming from the mainland U.S. and from as far away as Japan, requiring space for living, for their speculative activities, for their desire to enjoy and use for their own purposes the mild climate and the balmy winds that still stir the remaining green spaces. □

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**Mr. Creighton** is a former editor of *Progressive Architecture*. In Hawaii he has been a practicing architect and planning consultant, lecturer at the University of Hawaii, member of the Honolulu planning commission and columnist for the *Honolulu Advertiser*.

Forrest Wilson

# Climate-Bred System of Housebuilding

*Single wall construction 'can't possibly work' but does. By James N. Reinhardt, AIA*

The age of instant communication, mass media and widespread jet travel has brought a distressing trend toward standardization. The office buildings, shopping centers and highrise apartments of Honolulu look very much like those of other newly developed urban areas. In refreshing contrast to that trend, a unique system of housing construction has developed in Hawaii, one that is responsive to Hawaii's climate, culture and available construction materials. That system is the single wall house.

The inevitable reaction of knowledgeable construction people, after hearing the system described, is "it can't possibly work." The system not only can work, but it has been used for about 80 years and is the basis of approximately one-third of Hawaii's single family houses.

The mild climate of Hawaii allows for a type of construction that would not be possible elsewhere. While conditions vary widely depending on elevation, surrounding topography and trade winds, a general description would be of temperatures typically in the mid 70s to low 80s (winter nighttime lows of 68-70 degrees, summer daytime highs of 86-88 degrees), relative humidity about 60 percent, mild but constant trade winds out of the Northeast. Storms do occasionally bring heavy rains and high winds, but while these conditions may be unpleasant, they are very rarely life threatening. The function of housing, as a result, is simply to control sun, rain and wind. Temperature control is not a problem.

Construction in Hawaii, prior to the arrival of Captain Cook, consisted primarily of low walls of ungrouted lava stones and low structures of light poles with grass thatch. When the missionaries arrived in the early 1800s they brought with them the traditional New England balloon frame construction, used primarily for the often elegant residences of the merchants and plantation managers. But since lumber had to be brought to Hawaii by ship, the cost was not within the reach of most people.

The development of sugar cane and pineapple plantations created a need for large quantities of cheap labor, which in turn

**Mr. Reinhardt,** a past president of the Hawaii Society/AIA, is a partner of the CJS Group, Honolulu. Historical background information for this article came from Gordon Tyau, AIA, of the department of architecture, University of Hawaii.

created a need for cheap housing. The first worker housing was in shanty towns built of odds and ends of whatever was available at the edges of the plantations. Soon, however, the shanty began to take new form. The Japanese workers had brought with them a rich tradition of wood building, architectural forms, use of space and carpentry. From the scavenged odds and ends quickly evolved a simple, yet sophisticated housing system.

From the very beginning, the plan was a simple rectangle with a roof. The walls were a single thickness of vertical boards, overlapped board-and-batten fashion, which both held up the roof and kept out the weather. These houses were seen in Hilo in the late 1890s. By 1905, the staggered board wall had been replaced by a wall of a single thickness of vertical tongue-and-groove redwood siding exposed inside and out. Redwood was the cheapest wood available.

The plantation owners, recognizing a good thing when they saw it, quickly adopted the single wall house for employee housing, resulting in the construction of numerous plantation villages on company land, and the term "plantation house." Neat rows of closely spaced houses, with hip roofs of rust-red painted corrugated iron, and walls of green painted redwood siding could be found on every plantation, on every island.

In the late '20s and '30s, the single wall system was utilized by many of the architects in Hawaii. The resulting houses used the traditional forms but developed them to a much higher degree of sophistication. World War II brought great numbers of G.I.s to Hawaii, and single wall houses were built in great numbers for those who were able to bring their families. The single wall plantation house with its corrugated metal roof and redwood walls was synonymous with moderate cost housing in Hawaii.

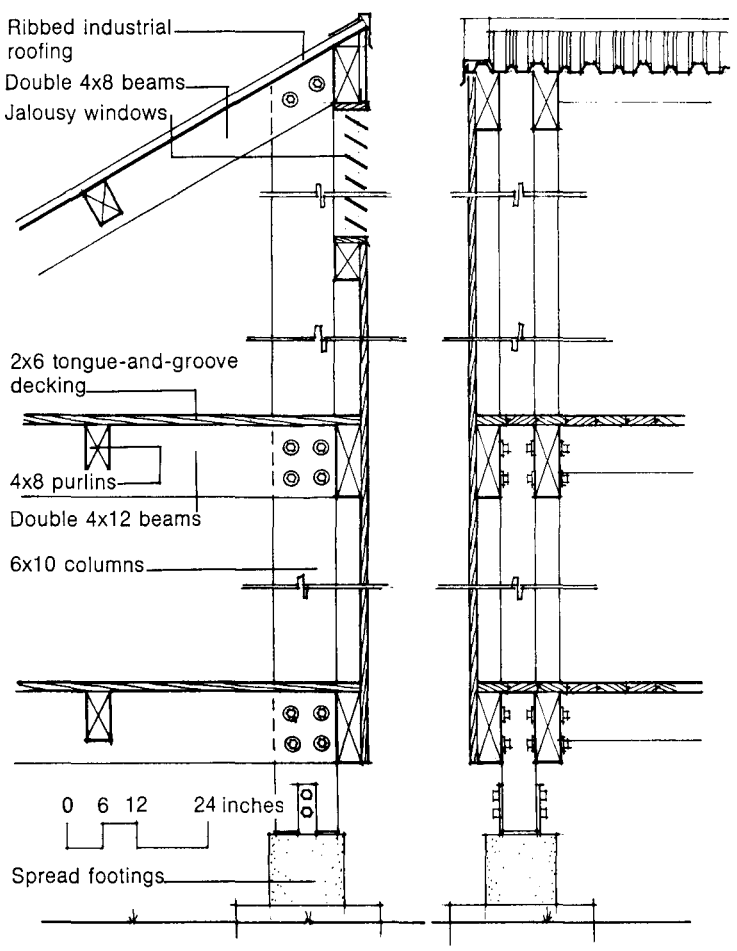
About 1970, several young architects trained at West Coast architectural schools looked to the single wall house for their own use. The system was appealing on several levels. It was simple, and direct, intellectually "pure." It had, by now, deep traditional roots; and it was inexpensive. The major drawback, however, was that the system was suitable only for one-story construction, while the lots that were available and affordable were on steep hillsides. The addition of an articulated structural frame allowed for the design of multiple level houses that worked with the sloping lots.

The structural frame appears in two similar forms—one using telephone poles as the vertical structural elements, the other using heavy sawn timbers (6x10 or 8x8). The posts sit atop independent spread footings with a concrete plinth. (Termites are a serious problem, and contact between wood and soil is to

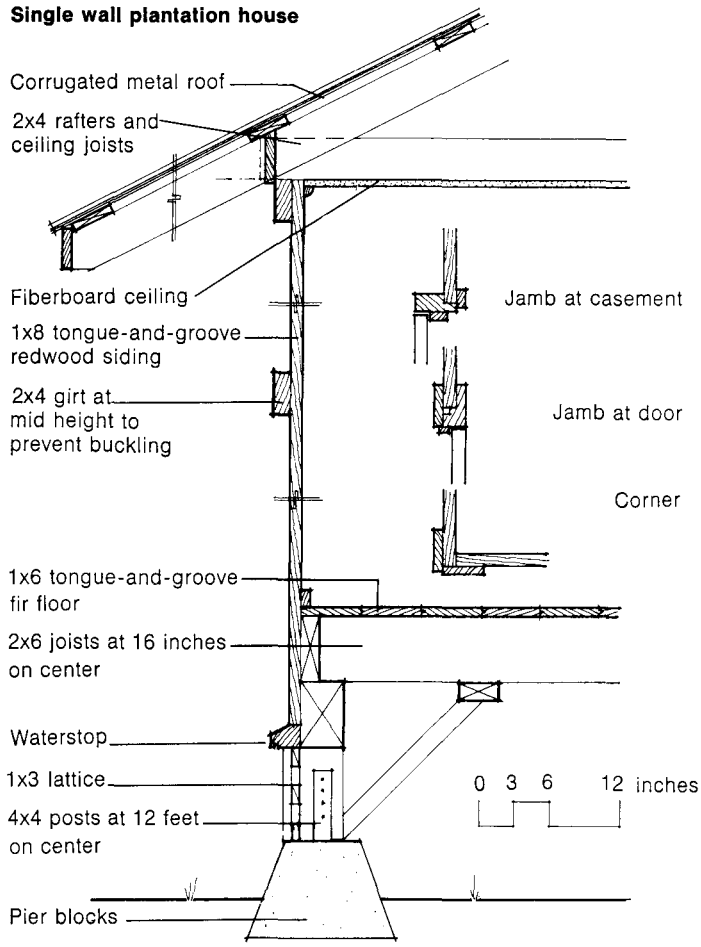
*Left, a traditional plantation house of single wall construction, braced by horizontal girts at mid-height. Modern adaptations, such as the 1974 house by Christopher J. Smith, AIA, below, add a post and beam structural frame that allows multiple levels.*

Christopher J. Smith

**Post and beam single wall house**




**Single wall plantation house**




*The house by Steve Au, AIA, in the Kahala section of Honolulu, right, is an example of the modern adaptations using telephone poles as structural elements, the single wall construction as a thin infill.*

## Walls without insulation or interior finish.

be avoided.) Double beams straddle the posts and are through-bolted for a moment resisting connection. Purlins span between the beams, 2x6 tongue-and-groove decking forms the floors . . . basic heavy timber construction.

The walls, however, are 1 (actual, not nominal) x 8 tongue-and-groove, clear heart redwood, run vertically. No insulation, no interior finish. The roof is, typically, a ribbed-profile corrugated industrial metal roofing sometimes used directly over the purlins as a combination structure and enclosure, sometimes over a one-inch tongue-and-groove roof decking. (The latter is much quieter during heavy rains.) Roof insulation helps reduce heat gain but, with adequate ventilation, is not mandatory. Louver windows and large sliding doors allow major portions of the wall areas to be opened for ventilation and continuity with the outdoors.

In the last few years, the single wall house has seen a significant reduction in use. Redwood has tripled in cost and that alone has reduced much of the market appeal of the system. Plywood sidings provide much improved lateral bracing, improved water tightness and labor savings in addition to the material cost advantages. A new single wall system utilizing plywood as the skin has made its appearance, but it does not have the appeal of the basic single wall system. The substitution of plywood for "real" boards is not, somehow, a substitution of equals. The basic single wall system as it has evolved from plantation house to its use in contemporary island architecture is a fitting response to a unique climate, shaped by cultural heritage. Its simplicity and directness seems to represent much of what is appealing about Hawaii. □

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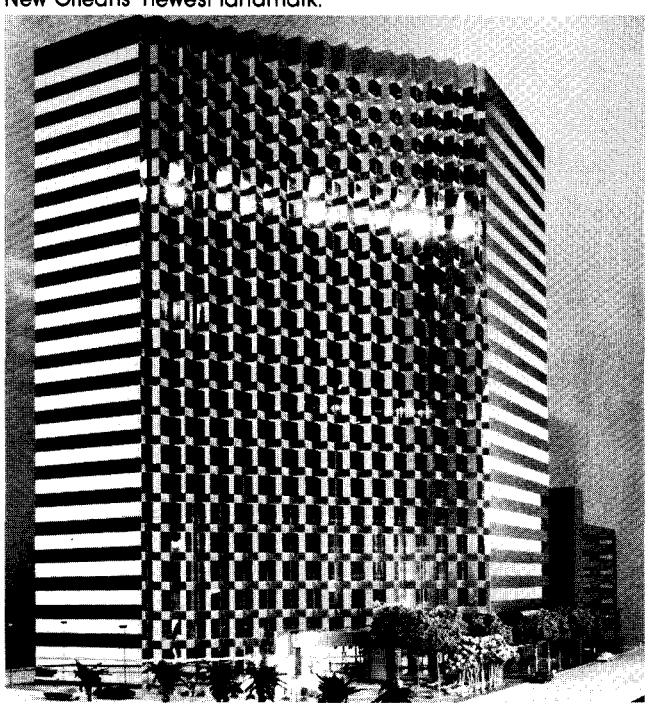

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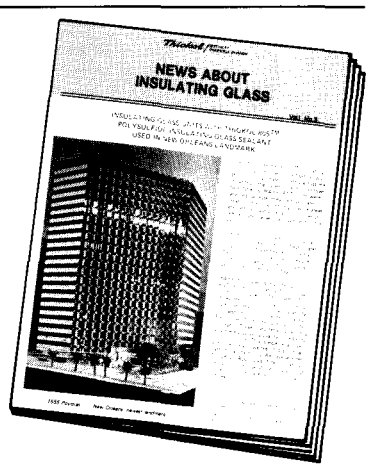


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# BOOKS

## 'Too Many Buildings in Too Small a Space'

**The Skyscraper.** Paul Goldberger. (Knopf, $25.)

America's free enterprise keeps pushing its buildings higher and higher into the sky, not deigning to notice what happens on the ground. Skyscrapers are at once marvelous engineering feats that give reality to ancient dreams and reckless destroyers of civilized urbanity.

The price we pay for these towers of pride is overcrowding, traffic congestion, displacement of families and small businesses, and alienation from nature. The towers promise prosperity, jobs and growth. But they often cost the city as much, or more, in additional services as they bring in revenue. "Skyscrapers tend to dehumanize the area in which they are raised. They suck the lifeblood from it, drawing into the air what should be closer to the human scale," concedes Nathaniel A. Owings, founding partner of Skidmore Owings & Merrill.

SOM is the architect of the tallest building in the world, the 1,454-foot-tall Sears Tower in Chicago, completed in 1974. It beat New York's twin-towered World Trade Center by 104 feet in the mad scramble for greater height and attention that uplified Chicago with the big X's of the Hancock Tower, San Francisco with the half-wrapped pyramid of the Transamerica Building, Seattle with the pointed shaft of the Rainier National Bank building piercing the heart of downtown and Boston with the clumsy Prudential Center (which Hancock's angular prism beat by 40 feet).

In his handsomely illustrated book, *New York Times* architecture critic Paul Goldberger acknowledges the dangers of cramming too many buildings into too small a space. He mentions other pitfalls of excessive height but does not deal with them. There is not a word about the hassle of raising a family on the 37th floor. There is little about the technical, political, social and economic circumstances that dictate the design of tall buildings and that tall buildings, in turn, help to create.

Goldberger, like the architects he writes about, is carried away by the insistent machismo of skyscrapers. Like their architects, he considers skyscrapers isolated sculptures—works of art that spring from the brows of architects like so many Minervas. He briefly praises engineers for not flinching at the challenge of making the architects' forms stand up. Or are the architects themselves propped up by engineers? Have they lost control? Are they shirking their duty to translate building technology (and their clients' egos) into beauty and livability?

A century ago, America's architects mastered that duty with glory. The Industrial Revolution had presented them with steel, glass, central heating and electric light. Otis had invented a device to prevent elevators from plunging. Eiffel had built his tower with construction methods he developed for railroad bridges. Chicago's Great Fire of 1871 had created a hot demand for new commercial buildings.

The first to make soaring architecture out of these opportunities was William Le Baron Jenney, who was also an engineer. His 10-story Home Insurance Co. Building in the Chicago Loop made a clear distinction between the supporting iron and steel structure and its enclosing skin. It was only a matter of years before steel or concrete frame and curtain wall construction made 15 stories, 36 stories and, by 1931, the 1,250-foot-tall Empire State Building possible.

Two somewhat different schools of skyscraper design evolved. Chicago architects such as Daniel Burnham and William Holabird wanted to break down the distinction between engineer and architect. They strove for no-nonsense buildings that subordinated the delight of ornament to the impact of structure. Even that virtuoso of rich ornament, Louis Sullivan, wanted most of all to express "the force and power of altitude." The skyscraper, Sullivan said, "must be tall, every inch of it tall."

New York architects like Cass Gilbert, McKim, Mead & White and others felt closer to Europe, its multitude of styles and the exuberance of the Ecole des Beaux-Arts, where many of them had studied. Goldberger professes to be more attached to the "flamboyant, eclectic skyscrapers inspired by the theatrical impulses of New York" than the "intellectually rigorous skyscrapers of Chicago." He is at his best when he celebrates the romance and marvel of the Woolworth, Wainwright and Chrysler buildings and their many tall cousins and kin that shoot up from rocky Manhattan.

The greatest triumph of them all, he points out, is the noble arrangement of towers and plazas, theaters and shops—

*The Chrysler Building, New York City (1930) by William Van Alen.*

to say nothing of the ice skating rink—that is Rockefeller Center. Its designers made it a delightful stage set for the human drama—a place that comes close to the Piazza San Marco in Venice. The center was completed in 1940, at the end of the Great Depression and possibly also the end of the heyday of America's great skyscrapers.

Nothing much was built until World War II was over, and then International Style glass boxes began to multiply all over. Not all these abstractions are insipid. Mies van der Rohe and Philip Johnson's Seagram Building deserves the praise it keeps getting. I. M. Pei and Harry Cobb's Boston Hancock Building has exhilarating flair. The trouble with abstract archi-

*continued on page 107*

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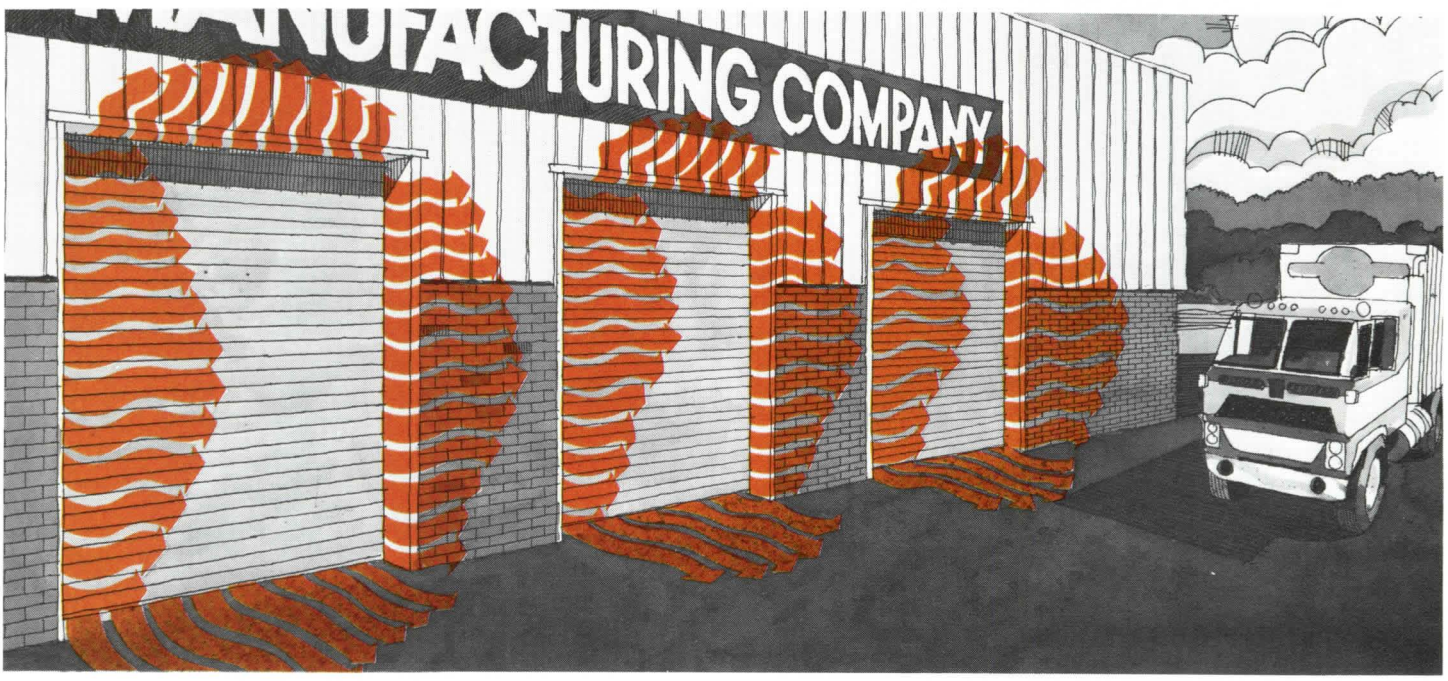


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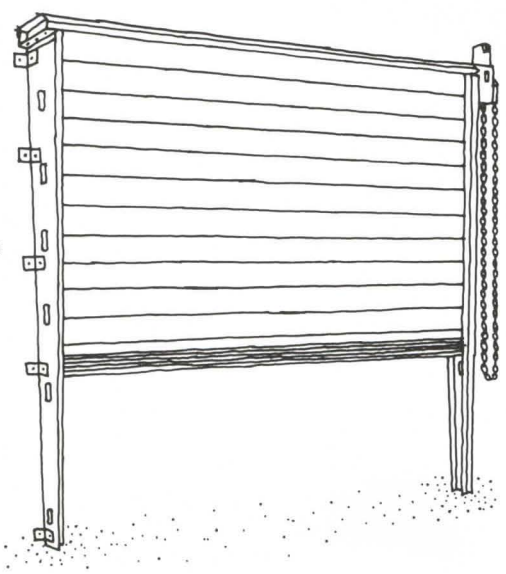

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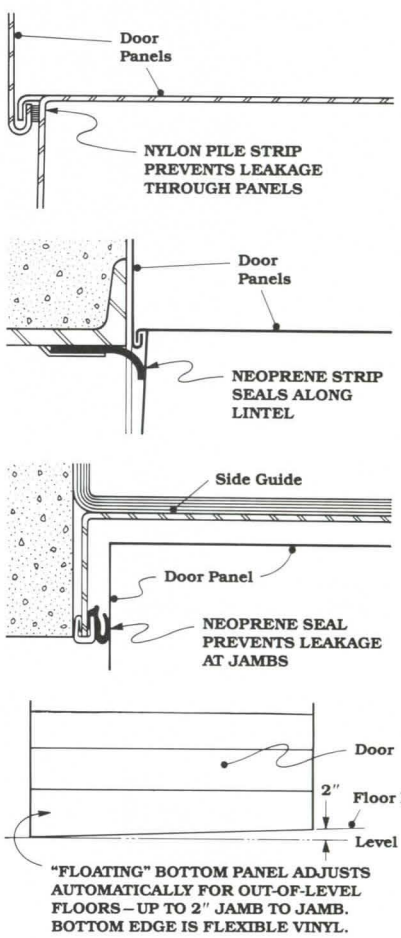


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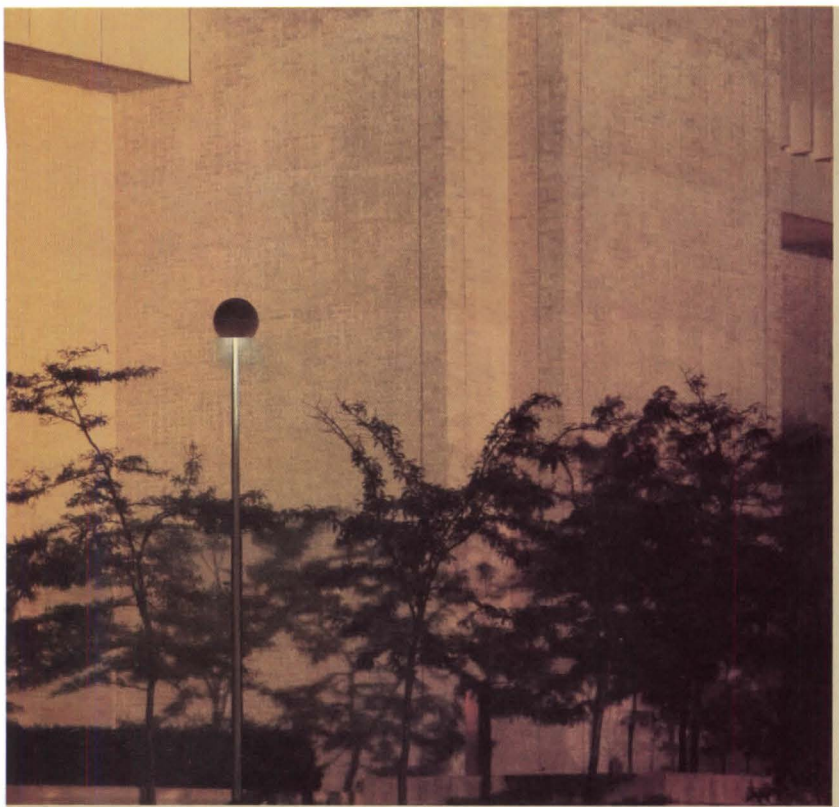

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**Books** *from page 102*
tecture is that it does not even attempt to be popular, to be understood and to be loved. The steps to the Seagram Plaza are deliberately designed to be uncomfortable to sit on. Nor have modern skyscrapers improved working conditions inside.

Goldberger wonders and ponders how skyscrapers got themselves into the International Style glass box and seems to believe that postmodernist architects are now fighting their way out. But, like the struggling architects themselves, he is so exclusively preoccupied with form that he forgets the skyscrapers' structure and function.

The latest style has changed the shape, but not the spirit, of the bare and square glass box. Architects like Philip Johnson and John Burgee, Kevin Roche, Cesar Pelli and Helmut Jahn are giving it shock-of-the-new therapy. In Goldberger's words, the box is "being pushed and pulled every which way." It is also sliced, split, sculpted and tinted, from Pennzoil Plaza in Houston to Hercules, Inc., headquarters in Wilmington, Del.

Engineers, meanwhile, have made structural advances. To resist the force of wind without uncomfortable sway and heavy expense, engineer Fazlur Khan developed a three-dimensional tubular cantilever system for SOM's John Hancock Tower in Chicago. Its core constitutes an inner tube, while the outer columns and spandrels constitute another tube. The two are rigidly held together by a "top hat," or concrete stiffener, placed at the service floors and the roof. The tapered tower is further supported by ugly X-shaped braces on its facade. At the Sears Tower, completed in 1974, Khan joined a "bundle of tubes," terminated at different heights.

The tubular system was swiftly adopted by engineer Leslie Robertson for the twin structures of the World Trade Center in Manhattan. Robertson's tubes consist of steel columns spaced only three feet apart from one another. That left Minoru Yamasaki only narrow slits for windows. The World Trade Center was the first to use "skylobbies," which save rentable space by allowing elevators to travel above one another in the same shafts.

But despite their ingenious engineering, "all these behemoths are astonishingly poverty-stricken as architecture," says Carl W. Condit, architecture historian and art department chairman at Chicago's Northwestern University. "They raise the question whether architects' control over form and urban design slips from their grasp."

As Goldberger observes, few of these new skyscrapers know how to meet the ground. Their concessions to humanity on the street are confined to interior or protruding enclosures, such as the atrium lobbies of John Portman's hotels, the public ground levels of Hugh Stubbins' Citicorp Center in New York and Philip Johnson's IDS Center court in Minneapolis. That is not much. There is hope, however, that the wide open ground floor lobby of Johnson's controversial AT&T Building will lend some civic grandeur to Madison Avenue. Goldberger seems ambivalent about it.

There can be no doubt of further technical progress. Says Fazlur Khan: "We could build a 190-story building without difficulty. Whether we should, and how the city would handle it, is not an engineering question. It is a social question."

The question is not being answered by playing only with facades. *Wolf Von Eckardt, Hon. AIA, Washington, D.C.*

## Revealing 'The Eternal Glory of Medieval Art'

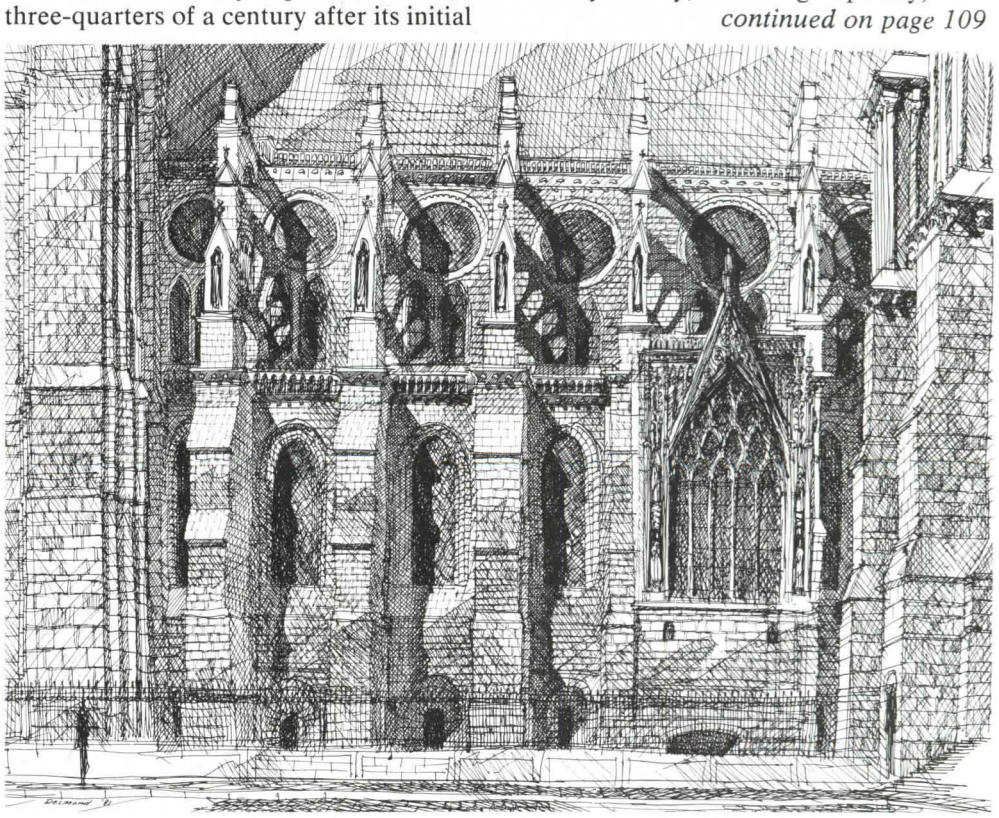
**Mont-Saint-Michel and Chartres.** Henry Adams, with an introduction by Ralph Adams Cram. (Princeton University Press, paperback, $8.95.)

When Ralph Adams Cram proposed to the historian, Henry Adams, an American Institute of Architects edition of his privately published *Mont-Saint-Michel and Chartres,* Cram met with incredulity. Adams would have "no part or parcel in carrying out so mad a venture of faith—as he estimated the project of giving his book to the public," Cram wrote in what Adams described as "a flaming preface" to the 1913 AIA edition. Yet the book has remained steadily in print, and now, three-quarters of a century after its initial publication, in 1905, it emerged in a handsome facsimile paperback edition—an indisputable classic. "To none more than the architect this book should be found unique and valuable," wrote Cram.

Cram (1863-1942) deserves a closer look. His very name invites the well-known New England inquiry, "What kind of an Adams are you?" His association with Bertram Grosvenor Goodhue has never been satisfactorily resolved to the interests of either man. A more objective life is needed to supplement Cram's autobiography (1936). Most of all, Cram's own writing needs to be re-evaluated, especially his pioneering *Japanese Architecture* (1906), which is but one of his 24 books and prolific other writings. As a promoter of the Gothic style, he undoubtedly regarded *Mont-Saint-Michel* as a useful endorsement, but he was far too intelligent not to recognize its greater value of contributing to the recognition of architecture and architects, especially in the *haute culture* where he increasingly found himself as the architect of universities (Princeton; Bryn Mawr), churches (St. John the Divine; St. Thomas) and institutional buildings.

While Adams had offered a seminar in medieval history to Harvard in 1872, his interest in art and architecture had not been aroused. His first visit to Mont-Saint-Michel appears to have been only in 1895, and the book commenced with the modest objective of providing some instruction to his numerous "nieces," with whom he conducted an extensive correspondence. As he explores the many facets of 12th century history, searching in poetry, eco-

*continued on page 109*



*The south facade of Chartres Cathedral; drawing by John J. Desmond, FAIA.*

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**Books** *from page 107*
nomic development, the crusades, technology and other areas for clues to interpret its art, the work evolved from a guidebook to a synthesis of medieval civilization expressed in its cathedrals. Until 1903, when the manuscript was finished, Adams spent much time in France and rather early determined to concentrate on Normandy, the source, he fancied, of his own ancestral roots as well as what he most valued in English civilization. Moreover, the Normans, who built Bayeux, Caen and the rest, "liked architecture."

In 1899 came the important visit to Chartres, perhaps the turning point in the evolution of the book, and by the summer of the following year Adams was deep in the study of 12th century churches, already recorded in the volumes of the *Monuments Historiques*. He was reading medieval manuscripts and the writings of St. Thomas Aquinas. But it was increasingly Chartres and its glass that lured him. "In my sublimated fancy, the combination of the glass and the Gothic is the highest ideal ever reached by man," he wrote to his most faithful correspondent, Mrs. Elizabeth Cameron. "Our age is too thoroughly brutalized to approach or understand any of these creations of an imagination which is dead." And yet he addressed himself to the task of making that understanding possible.

While probably reflective of the author's own evolution, the structure of the book is strategic. From the initial chapter, where we are introduced to the martial dimensions of the Mont, a steadily broadened presentation of cathedral building and the many aspects of medieval culture are reviewed. We cross Normandy and ascend the Seine; from the Chanson de Roland we move to the glass of Chartres and the cult of the Virgin. A feminist before his time, Adams passes easily from the Virgin to the "superiority of women," the three queens—Blanche of Castile, Eleanor of Aquitaine, Mary of Champagne, and the celebrated love affairs of the troubadors, Aucassin and Nicolette, Abelard and Heloise. In the last chapter Adams considers St. Thomas Aquinas. Where is architecture in all this rambling through literature and history? Everywhere. The buildings, their decoration, the sculpture, the glass—all is architecture, the great unity that mirrors the unity of the age that is Adams' chief message. Today still, there is a freshness on every page of this work of discovery, and there is little one would wish unsaid.

Never does Adams abandon his central theme—architecture as the expression of energy. Nowhere does he fall into the traps of specialized scholarship. In writing of the Chanson de Roland: "The poem and the church are akin; they go together and explain each other." In his hands, they do. We see the evolution and change of Mont-Saint-Michel from the initial architectural mode of the first crusade to the abbatical megalomania a century later when a vast functional expression documented the rise of the monastic bureaucracies. "The architect intended it all," in Adams' fine phrase.

From 1903 on, the work was definitely headed toward publication, and in 1904 it was described as in type. For a dramatic moment, it was feared the entire manuscript had been lost in the great Baltimore fire that damaged the printery of J.H. Furst Co., but the loss proved limited to a few chapters that could be replaced in less than a month, and by Christmas 1904 Adams had received the 100 copies he had specified. Most were distributed to universities, libraries and a few intimate friends. Between his self-appreciation ("the only book I ever wrote that was worth writing") and self-depreciation (the whole of *The Education of Henry Adams*), Adams posed a dilemma that has not ceased to fascinate historians and biographers. As Gamaliel Bradford wrote of his autobiography, "Nothing takes hold of him, and it is precisely because he does not wish anything really to take hold of him." Yet for all the impression of a dilettante, *Mont-Saint-Michel* was a work of

*continued on page 111*

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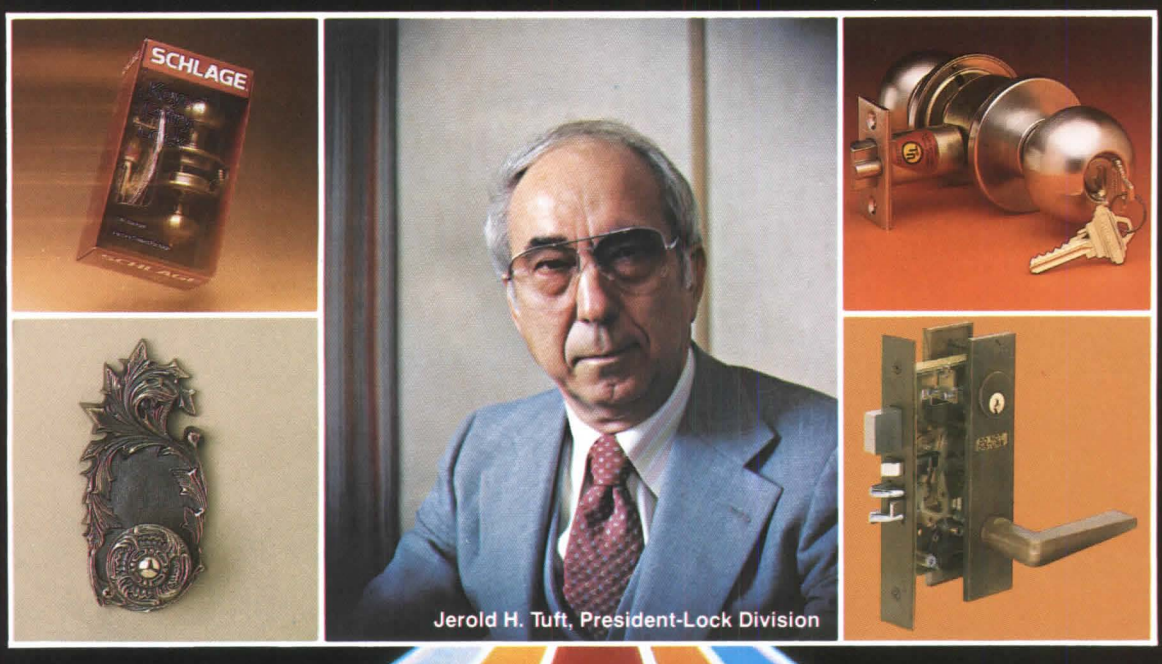


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**Books** *from page 109*
genius and a testament of faith, and Adams sincerely described it as "my real comfort in life."

The 1904 edition defied Adams' gloomy prognostications, and he printed a second private edition of 150 copies in 1911, "because all of the earlier copies were given away." The reception of Cram's 1913 AIA edition also took him by surprise. The papers "are reviewing me as a youthful beginner," he grumbled; "no one is aware that I ever wrote anything else." But, he reflected, "I have the architects behind me." He was made an honorary member of the Institute. He died in 1918, bequeathing the 1905 copyright to AIA. The Princeton University Press paperback edition is a facsimile of AIA's 1913 edition, complete with Cram's preface.

Cram was correct in recognizing *Mont-Saint-Michel* as presenting medieval civilization as a whole, in its "singular entirety." He found in Adams the power of "merging himself in a long dead time," and of recreating its spiritual impulses. "Seven centuries dissolve and vanish." Here is "a revelation of the eternal glory of medieval art and the elements that brought it into being."

One should appreciate the force of the imagination that recreated *Mont-Saint-Michel* from the realities of that summer of 1895 when Adams wrote, "We got to Mont-St. Michel in a mob of tourists of many kinds of repulsiveness. Odious Frenchmen, gross shapeless, bare-armed, eating and drinking with demonstrative satisfaction; and dreary English-women, with the usual tusks; and American art students, harmless and feeble, sketching from every hole in the walls. The mob was awful and the meals hog-pens. Romance and religion are a long way from Madame Poulard's kitchen in these summer weeks." In another dozen years, Poulard would have sold out to a joint stock company; the centuries-long tradition of omelettes for pilgrims had yielded to a fast food takeover. The great blight of tourism had become "a greasy taste; a mercantile and gold-bug trail, even on the architecture."

But surviving it all, recreating forgotten origins, is this great book, as fresh today as when it was first written. *Frederick Gutheim, Hon. AIA, Washington, D.C.*

**Literary Architecture: Essays Toward a Tradition.** Ellen Eve Frank. (University of California Press, $18.)

This is a unique book, genuinely original and highly thoughtful; that is more than enough to make it well worth our attention. Even so, it cannot be recommended without two caveats. First, the author's tone is sometimes pretentious, and her style is often annoying. Indulged,

*continued on page 113*

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**Books** *from page 111*

we assume, by her editors, she likes to break the joints between her nouns and their prefixes (as in "di-stance," "no-thing" and "trans-formation"); she uses as verbs words usually used as nouns ("image," "revision" and "architect"); she is unfortunately fond of inventing hyphenated pairings ("house-mind," "dwelling-body" and "breath-being"), and some of her sentences would choke a horse: "Death-in-life is the necessary converse for life, which actually is life-in-death, being-in-field (universe) or being-in-void." There are Joycean liberties without Joycean results.

Second, the title should not be misunderstood. The book is not (except incidentally) about architecture that makes use of literature. It is not even simply about literature that is descriptive of architecture. (The author notes that Ruskin, although he is quoted and acknowledged as a major influence, has no important place in her book, and not even mentioned are Hawthorne, Poe, Faulkner and others who have written well about the built environment.) The book is, rather, about the literary use of architecture as an analogue for art, and it is also about the use of principles of architectural composition as organizing devices for literature. We see these uses in selections from the writings of Walter Pater (who, the author says, originated the phrase "literary architecture"), Gerard Manley Hopkins, Marcel Proust and Henry James. And the book, organized as a succession of "rooms . . . each filled with the furniture of its subject matter, each very specifically located, separated by halls of space," attempts to be a demonstration—not just an explanation—of these uses. "For these are the tissue of this book: the architecture of literature as external configuration, as form and embodiment, of consciousness."

It is clear that the author has not imagined an architecture buff but a literature buff as her ideal reader. Nevertheless, architects can be enlightened as well as entertained by considering how writers make use of buildings in ways never intended by the buildings' designers. And a book concentrating on the serious application to writing of architectural compositional devices—symmetry, proportion, progression, repetition, reflection, the openings of walls with windows—cannot help but healthily embarrass the architect who so often treats these devices cavalierly.

Best of all, the author often lets her subjects' own writings speak for themselves, and the four masters have some very interesting notions about architecture. Just two examples here: For one, Pater refers to "that architectural conception of work, which foresees the end in the beginning and never loses sight of it";

*continued on page 115*

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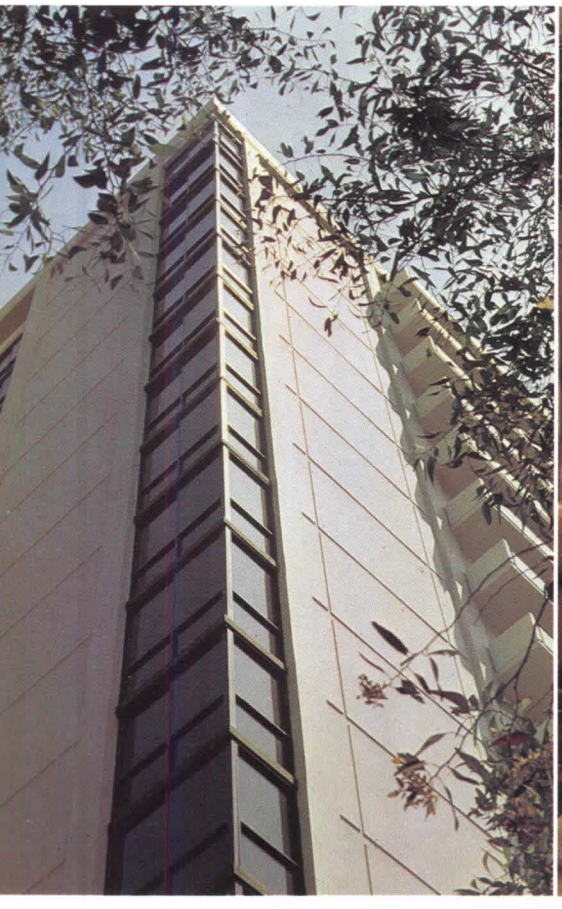

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**Books** *from page 113*
for another, James says that "a great building is the greatest conceivable work of art because it represents difficulties annulled, resources combined, labour, courage, and patience."

The book concludes with some brief summaries of architectural analogies: "Architecture and the Human Body," "Architecture and the Mind," "Architecture and Memory," and, climactically, "Architecture and Literature." Three dozen architectural photographs nicely complement the text. Try to stomach the occasional aggravations of the writing, for there is much substance here to learn from and to enjoy. Maybe, someday, *Literary Architecture* will be translated into English. *Stanley Abercrombie, AIA*

**Underground Plans Book—1: 8 Large Scale Plans and Details You Can Use in Designing a House for Your Site.** Malcolm Wells and Sam Glenn-Wells. (Malcolm Wells, P.O. Box 1149, Brewster, Mass. 02631, $13.)

Malcolm Wells has been thinking underground since 1964. His original self-published book, *Underground Designs,* published in 1977, is in its ninth printing of 10,000 copies, some of its popularity no doubt due to the widely read article in *Popular Mechanics* in March 1977, that featured Wells on Wells. While Wells' first book covered all types of subterranean uses from a museum of the future to an organic mortuary, this new volume covers only houses. It is a smart choice of subject matter since there are now estimated to be more than 5,000 earth-sheltered dwelling units in the U.S., many of them owner-designed and built. "Gleams-in-eye" will produce thousands more, particularly when OPEC oil is reaching $50 a barrel.

This book is a professional form of folk art itself. Its dimensions flat open are 11x44 inches. There are 44 pages of hand illustrations and lettering. The author claims he is saving the purchaser great amounts of money by not using more exotic production technology, like typewriters. Altogether, it is a rather stylish effort.

Wells states that this book has been developed to meet the needs of a group who want to design and build their own earth-sheltered houses. However, he sets forth two major caveats: that the publication can be no more than a generator of ideas and that the designs only apply to cooler climate. While he encourages do-it-yourselfers to consult an architect, he is most vehement in urging the reader to employ the services of a structural engineer because "earth is heavy and sneaky."

The first 10 pages are devoted to tips on such subjects as planning ideas, costs,

*continued on page 116*

**Books** *from page 115*

structure, waterproofing, insulation, humidity, landscaping and sources of additional information. Some of the ideas are ordinary, others innovative. Wells also includes his "Absolutely Constant, Incontestably Stable Architecture Value Scale," first published in *Progressive Architecture* in 1971. In backing up this value scale he offers a series of ideas on home waste management, windmills, gray water use, porous pavers and slot gardens.

The next 29 pages are floor plans, elevations and sections of eight houses. Each house is developed to meet a specific site condition. The names are revealing: (1) house for a south slope, (2) house for a flat site, (3) house for a north slope, (4) house for east or west slope, (5) truss house, (6) the little green house, (7) the little square house, (8) a random house and (9) terrasolarium. The general design, floor plans and innovations in these examples are a substantial cut above the normal plan books for earth-sheltered housing. The drawings are crisp, clear and easy to read, thanks to the quarter-inch scale made possible by the large format.

The final few pages are devoted to construction details. Wells has been careful to point out how troublesome standard details can be. To avoid literal use of the details, he omits dimensions in many cases. Nevertheless, the details are interesting and could be useful to do-it-yourselfer and architect alike; but the former is clearly the intended audience.

The *Underground Plans Book—1* is as intriguing as it is unwieldy in size. It represents a substantial amount of thought and work on the part of the author. I recommend it to laymen and professionals interested in earth-sheltered architecture. *Michael Barker, AICP, Administrator, Design, AIA*

**The History of the City.** Leonardo Benevolo. (London, Scolar Press; MIT Press, $90.)

The important thing to know about this book is that it has 1,559 illustrations. I'll get back to that in a moment, but first let me enter the necessary warning that this book is not what its title implies. For the history of the city, you can still rely on Pierre Lavedan, E.A. Gutkind or, for that matter, Lewis Mumford. In the present volume by a distinguished Italian architectural historian, the essential qualification comes in the very first sentence, describing it as "in the form of a short written text combined with a large number of illustrations." The work lacks the critical apparatus of a history: no references or footnotes, no bibliography, no comprehensive index, no table of plates with dates and sources of illustrations. So much for a book that is 1,000 pages long,

*continued on page 119*

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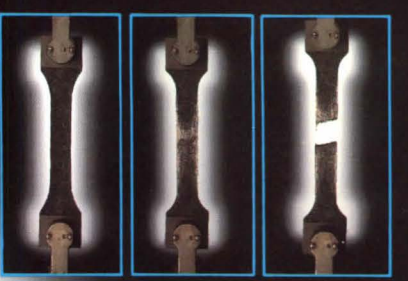

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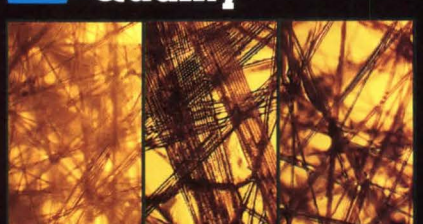

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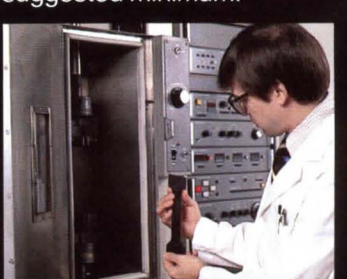

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**Books** *from page 116*
two inches thick, weighs six and a half pounds and is priced at $90.

The illustrations have been assembled by Benevolo over the years he supervised the drawing course offered by Italian high schools to students preparing for careers in environmental design. The collection contains some remarkable material. Its mixture of ancient prints, archeological remains, models, old photographs, plans and measured drawings is very pleasant. But one wishes for more identification. (Not even Benevolo's own drawings are identified.) The selection is uneven; but if the treatment of Jerusalem is sparse, that of Rome is fulsome. Plans and buildings are not the whole of Benevolo's city; his graphic exploration embraces urban technology, processions, markets, festivals and other human behavior, art, medals and coinage, fortifications, ships, the landscape and much else.

Brief as the text is, it contains many powerful insights. How Brunelleschi's dome "became the focal point of the whole city" of Florence; the integration of town and landscape at Urbino; the urbanistic achievement of the Este family at Ferrara; the planning of the Strada Nuova at Genoa.

As you may suppose, Benevolo's best shot is Italy, and of that, the renaissance cities. As in his earlier work, there is an even-handed attention given the cities of the new world—Quito, Caracas, Guadalajara, Mexico City. A plan of the environs of Paris during the mid-18th century shows the straggling network of surviving medieval roads and paths, within which are scores of islanded estates with rectilinear plans—a striking reminder of how the landscape was transformed. The idealization of the city toward the end of the 18th century was marked by the growth of hospitals, prisons, markets and other expressions of urban reform, but these have not been reflected, nor have the closely related utopias at urban scale such as Chaux. *Frederick Gutheim, Hon. AIA, Washington, D.C.*

**Acoustical Design of Concert Halls and Theatres.** Vilhelm Lassen Jordan. (London, Applied Science Publishers, $36.)

This is a personal view of auditorium acoustics, written by one whose professional experience, nevertheless, has been broad enough to make the book as comprehensive a coverage of the field as one might wish. As a pioneer in the use of scaled acoustic models for the testing of physical parameters, Jordan has many good observations on the techniques for shaping and modifying space that should be of value to anyone planning a large performance hall.

In Jordan's opinion, no single hall, no matter how flexibly conceived, can satisfy the needs of the very widest range of theatrical events. He strongly advises a realistic analysis of intended function in advance and holding to this analysis once the structure has been completed. The failure of many halls, in his view, is due in large part to their being used in ways that were never originally intended.

In addition to technical sections devoted to the definition of acoustical criteria and their application to the design of large halls, Jordan includes a brief historical survey. From the earliest amphitheaters to Wagner's Bayreuth and the Boston Symphony Hall, he sketches the background for a discussion of 20th century experimentation, much of it conducted by the author himself in the course of his own career. The detailed accounts of his involvements with the troubled Sydney Opera House and the New York State Theater at Lincoln Center in Manhattan —only recently designated as being in need of a thorough acoustic overhaul— serve to dramatize the essential unpredictability of the still-emerging science of performance room acoustics. *Martin Bloom, AIA*

**Writings on Wright: Selected Comments on Frank Lloyd Wright.** Edited, with introduction and commentary, by H. Allen Brooks. (MIT Press, $17.50.)

H. Allen Brooks, author of *The Prairie School: Frank Lloyd Wright and His Mid-Contemporaries,* evidently has immersed himself in the many writings on Frank Lloyd Wright. He has produced an anthology of these writings, seeking, he says, "to expose and correct; to dispel fable and attempt to reveal the truth, thereby gaining a greater understanding of Wright's architecture, but also of the man himself as well as his place vis-à-vis the times in which he lived."

To this purpose, Brooks has arranged the collection of writings thematically rather than chronologically. The book's first section concerns Wright's personality and life style. Among the pieces included are a profile by Alexander Woolcott that appeared in *The New Yorker* magazine in 1930 and an account by John Noble Richards of Wright's funeral that was published in the *Journal of The American Institute of Architects* in May 1959.

The book's second part concerns Wright's clients and his work, and there are accounts by such noted clients as Paul and Jean Hanna, Loren Pope and Edgar Kaufmann, jr., among other writings excerpted. Part three on "American Assessment (1897-1912)" contains among its five excerpts an account by Russell Sturgis of the Larkin Building in Buffalo, published in the April 1908 *Architectural Record.* Sturgis called the building "extremely ugly" and "a monster of awkwardness."

*continued on page 120*

**Books** *from page 119*

"European Discovery (1910-1930s)" is the thematic division of the book's fourth group of excerpts. One of the quotes is by Ludwig Mies Van der Rohe (1946) who said that Wright was a "master-builder" who drew upon "the veritable fountainhead of architecture." The final section on "More Recent Evaluation" contains excerpts from the writings of Lewis Mumford, Reyner Banham, the editor himself and others.

The reader may wonder if Brooks has really "exposed and corrected" in this collection. At any rate, he has produced a most readable work on people's ideas about Wright and his contributions.

**The Ideas of Le Corbusier on Architecture and Urban Planning.** Texts edited and presented by Jacques Guiton; translation by Margaret Guiton. (Braziller, $25 hardbound, $9.95 paperbound.)

In order to understand Le Corbusier, says André Wogenscky of the Fondation Le Corbusier in Paris, one has to read his books as well as to study his plans, drawings and buildings. "None can be isolated from the others." This book, Wogenscky says in the foreword, will "greatly help" in comprehending Le Corbusier's reasoning. It is a distillation of Le Corbusier's thought, taken from the architect's many published writings. The ideas are organized around such broad topics as what is architecture, how to design architecture, how to teach architecture, housing and urban planning. Another intriguing section is on the reasons behind Le Corbusier's ideas. "It takes at least 20 years for an idea to be recognized, 30 for it to be appreciated and 50 for it to be applied, when it should, by then, be changing," Le Corbusier wrote. And again: "Yes, nothing can be handed on except ideas, which are the noblest fruits of human labor. Such ideas may, or may not, prevail over death, perhaps in some unforeseeable new form."

The editor of this book, Jacques Guiton, was born and educated in France, coming in 1948 to this country where he was associated with Skidmore Owings & Merrill for 25 years before his retirement.

**Thomas Jefferson's Rotunda Restored, 1973-76: A Pictorial Review with Commentary.** Joseph Lee Vaughan and Omer Allan Gianniny Jr., with a foreword by Frederick Doveton Nichols. (University Press of Virginia, $27.50.)

The University of Virginia's famed rotunda was Thomas Jefferson's architectural masterpiece, modeled on Rome's Pantheon and designed for use as a library. Begun in 1823 and completed in 1826, the year of Jefferson's death, the building has had a varied history. It has experienced structural additions made in 1850 under the supervision of Jefferson's protégé Robert Mills, devastation by fire on a Sunday in October 1895, controversial major alterations by Stanford White in 1896-98 to provide space for an enlarged library and dismissal as the university's central building when the library was moved in 1938. The fascinating story of the building's history, with Jefferson's drawings and plans included, forms the book's first part.

Part two, with more than 50 color photographs, describes the rotunda's restoration in 1973-76 following years of careful research. Frederick D. Nichols says in the introduction that "the restoration is correct to the smallest detail." Preservationists will appreciate the accounts in the book of how technical questions were resolved concerning the return to Jefferson's original design after the major changes made by White. The restoration effort was carried out by Louis W. Ballou of the Richmond architectural firm of Ballou & Justice. Construction work is detailed with both words and photographs. Appropriately, the restored rotunda was dedicated on the 233rd anniversary of Jefferson's birth and was a major event in the celebration of the nation's bicentennial.

**Handbook of Speciality Elements in Architecture.** Edited by Andrew Alpern, AIA. (McGraw-Hill, $42.50.)

Most architects probably never took a course on the cost, maintenance, siting and construction requirements of flagpoles and would welcome the complete coverage given the subject by James E. Coane. Perhaps, too, a project requires some knowledge of interior art. Judith Selkowitz tells how to find art that is appropriate for commercial interiors, describes how to work with a professional art consultant and discusses framing, lighting and insurance. As the editor of this book says, practitioners of architecture and interior design often need a knowledge of some specialized field, and the book's purpose is to give the reader a general understanding of 12 subject areas.

In addition to flagpoles and interior art, there are chapters by specialists on audiovisual communications (Jerome Menell); exterior plantings (Joseph Hudak); trees and plants for interior design (Everett Lawson Conklin and Susan Korner); sculpture (Louis G. Redstone, FAIA); adult outdoor recreation areas (John M. Roberts); juvenile play areas (M. Paul Friedberg); signage (Fred T. Knowles), and designing for the disabled (Robert James Sorensen).

Everything about designing for the disabled, say, cannot possibly be covered in a single chapter, but the handbook is a most useful starting point in acquiring a general background on the specialty elements covered. □

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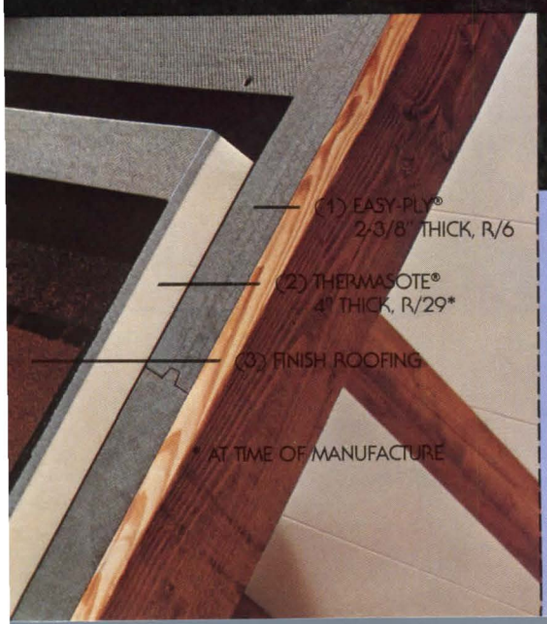


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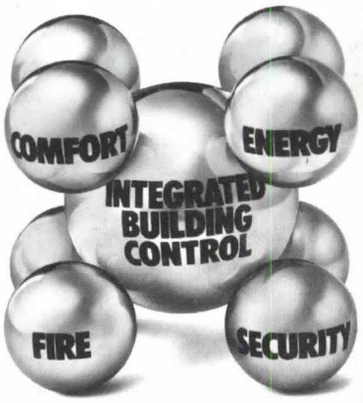


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John R. Hoke Jr., AIA

*Continued from page 91*

## Prewar years: labor strife and the steady growth of air travel.

dollars. The pineapple industry, like sugar, tended toward consolidation. In 1920 there were 13 companies and 11 canneries; in 1930, despite large increases in production, the number was reduced to nine with eight canneries. The Pineapple Growers Association and the Hawaiian Sugar Planters Association worked closely together on labor and immigration policies.

Immigration of labor ended in 1932. The last group came from the Philippines. The major influence of immigration upon the physical form of plantations was their division into "camps." Each was characterized by a distinct racial or occupational group: lower level managers or the various ethnic groups of cane workers.

The camps were isolated and the people living together in a strange land were drawn together. The immigrants clung to their customs and habits. Some of the plantations' physical structures emerged as culturally characteristic. Bath houses were used by all races but indigenous to the Japanese who had their own soaking tubs. The recreation house used by unmarried working men was an important feature of Filipino immigrants. The clubhouse, a one-story building near the mill used by skilled employees, engineers, chemists, mill experts and office men, was most commonly located near the *haole* section of the plantation.

Getting to Hawaii in these early years as an American territory was half the fun. Lindbergh's flight across the Atlantic in 1927 stirred the imagination of the world. But two years earlier three seaplanes had undertaken almost as bold a venture. They attempted to fly to Hawaii. One did not get off the ground, a second flew 300 miles and returned to the mainland. The third completed the journey under sail. It ran out of gas 200 miles northeast of Maui and was not discovered for nine days. When finally located by a submarine its fliers had cut the fabric off its wing, rigged a sail and were sailing downwind toward the islands.

On June 28, 1927, two army pilots flew from Oakland, Calif., to Oahu in 25 hours and 49 minutes, and although they carried the best equipment available and were competent, well trained fliers and navigators, they almost missed the islands entirely.

The InterIsland Steam Navigation Co. started an airline. Its first flight was on Nov. 11, 1929; using a Sikorsky amphibian, it flew from Honolulu to the islands of Hawaii and Maui with 11 nervous passengers. The next day it flew from Honolulu to Kauai. The Sikorsky took off from 1,000-foot-long, 25-foot-wide-runway cut into a cane field.

The first DC-3s were delivered to the company, now Hawaiian Airlines, in 1941. Three of the planes flew from Oakland, Calif., to Honolulu in formation. The flight took 14 hours and 58 minutes and was the longest over-water flight ever made by the DC-3. Pan Amercan Airways inaugurated its China Clipper service from San Francisco to Manila to Hong Kong in 1937.

Yet, despite the spectacular flights of airplanes, the great favorite of the affluent remained the steamship. The best known of these to call at the islands was the Lurline. The first Lurline, a brigantine named for a daughter of Captain Matson, the organizer of the Matson Navigation Co., came to Hawaii in 1887. In 1933 the largest and most luxurious of the Lurlines made her maiden voyage to Hawaii. The ship was called the "Great White Palace of the Sea." The Lurline symbolized Hawaii to the islanders and the rest of the world. Travelogues of the time showed her sailing off into the sunset as the hula girls swayed on the dock, the Royal Hawaiian band played, *"Aloha Oe,"* that lovely and haunting song composed by princess Lili'uokalani, as hundreds of the islands people waved farewell.

As the orientals and *haoles* grew in numbers the pure Hawaiian population continued to decline. From nearly 70,000 in 1853 the population shrunk to 24,000 in 1920. But the numbers of Hawaiians living in Honolulu increased. They lived, for the most part, in tenements and slums crowded together in settings ill-suited to their traditional way of life.

Plantation labor was recruited for the reasons stated in the *Plantation Monthly* of 1882: "The experience of sugar growing the world over goes to prove that cheap labor, which means in plain words servile labor, must be employed in order to render this enterprise successful."

To the planters of Hawaii the problem was simply: get enough workers, get them cheaply, work them as much as possible and keep them on the plantations. Occupational status and pay were based on ethnic identity. The pay for identical work ranged from the *haole*'s top pay to as little as one quarter of that hourly rate for Japanese. Major *haole* firms recruited managerial personnel from the mainland rather than upgrade Oriental assistants.

Hawaii's first industrial union, the Higher Wages Association, was organized in 1908 and called its first major strike in May 1909. The strike was broken and the strikers were severely punished. But plantation working and living conditions were improved. What the planters refused to surrender under threat they gave paternally.

The pattern of kamakazi confrontation and paternalistic improvement continued to World War II. Unionism was halted by the military government between Dec. 7, 1941, and Oct. 24, 1944. Laborers were forced to have military permits to move and found it impossible to obtain them. An informal agreement existed, Fuches writes, not to hire sugar and pineapple workers for federal and military jobs. The military imposed jail sentences for absenteeism, and hundreds of workers were either fined or jailed.

Brief strikes occurred in Honolulu in 1943 after partial lifting of military restrictions, and union organization began in earnest on the plantations in 1944 after the full suspension of military prohibitions. At the end of martial law the repressed labor union leaders could and did assert their rights under the National Labor Relations Act.

A spontaneous combustion of circumstances—army repression, the National Labor Relations Board and the postwar demand for labor, an influx of federal funds—combined to prime a massive economic surge. *Haole* elite and planter domination was broken.

The 1950-59 boom that ushered in the age of tourism fusing the building explosion that gave us highrise Waikiki and Honolulu was the third major transformation of the archipelago since its discovery.

Captain James Cook found a primitive subsistence economy. It was urbanized by merchant ships and whalers as the Hawaiians flocked to the ports to become ships' chandlers to the North Pacific. In the transition Hawaiians discarded their traditional chiefly system in favor of a Hawaiian monarchy, the better to control a unified archipelago and forge a modern state. The Hawaiians' chiefly class welcomed the missionaries who supplied a handy conforming set of beliefs paralleling their own objectives.

*continued on page 128*


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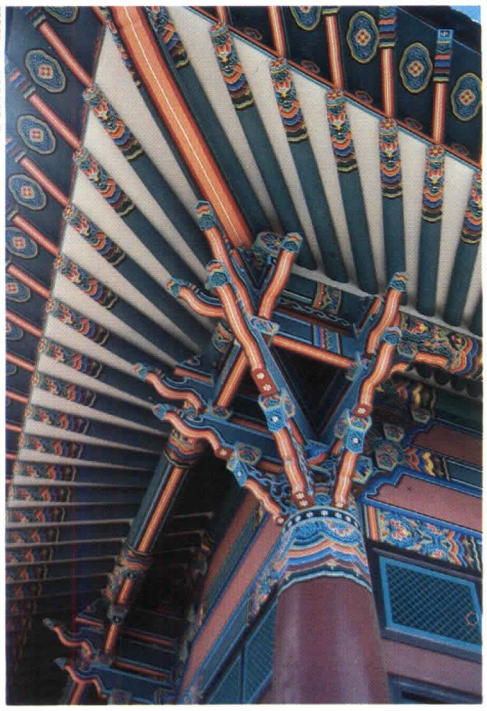


Forrest Wilson

*Continued from page 126*

## Postwar years: Headlong growth in tourism and defense dollars.

With the end of the whaling industry sugar planters and merchants sought alternatives, but no clear line of economic development was established until the American Reciprocity Treaty of 1875. The next 60 years saw a continuous expansion of the sugar industry and after 1913 the export of canned pineapple. Railroads were built as were mills, plantation camps and plantation towns. The main focus of activity was turned to inland and outer island sugar and pineapple plantations. By the mid-1930s island economists assumed that the welfare of the islands was totally dependent on sugar and pineapple.

There were no important natural resources that could be exploited, they reasoned. High transportation costs blocked the development of mainland markets for Hawaii's other agricultural products. Without raw materials and easy access to markets, manufacturing did not seem feasible. Sugar and pineapple were conceived as the bulwarks of the Hawaiian economy. Although there was some tourism consisting of wealthy visitors who traveled by luxury liners, there seemed little chance for prosperity other than that offered by the plantations.

But World War II, the airplane and automation altered everything. Commercial airlines, now only four and a half hours from the mainland, brought half a million passengers to the islands in 1959. The industrial world was moving beyond the industrial revolution; the time lapse between change on the mainland reflected in the islands was reduced from months to minutes.

*Above, the Korean center at University of Hawaii, newly built of traditional design.*

The war had exposed the islanders to the rest of the world in a way no other event could have. The G.I. bill of rights made it possible for servicemen to attend the finest universities on the mainland. Many returned with degrees that qualified them to enter professions. Changes were demanded in the power structure of Hawaii that were not willingly made.

The plantations had been hard pressed competing against defense contractors during the war years. As a consequence they accelerated their efforts to substitute machines for men. By 1957 there were 25,000 fewer agricultural jobs than there had been on the eve of the Pearl Harbor attack. The decline in agricultural employment, postwar reduction in defense activity and the long waterfront strike of 1949 resulted in a temporary depression in the winter of 1949-50. Pessimistic economists counseled reconcentration on sugar and pineapple.

But Hawaii was saved by the renewed military spending of the cold war. Between 1950 and 1959 defense expenditures in the islands soared from $147 million to $338 million. As the territory became a central Pacific reserve of manpower for Okinawa, Japan and Guam, Hawaii's military population doubled. By 1959 one-sixth of Hawaii's population was military personnel and their dependents. One-fourth of Hawaii's people was supported by defense spending, as Pearl Harbor employed 6,000 people.

Only tourism surpassed defense in growth during the 1950s. The visitor industry rose from $24 million to $109 million. Optimistic economists predicted tourism would bring $350 million in the '60s.

Before the war Waikiki had been a quiet residential area of three hotels. After it, multistory hotels rose in rapid succession and the total number of hotel rooms quadrupled to 4,000. Property along Kalahaua Avenue, the Champs Elysees of Waikiki, soared from $30 to $60 a square foot.

Once again, as in the first decades of the 19th century, Honolulu drew the people of the archipelago. A significant shift of wealth and population from the outer islands to Oahu took place. The movement of capital and managerial personnel from the mainland to Hawaii accelerated. Competition and diversification in Hawaii's industries and agriculture increased. Oriental millionaires appeared.

The population surge to Oahu stimulated a boom in retail trade and construction. Ninety percent of the islands' wholesale and more than 82 percent of their retail trade was centered in Oahu. By 1959, the year of statehood, 92 percent of every tourist dollar spent in the islands was spent in Oahu, and 98 percent of Hawaii's defense activity was located at the major military installations there.

The populations of Hawaii, Maui and Kauai continued to decline steadily during the 1950s while Oahu absorbed more than 100,000 new residents during the five years preceding statehood. In 1930 the neighboring islands represented 45 percent of the territory's population. By 1959, Oahu held more than 78 percent of Hawaii's 576,000 people.

The gigantic Ala Moana shopping center was completed in 1959, and the beginning of the largest housing development ever planned for Hawaii, the $350 million building program organized by Henry Kaiser and the Bishop estate on 6,000 acres of land in the Koko Head section, was under way.

Kaiser was not alone among mainland investors. From 1948 to 1958 investments of mainland companies increased from $17 million to $180 million. Residential expansion moved to leeward Oahu and residential development accelerated on the windward side.

The outer islands did not share in Oahu's prosperity. Intense mechanization of the sugar and pineapple plantations replacing men with machines meant declining populations and reduced purchasing power, school facilities and services.

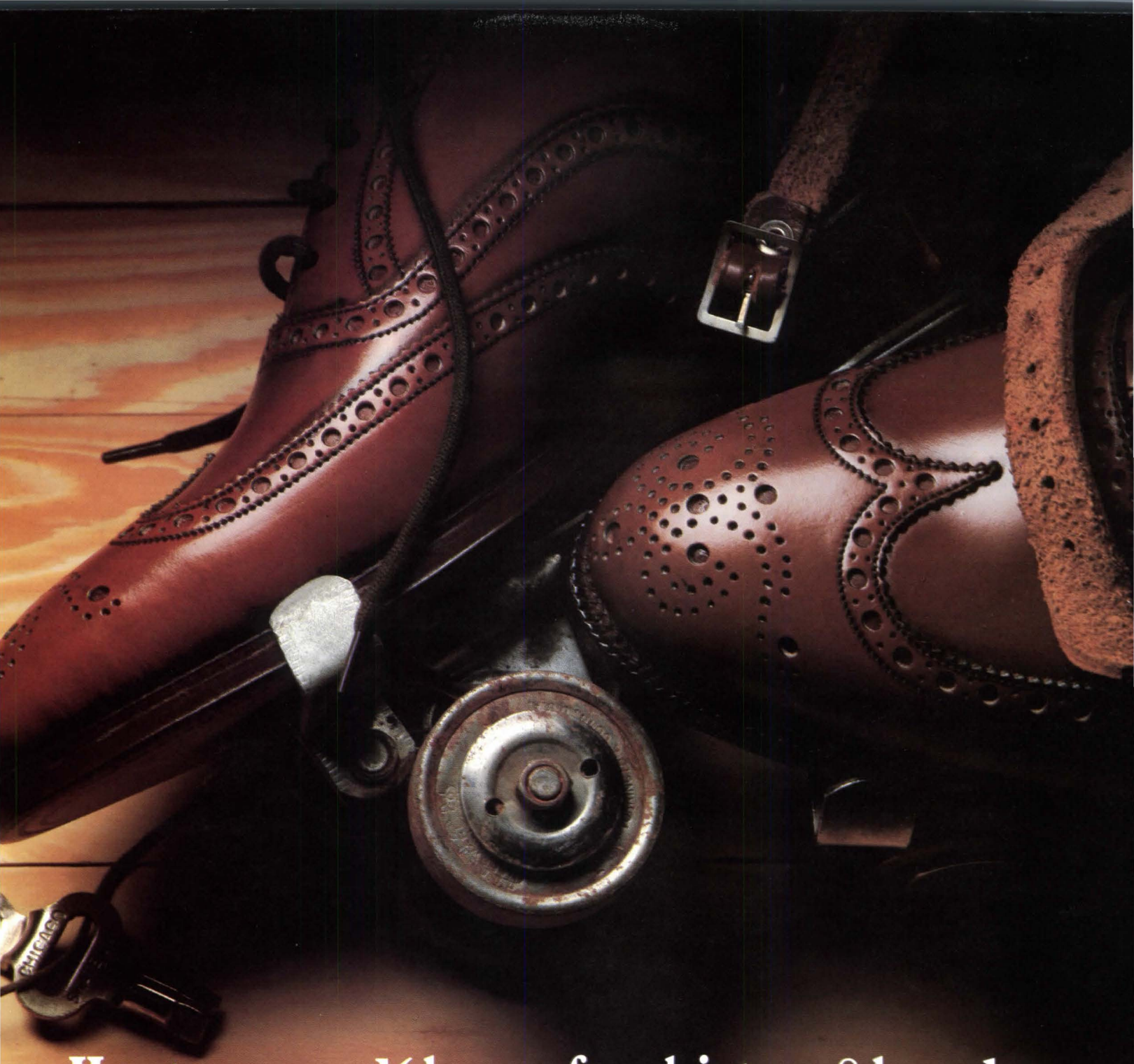
Economic developments had a profound effect on the sugar industry and the thousands of people that depended on it for support. Although sugar brought $5 million more in 1959 than it had in 1950, sugar acreage had decreased from 109,000 to 84,000 acres. The decline of employment on the sugar plantations was the result of automation.

But sugar profits were at a low level, and the increasing threat of foreign competition (even though Hawaii's efficiency in sugar growing had not yet been matched by foreign competitors) caused the decision makers in the sugar industry to consider alternatives. Some counseled that the sugar plantations of Oahu be plowed under and their lands used for residential and industrial development.

In 1959 there was a strong faith in the continuation of the visitor industry with predictions that it, as the wave of the future, would generate half a billion dollars in the 1960s.

Plans were made to ride the wave of tourism. It was also anticipated that many mainlanders would retire to Hawaii in the coming decades. There was speculation that a two hour jet flight from New York was possible and that resorts rivaling Waikiki would be built on the outer islands. Hawaii was thought of as the emerging cultural and research center of the Pacific. Kaiser had had no doubt that

*continued on page 130*



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*Continued from Page 128*

## Most recently, mainland problems and the making of a 'theme park.'

the islands would welcome more than a million visitors in the late 1960s, compared with a little less than one quarter of that amount in 1959. The Hawaiian visitors Bureau prophesied 2.5 million by 1975, the most accurate prediction of all, for the actual count proved to be 2,880,000. By 1980 nearly four million tourists spent an estimated $3 billion in Hawaii.

Except for stretches of sand around Diamond Head, Waikiki was now a tourist beach. Waikiki's resident population declined as the state's population expanded. As hotel construction boomed the islands experienced a housing shortage of crisis proportions. Studies disagreed on the magnitude but agreed that it was staggering. Rents doubled, placing Hawaii's second only to Alaska's. Less than half of the houses were owned by their occupants, and home ownership was priced out of the hands of average wage earners.

An average house cost twice that of the national average. One-fifth of the existing housing was classified as overcrowded, one-eighth as dilapidated. Hawaii was short 50,000 reasonable priced housing units, and the situation was growing more critical.

Students erected a tent city on the campus of the University of Hawaii in early 1970, and a family that had lost its house made front-page news by pitching a lean-to on the grounds of Iolani Palace. House and apartment sharing became so widespread that Hawaii led the nation in the average number of people per housing unit.

The population of the archipelago jumped from 633,000 in 1960 to 770,000 in 1970. Although neighboring islands experienced slight growth most of Hawaii's new people packed themselves onto Oahu and the city of Honolulu with its patulous suburbs. In a decade, the city's skyline burst upward from two- and three-story buildings to twenty- and thirty-story skyscrapers. The greatest mass of highrise buildings concentrated in Waikiki, the detonator of Hawaii's tourism.

The number of hotel rooms more than tripled. The number of tourists arriving in Hawaii increased fivefold, retail sales doubled, contracting nearly tripled. Defense spending, stimulated by the war in Vietnam, nearly doubled. Wages and salaries increased about 50 percent. The number of cars on the road by 70 percent. Virtually every household in Hawaii had a TV set. Unemployment dropped below the theoretical possible low of 3 percent to 2.7 percent.

The first air pollution studies appeared in 1965, a researcher notes. And they came as a shock to a public largely convinced that an island swept by gentle trade winds could never be polluted. By 1970 air pollution, most of it coming from the ever-increasing number of cars, and rush-hour bumper-to-bumper traffic were increasing. Parts of Honolulu and Waikiki became "smog belts" during rush hours.

Water pollution and dying plant and animal life in streams, bays and off-shore reefs brought Hawaii into the mainstream of mainland problems. The noise of airplanes, street traffic and jackhammers, and worry over supplies of clean air and water became more intense as Hawaiian time gave way to rush hour.

At the far end of the gloom spectrum, a youth congress, after four days of agonizing discussion, in the summer of 1970 voted by a two-to-one margin that the ultimate solution for Hawaii was secession from America.

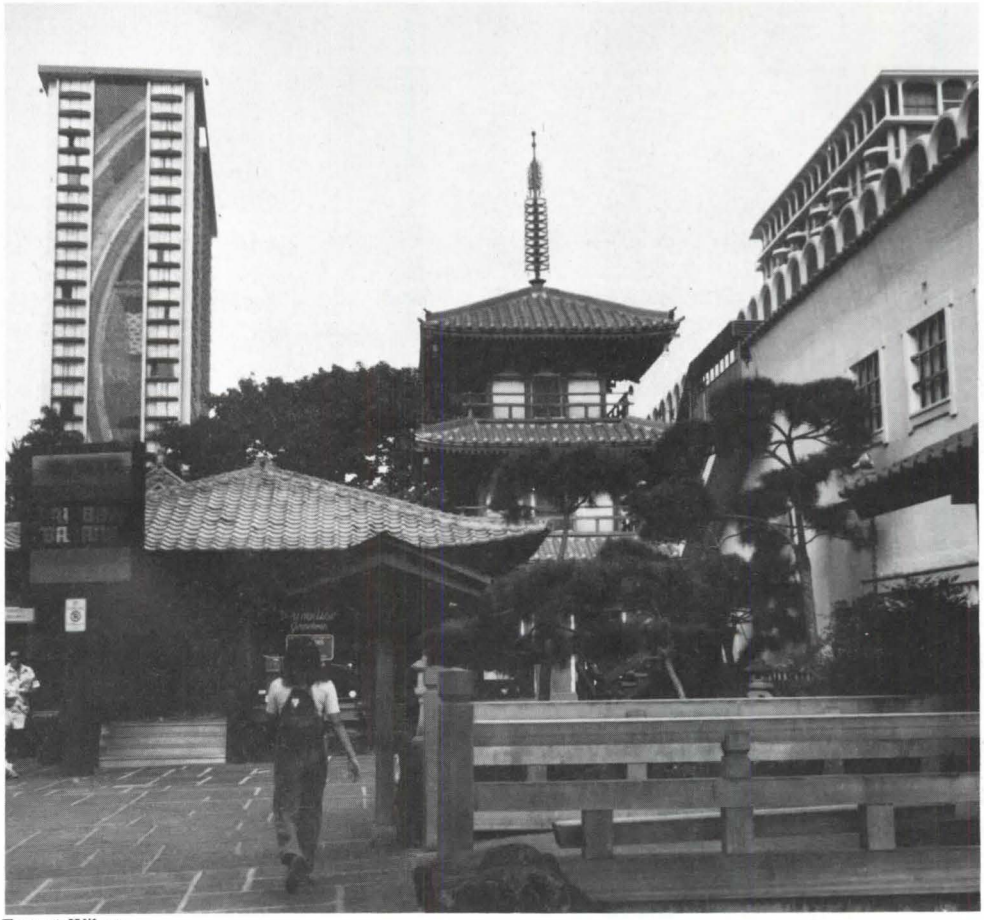
Many of the islands' people were beset by a nagging anxiety that the new wave of mainland *haoles* attracted by tourism and statehood would erode island traditions. The feeling was seldom voiced openly, but it was feared that the new wave would jeopardize the comfortable way of island life and threaten the prominent role of non-Caucasians in island politics. Those of Asian descent had no sooner begun enjoying their liberation from rule by an elite Hawaiian oligarchy than it seemed they were faced with a tide of new settlers from mainland America.

The 1960 federal census found Caucasians had risen to 32 percent of the population, compared to 32.2 percent of Japanese ancentry. The balance of the population was distributed among smaller ethnic groups, mainly part-Hawaiians. One state manpower official predicted the immigrant wave would produce a *haole* majority within a decade, and the respected state statistician Robert Schmitt estimated the Caucasian migration might climb to over 50 percent of the island population in 20 years. The 1970 census breakdown registered a climb of Caucasians to 38.8 percent in 1979 when George Chaplin, editor in chief of the *Honolulu Advertiser,* wrote a summation of the decade just ending.

There was once again a one party system, he declared, but this time it was a Democratic party. Housing continued as the major problem. Chaplin noted that during the first half of the 1960s more single-family units than apartments were built, but for the past 15 years (1965 onward) permits for apartment units outnumbered those of single-family dwellings.

A state report indicated that in 1970 the average price of units sold, both one-family and condominiums, was $44,755. In 1975 it was $71,485, a 60 percent in-

*Below, the tinted tower and Polynesian style shops of the Hawaiian Village Hotel. Right, building and nature in Waikiki.*



Forrest Wilson

crease in five years. In 1978 the average sales price was $82,076, a 15 percent increase in three years. Rising interest rates added fuel to inflation in late 1978 and continued.

In 1960 there were 165,506 housing units in the state, and in 1979 there were 186,854, but many of these were condominiums rented to visitors on a weekly basis. The shortage of housing and soaring prices and dirth of mortgage money eliminated middle and lower-income people from the market.

Crime, Chaplin reports, kept pace in inverse proportion to the availability of moderate priced housing. On Oahu, population had risen 50 percent during the past 20 years, but rape increased 900 percent. There were 13 times more robberies, seven times more assaults, three times as many burglaries and thefts and double the number of murders.

A statewide poll of nearly 3,000 people aged 15 and over showed that 30 percent of them or their immediate family had been a victim of crime during the past 10 years. On Oahu the percentage was 40 and on the big island, Hawaii, it was 22.

The ecological revolt, an economic downturn and growing cynicism concerning the institutions of the society (weather, government, media, universities, the courts, medicine or the professions) were sparking racial tensions.

Among militant Hawaiians, the editor continued, there is a sense of outrage and dispossession. Among the Pacific islanders lately arrived there is a feeling of frustration and hostility at the difficulty in adjusting from a communal to a competitive society, especially for those with little formal education, few or no occupational skills and language difficulties.

Women's changing role is also different in degree rather than in kind from that of the rest of the country. Fifty percent of Hawaiian wives hold jobs outside the home, and within the next 10 years this percentage will rise.

In short, we find that the Hawaiian Islands, in the description of editor Chaplin, have finally achieved the status of a modern industrial state.

Yet, there is one element of the Hawaiian context that does not seem to have changed. To describe it we will return to the words of Somerset Maugham: "Hawaii is the meeting place of East and West . . . And if you have not found the romance you expected, you have come upon something singularly intriguing. All these strange people live close to each other, with different languages and different thoughts; they believe in different gods and they have different values; two passions they share, love and hunger. And somehow as you watch them, you have an impression of extraordinary vitality."

To experience Hawaii is to perceive the

John R. Hoke Jr., AIA

wonders of 25 million years of geological evolution and 1,400 years of stone age culture, as developers and their designers transform it into a Polynesian theme park, the culminating context of 200 years of Western achievement.

The world most visitors will experience and enjoy is man-made. The mountains, sea and magnificent views are background to this designed handiwork. The environment of the visitor industry is a man-made artifact and in no other context, except perhaps cathedrals, is design as significant. Every detail is contrived, fashioned to stimulate perceptual response. Theme parks are total design, with a vengeance.

The designed world the tourist enjoys in Hawaii today is the mutation from the environment shaped by sugar cane and pineapple, now shrinking as its lands are eaten away by developers. King Cane and "the Golden Fruit" usurped an island context shaped by merchants, ranchers and whalers as they had altered the milieu of the Hawaiian kingdom that had seized the lands and works of the Menehune, who may in reality have been Hawaiian pixies.

In terms of the built environment the Hawaiian archipelago is Western civilization in a petri dish, a landscape of great beauty and splendor being redesigned. There are few places on earth where those who profess responsibility for humankind's health, safety and welfare in the built environment can learn so much of the past and present so pleasantly. But no designer should dare forget that his building rests on volcanos. □

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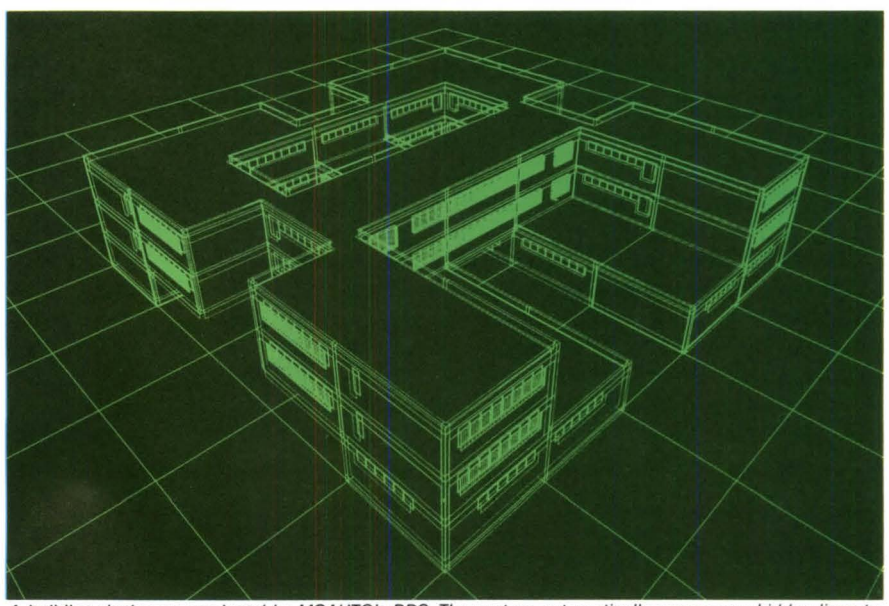

*A building design as produced by MCAUTO's BDS. The system automatically suppresses hidden lines to enable the designer to aesthetically evaluate a building's appearance in its early design stages.*

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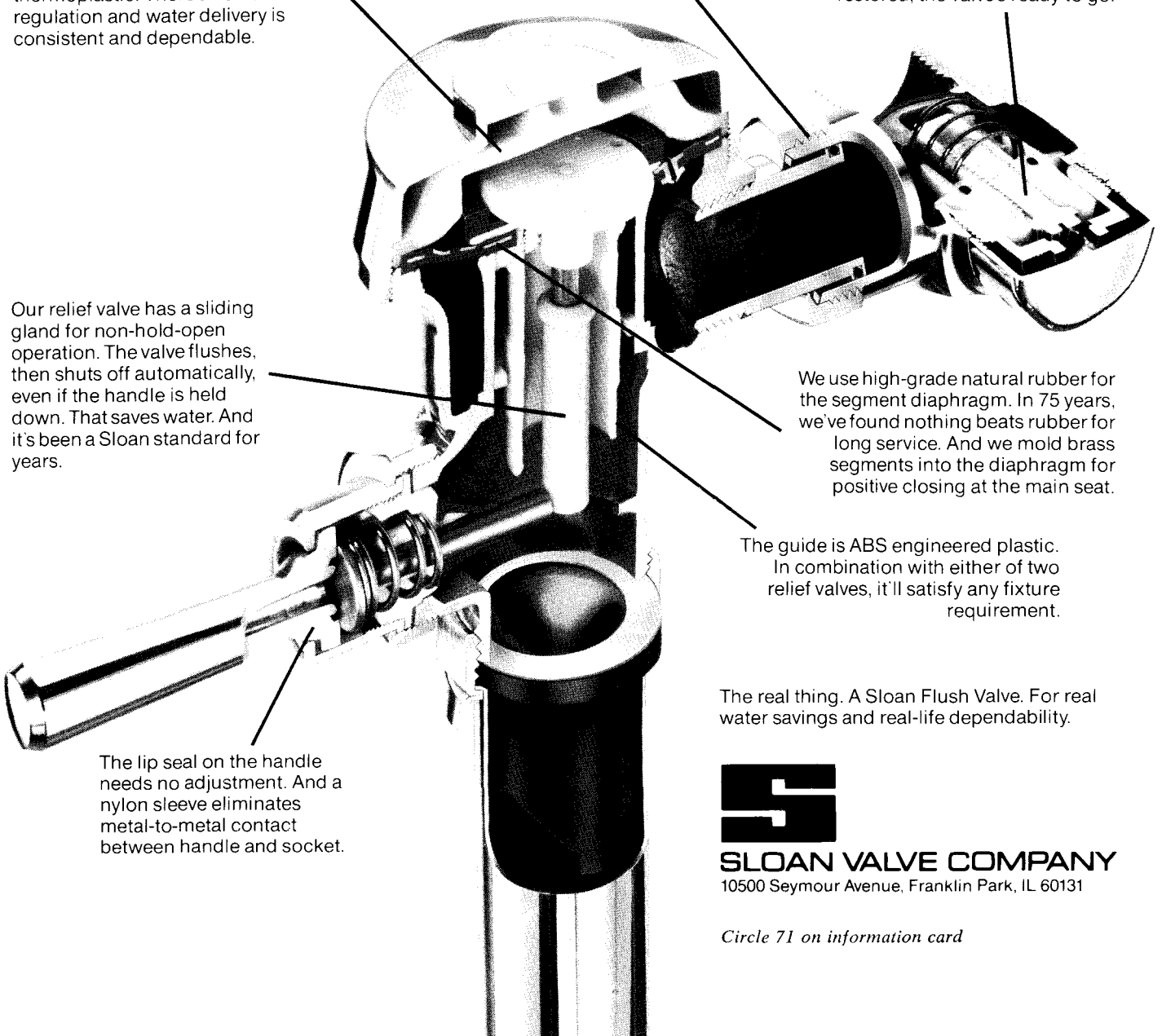

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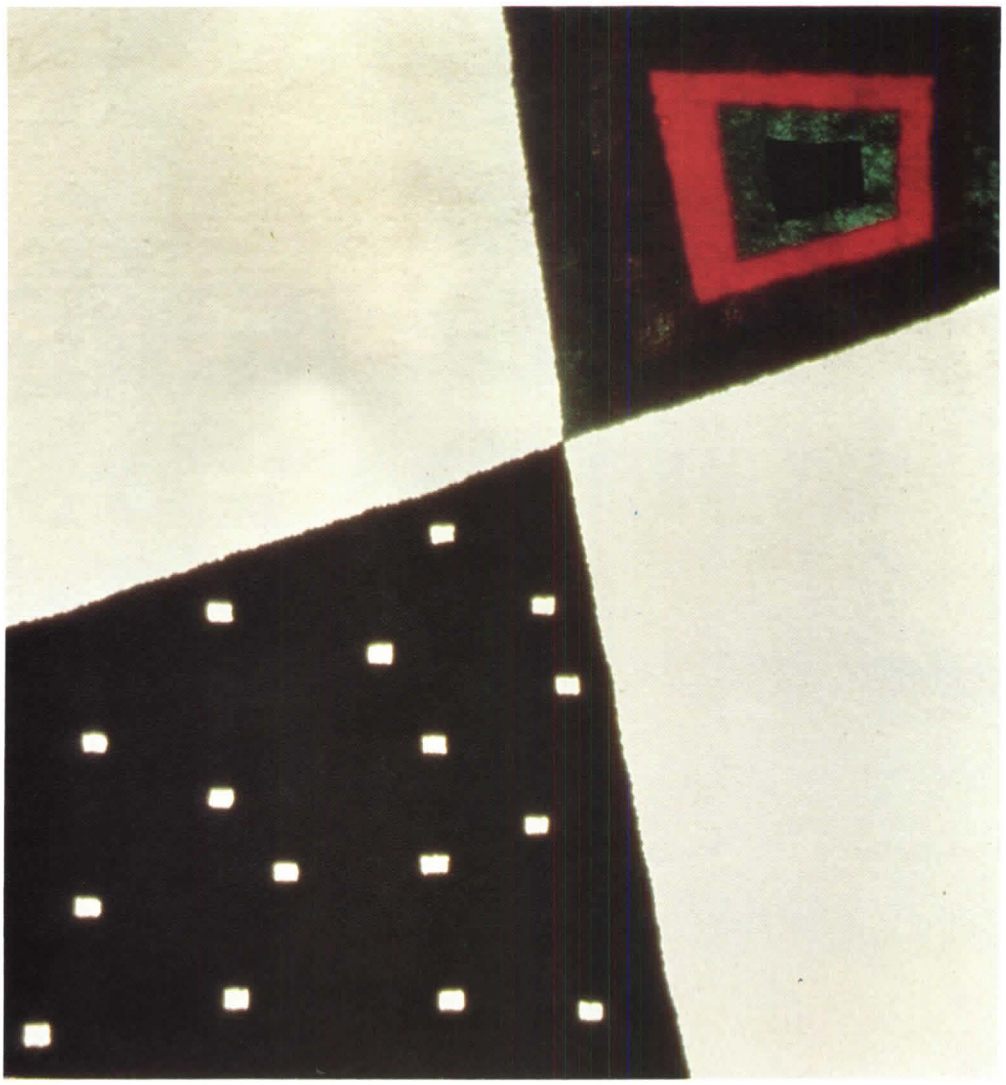
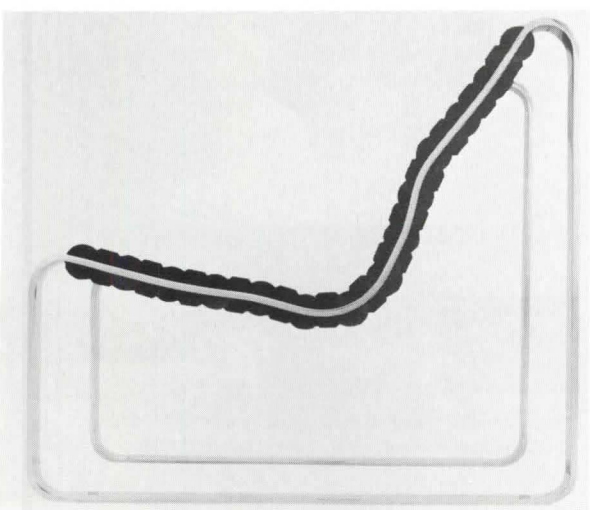


1

# Furnishings

*As resources for design and objects of design. S.A.*



2

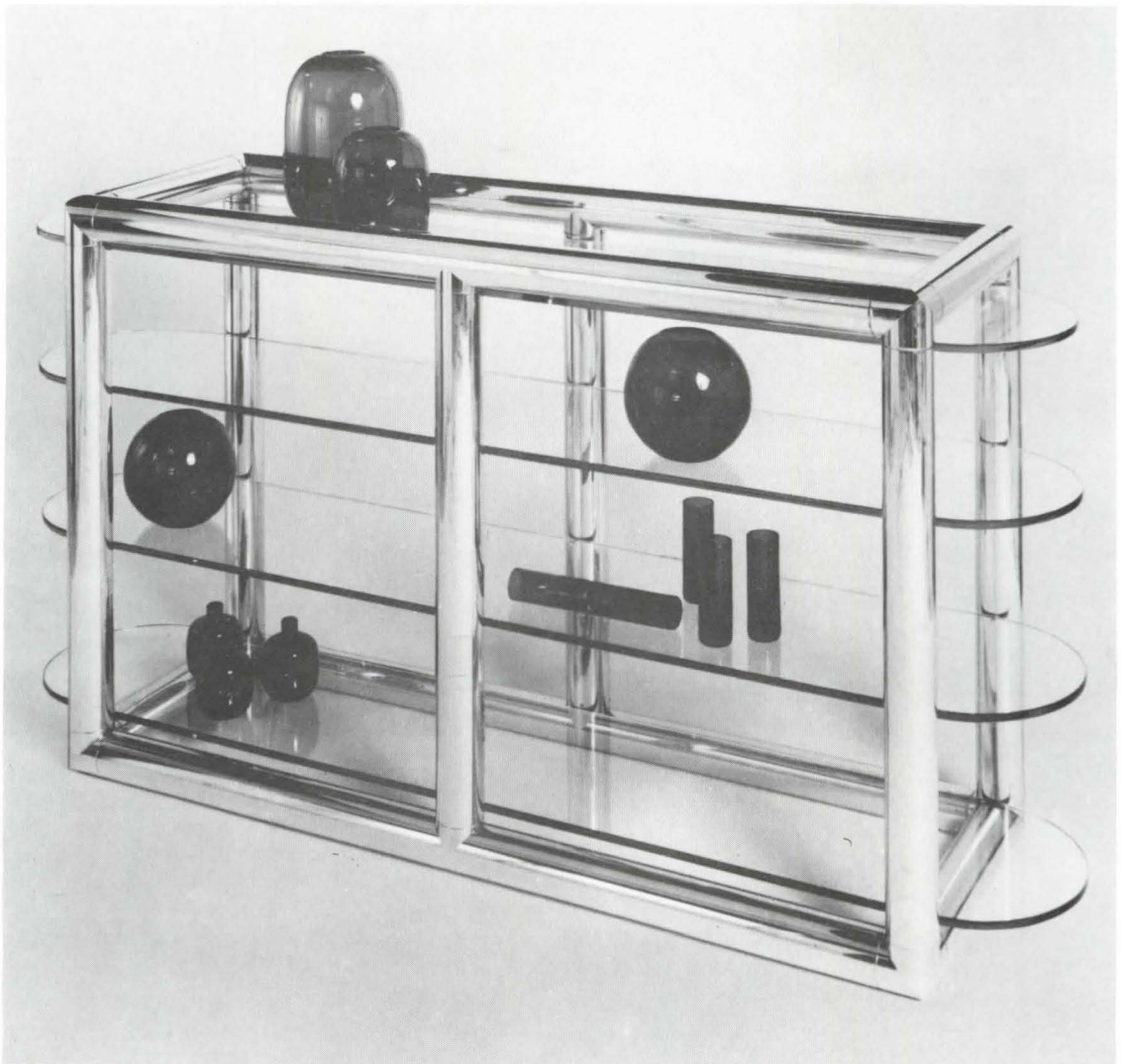
In 1972 the late Marcel Breuer, FAIA, designed a hooked rug called "Balance" that was included in his one-man retrospective at the Metropolitan Museum of Art. Later he produced a maquette for a tapestry based on the same design. A limited edition of 20 of these has now been produced (1). They are six feet, eight inches square, woven in India of wool pile and available through Modern Master Tapestries, Inc., New York City.

The XO chair (2) designed by Leif Blodee for the Kimball Office Furniture Co., has a seat and back of solid walnut strips bridging between frames of mirror-polished stainless steel. A companion piece can be used as either an ottoman or a table.

The chrome and glass etagere (3) is one of a variety of sizes and shapes available from Architectural Supplements, New York City. Some shelves have rounded ends, as shown; others are rectangular.

The Ribbon Rack (4), standing just under three feet tall and variable in length, is a one-piece tubular parking stand for bicycles. It is made of heavy gauge galvanized steel, comes in stainless, bronze and other finishes, and is said to use 50 percent less area than conventional bike racks. It has been given a national design award from the Industrial Designers Society of America. From Brandir Enterprises, Inc., New York City.

The 600 Inverness seating group (5) is a modular design by Brian Kane for Metropolitan Furniture. It includes chair, loveseat and sofa components in 28-inch wide increments that can be combined in linear and right-angled arrangements. □



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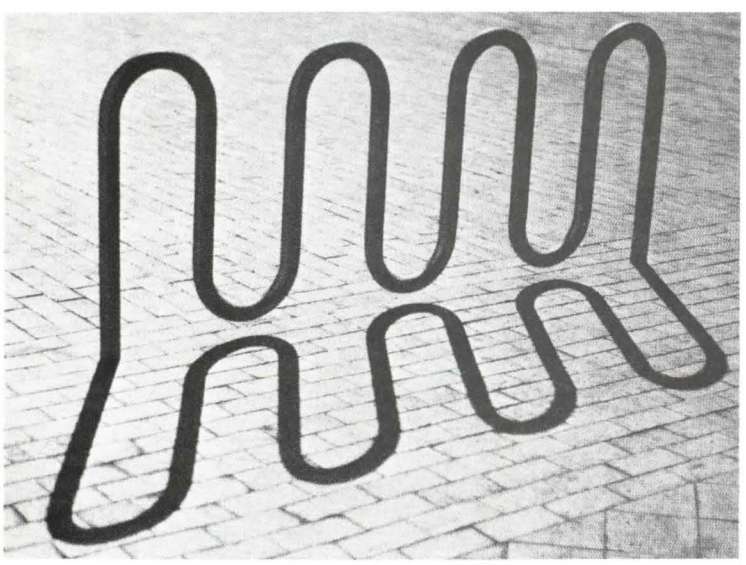

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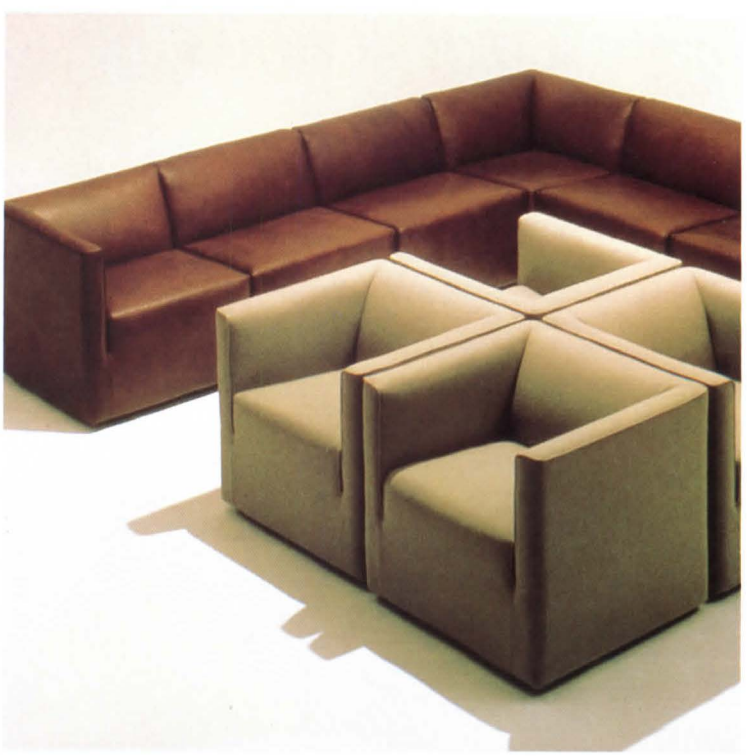

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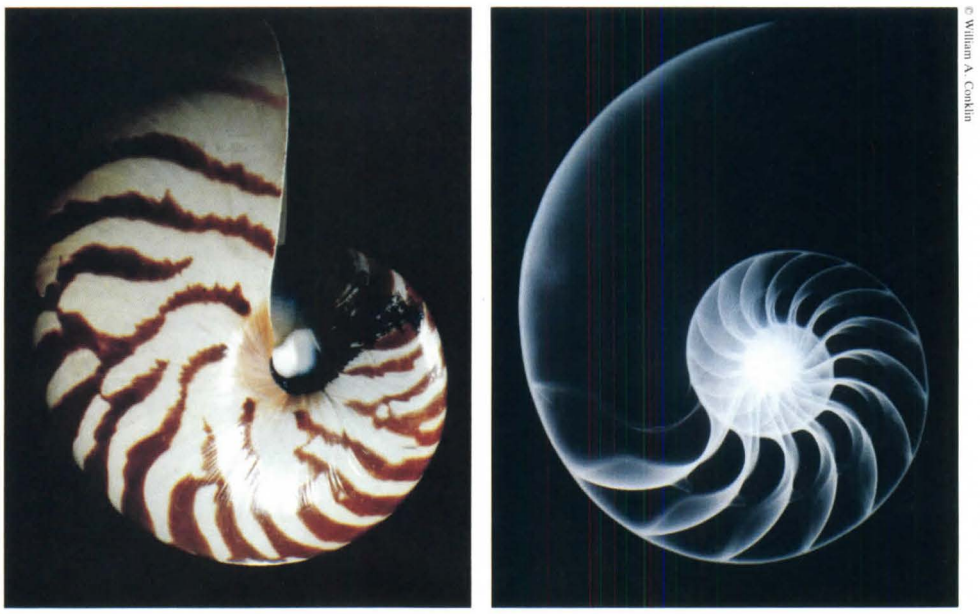

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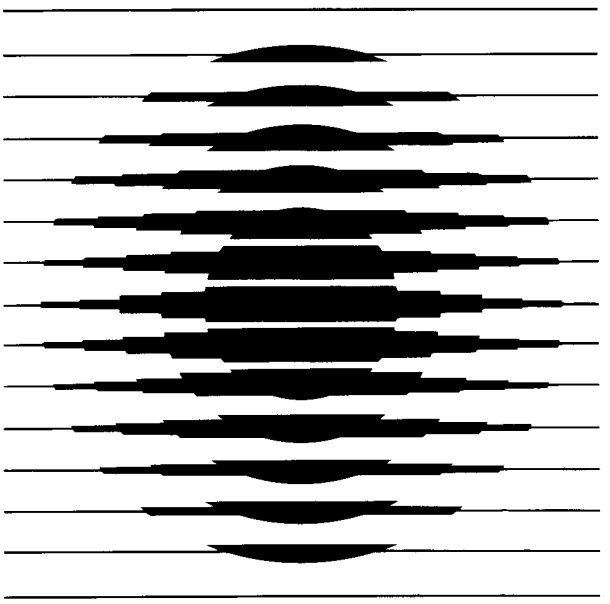

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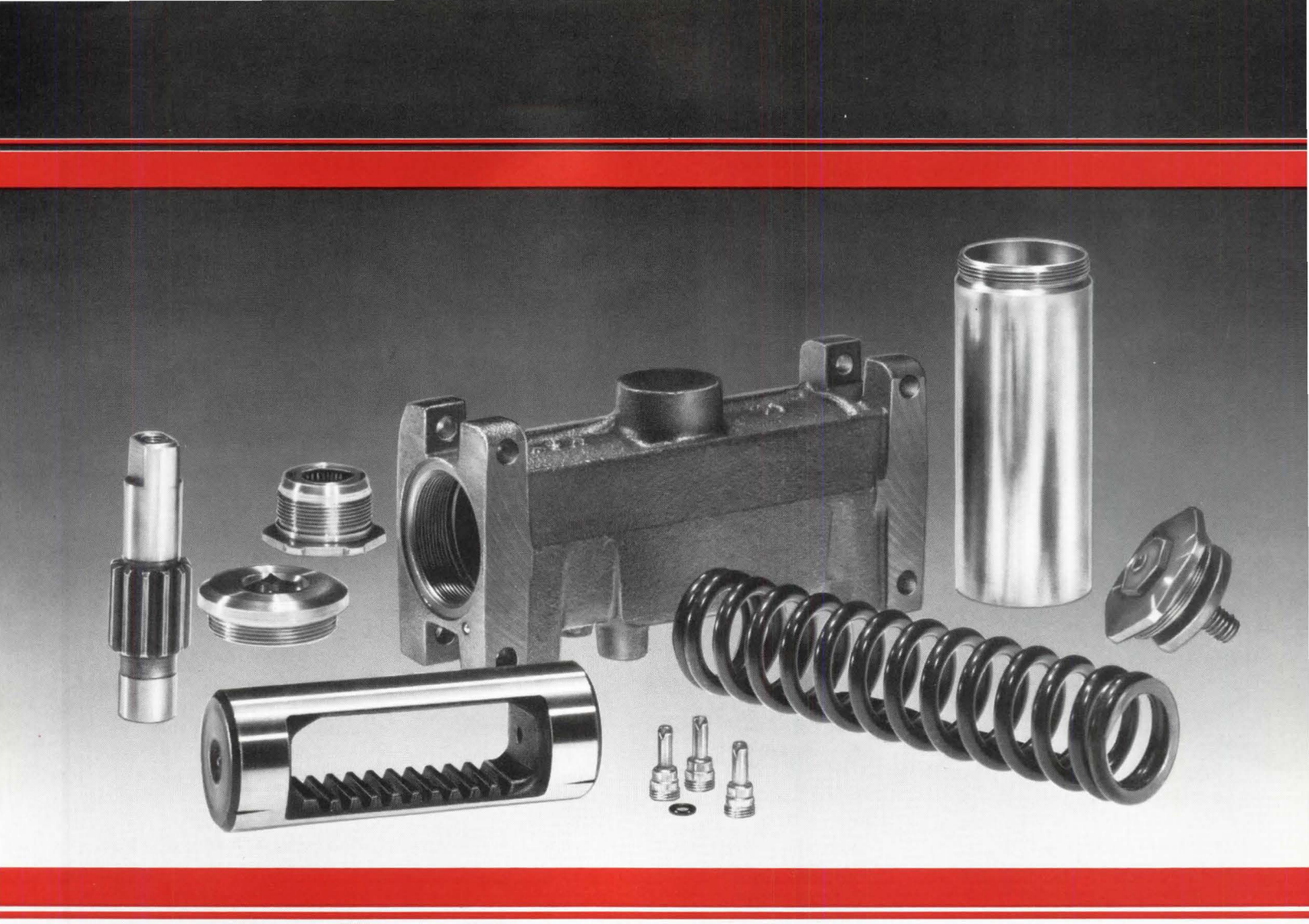

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**The Institute** *from page 52*
types of projects should receive competitions: projects of national or regional significance (47 percent of the AIA firms, 41 percent of the larger firms) and "memorials and buildings of unusual national significance" as allowed in the Brooks law (30 percent AIA firms, 41 percent larger firms). If an increase in federal competitions is required by future legislation, a minority of those responding (15 percent AIA firms, 8 percent larger firms) felt that nearly all federal building projects should receive competitions.

## AIA/PAC Opens '82 Fund Drive

The AIA political action committee, formed in 1980, this month begins its second fund-raising campaign. The goal this year is $50,000.

Last year's campaign raised nearly $12,000, which directors of the committee consider a respectable amount for a beginning effort but insufficient to provide much leverage in the national political arena. Heaviest contributors were in the states of Louisiana, Texas and Ohio.

The funds are used "to help in the nomination and election of Congressional candidates who have demonstrated their interest in and commitment to advancing the goals of the architectural profession." The recipients are chosen by the committee's 13 directors, chaired by former AIA president Charles E. Schwing, FAIA.

Schwing points out that contributions to the committee do not substitute for contributions to individual Congressional candidates by individual architects. What they do, he said, is make the architectural profession's political presence felt as a group.

Political action committees with the same purpose have proliferated since enactment of legislation providing tax credits for half the amount of a contribution (up to $50 on an individual federal income tax return and $100 on a joint return).

Contributions to the committee may be made only by individuals, not by firms, and must be made by personal check.

*News/Sequels*

## Kennedy Center Expansion

Preliminary approval has been given to revised plans for expanding Washington's Kennedy Center—this time underground. The new concept is a five-story, terraced structure spilling from the end of Edward Durrell Stone's 1971 building.

Plans accepted by Washington's Fine Arts Commission are specific, showing light wells and a sunken garden, a recital hall, theater, practice and classroom areas and parking spaces for 630 cars, but Kennedy Center officials say design, fund-raising and programming are still in early concept stages.

Earlier, a $40 million concept to extend each end of the center by two bays (see Jan., page 31) was rejected as too expensive. The new plans are by the Washington firm of Hartman Cox.

## Watt Blocks Viet Groundbreaking

Interior Secretary James Watt has blocked plans to break ground on the Vietnam Memorial to be built in Washington, D.C. Construction was to have begun early this month.

Watt announced his decision in letters to the chairmen of the Washington Commission of Fine Arts and the National Capital Planning Commission, saying he would withhold approval until the two agencies approved modifications in the design. Both approved the original memorial design.

The modifications, still to be worked out in detail, include placement of a flag pole and a larger-than-life statue of an American infantryman somewhere on the memorial site. Memorial sponsors agreed in principle to the modifications as con-

*continued on page 143*

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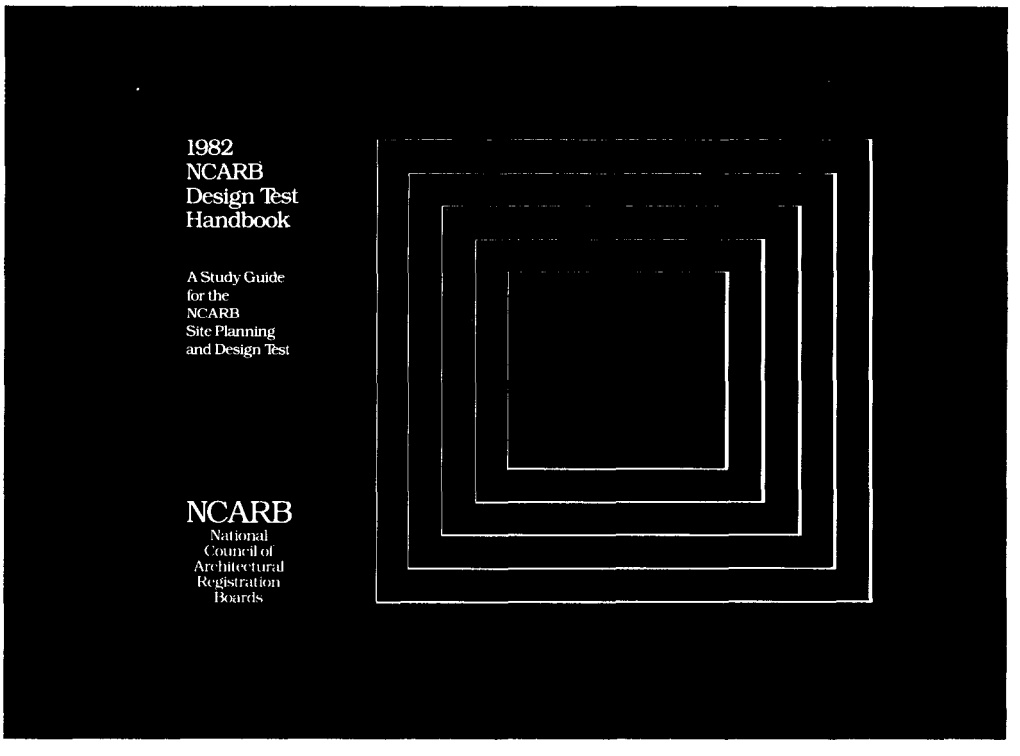


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