



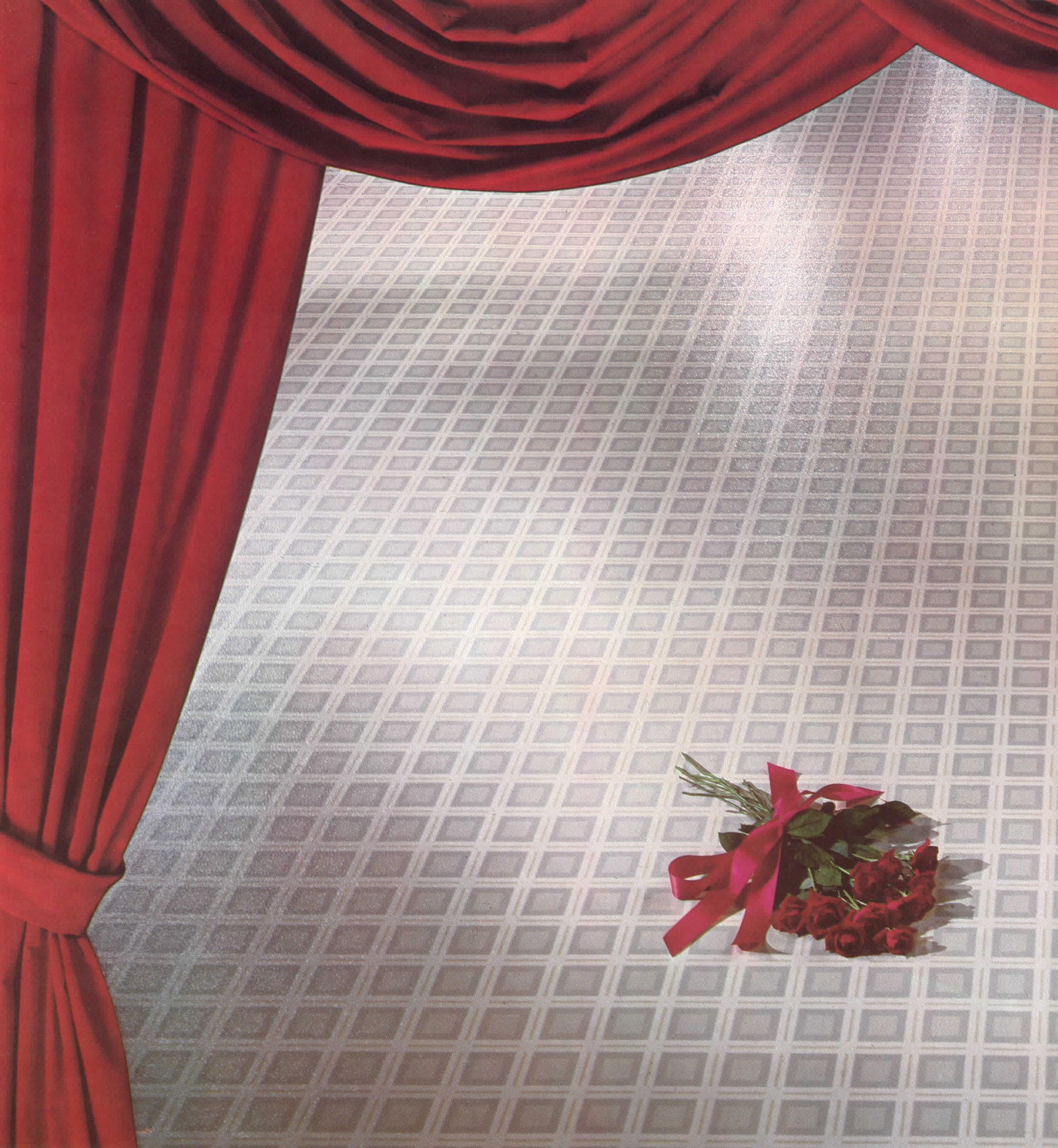
MADISON CIVIC CENTER, BY HARDY HOLZMAN PFEIFFER ASSOCIATES  
A REPORT FROM INDIA—CURRENT WORK OF C. M. CORREA  
VIGNELLI APARTMENT, BY MASSIMO AND LELLA VIGNELLI  
BUILDING TYPES STUDY: RESORT HOTELS  
FULL CONTENTS ON PAGES 10 AND 11

# ARCHITECTURAL RECORD

JULY 1980

7

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## Armstrong invited over 2,000 specifiers to judge

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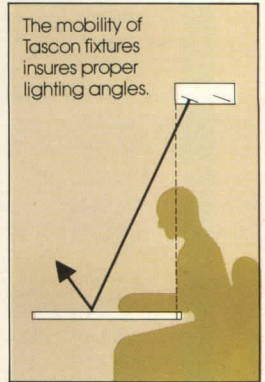
reflections some furniture-mounted task lights create.

And Tascon directs 20% of its light upwards to create visual interest and ambient illumination.

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**Performance Comparison – Conventional vs. Tascon**

Room size	30'x30'x9'		
Reflectances			
Ceiling	80%		
Walls	50%		
Floor	20%		
Task	#2 Pencil		
Lumens/Lamp	3150		
		<b>2'x4', 4-Lamp Recessed Troffer (prismatic lens)</b>	<b>2-Lamp Moveable Tascon Fixture (prismatic lens)</b>
No. of fixtures		15	9
No. of lamps		60	18
ESI (equivalent sphere illumination)		40 (80% area coverage)	40-60 (on work surface)
Classical footcandles (maintained)		95 (CU method)	90 (on work surface)
Watts/work station 100 sq. ft.		307	92
Watts/sq. ft.		3.07	.92



Circle 2 on inquiry card

## Letters to the editor

At first I was impressed that you would do a study on housing (RECORD, September 1979, pages 125-140). Then I was further impressed by the lead statement that two-thirds of the architectural profession is currently involved in housing, and that architects now accept housing as legitimate part of architectural practice.

But then I discovered that your coverage is very narrowly limited to those housing projects that comprise a very small percentage of the housing that is produced by architects. The projects shown are all luxury multifamily condominiums.

As one of the earlier architects in California or the nation to get involved with housing and planning concepts in a heavily creative way, I find it hard to buy this article as showing how architects influence housing, or are involved in it.

The truth is that we are faced with a housing problem of a size and nature that may be unprecedented since the early 1930s: over half the nation now cannot afford the housing being built, and the housing being built is so hampered by red tape, antiquated building methods, architectural eclecticism, and financial limitations that the best in planning, design and technology is not able to help solve the problems.

It is time that you, as the most reputable professional and technical publication, take some editorial leadership to help solve the problems. It is not the time to aid and abet the ostrich-like complacent attitude of the professional. Houses and housing have really been the cornerstones of every outstanding movement in the profession. It is not now the time to abandon the cornerstones.

Robert E. Jones, Architect  
La Jolla, California

But see also RECORD's March 1980 Building Types Study, "Low-Rise Housing," which focused on subsidized units for the inner city, migrant farm workers and the elderly.—Ed.

I would rather be known as an architect than as an architectural critic, and for my architecture than for my criticism. However, I cannot ignore the challenge offered by John Hejduk in the statement quoted on page 114 of your April 1980 issue.

Architecture cannot be two-dimensional, and to say that "I don't believe anybody can conceive a building in three dimensions" is to exhibit so narrow a view that I find it difficult to understand how it could ever produce architecture. Indeed, there are buildings which it seems to me would have been well nigh impossible to have been conceived in

any way but three-dimensionally—the Hagia Sophia, the Guggenheim and numerous others. I have never designed, and don't believe I could design, in any way but by three-dimensional visualization.

Drawing is, nonetheless, at least as basic to the architect as giving shots or taking temperatures is to the physician. Not only is rapid freehand sketching just as useful in skilled hands for three-dimensional investigation as model-making; it is also several times quicker and therefore on the same order of times more efficient. In perhaps 95 cases out of 100, drawing is equally effective as models in conceptualizing volume.

Once a designer has committed himself to a hard (ruled) line or a three-dimensional construction, he has an investment that is hard to view and evaluate objectively. On the other hand, a freehand line or figure on yellow thumbnail sketch paper represents a minimum investment that can be deleted, revised or refined instantly with a single swipe of kneaded rubber. Leave it there, shift the roll of paper over a bit, in three seconds draw a variation that can be visually compared with the first sketch, and *voila!* Instant feedback!

Moreover, approval from the client would be denied, in most cases, without graphic communication on a pretty high level.

Nevertheless, drawing must always be seen as the means, not the end. Even if it seems to me unlikely, it might be possible to produce good architecture following the premises Hejduk propounds. I just want him to accord me and what I perceive to be the great majority of architects the same tolerance for our view: that good architecture is essentially three-dimensional and that the processes for producing it—including design investigation and visualization by two-dimensional drawing—need to be in harmony with and servant to the three-dimensional reality of architecture.

Frank Orr, AIA  
Orr/Houk & Associates,  
Architects, Inc.  
Nashville, Tennessee

We were pleased, again, by your coverage of Landmark Center in St. Paul (RECORD, December 1978) and of the winners of the 1980 Honor Awards (May 1980).

However, the omission of credit in the later story to Winsor-Faricy as our associate architects in St. Paul is regrettable. It was surely the combination of our efforts that achieved the drama and fine detail that has made the project such a success.

Susan T. Steele  
Perry, Dean, Stahl & Rogers, Inc.  
Boston

## Correction

Structural engineers for Venturi Rauch and Scott Brown's Institute for Scientific Information (RECORD, May 1980, pages 97-100) were Keast and Hood Co. Cost control and project scheduling consultants were International Consultants, Inc. (ICI).

## Calendar

## JULY

**8-31** "Buildings Reborn: New Uses, Old Places," a photographic exhibit by Barbaralee Diamondstein illustrating new life given to older structures; at The Gallery at the Old Post Office, Dayton, Ohio. Sponsored by Lorenz and Williams Inc. Contact: Marilyn Shannon, 120 West Third St., Dayton, Ohio.

**23-20** Fifth session of The Women's School of Planning and Architecture, held at Hood College in Frederick, Maryland. Contact: WSPA, 2105 Erdman Ave., Baltimore, Md. 21218.

**24-26** The Stanford Conference on Design, sponsored by the Stanford Alumni Association. Contact: Stanford Alumni Association (415/497-2021).

## AUGUST

**17-20** International Conference on the Teaching of the Arts at Advanced Levels; to be held at the University of Quebec at Montreal. Contact: General Secretary, Symposium 80, University of Quebec at Montreal, P.O. Box 8888, Station A, Montreal, Que., Canada H3C 3P8.

**20-25** ASID 1980 Annual Conference and International Exposition of Designer Sources, "Design Power 1980/Join the Switch to Creative Energy"; at the New York Hilton Hotel, New York, N.Y. Contact: Ed Gips, Associate Director, American Society of Interior Designers, (212/586-7111).

**Through September 1** Exhibit, "Across the Nation: Fine Art for Federal Buildings, 1972-1979," at the National Collection of Fine Arts, Renwick Gallery, Washington, D.C.

**Through September 21** Exhibit, "Architecture: Practice and Pedagogy," presented by Syracuse University's School of Architecture; at the National Academy of Design, 1083 Fifth Avenue, New York, N.Y.

## SEPTEMBER

**3-5** Conference, "Community Renewable Energy Systems: Solar for the Cities," sponsored by the Solar Energy Research Institute, Western SUN Regional Solar Energy Center and the Department of Energy; to be held in the Seattle Center, Seattle, Washington. Contact: The Solar Energy Research Institute, 1617 Cole Blvd., Golden, Colo. 80401.

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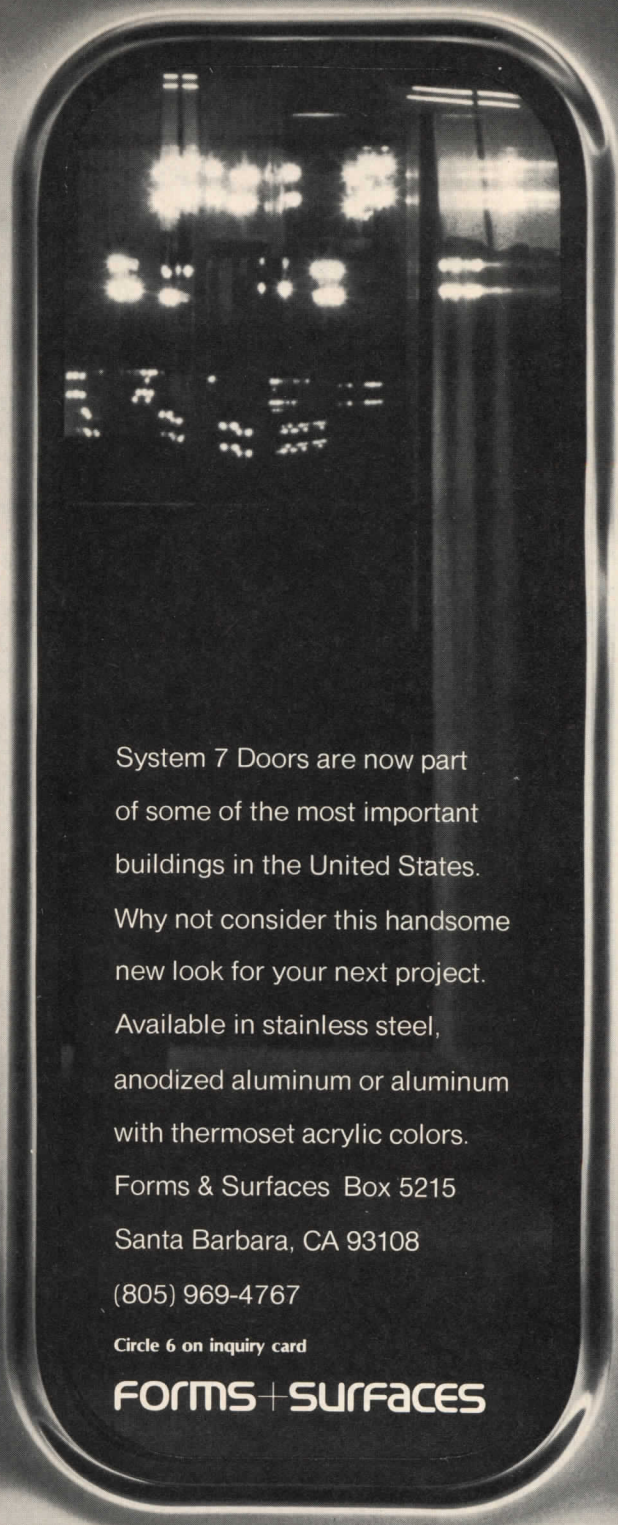
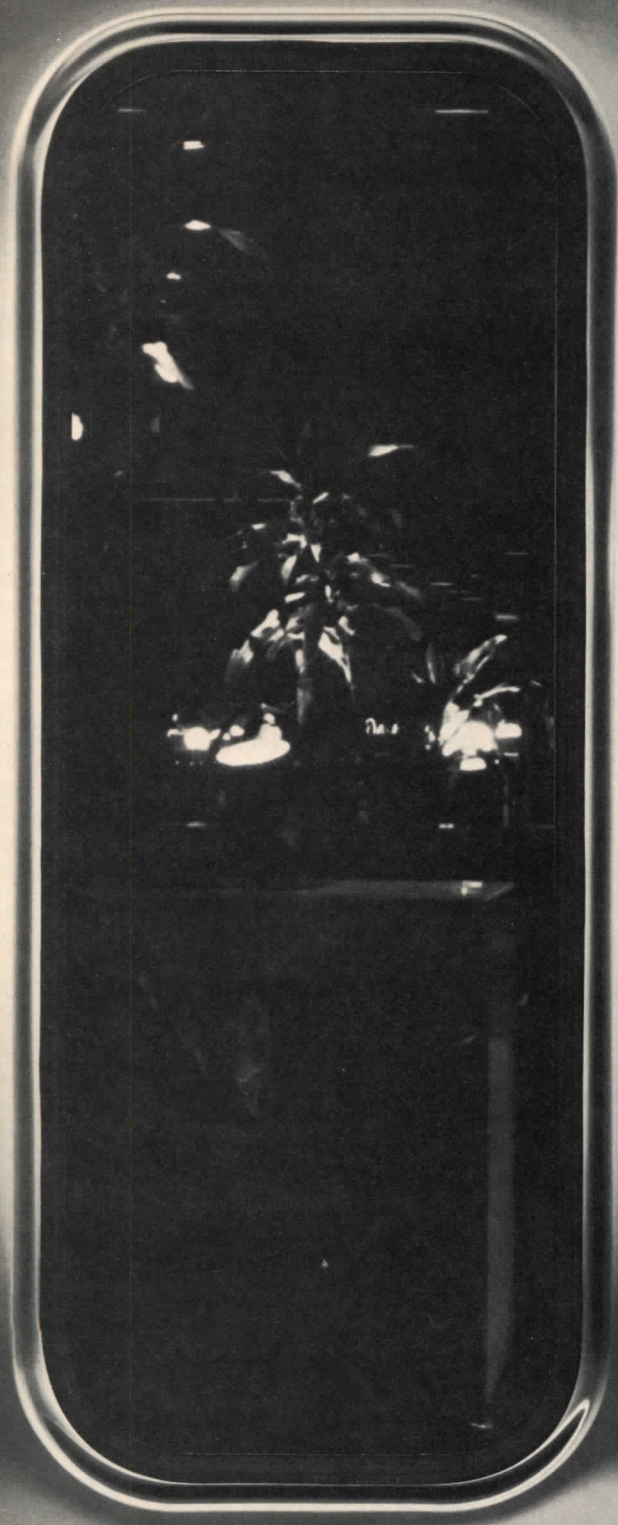
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## A sad day for professionalism: architects will now have a *voluntary* code of ethics

The most important action taken by the delegates at last month's AIA convention in Cincinnati is contained in a very short (and in my opinion tragic) resolution: "Resolved, that the delegates recommend that the Board of Directors, by a majority vote, adopt a voluntary Statement of Ethical Principles to replace the current Code of Ethics and Professional Conduct." The vote was 1,280 to 801. The AIA Board will now produce this new voluntary statement of ethical principles (and isn't *that* a contradiction in terms), vote to accept same (it hopes sometime this summer), and thus the mandatory Code of Ethics and Professional Conduct will slide into history. In my view (and in the view of many, but apparently not a majority of architects), a concept that has long separated professionals from entrepreneurs will also slide into history. This was done with less debate than marked the matter of raising the Institute dues by \$15.

It needs to be said that the pressures by the Justice Department on the AIA to eliminate the mandatory Code of Ethics have been fierce, and have continued unabated for nearly 10 years. Mostly under the aggressive prodding of the Justice Department (which constantly sees restraint of trade in what honorable men long have believed to be rules intended to protect the public interest), the Code of Ethics has been steadily diminished:

- The AIA itself (this was not a Justice Department action) decided some years ago to permit architects to take an ownership interest in a project, and then to participate in the "experiment" in design-build. This decision—which many viewed as a major assault on the concept of professionalism—grew out of the demands of many members who wished to practice (and some who *were* practicing) on a design-build basis on the grounds that the market demanded it.

- The AIA abandoned a prohibition of fee competition in 1964. The consent decree of 1972 resulted in the abandonment of any "policy, position, or ethical standard suggesting that it is unethical to submit fee quotations or engage in price competition."

- Under pressure of a Supreme Court ruling that professionals have a constitutional right to advertise their services, the AIA changed its rules to permit limited kinds of advertising, and feels it could not enforce its current remaining restrictions.

- Similarly, the AIA abandoned its code on competitions—replacing it with voluntary

guidelines—in 1976, and repealed the supplanting rule when, last July, Judge John Sirica held that the rule violates the antitrust laws, based on the holding by the Supreme Court in the National Society of Professional Engineers case that any ethical standard that has an adverse impact on competition is in restraint of trade.

- Finally, many of the other rules of the Code have been subject to prodding by Justice, and AIA counsel are wary about their enforceability.

Against this background, the task force set up to review Institute Ethics and Policies just after the Sirica decision unanimously voted for adoption of a voluntary code of ethics, arguing as follows (excerpted from the background information provided delegates):

"1. Because of legal decisions, the only way AIA can retain meaningful statements . . . is through voluntary standards.

"2. Mandatory standards require the removal of all ethical statements which may cause legal problems, so enforcement is of little value. . . .

"3. One purpose of ethics is to communicate AIA's ideals to the public. Voluntary ethics would give AIA the greatest opportunity to do this, whereas mandatory statements would be highly restricted.

"4. Enforcement is not the primary reason for ethics. . . .

"5. Voluntary standards would be the safest legally.

"6. With voluntary ethics, AIA's resources and energies could be applied to other endeavors instead of constantly defending a mandatory code. . . .

"7. With a voluntary code, AIA would still maintain the right to discipline a member who violates state licensing laws or commits a felony. . . .

"8. Members want to be respected by their peers, and voluntary ethics will be observed by most members.

"9. A voluntary code has a positive outlook and is a collective view of individual responsibilities. The threat of a mandatory code is negative in nature.

"10. Past history indicates that AIA's ethics have not been enforced to any great extent. . . . Strict rules always can be circumvented or avoided; AIA's time would be better spent focusing on the spirit and ideals of ethics.

"11. Voluntary ethics would provide the

broadest and strongest set of statements members could make in dealing with each other, in guiding young architects, and in relations with the interested public."

And so, apparently on these arguments, the delegates voted 1,280 to 801. And the deed, for better or worse, is done.

### Some final thoughts on and questions about what happens now. . . .

As I indicated at the beginning of this piece, I think the decision to abandon mandatory standards is tragic. Understandable, sure. But still tragic. Nonetheless, it is done. And so the question is: At what level will the new voluntary Statement of Ethical Principles be set? As shown to the delegates in the background information, the new Statement essentially changes all the "shalls" to "shoulds"—instead of a statement that "Members *shall* not have any significant undisclosed financial or other interest, or accept any contributions or gifts," the new statement might read: "Members *should* not have any significant undisclosed financial interest. . . ." ("Thou should not steal.")

It seems to me that in writing the new voluntary standards, the Board should do much more. It seems to me that if the new Statement of Ethical Principles is to have any meaning, it should be a statement of very high principles. I'd like to suggest a return to some of the old principles (especially since they're only "shoulds" and unenforceable anyway). How about, for example, "Should not advertise"? "Should not take part in design competitions not approved by AIA"? "Should not supplant another architect"? Or "Should not submit free sketches or offer free services on a contingent basis." Do we dare go back, if we believe in it, to saying right out that architects "should not submit fee quotations or engage in price competition"? That would be gutsy.

Let it be said that I don't think there will be any enormous impact on architects from this change. Most professionals will perform in a professional manner with or without a mandatory code. But there *is* the matter of principle—you cannot be "mostly professional" any more than you can be "slightly pregnant." Standards everywhere are descending, under duress, towards the lowest common denominator—and maybe that is what the public wants of architects and other professionals. And *that* is tragic.

—Walter F. Wagner Jr.

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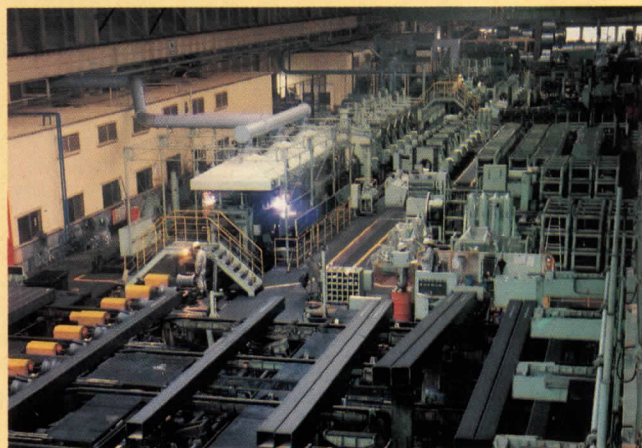
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## AIA Convention: ethics, dues, more local involvement

This year's convention was a relatively calm and peaceful affair. Nonetheless, some major decisions were made. The most important was the decision to abandon, after years of struggle with the Justice Department over "restraint of trade" issues, the Institute's mandatory Code of Ethics. In its place, the AIA Board has set itself the task of writing a voluntary Statement of Ethical Principles. Dues were increased (indeed by more than the Board asked), and the debate over dues seemed a vote of confidence in Institute programs. Other resolutions clearly directed the Board to involve local, state and regional organizations more deeply in planning and in some of the Institute's important national programs. On these pages: more details on these actions, and a brief rundown on the Institute's new officers.

The most important event of the 1980 AIA convention—held in Cincinnati June 1st through 4th—was the decision to abandon the Institute's mandatory Code of Ethics and Professional Conduct and replace it with a voluntary Statement of Ethical Principles. In recent years, rulings by the Justice Department and the Supreme Court have brought professional codes of ethics (not just AIA's) under increasing fire, on the grounds that the codes restricted competition and/or were in restraint of trade. The Institute has, in recent years, abandoned or modified its stands prohibiting design-build, fee competition, advertising of professional services, undertaking competitions not approved by AIA, and supplanting of another architect. The resolution passed by the delegates, by a 1,280 to 801 vote, requires that the AIA Board of Directors write and adopt a voluntary Statement of

Ethical Principles to replace the current Code. Such a system of voluntary standards would have no element of enforcement or compulsion, and it would be the responsibility of the individual AIA members to decide for themselves whether to abide by those principles.

An amendment that would have called for enforcement of the mandatory code in those areas not subject to legal "restraint of trade" rulings, and the use of voluntary standards in those areas, was defeated early in the debate.

The AIA Board now intends to write the statement of voluntary standards, with input from its Legal Decision Impact Task Force and other members. As proposed at the convention, the changes would essentially change the imperative (shall) statements in the Code, to "should," though there was some sentiment for toughening up the statement on the

grounds that it was voluntary. The Board hopes to have the new statement written this summer, though many delegates expressed doubt it could be done that quickly. No further membership vote is currently scheduled, since the Board is empowered to make the change.

For further details on the change, and comment, see the editorial on page 13.

### Robert M. Lawrence of Oklahoma, long-time Board member, is the AIA president-elect

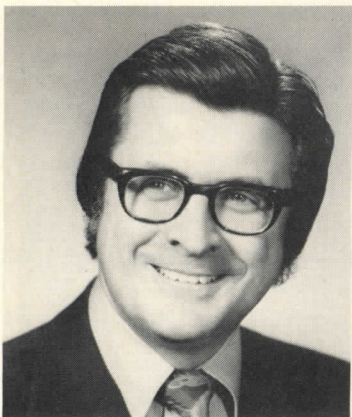
Mr. Lawrence (see photo below) was elected first vice president and president-elect; he will assume this office in December, and will become AIA president in December 1981. R. Randall Vosbeck, the AIA's current first vice-president, will succeed Charles E. Schwing as AIA president this December.

Lawrence, who is completing his second term as AIA secretary, previously served a three-year term on the AIA Board as director from the Central States Region. He currently chairs the Legal Decision Impact Task Force which brought to the Convention the question of mandatory vs. voluntary ethical code.

The new president-elect is a principal in the 14-member architecture/engineering firm of Noftsger, Lawrence, Lawrence & Flesher of Oklahoma City. He is a graduate of Oklahoma State University.

Elected national vice-presidents were Robert Broshar of Waterloo, Iowa, George M. Notter Jr. of Boston, and Ray K. Parker of

*continued on page 37*



Robert M. Lawrence, FAIA, of Oklahoma City, was elected first vice president/president-elect of the AIA. He will assume office in December 1980 and become president one year later.



AIA President Schwing (right) presents the 25-year Award for Lever House to (left to right) Thomas Carroll of Lever Brothers, and architects Gordon Bunshaft, Nathaniel Owings, and John O. Merrill.

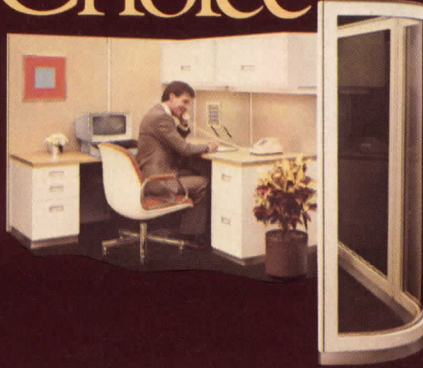
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tax-exempt bonds or other means," and urging further that "special programs be instituted to sustain housing in periods of tight money."

- Voted down a resolution seeking the development and promulgation of a national roofing-design standard or guideline—on the grounds that such guidelines or standards were properly the province of the code-making bodies.
- Tabled a resolution urging a "study of the means and methods to promote the selection of AIA architects by clients."
- Passed a resolution requiring the Board to "study the feasibility . . . to initiate a public relations effort, in concert with other professions, to communicate the position that the establishment of ethical standards, and the embracing of same by a profession, is, in fact, in the public interest." The importance of this public relations effort is, of course, brought into question by the delegates' decision to abandon mandatory standards in favor of voluntary standards.
- Passed a resolution to encourage the National Science Foundation to "expeditiously investigate the urgent problems embodied in decommissioning nuclear power plant facilities"—after revising the original resolution which would have required an AIA task force to undertake the study. This vote is, of course, in sharp contrast to resolutions in past years, when any mention of nuclear power quickly developed into a strong pro and con argument.

#### **On the matter of dues, the Board got more than it asked for**

The AIA Board asked for a \$15 increase plus a \$5 increase in the legal-defense fund. This would have meant that the dues for a regular member (beginning with the third year of AIA membership) would have increased from \$105 (\$100 plus \$5 legal fund) to \$120 (\$110 plus \$10 legal fund).

That resolution was amended by past president Elmer Botsai, who proposed a larger increase to \$140 (\$130 plus \$10). He argued that while there was criticism about dues, no one seemed to be able to agree on just what programs should be cut. Another delegate seemed to clinch the debate when he said that he had "spent \$15 on a not-very-good alumni lunch yesterday" and thought, therefore, that the dues increase was not only essential but reasonable. The Botsai amendment passed despite a fairly strong "No" vote; and the amended resolution then passed the convention with a strong voice vote.

Supplemental dues were changed from \$155 less \$85 credit for members to \$160 less \$90 credit for members—thus there is no change in the net amount of supplemental dues for members.

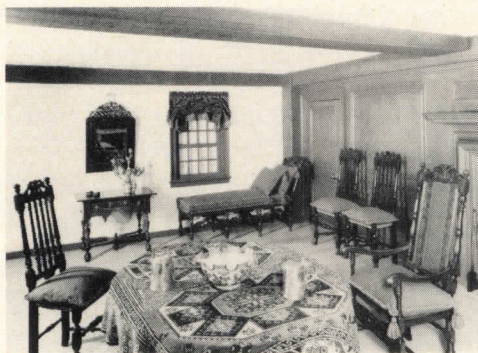
The dues for associate members were changed as follows: \$15 the first year, \$25 the second, \$35 the third, \$45 the fourth, and \$55 (the dues for a first-year regular member) the fifth and thereafter until the associate becomes licensed.

#### **New American Wing opens at Metropolitan Museum**

After five years of construction, the first installation phase of the new American Wing at the Metropolitan Museum of Art was opened on June 11. The new building contains 150,000 square feet and consists of a three-floor structure, built around the old (1924) American Wing, and a glass-enclosed sculpture garden court.

The new wing is a masonry, steel and glass structure housing galleries for paintings, sculpture, the decorative arts, and temporary exhibition space. Period rooms, dating from the 17th through the 19th centuries—which have been on exhibition in the old wing—have been refurbished and reinstalled. Other period rooms, of the 19th and early 20th centuries, are being prepared, and scheduled for opening at a later date.

The Charles Engelhard Court (photo right) is an airy, glass-roofed garden enclosure with a reflecting pool, landscaping, and a glass curtain wall looking out on Central Park. The court joins the wing at the south and measures 12,000 square feet and 70 feet from floor to skylight. Contained in the court is a selection of 19th and 20th century sculpture and the 1822-24 facade of the United States Branch Bank, originally located on Wall Street. The Engelhard Court also holds the loggia designed by Louis Comfort Tiffany for the entrance to his Long Island home, and a pair of Louis Sullivan cast-iron staircases



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An intensive five-day professional course for architects, environmental designers, and physical planners now working or planning to work in Muslim countries "will prepare participants to transcend Western experience" in their design work, and expose them to design approaches sensitive to local traditions, cultural factors, construction techniques, and ecological considerations.

Curriculum development for the course and the background presentations are financed by The Aga Khan Program for Islamic Architecture at Harvard and MIT. "Designing in Islamic Cultures" is intended to be the first in a series of offerings that will address topics of importance to design professionals working in Islamic countries, and stress the inter-relationship among architecture, physical design, and the cultural heritage of these countries.

The course will start with a summary of aspects of the Islamic countries' ecology and

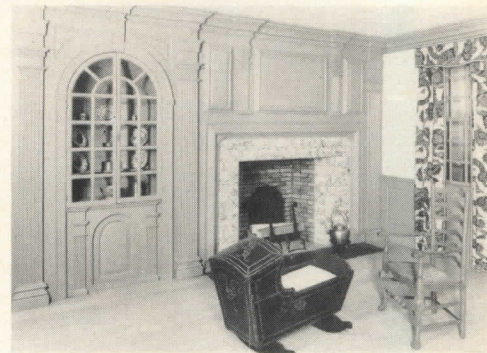


*Henry Groskinsky*

designed in 1893 for the Chicago Stock Exchange.

The new American Wing and Charles Engelhard Court were designed by Kevin Roche John Dinkeloo and Associates. Arthur Rosenblatt, vice president at the Museum for Architecture and Planning, was in charge of the development of the project.

The over-all cost of the first phase of the new American Wing is about \$18 million.



culture that are particularly relevant to designers. This will be followed by the presentation of two case studies—King Abd el Aziz University in Mecca and the Center for Management Studies in Teheran—which illustrate recent attempts to create built environments that answer modern educational needs while respecting ecological and cultural factors particular to their location.

The second half of the course involves a series of sketch design exercises. Participants will be given a "client's brief" containing all physical, socio-cultural, and programmatic information. The projects will be presented to the class and reviewed by the faculty panel.

"Designing in Islamic Cultures" is scheduled for August 18-22 at MIT, and the cost is \$400. For more information contact: Michael Joroff, MIT Laboratory for Architecture and Planning, Room 4-209, 77 Massachusetts Ave., Cambridge, Massachusetts 02139, 617/253-1345.

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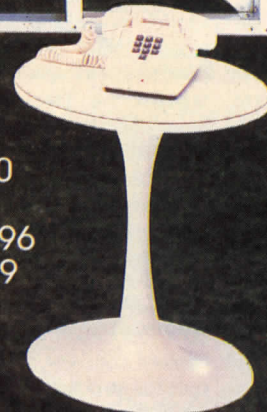
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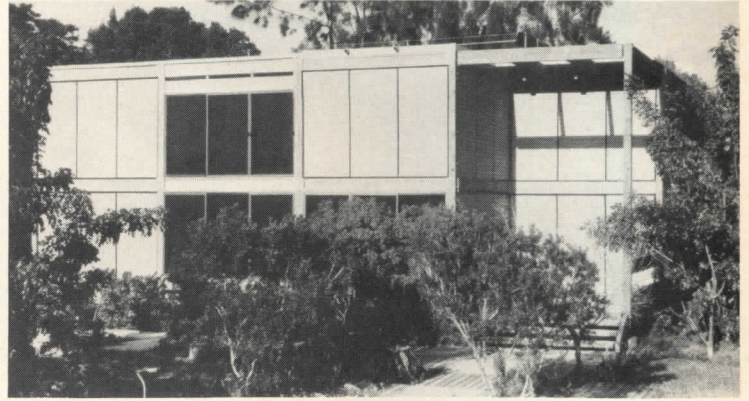


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## Three architects win top honors in Plywood Design Awards Competition

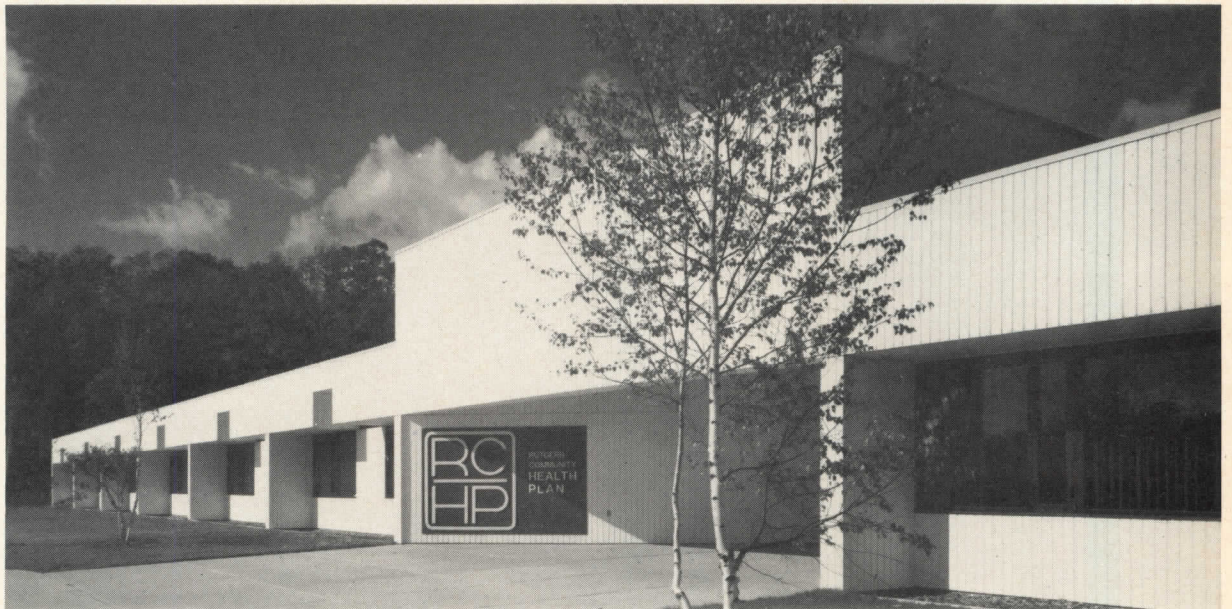
The American Plywood Association and *Professional Builder & Apartment Business* magazine, co-sponsors of the ninth annual Plywood Design Awards Program, have awarded three projects top honors and ten others citations of merit. The categories were: residential/single-family, residential/multifamily, commercial/institutional and vacation homes. The three \$1,000 winners are shown here with comments from the jury; no vacation home awards were given. The winners of the ten citations of merit are: Silver Residence, White Plains, New York, Gruzen and Partners, architects; Logan Residence, Tampa, Florida, Rowe Holmes Associates Architects, Inc., architects; Goodwin Residence, Jacksonville, Florida, Goodwin & Associates, architects; Franco Residence, Los Angeles, California, Rafael Franco, architect; The Oaks, Walnut Creek, California, Land Development Systems, Inc., architects; Findley Place Housing, Minneapolis, Minnesota, Williams/O'Brien Associates, Inc., architects; Russian Hill Townhouse, San Francisco, California, Donald MacDonald, AIA, architect; Cooper Field Bathhouse, Trenton, New Jersey, John P. Clarke, AIA, and Fred Travisano, AIA, architects; San Luis Obispo County Airport Fire Station, San Luis Obispo, California, Patrick Sullivan Associates, architects; and Office Building for Thomas Luckey Construction Company, Inc., Thompson Architectural Group, Inc., architects.



**Sieger Residence**, Miami, Florida; Charles Sieger Architectural Offices, architects. The jury commented: "A disciplined structural system combines plywood siding with careful detailing and interesting spaces to produce an informal feeling in this rather elegant design.

The limitations of a rigid type structural system are overcome by skillful use of spaces to open light from above. Moving from one level to another through these cubical kinds of definitions would make the house an exciting place to live."

**Health Center for Rutgers Community Health Plan**, New Brunswick, New Jersey; Henry Horowitz, architect. According to the panel of jurors: "Here is an excellent demonstration of total plywood expression. The integration of clerestories into the hallway gives a sculptural form to the fascias. Interior use of skylights and windows provide a delightful environment. The vertical lines in the plywood around the total perimeter carry out a strong and unifying theme."



**The Orchard**, Citrus Heights, California; Fisher-Friedman Associates, AIA, Architects & Planners, architects. The 3-man jury noted: "Scale of buildings and development of site were dovetailed to create a handsome and inviting living environment. There is a strong order and connection made between the different rectangular elements. The floor plans are more innovative than most multi-family dwellings and showed tremendous respect for the site and for each other. The inter-relationship of the community building with the apartments was well executed."



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**UNITED STATES GYPSUM**  
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## Exploration and invention

ART NOUVEAU ARCHITECTURE, edited by Frank Russell; Rizzoli International Publications, \$65.

Reviewed by Meredith L. Clausen

Architects in the latter 19th century were oppressed by the insufferable weight of tradition. Bound by the expectations of a conservative public as well as by their own academic training, they were inhibited from innovating, esthetically and structurally. Pressure—both internal and external—mounted, as dissatisfaction with the sterile, limited repertoire of historical forms grew, and the rapidly changing social and economic situation compelled the creation of new building types based on modern structural techniques. Architects floundered about without direction or conviction as the classical principles of architectural form they had traditionally relied on became less certain, suddenly to be pulled out altogether from beneath them, with the triumphant success of engineered structures at the Paris Exposition of 1889. The breathtaking new effects of space, light, and most of all, architectural form based not on mass but on fragile, skeletal elements of steel, finally forced architects into rethinking the basics of their art. Catalyzed by this new esthetic, progressive architects suddenly burst forth in an explosion of creative release, producing an architecture infused with a new spirit of modernity, marked by the exploration of space, structure, light, color, and expressiveness, an architecture differing wholly from the academic traditions of the past. This burst of creative energy, characterized by an inventiveness long kept in tow, sparked simultaneously throughout the West, across the Continent, in the British Isles, and United States.

Long dismissed by functionalists of the Modern Movement as a transitional, largely decorative style, Art Nouveau is in the throes of being reassessed. Practitioners today are now showing keen interest in the turn of the century experimentation in ornament, spatial effects, and, most recently, color. Amid the flurry of recent publications feeding this interest, this Rizzoli publication on Art Nouveau architecture is one of the best. It is for the most part an excellent introduction synthesizing much of the recent research in the period.

Meredith Clausen is an assistant professor of architectural history at the University of Washington, and is currently working on a book about the Samaritaine Department Store in Paris.



Printer's house, by Lucien Weissenburger, 1904.

Well-illustrated with plans, line drawings, and photographs, many of them in color, the text reads easily while also satisfying demands of historical scholarship.

The subject is immensely complex. Underscoring this complexity—as much ideological as formal—editor Frank Russell has wisely chosen to divide it into separate chapters, contributed by well-known authorities on Art Nouveau or its counterpart in different countries. These essays vary in length and quality, providing a diversity of points of view, often contradictory, which adds considerably to the interest of the whole.

Roger Guerrand, whose publications on Art Nouveau fifteen to twenty years ago remain invaluable sources for the scholar, was invited to write the introduction, which provides a broad view of the architectural situation in Europe against which Art Nouveau architects reacted. This is disappointing. Admittedly a difficult task, covering a complicated period about which a great deal more needs to be known, Guerrand's views are oversimplified, and now outdated by the research of the past decade. His pitting conservative classicist villains on one side against innovative, ahistoricist heroes on the other is much too cut and dried. Architecture of France in the 1870s and '80s was in turmoil, with architects in one camp frequently crossing partisan lines to espouse or experiment with the architectural values of the other; eclectics claimed to be rationalists, and rationalists proved to be as concerned with form as their academic counterparts. The architectur-

al training at the Ecole des Beaux-Arts in this period did not wholly ignore practical training, as Guerrand suggests, though it emphasized esthetics as the mark of distinction between architecture and ordinary building. Guerrand's description of the stultifying role of the Ecole presents a view too starkly black and white in which significant details such as the extent to which the Ecole contributed positively and directly to the work of Art Nouveau architects, many of whom had received a traditional academic training, are dropped out. To what extent did Garnier's Opera (which Guerrand cites as a paradigmatic example of academic sterility) pave the way for the burst of creativity we see at the end of the century, especially in its use of lavish ornamentation and color? Contemporary critics, such as theorist Franz Jourdain, saw through Garnier's historicism, recognizing his creative energy, and consistently held him up, despite his academic affiliation, as a model to the emerging Art Nouveau generation. Bernard Maybeck, an architect perhaps too clearly Beaux-Arts rather than Art Nouveau to be included here, but whose work shares the same spirit of creative energy, received architectural training at the Ecole, as did Louis Sullivan. To what extent might his sense of liberty, freewheeling eclecticism, his love of color and lavish ornamentation—not wholly unlike Sullivan's—have been spurred by his exposure to Garnier, Nénot, Laloux, or others at the Ecole?

Counterbalancing Guerrand's misleading introduction, Tim Benton's essays on Great Britain and Spain give a truer picture of the complexity of the subject. Addressing the most obvious, surely knottiest question raised by the book as a whole, Benton begins his chapter, "Arts and Crafts and Art Nouveau: Great Britain," by asking whether indeed Art Nouveau, if conceived in terms of a sinuous, whiplash line, existed at all in England. Benton, a careful scholar concerned enough to make distinctions for the sake of clarity, tends to see Art Nouveau as a Continental phenomenon, inspired to a large degree by the Arts and Crafts in Great Britain, but fundamentally different from it, despite common roots in the Gothic Revival and the pursuit of a new formal language based on forms from nature. His somewhat didactic tone notwithstanding, Benton succeeds admirably in portraying the different regional traditions and esthetic predispositions in England and Scotland by detailed analyses of individual works of Townsend, Lethaby, Mackintosh, and others,

continued on page 46



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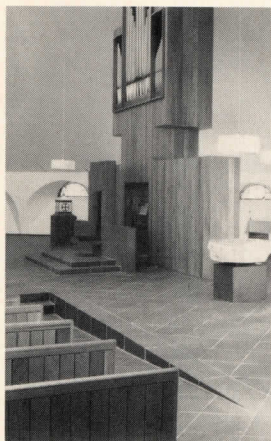
"Up here in Vermont I own a quarry full of good quality slate. About 60 of us work here—eight in the mill, 30 in the quarry, four in the office, others driving trucks and

doing maintenance. Herby Jones, who's in the picture with me, started here at the age of 11 'making motions'—directing the crane operators with hand signals. He's 83 now—and he drives the donkey engine (*it's* 100 years old) that operates the hoist that lifts the slate from the quarry and sets it on the bank. My name is Bill Markcrow, and I spend 90 percent of my time on the telephone doing most of the selling. We cut and hand-split and sell about a million square feet a year of stock slate— $\frac{3}{8}$ -inch pavers and roof slates and that  $\frac{1}{4}$ -inch stuff the do-it-yourselfers buy in the lumber yard. That gives us plenty of work. But . . .



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"Fancy work and all, the slate was well within Barnes' budget.

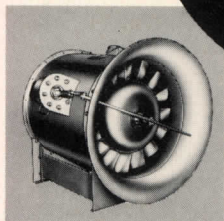
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## Managing the building program: two scenarios

The decision to build a new headquarters is one of the most significant in a company's growth and development. Since it is something that does not occur too frequently, it is a process with which the senior executives may have little or no personal experience.

The actual design of the new building cannot begin until the requirements of its owners and users are known in some detail, and until a suitable site has been found. Because of this, all too often, the design team is not assembled until much of the initial work in these areas has been done. Yet, just because the building design must respond closely and accurately to very specific needs, those responsible for its design actually need to be involved in these early pre-design stages. Left to themselves in these early stages, many companies find it difficult to divorce themselves from the status quo, to visualize or conceive of the possibilities of change in organization, work flow, departmental and work station configurations, and cannot get beyond existing hierarchies to analyze the true dynamics of the work situation. The way in which the program is developed, the site location sought and evaluated, projections for growth computed, and user needs solicited, weighed and incorporated within a realistic program will vitally influence the ultimate success of the building.

In the following article, two quite different approaches to the same set of problems by the hypothetical company Brandex are examined in some detail, based on first-hand experience of the kinds of things that really happen in the process of programming, planning and designing a new corporate headquarters.

by Bryant Putnam Gould, AIA

Brandex is a well established manufacturer that almost made the *Fortune* 500 several times and may well attain that eminence within the decade. The corporation moved its headquarters to a large city in 1955, leasing space in a modern office building. At first the Brandex people were happy, even proud, in their new quarters.

Then the troubles began. Because of growth and new methods of management, the staff was expanded. Initially, space was gained by doubling up in offices and moving desks closer together in open areas. Another floor was leased and then another. Brandex hired a space planner, who made temporary improvements but could not solve the problem of proliferating bodies.

It seemed that moving and alteration work was constantly in progress. Partitions fell and rose and fell again. Hammering and dust filled the air. Tempers frayed, morale sagged, and productivity fell.

Clearly Brandex needed to take action. The company's real estate department was assigned to study the problem and define options. A report was duly tendered and management decided to relocate to the suburbs and consolidate all operations except research in a new headquarters. Real Estate then prepared a masterful study to define a general area in which a search for a site

should be focused. By a remarkable coincidence the recommended area was close to the homes of most of Brandex's executives.

Brandex was ready to embark on a perilous voyage. How the company elected to manage the process of locating a site, designing and building its new headquarters would have a profound effect on the success of the venture and on future operations.

The two following scenarios demonstrate two approaches to the planning process and the very different results they generated. In one case, the program was developed by an in-house staff and the architect called in to study the finally selected site; in the other, the architect was hired immediately to guide the project team through the predesign stages and stay with it until occupancy of the completed building.

### Scenario 1

Brandex's executives were capable, hard-nosed businessmen with a reputation for sound planning and shrewd fiscal management. Having decided to relocate they set out to carefully plan the process leading to construction of the headquarters. Above all, the executives felt that they knew exactly what they wanted in the new facility.

The first priority was to find a suitable site. The real estate department's report contained criteria for selection, including a rough projection of building area based on square feet per occupant. Some thought was given to obtaining professional assistance in site

evaluations, but the idea was discarded in view of the corporation's own considerable resources in engineering and planning. Moreover Brandex's executives lived in the search area and had many contacts there.

Real Estate created a method for evaluating the various properties. Just to be on the safe side, the earlier building area projections were increased by 50 per cent. A local realtor was appointed to look into promising sites.

Brandex had decided that its staff could easily write its own facilities program. The programming was assigned to the Director of Personnel, who promptly delegated it to a young assistant, who acquired several books on office planning and set to work. He requested each executive and department head to assemble projected functional needs and conducted interviews intended to smoke out detailed requirements. The interviews turned out to be less than satisfactory. Little of the requested data had been assembled and few of the check lists abstracted from textbooks proved to be applicable.

The matter of private office assignments proved most ticklish. Brandex had never established firm standards and had often given its staff whatever offices were available. Temporary assignments had become permanent and, in some cases, squatters' rights determined occupancy. This lack of standards created two hostile groups—one consisting of ineligibles fiercely determined to protect their turf and others ready to fight for offices consistent with a suitable place in the corporate pecking order. After the first few interviews the assistant avoided the issue as much as possible.

The programming was taking longer than anticipated. The data gathered by the assistant were incomplete and inconsistent. He sensed that some of the staff's demands were unrealistic, or perhaps outrageous, but he had neither the basis for comparison nor the authority to insist on justification. Under pressure to complete the program, he patched together a final report. Lacking a basis for sizing such facilities as cafeteria, office services and shops, he made approximations based on examples in his textbooks.

The assistant was somewhat uncertain as to how to convert net area to gross area. The textbooks were vague in defining net area and sometimes referred to "usable," "net rentable" or other ambiguous terms. It appeared that gross area could be estimated

*continued on page 61*

Bryant Putnam Gould, AIA, is senior vice president and director of facilities planning of The Eggers Group P.C., Architects and Planners, in New York.

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by applying an "efficiency factor" to net area, but the varying concepts of net area made it difficult to arrive at a reliable formula. In desperation he picked a median number and calculated a gross. The assistant's final opus was an impressive document complete with forecasts, space allocations and an elaborate proximity matrix. Management was duly appreciative and the assistant enjoyed a brief moment of glory and a moderate raise.

Meanwhile, the realtor's discreet investigations had turned up three sites which appeared to fulfill Brandex's criteria:

- The *Greenfarm Site* had great natural beauty and could be reached from a local road connecting to a nearby interchange of an interstate highway. However, the topography was somewhat irregular, as was the shape of the site. Total acreage was apparently more than needed.

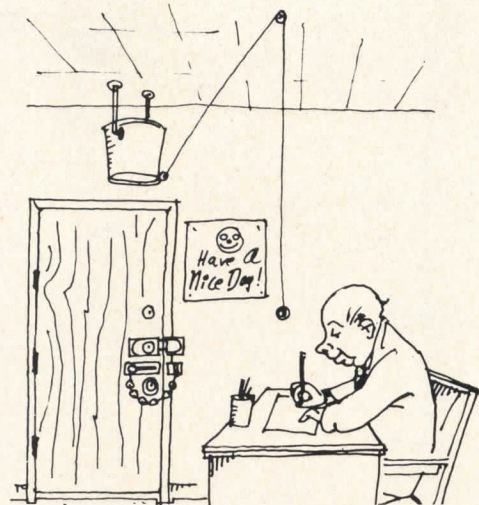
- The *Cachet Estate* contained an unused mansion and outbuildings in good condition. The acreage was adequate, according to Brandex's rough projections of building area. Although a zoning variance was required, a nearby bridge approach made the property undesirable for residential use. The realtor was sure that a variance could be obtained, an opinion confirmed by a well-placed friend of one of Brandex's executives.

- The *Nofrills Site* was not as attractive as the others but was of regular topography and shape. There were no apparent problems in zoning: in fact, the municipality was anxious to attract ratables. Size was barely adequate. The property fronted on a secondary road, which was quite heavily used during short peak periods. However, an easement could be arranged to give access to another road. All three sites were served by adequate utilities and were in the same cost range.

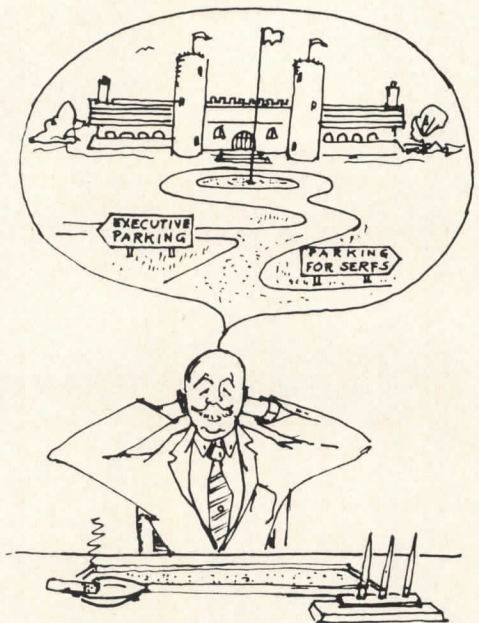
The Building Committee's comparative evaluation of the sites was thorough and completely professional. The Greenfarm Site was summarily discarded because of excess acreage and the engineering group's opinion that much of the site was unbuildable. The Cachet Estate was abandoned reluctantly (the possibility of renovating the mansion had great appeal to the executives). The Committee saw no way in which the mansion could be altered and expanded to serve as an efficient headquarters. The Nofrills Site was considered the best choice and had much the highest score on the evaluation rating system devised by Real Estate. The property was eminently buildable and the township had made several tax and utilities deals to sweeten the pot. Although the amount of acreage was somewhat tight, the safety factor added to the consultants' estimates seemed to compensate for the deficiency.

Shortly before the acquisition took place, the Facility Program was handed over to the Building Committee. An observant member of the Committee's staff compared the completed program with the site evaluation criteria, thereby lobbing a bombshell into Brandex's meticulously conceived plan. Projected growth in personnel made by Brandex's staff during programming far exceeded Real Estate's earlier forecasts. The gross building

area given in the program was much more than even the beefed up estimates used in evaluations. The combination of allowable building coverage and required parking space, setbacks and height limitations specified in the township's zoning resolution, when applied to the programmed personnel and space projections, made the site totally unfeasible. Predictably the Brandex management was outraged and the members of the Committee took to cover. The situation seemed saved when an adjacent property came on the market, but by then word of



Ineligibles fiercely determined to protect their turf.



The possibility of renovating the mansion had great appeal to the executives.

Brandex's plans had leaked to the community. The road which was to provide a second entrance to the site passed near a small housing development, the residents of which conjured up visions of a future freeway passing their doors. Quick as a squall, a citizen's committee, leaflets and a baby carriage barricade materialized. Brandex abandoned its plans for the site.

The Nofrills Site fiasco had taken up considerable time and management became concerned over impending lease renewals for its existing offices. Greenfarms had been sold, leaving the Cachet Estate as a possible option. Since the suitability of use of the mansion had

never been ascertained and a zoning appeal was required, Brandex retained an architect to study feasibility and develop a concept for use in an appeal. Immediately the architect exploded a second bombshell. His review of the program prepared by the hapless assistant showed that much more building area was needed than was specified in the program. Not only was the wrong conversion factor used in establishing a gross area, but central services were drastically undersized, the result of transposing data from other buildings with different requirements. In order to build the required new space it would be necessary to appeal for relaxed zoning standards in addition to a change of permitted use.

The moment of truth had arrived. Should they appeal and risk a possible defeat? Evaluate more sites? Search in another area?

But then seeming salvation appeared. Brandex's realtor produced a builder who was ready to begin construction of a speculative office building in the area. Was it too late to change the plans for Brandex's requirements? Not at all. The builder's architectural "designer" could do it in no time. Any problems in zoning? Not at all, provided the building size was not increased. The project could be delivered before lease renewals were due on Brandex's offices. Better still, the price was guaranteed, provided Brandex did not demand any architectural frills.

The one hitch in the scheme was the prohibition against expansion. Brandex decided that the plentiful rental space in the area was an adequate fail-safe. Besides, the zoning standards might be relaxed in a few years, enabling expansion. Or corporate growth could be less than forecast. Brandex decided to buy the building.

The new headquarters was delivered on schedule 14 months later. While the building was under construction, Brandex acquired a new company and, thereby, a requirement for additional space. Corporate growth was about as forecast. Thus the building was almost full upon occupancy. Initially space was gained for new people by doubling up in offices. Soon space was leased in another building a half mile away. It soon became apparent that the quality of materials and workmanship in the new building was poor. Acoustics, lighting and air conditioning were especially bad, and maintenance and energy costs became excessively high.

It seemed that moving and alteration work were constantly in progress. Partitions fell and rose and fell again. Hammering and dust filled the air. . . .

## Scenario 2

A new executive, who had participated in a corporate construction program while with another firm, joined Brandex just after the decision was made to relocate to the suburbs. He persuaded management to form a project team immediately and to retain an architect to guide the team through the pre-design phases of the project.

*continued on page 63*

# A beautiful home for a cosmetics company. **ELEVATORS BY DOVER**

The new international headquarters building for Mary Kay Cosmetics, Inc. in Dallas presents an elegantly curved, gold-windowed face to its neighbors. All administrative and accounting activities of the company are housed in the 115,000-sq.-ft. facility. The eight-floor building is served by three Dover Traction Elevators, housed in an interior core. For more information on Dover Elevators, write Dover Corporation, Elevator Division, Dept. A, P.O. Box 2177, Memphis, Tennessee 38101.

Mary Kay International  
Headquarters Building, Dallas  
ARCHITECTS:  
Foster + Meier Architects, Inc.  
CONTRACTOR:  
Connell Construction Co.

Dover Elevators sold  
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Dover Elevator Co.

**DOVER**<sup>®</sup>  
The elevator  
innovators.



The project team was kept small and included only members who could spend enough time on the project to be effective. Included were the architect and a full-time man hired to be the future facilities manager. The construction contractor would join later during schematic design.

The team was strongly supported by the Brandex management and was authorized to make prompt decisions. A master schedule was developed by the architect for the entire project, with early phases planned in detail; later when the contractor came aboard, all interfacing design and construction tasks would be worked into the schedule. The project organization provided for participation by Brandex's finance, engineering and real estate groups but no group was given authority to override the team's decisions.

Criteria for site selection were coordinated by the architect, who established a system for numerically rating the sites based on factors weighted according to Brandex's need. The architect asked Brandex to bring its personnel forecasts up-to-date and used the new projections to calculate gross building areas and estimated costs. With preliminary criteria established, a local realtor was engaged to search for sites. Following an investigation, the realtor recommended for Brandex's consideration the Greenfarm, Cachet and Nofrills sites.

Before the site criteria were established the architect and his facility planning staff had begun collecting data for the facilities program. One of the architect's first actions was to politely insist that management confront the problem of a lack of standards for assignment of private offices. Using standards from programs prepared by the architect for other corporate clients as a basis for comparison, the team reviewed existing practices and then developed a sensible, hierarchical method for assignment using several office types.

After Brandex's department heads had entered personnel projections and other planning input on simple forms, the key people were interviewed by the planner. In addition to questions about functional relationships, record-keeping requirements and demand for central services, the planners had quite specific queries about the individual departments. In some cases, the interviews uncovered needs which the Brandex people had not considered or had forgotten to mention. Occasionally, the planners pursued information through several sources in a department before finding the one person with the answer. Considerable attention was paid to defining the scope of such services as cafeteria, computer center, office services and maintenance. Since the services in the new headquarters would be quite different from those in the old offices, the study was based, in large part, on the architect's experience with facilities for past clients.

After the collection of data, an intense effort was made to develop a preliminary set of net area allocations so that gross areas could be calculated. The preliminary gross areas and related cost estimates were substituted for the early approximations used for



A baby carriage barricade materialized.



One day the Chairman of the Board donned a hard hat.

site evaluations and financing. This process of frequent checking and constant refinement of data continued throughout the remaining stages of programming and design. After translating the planning data into detailed space allocations, charts and diagrams, all information was consolidated in a program report, which became the bible for design.

Meanwhile the site evaluations were continuing under the direction of the architect, who included in his report his own judgment as to whether the characteristics of each site were supportive of a good architectural solution. Since by the later stage of site evaluation, the architect knew the approximate sizes of major functional elements of the building and how they should relate to each other and to parking and major entrance, he could test each site for compatibility with an architectural concept.

The Nofrills site was considered feasible, provided additional adjacent land could be acquired at reasonable cost. But, through bitter experience, the architect was apprehensive over possible adverse reaction from the community over the use of a local street for secondary access to the site. He gave weight to the buildability of the site, but budgeted additional costs for landscaping.

The Cachet Mansion scored well in many respects. The architect saw several ways the existing mansion could be used as the nucleus for a headquarters. However, the site would not be feasible without zoning concessions.

The Greenfarm site received much the

highest score. The architect found that the seemingly difficult contours and irregularities of shape could, in fact, be used to advantage. Most parking could be "tucked into" a slope. The architect grouped several related elements of the program into separate building components and the resulting plan fell into place on the irregular plot. The local road connecting to a high-speed highway could, with careful design of the site's road system, accommodate the traffic generated by the headquarters. Moreover, the acreage provided a comfortable margin beyond the programmed ultimate land area requirement.

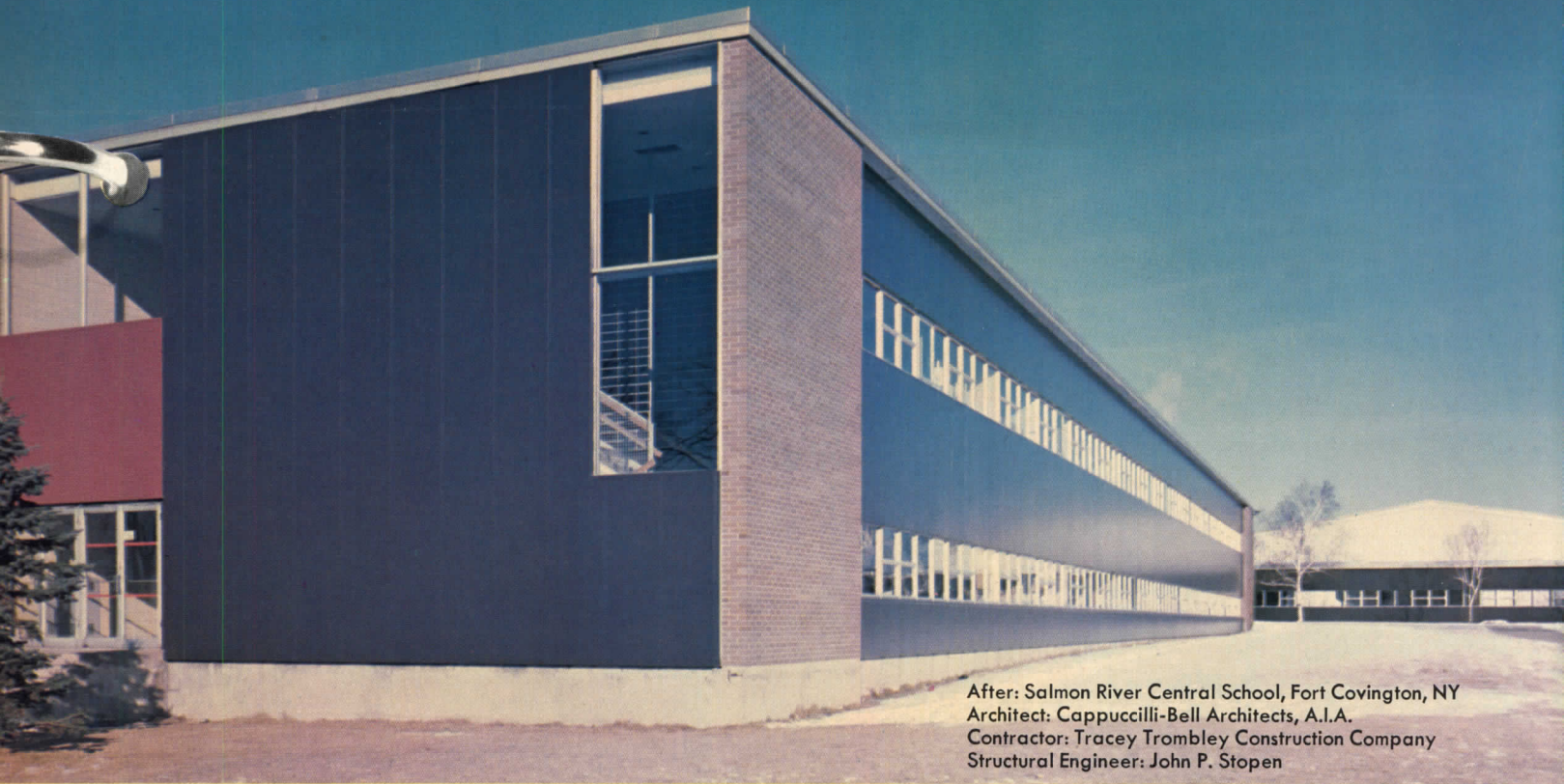
Based on the architect's recommendation, and its own investigations of taxes, relocation costs and other corporate concerns, Brandex acquired the Greenfarm site. Although Brandex's people were now in a mood for quick results, the architect did not continue with design of the headquarters until he had prepared a master plan showing how buildings, site, utilities and road systems would ultimately function together. The office building design was thus developed within the matrix of the long-range plan and the program. Once a building form was approved, the architect's facilities planning and design groups made block diagrams, which assigned departments and services as well as space for expansion to floors and wings of the building. The diagrams were shown to Brandex's executives and staff, and it wasn't until all agreed to a scheme that the architect began detailed office layouts.

Fairly early in design a spurt of construction cost escalation forced the project team to take a second look at the scope of the project. Because of the level of detail in the program and the modularity of the design, the architect was able to quickly define several options for cutting back.

One day the Chairman of the Board of Brandex donned a hard hat and turned over the first spadeful of earth to the sound of dutiful applause. While construction was under way, the architect's interior-design staff completed space planning and selected furniture and furnishings. The interior design scheme was the final refinement of the building's architecture, so such details as graphics and office accessories were part of a unified concept. The scheme made extensive use of demountable partitions and work stations.

While the building was under construction, Brandex acquired a new company and, thereby, a requirement for additional space. Corporate growth was about as forecast. The space for expansion and the flexibility of the plan enabled Brandex to easily adjust to the changes and to gain a breathing spell in which to reconsider the forecasts. Because the master plan provided a guide for orderly expansion, Brandex could choose the timing and the mode on the first increment of growth.

Of course neither the owner's forecasts nor the architect's planning proved to be infallible. There were minor crises and dissatisfactions as Brandex settled into its new headquarters. But by and large the teamwork in the planning and design stages of the project paid off in dollars and satisfaction.



After: Salmon River Central School, Fort Covington, NY  
Architect: Cappuccilli-Bell Architects, A.I.A.  
Contractor: Tracey Trombley Construction Company  
Structural Engineer: John P. Stopen

## This Formawall retrofit improved U-values from 0.88 to 0.10.

At the Salmon River Central School, Fort Covington, New York, Robertson's Formawall panels are helping to save an estimated 17,500 gallons of fuel a year.\*

Cappuccilli-Bell Architects worked closely with Robertson to cover large sections of the school's 1956 aluminum and glass curtainwall with 20,000 square feet of Formawall insulated panels.

**Why they chose Formawall.** Formawall's U-value—as low as 0.065—was one major reason. But its crisp appearance and the proven durability of its Durasil finish were also important.

In addition, the erection of Formawall over the existing curtainwall allowed classes to proceed without interruption and provided an improved U-value by leaving the older curtainwall system intact.

**Let Formawall work for you.** Whether you're planning a retrofit or an entirely new project, Formawall can provide the insulation, beauty and durability you need. It's available with Durasil, Versacor, Vitralume porcelain enamel or other finishes.

For information about a free computerized cost-analysis of retrofit options for your building, including pay-back estimates based on fuel savings, write: H. H. Robertson Company, Department A-7, 400 Holiday Drive, Pittsburgh, PA 15220.

\*Based on typical (as of March 25, 1980) fuel costs of \$0.87/gallon, annual estimated savings today are \$15,225.00. (Fuel savings estimates and U-value measurements by Cappuccilli-Bell.)  
Formawall, Durasil, Versacor and Vitralume are registered trademarks.



Before: Prior to Formawall retrofit, Salmon River School had a 1.10 U-value for glass and a 0.20 U-value for wall panels. (Photo by Dennis Spina, Cappuccilli-Bell.)

**Robertson**



# The dawning of a new age in mortgage lending

Every day during the spring, builders and borrowers turned anxiously to the financial pages, where bold headlines proclaimed the latest episode in the roller-coaster ride of interest rates from breathtaking highs to precipitous plunges. Buried under this fascinating turmoil were stories about the Congressional passage of "The Depository Institutions Deregulation Act of 1980" and about the Federal Home Loan Bank Board's implementation of regulations permitting thrift institutions to make "renegotiated rate mortgages." Yet, long after this spring's interest rate hubbub is forgotten, these two government actions still will be affecting the funding of mortgages and the form and substance of the loan agreement between borrowers and lenders.

In the "Deregulations Act," Congress casts aside state usury laws on home mortgages and makes all loans made by Federally-insured institutions subject to Federal regulations. The preemption for home loans becomes permanent unless states vote new limits before April 1, 1983. States can overturn the other Federal preemptions at any-

time. This Federal override will force states to conduct long overdue, systematic, legislative reviews to modernize their usury-law rate-setting procedures, which affect nonresidential finance as well as residential finance.

To help improve the earnings potential of Federally-insured thrift institutions, other sections of the "Deregulation Act" expand

their authority in such short-term lending areas as consumer loans and commercial paper, and in such long-term lending areas as commercial real estate and corporate bonds. Basically, of course, thrift institutions issue short-term financial instruments to obtain funds to invest in long-term, fixed-rate, mortgages. When interest rates rise continuously, as they have been doing recently, thrift institutions must compete for short-term money at market rates. However, the earnings from their portfolio of predominately long-term, fixed-rate, residential mortgages lag behind the market, eventually hampering their efforts to pay the rates needed to attract or retain funds for mortgage lending. The broader investment powers provide thrift managers with greater flexibility in choosing investments, so their earnings may be more responsive to changes in interest rates.

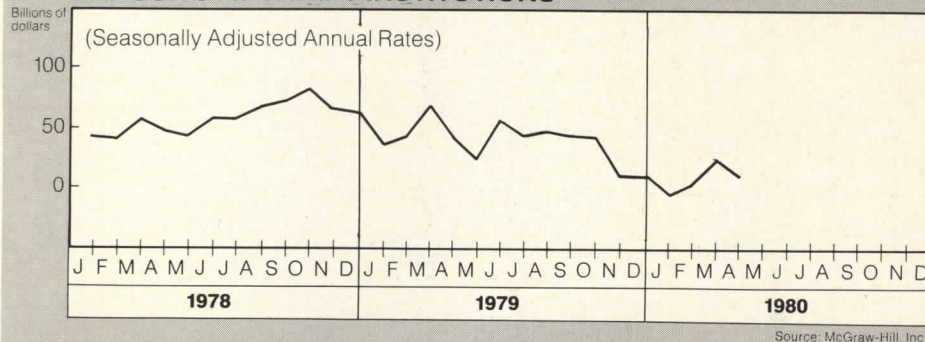
In a much more direct and dramatic move to solve the thrifts' "borrowing short to lend long" dilemma, the Federal Home Loan Bank Board granted them the power to make renegotiated rate (or rollover) residential mortgages. In a renegotiated-rate mortgage (RRM), a long-term mortgage (up to 30 years) secures a series of short-term loans (three-, four-, or five-year terms), which are automatically renewable. In contrast to a fixed-rate mortgage, where the interest rate remains constant on throughout the life of the loan, the rate on RRM's is renegotiated up or down at *each* renewal of the short-term loan according to changes in a prescribed national index.

Both the expanded investment powers in the "Deregulation Act" and RRM's are designed to improve the thrift industry's ability to acquire funds in any interest rate environment. It will take time however, for the full effect of these actions to filter through our mortgage lending system. Thrift managers will need time to learn new investment strategies and to reshape their portfolios. Homebuyers, lenders, politicians and regulators will need time to understand and to thrash out a universally acceptable renegotiable rate mortgage. But in the long run, these changes should better equip our mortgage lending institutions to compete for credit the next time severe monetary restraint is used to combat excessive inflation.

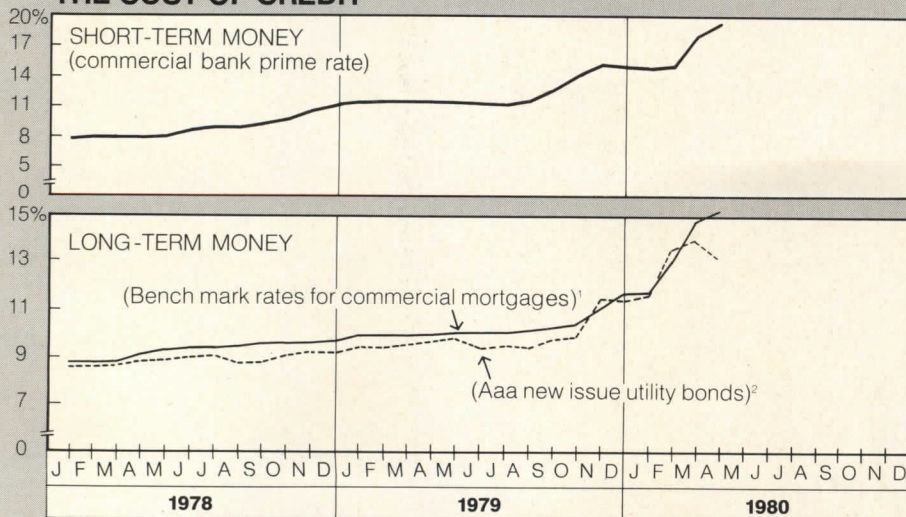
Phillip E. Kidd

Director of Economic Research  
McGraw-Hill Information System Company

## NET CHANGE IN SAVINGS AND TIME DEPOSITS AT THRIFT INSTITUTIONS



## THE COST OF CREDIT



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# HIGH CLASS GLASS





Norman McGrath photos

## The new Madison Civic Center by Hardy Holzman Pfeiffer Associates

What have we here? What sort of facade is this? What will Malcolm Holzman think of next? Is it Post Modernist? Is it a quotation from late twenties Hispano-Moorish movie palace kitsch? Is it a quotation at all? Can it be the entire text? Or even the real thing—a genuine old cinema palace—phoenix? And now multipurpose? It is indeed the latter, the entrance facade left almost intact except for minor refurbishment including cleaning and repointing the brick and installing the “dumb and ordinary” new doorway; and the interior restored and adapted for a wide range of musical and theatrical performance.

To the left and right of the portal are symmetrical infilled walls that screen the new expanded facilities which replace former

structures torn down. The windows in these walls are staggered in height, building toward the crown of the niche in the upper portal—a gesture toward the niche and the elaborate Spanish Baroque cornice, and to the five Spanish Romanesque windows that form a curve in the portal recess.

Connected to an infilled wall but down the street and out of the range of the camera lens is another unabashed facade, its masonry also clean and newly pointed. This one is more or less Georgian and was formerly the front of a Montgomery Ward department store built in 1941. And the old store? It is now the art museum of the Civic Center.

Neither of the two fronts are or ever were considered to be much as architecture

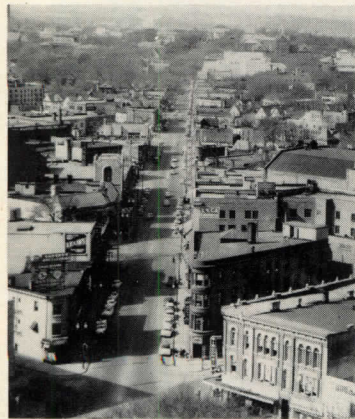
(the Chicago firm of movie theater architects Rapp and Rapp had built grander facades for more sumptuous movie palaces and the storefront was designed by the Montgomery Ward engineering department). Their restoration by HHPA has been modest and low key in keeping with the scale and feeling of the small commercial buildings along both sides of the street. These facades, then, are neither arcane Post Modernist quotations nor landmarks in their own right. Nothing much has been done to them. Why pay attention?

Because these humble fixed-up fronts and the pedestrian mall they face are the only visible signs on the main street of Madison, Wisconsin of the existence behind them of a \$7.5 million civic and cultural center which,

**These humble fixed-up fronts  
are the only signs of the existence behind them  
of a \$7.5 million civic and cultural center**



1



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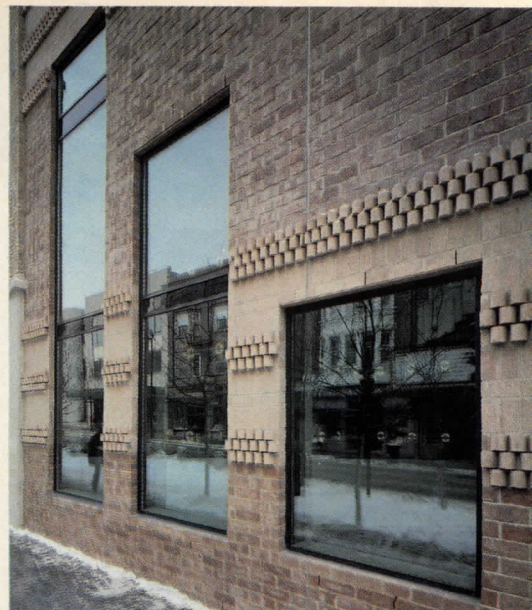
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since it opened last February, is already bringing new vitality to Madison's steadily reviving downtown. And even more importantly because architects Hugh Hardy, Malcolm Holzman and Norman Pfeiffer seem to be saying that the forms and ornament of buildings have no intrinsic meaning but gain their signification through the way the buildings are used. Thus these styles, however disparate, and despite the ideas and feelings they have symbolized in the past will gain a new resonance. They will come to speak of a lively public interest in the arts as surely as the Neo-Classic forms of Madison's famous State Capitol building (1) have long signified the powers of law and government.

Not everyone would agree. Traditionally communities have built large and elegant buildings to attest to their commitment to the arts. "Make no small plans," said Daniel Burnham and Frank Lloyd Wright would have concurred. Wright, buried near Madison at Taliesin in Spring Green, believed that his city should have built its auditorium and civic center on Lake Monona, one of the city's two huge lakes. Said Wright to the local Eagles Club in 1939: "There isn't enough civic spirit in Madison to do something great, regardless of who wins or loses or whose ox is gored. Why not wake up, go places, do something with the beautiful site Nature gave you."

There were more than a few civic leaders, however, who shared Wright's dream of magnificence for Madison. In 1955 they asked him to design the great Monona Terrace project, modifications of which by the Taliesin Fellowship were under consideration until 1974 when lack of public support, extensive litigation and a major shift in city planning concepts caused the project to be permanently shelved.

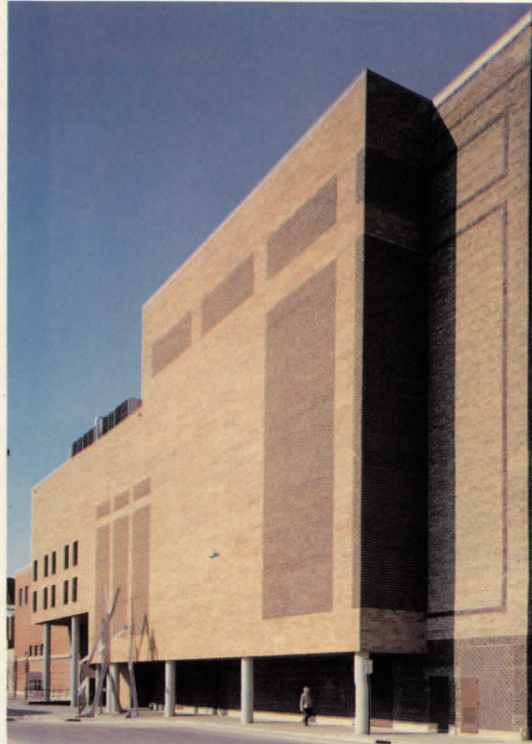
The realization that the Monona Terrace project was too grandiose for a small city like Madison came gradually, but was spurred on by the fact that its downtown was dying. People began to see that not only was the project too big, it was in the wrong place as well. In 1974 in response to the advice of the Madison City Planning Department and the urgings of its assistant planning director, John A. Urich, the city's then new mayor, Paul Soglin, purchased the old Capitol Theater and the empty Montgomery Ward department store on State Street to be recycled into the long desired civic center. Soglin, now replaced by a new mayor, considers this to have been one of the most important single actions he took during his six-year term of office. "Just the fact that what we have now is on State Street," says Soglin, "that it holds together the community, business and educational functions of the city and is available to pedestrian traffic is a different concept for



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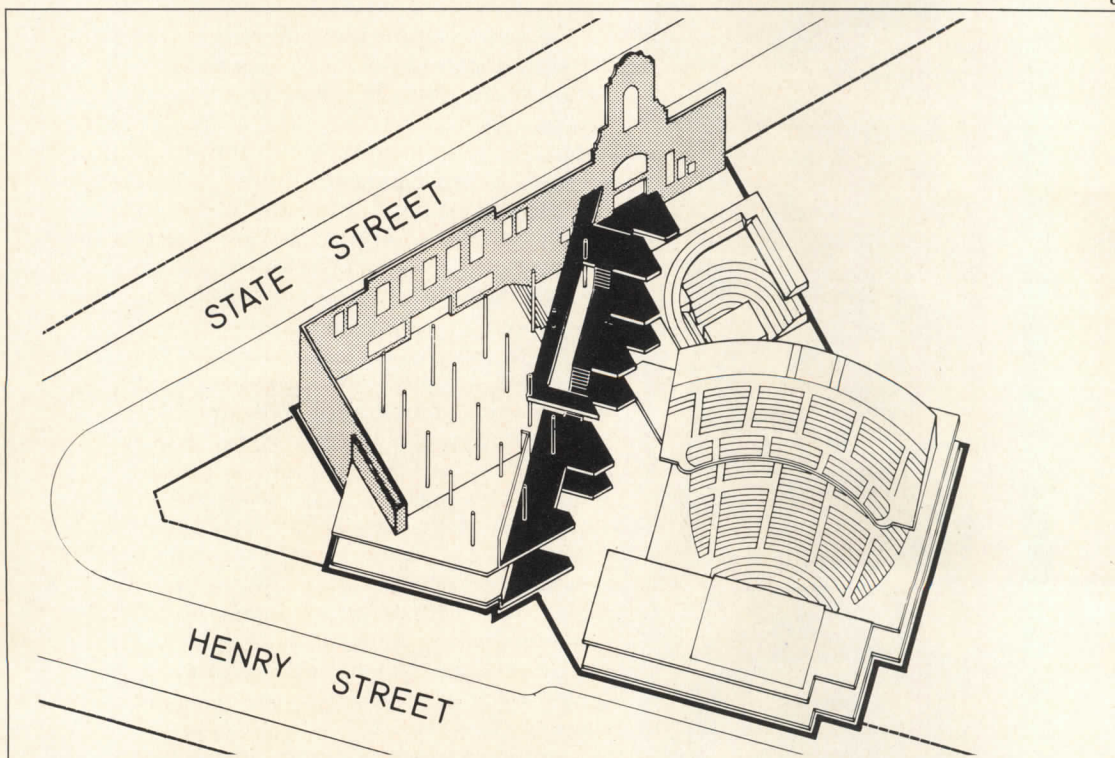


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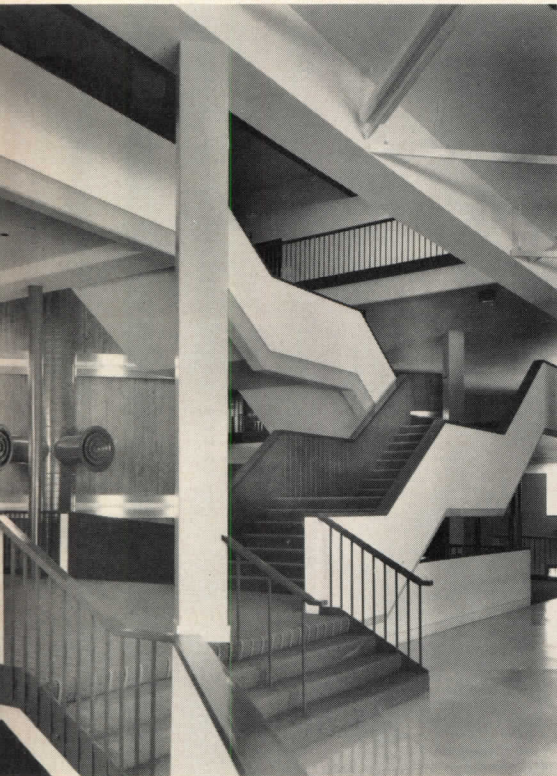
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The site (9) is two blocks from Madison's most beautiful building and important landmark, the State Capitol (1), and six blocks from the main campus of the University of Wisconsin at the opposite end of the State Street axis (2). The project forms a major element in a downtown revitalization plan, which includes the State Street Transit/Mall for pedestrians and buses developed by M. Paul Friedberg & Partners and new commercial, office and residential development. Both the State Street (5,8) and Henry Street facades (6, 7) combine elements of new and existing construction. On State Street the buildings on either side of the old Capitol Theater facade have been removed, along with the marquee and metal display cases. A shot-sawn limestone entry has been installed to complement the buff brick and decorative terra cotta of the Hispano-Moorish facade of the old movie house, and new exterior infill walls have surfaces of bull-nose and flat oversized brick in good scale with the ornament of the remaining buildings.



9

# The Civic Center spaces are interconnected by a multi-storied lobby called the "Crossroads"



The complex has four main levels (12) interconnected with a multi-storied lobby called the Crossroads (10, 11, 13), which joins three exterior and ten interior entrances—on six levels in all. It serves the audiences of the two theaters (sometimes more than 3,000 when combined) and includes an informal theater space (11).

10



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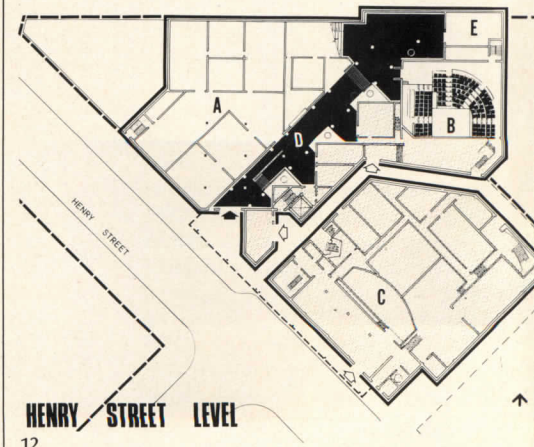
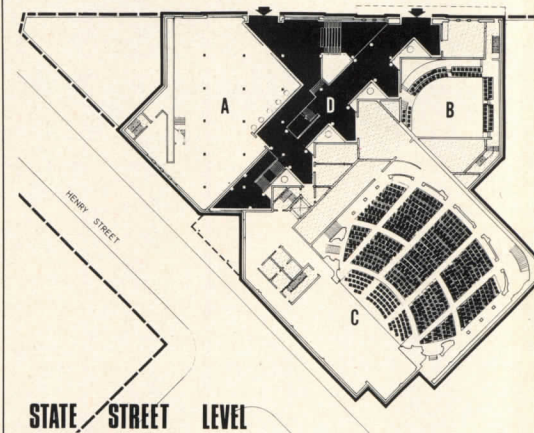
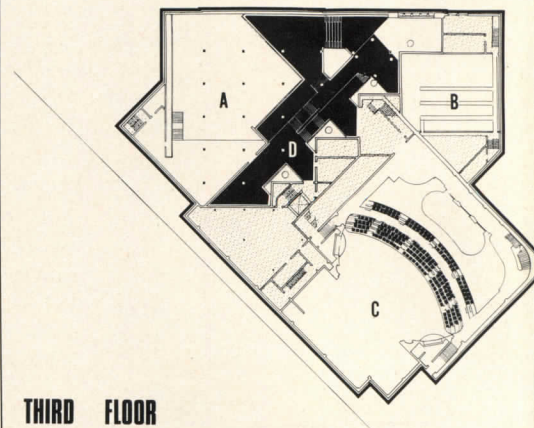
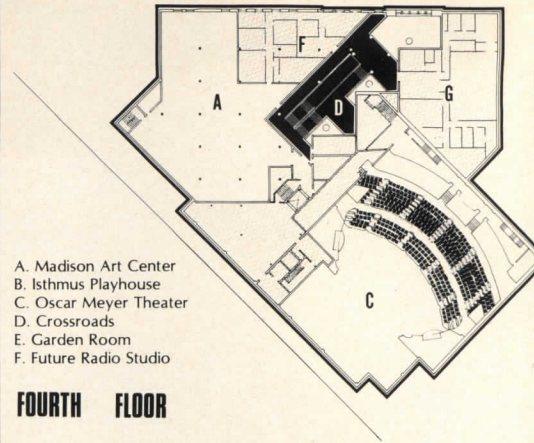
Madison. The thought of an art center that people can drop into in the middle of the day, without making a special trip is pivotal. The space inside the building—the open areas which are not simply corridors but can be used for performances at noon—is a recognition of the fact that people will come out during their lunch hour, eat and see a performance."

A significant building for the arts built before World War II would have been in an outlying city park. The urban renewal of the fifties and sixties also put buildings for culture into enclaves. The whole idea of weaving a major arts facility into a decaying downtown commercial fabric is what is new. According to Soglin, the new complex has already begun to enliven the surrounding area. "We managed to prevent the ghost town effect later in the day as various parts of the city close up. Because the Civic Center is near a densely populated residential section and yet is easily accessible from the downtown offices, the city is now alive after six in the evening. And the location saves gas. Drive to work in the morning, walk to a performance or an art show at the end of the day and then drive home. Or take a bus. Madison has the best bus system of any city its size in the United States. Within a few blocks of the new facility you can catch a bus to any part of the city." Soglin points out furthermore that the downtown location of the Civic Center allows the same parking facilities to be used both day and night, a plus since parking facilities take up a lot of space and are expensive to build.

Soglin also believes that the new center will strengthen Madison's ties with the University of Wisconsin. "Some of the university people were very nervous about the project because they were afraid it would rival the university's cultural programs. I think that the city facility augments what the university already has and out of this will come greater cultural growth. Town and gown are both on the State Street axis, so they tie together in the physical as well as the cultural sense."

Soglin has hopes that the new Civic Center will strengthen the State of Wisconsin's commitment to the arts. Wisconsin until two years ago had the lowest per capita allocation for the arts of any state in the U.S. "I think," says Soglin, "that we will see greater support of the Wisconsin Arts Council, which in turn will provide more funding for activities within the city and in the rest of the state. So if there is an expansion of the poet-in-the-schools program in Eau Claire, it can be attributed to the Civic Center as the central force in an effort to get the state interested in all the arts."

Architects Hardy, Holzman and Pfeiffer



12



# The old movie palace, restored yet improved, is more magnificent than ever



14



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hope, with their former client Soglin, that the new complex will have a far-reaching effect upon the cultural life of the state. They also hope that the success of the center will cause architects and their clients to remember that average, ordinary buildings are of value, "not because their detail is superb and fantastic," says Malcolm Holzman, but for other reasons. Holzman believes that in the 1980s and '90s architects will be dealing more and more with the problem of what to do with average buildings. "It would be easy to argue that we should tear them down because their only value is their structure and to some extent their skin. But there is a cultural attachment to old buildings, and they are part of the fabric of the city. If you remove them, how can you suitably match that fabric? And they are an important energy resource. Saving bricks represents the conservation of the energy which bricks embody. Clients ask what we know about energy conservation, but their question usually relates to solar collectors and windmills. People understand the need to insulate but when we propose to reuse a building they don't understand that as energy conservation. Or the use of energy in tearing it all down and putting it there a second time. There is an enormous expenditure of energy just in the structural frame of a building."

But Holzman also reminds us that saving and recycling old buildings is very hard and time-consuming architectural work. Now that a movie palace and a department store have been neatly interwoven together, the effort doesn't show. "But," says Holzman, "how you thread a piece of steel through a building to hold up concrete and bricks and then cover it all up so that no one knows it is there is absolutely the opposite of the structural expressionism everyone was so fond of twenty years ago. In re-use projects you don't create great stunning structural feats. You are mainly involved with little structural adjustments, which are very difficult for the contractors. Holding things up and putting things under them, that kind of thing."

Contractors who are bidding such projects have a hard time estimating from the drawings how much work there will be in recycling an old building. Sometimes it is difficult even for the architects to describe definitively how much work there is, so the situation often occurs where the contractor has not bid everything or the architects haven't drawn it. "It is a new kind of architectural performance," asserts Holzman, "but it is worth it. What we did respected the scale of that town. If we had done something new at that scale made of pieces which would have looked right with the old buildings on the street, it would have cost much more money than our renovation. If the Civic Cen-



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22





The old Capitol Theater (14-19) has been completely refinished: all plaster surfaces are now restored and painted with stencils in 14 different values and finishes (20, 22). The colors have been selected to produce special effects in combination with a new three-color house lighting system,

which includes the newly illuminated ceiling coves of the original movie house (23, 24, 25). New aisle carpeting has been rewoven from the original design and the new draperies are in complementary colors. Two large chandeliers (21) have been fashioned from five small existing ones (18).

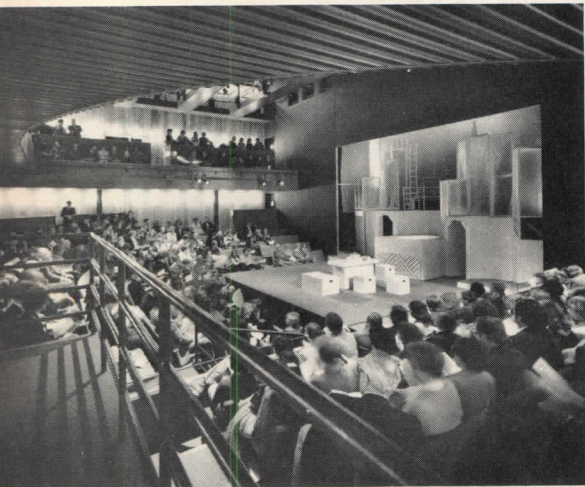


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## The Civic Center includes a small and intimate theater for experimental work and an art gallery



26

The thrust theater, known as the Isthmus Playhouse, seats 370 people in a balcony and orchestra with no seat more than seven rows from the stage. This room has been designed for a diversity of productions ranging from children's theater, puppet shows and chamber music to formal drama. To accommodate such flexibility, the stage is fully trapped. The rear-stage wall is demountable in modular sections. Specially designed carpet covered benches compensate for the range of sizes of the child and adult patrons. The Madison Art Center (27) now occupies the main selling floor of the former Montgomery Ward store.



27

ter had been built new in any other way, it would have looked too big. The way we saved the framework of State Street is a value that cannot be measured in dollars. The saving of the movie palace auditorium—you could never get a room like that in a new building."

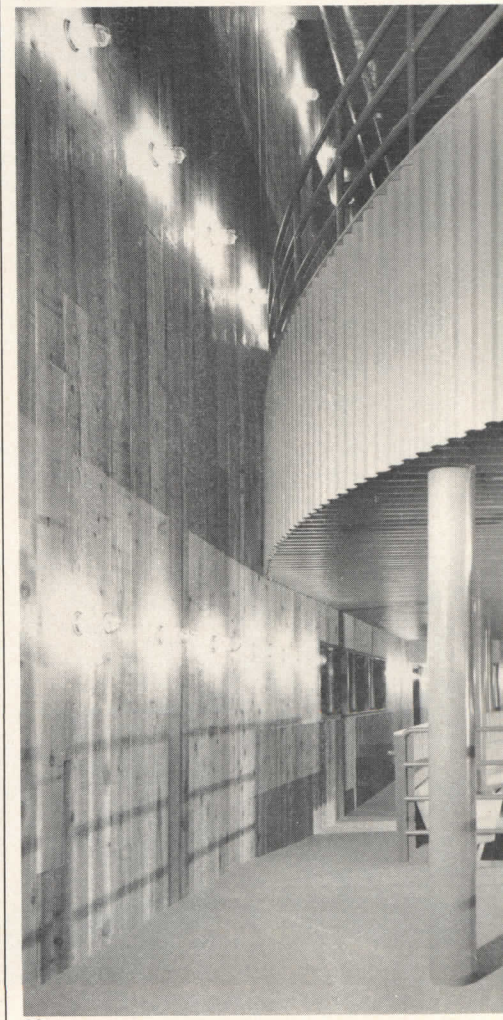
Architects Hardy, Holzman and Pfeiffer are fond of Madison. "It is a wonderful city," says Holzman, "because you can still see how it began. The Capitol, the most prominent building, is located on a rise and its vistas have been preserved by zoning height regulations. As architecture it has no rival. The city has a fine stock of masonry and wood buildings. When you come to its commercial areas—State Street is one of the oldest—most of the fabric closest to the Capitol is still intact and consists of small stores 20 to 30 feet wide and each one owned by an independent entrepreneur. As you move down State Street toward the University this fabric becomes eroded somewhat because of the growth in the sixties. The buildings which look out of place in Madison are the new big ones and the University built most of them."

The architects also like Madison's town plan laid out on a grid system in 1836 by a Federal judge and real estate speculator, James Duane Doty. Within the grid which runs between Lake Monona and Lake Mendota is the Capitol, from which four avenues extend to the north, south, east and west creating in effect a rotated grid. Each avenue cuts the grid at a 45 degree angle creating a number of triangulated lots of which the Civic Center site is one. Everyone familiar with the plans of Hardy Holzman Pfeiffer Associates knows they like to work with rotated squares forming triangulations. "If we hadn't had them we would of course have invented them," said Holzman, "but this time they were built in." —Mildred F. Schmetz

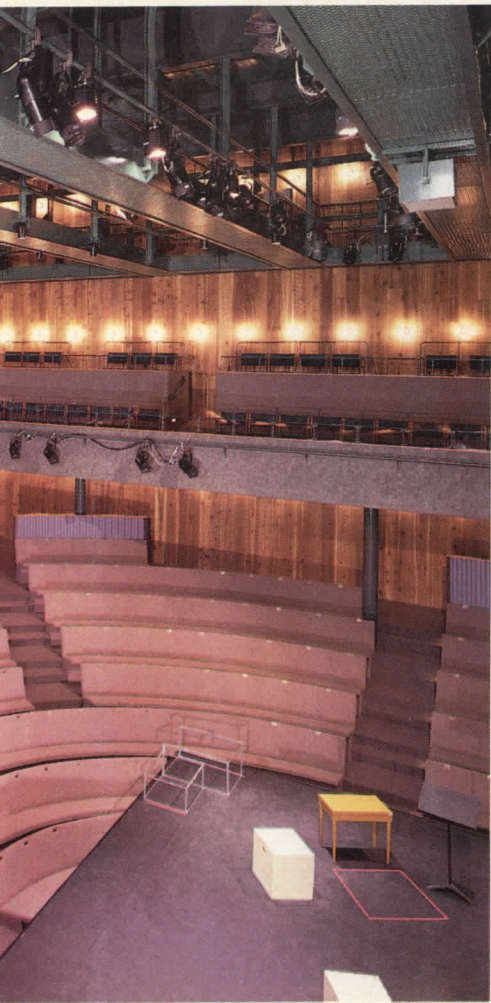
MADISON CIVIC CENTER, Madison, Wisconsin. Owner: The City of Madison. Architects: *Hardy Holzman Pfeiffer Associates*—partner-in-charge: *Malcolm Holzman*; supervising architect: *Theron E. Grinage*; HHPA team: *Conrad Schaub, Perry Hall, William Jordan, Victor Gong, Bun-Wah Nip, Robert York, Dorothy Alexander, Michel Lewis, James DeSpirito, Neil Dixon, Jan Gorlach*; project representatives: *Peter Blossom, Duane Hinz*. Engineers: *Ketchum Barrett Nickel Austin/Besier* (structural); *Mechanical Design, Inc.* (mechanical/electrical). Consultants: *Jaffe Acoustics, Inc.* (acoustical); *Jules Fisher Associates* (theater lighting); *Jules Fisher & Paul Marantz* (special lighting); *Theater Techniques, Incorporated* (stage); *Boyce Nemece Designs* (projection & equipment); *George D. Cattabiani* (elevator); *Dennis Pearson* (stained glass); *Morrison/Hannah Designs* (Isthmus Playhouse seating). General contractor: *Orville E. Madsen & Son, Inc.*



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## Adapting a movie theater for multi-purpose activities

The following check list indicates the three major areas—stage, audience and technical—that need consideration in determining the suitability of using an old movie theater as a multipurpose hall. Each item indicates: 1) how movie theaters were constructed; 2) today's requirements; and 3) changes made to the former Capitol Theater in Madison, Wisconsin. It was prepared by HHPA with Paul Marantz, Bernard Weiss, Boyce Nemec, Christopher Jaffe and Robert Davis.

### STAGE REQUIREMENTS

#### Size

1. Most movie-theater stages constructed prior to 1930 were 50 to 80 feet wide but at most 20 to 30 feet deep.
2. Today, requirements for a 70- to 100-piece orchestra, ballet company or Broadway show necessitate a minimum of 35 or up to 60 feet of depth for grand opera.
3. The existing rear stage wall of the Capitol Theater was removed and reconstructed to provide an expanded stage depth of 35 feet.

#### Orchestra pit

1. Orchestra pits in old movie theaters permitted a maximum of 20 to 30 musicians, and seldom extended below or behind the front edge of the stage.
2. Many of today's productions require 40 musicians (60 to 80 for opera).
3. The existing fixed pit of the Capitol Theater, 48 feet by 8 feet, and four rows of orchestra seating were removed. They were replaced by a 56- by 20-foot hydraulic pit lift. It stops at four levels: basement for loading, 5 ft-6 in. below orchestra seating to serve as a musicians' area, orchestra seating level to augment capacity with four rows of removable seats, and stage level to assist in loading/unloading and for certain productions to increase stage size.

#### Stagehouses

1. These were usually built to the side and rear property lines of the old movie houses. Included within this space were the firestair and dressing rooms.
2. Today, off-stage space for the movement of performers (especially dance) and scenery is a necessity.
3. For the re-cycled Capitol Theater, 1,900 square feet of wing space were added stage left for movement of performers and scenery and to accommodate star dressing rooms.

#### Dressing rooms

1. Most old movie theaters had 10 to 20 dressing rooms, which accommodated 2 to 4 people starting one level above the stage and running the full height of the stage tower.
2. The dressing rooms most in demand now are at stage level for use by stars and their entourage. These usually include private bathrooms. Next in demand are chorus dressing rooms accommodating 20 to 40 people.
3. Two 100-square-foot dressing rooms with toilets were constructed at the Capitol's stage level.

Two chorus dressing rooms totaling 1,500 square feet were constructed one level below the stages.

#### Green Room, warm-up rooms, rehearsal rooms

1. These were rarely included in old movie theaters.
2. Today they are in demand by resident companies and touring groups.
3. As part of the transformation of the Capitol Theater, a 1900-square-foot rehearsal room was constructed with a professional dance floor. A Green Room and warm-up room were not provided.

#### Construction shops and storage

1. These facilities were never included in movie theaters.
2. Today, resident companies require them for the production and storage of sets and costumes.
3. None are provided for the new theater.

#### Loading facilities

1. These were usually minimal. Movie theater stages were often served by the same stage door used by performers.
2. In today's multipurpose hall they are crucial to a successful operation. If scenery, sets, costumes, instruments, etc., cannot be loaded in and out within a few hours, many touring companies will not agree to perform.
3. A new series of 8- by 10-foot acoustical loading doors have been installed with direct access to the pit lift. An 80-square-foot elevator also services the stage from the street level.

#### Administration

1. These spaces were rarely more than minimal.
2. For live performances today, these areas grow in number to include: public relations, accounting, bookings, ushers, etc.
3. 1900 square feet of new administrative office space was constructed in the new facility.

### AUDIENCE REQUIREMENTS

#### Seating

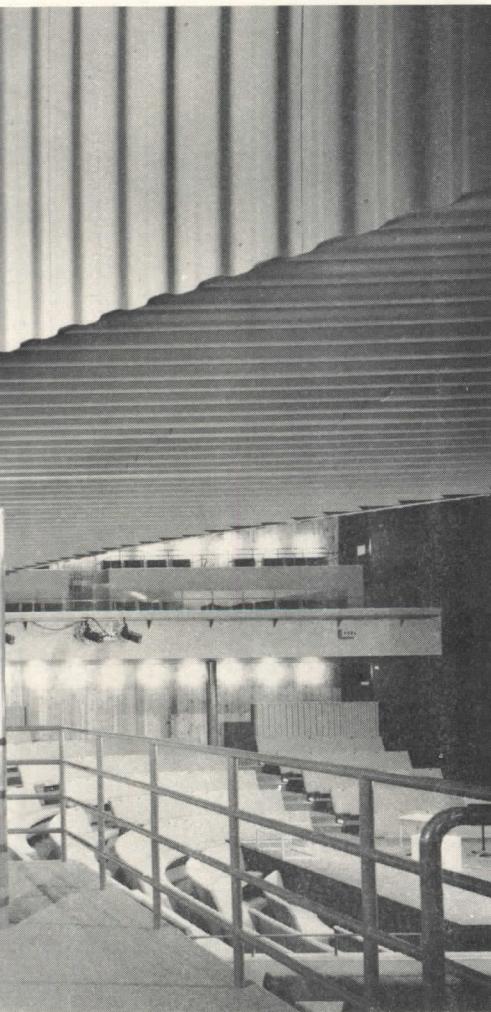
1. The 1920s and '30s provided us with movie theater seats that were generally 18 to 20 inches wide, with back-to-back spacing of 30 inches.
2. Now most communities demand 20- to 22-inch-wide seats; back-to-back measure of comfort is 34 to 36 inches. These dimensions can usually be accommodated with a reduction in the number of seats in the orchestra level, but not in the stepped balconies or loges.
3. In the renovated Capitol, the new seats are 34 inches back-to-back and the individual seats are wider. There are now fewer seats in the orchestra and more in the balcony. The theater capacity has not been appreciably changed.

#### Lobby

1. Lobbies in downtown and neighborhood movie theaters vary in size, but function primarily as a place to hold some patrons waiting between continuous shows.
2. For live performance a lobby must comfortably accommodate all of the patrons prior to performance, during intermission, and may also have to function as a place for community events.
3. For the Madison Civic Center, a new lobby, the Crossroads, was constructed with light and sound locks servicing all theater levels. It includes an informal performance place, refreshment areas, box office, and coat room.

#### Box office

1. Box offices of older theaters were usually just large enough for two people dispensing tickets to one performance.



2. The box office of today's multipurpose hall sells tickets to many performances, sometimes months in advance. Many are computerized and directly involved with administrative functions.
3. A new four-position box office and subscription area with computer consoles was installed in the new facility.

#### Toilet facilities

- 1,2. Building codes change and so have the public demands for these facilities.
3. New men's and women's toilets were constructed on four different levels.

## TECHNICAL REQUIREMENTS

### Rigging

1. Movie theaters were equipped with stage rigging to meet the requirements of vaudeville: A hemp-type system with a pinrail at stage level, with several special wire-guided counterweight sets for border lights, picture screen, screen masking, a house traveler track with curtain and a fire curtain.
2. Production requirements for theater or opera include a counterweight rigging system with sets on 6 in. centers capable of handling 800- to 1000-pound loads. A loading bridge should also be provided. Fly galleries should be on both sides of the stage with pinrails to handle spot lines and special rigging.
3. A new counterweight system with sets on 6 in. centers was installed at the Madison Civic Center for the full stage depth in addition to fly galleries, grid, pinrails, etc.

### House lighting

1. Movie theater lighting was atmospheric—designed to create moods.
2. Requirements for seeing in a multipurpose hall far exceed those conditions suitable for motion pictures. Supplementary lighting must allow patrons to read printed programs, identify reserved-seat numbers, and mingle during intermission. Modern electronic dimming systems can replace the complex mechanical systems previously used to achieve color blending and dynamic light transitions, and recall them with a touch of a button.
3. A new three-color cove lighting system, re-fabricated chandeliers, refurbished wall sconces, aisle lights and new downlights were installed at the Madison Civic Center.

### Stage lighting

1. Most existing lighting equipment in movie houses is located on stage and has seen 50 years of diminishing use.
2. Power requirements in a multipurpose facility are many times that of the original equipment. As much as 30 per cent of a stage-lighting system, including its control, is located on the audience side of the proscenium. Adequate space must be found for new equipment that is accessible for maintenance, esthetically compatible with the auditorium decor and located in the correct *relationship* and distance to the stage.
3. No lighting equipment was recoverable from the original Capitol Theater. The new installation includes: memory control console, patch panels, dimmer and relay racks. Stage lighting in the auditorium has been mounted on two pairs of ladders adjacent to the proscenium, placed on extensions to the front of the balcony, mounted above the ceiling and in the follow spot booth.

### Acoustics

1. Movie theaters were not designed to strict *acoustical parameters for live performances*, although they did accommodate a variety of

musical and speech presentations ranging from organ music accompanying a silent film to an occasional vaudeville soprano.

2. Movie theaters vary in their physical layout but their volumes are often similar to those specified today for opera houses. These spaces do not usually have sufficient reverberation for symphonic use and fan-shaped spaces do not provide adequate reflection to the central orchestra area. Consideration must be given to the types of performances to be housed, whether the acoustical criteria will be achieved by the introduction of electronic or natural sound-reinforcement systems. Today's productions require sophisticated communication systems; actor call, program monitoring, audience call, expanded control-room facilities and in-house mixing.
3. The stage tower volume of the Capitol Theater was physically coupled to the house through a curtain, and a lightweight articulated shell was designed to blend and balance orchestral sound, improve distribution of the harmonic structure, and assist the musicians in hearing themselves and others. The pit was enlarged and acoustically designed for an opera orchestra. An extensive theater sound system was installed to add to the room's natural acoustics. A main cluster of speakers was located behind a sound-transparent proscenium drapery supplemented with under balcony speakers. The basic system is designed for speech, jazz and musical theater only. Extensive additional power and conduit systems were installed to allow highly amplified groups to rapidly assemble their own touring systems in the theater.

### Film

- 1, 2. Most movie-theater prosceniums can accommodate the range of current and traditional film formats from the early 1:1.33 height-to-width ratio to the wide screen 1:2.25 images. In some large movie theaters, the projection down-angle to the screen was extreme, 18 degrees. Today's standards to reduce distortion and provide sharp focus over the entire image are not more than six degrees. Technological improvements in equipment no longer restrict the size of the displayed image. Instead the image size is controlled by the comfortable (20 degrees) upward viewing angle from the front seat and the cut-off line of the balcony from the last orchestra seat.
3. The existing movie equipment of the Capitol Theater has been fully refurbished to conform with Academy standards. A new suspended screen and sound system has been installed.

### Mechanical system

1. The early theaters employed ventilation as a means of removing heat. Air was generally drawn into the building through the basement, forced up vents below the seats, exiting through perforations in the ceiling and attic space. Improvements to this basic convection system included employing fans, introduction of heat and finally cooling.
2. The problems of environmental room control in the modern auditorium are complex: an audience will not tolerate more than a 5 degree temperature differential during a performance; humidity control is essential to audience comfort and acoustics: energy-conservation requires reuse of air where possible; and live performance power-requirements create large amounts of heat to be dissipated.
3. All mechanical systems at the Madison Civic Center have been replaced to meet today's energy requirements and conservation guidelines. Shafts, ducts, and chases have been reused where possible.

## The movie palace in context

by Hugh Hardy, Malcolm Holzman and Norman Pfeiffer

The perceived economic value of most large movie theaters during the 1950s and 1960s was negligible, except as urban renewal sites. The current interest in "saving" these structures regardless of their use represents a step forward. Some communities and developers discovered the large volumes they enclosed were an exploitable resource. The Michigan Theater (Rapp & Rapp, 1926), in downtown Detroit, was recycled by inserting a ramp and three levels of parking garage. The Century Theater (Edward Eichen Paum, 1925), on the northside of Chicago, was gutted and retrofitted with a continuous "Guggenheim" type ramp and scenic elevators as a shopping center. Almost every city now has a Cinema 1, 2, 3 and 4 in which operators have subdivided a larger theater. At the same time, a number of cities (Columbus, Oakland, Tampa, Akron, Providence, Pittsburgh) realized another potential for underused or vacant movie theaters by transforming them to accommodate live performances. Ironically, buildings that began as inexpensive enclosures for the masses are being changed by use to high-culture facilities.

Mass entertainment, especially film, has always exploited the public's taste for escapism. Old movie theaters were "dream cathedrals," or "fantasy architecture." Few buildings constructed today stylistically resemble these theaters. But, however exotic they may appear, their achievement is real. It must be recognized that a limited number of architects channeled their talents into a highly specialized architecture which adhered to constraints of time and money heretofore unknown to the profession. Working with the film industry, they conceived sophisticated planning formulas to attract developers and an eager audience. If America's remaining movie theaters are to become community resources, their future depends not upon nostalgia, but on a better understanding of their history and the design factors which made them successful. It is also essential that the theater's role within its commercial context be fully appreciated.

### History

In 1889 Thomas Edison's laboratory patented an *instrument*, "which does for the eye what the phonograph does for the ear"—the "Kinetoscope." This successful novelty—the introduction of motion to pictures—was further developed so that 20 years later bigger-than-life-size pictures were seen on screens in roughly 10,000 nickelodeons across America. By 1915 "feature films" were being made. In 1926 *Variety* reported an attendance of 100 million people a week in 20,000 theaters. Movies had grown from Edison's invention to a billion-dollar-a-year industry.

## The first theaters—1920s

As the industry evolved, the need for proper places of display became evident. When it was proven that the public would sit for more than one hour to watch a film, it was apparent that the nickelodeon (a storefront with seats) would not suffice, nor would legitimate theaters or vaudeville houses with their steeply raked, column-supported balconies.

Aggressive film exhibitors decided to build their own theaters, to accommodate the special requirements of projection booths, the proper angle of the projector to the screen, improved patron sightlines, separation of patrons between continuous showings, and the desire for more striking environments than legitimate theaters. Exhibitors turned to architects with previous theater experience. William Fox employed Howard Crane (who designed storefront nickelodeons prior to 1910). Balaban and Katz employed Thomas Lamb and John Eberson (Lamb built his first theater in 1909). Many of the independents employed the Boller Brothers (one started as a scenic artist and the other as a magician).

## Commercial context

These professionals began in modest practices that grew with the industry into large offices with substantial commissions. The economics of providing rentable space adjacent to areas of significant public activity was clearly understood by theater owners. In 1915 Al Ringling commissioned Rapp & Rapp to design a theater and commercial space in Baraboo, Wisconsin. Assembling large pieces of property in developed downtown areas of major cities—Philadelphia, Columbus, Brooklyn, etc.—required an underwriting of millions of dollars. To produce fiscally sound investments, revenue-generating space was included in addition to the theater: often this rentable area exceeded the theater in size. A prototypical configuration of multi-use projects would be: placement of the lobby on the major public thoroughfare, with the vast volume of the theater at the rear of the site. Income-producing space could then occupy the maximum amount of prime frontage.

## Architecture

Architectural design during the 1920s was still strongly influenced by the Beaux Arts tradition. Greek and Roman temples, Renaissance palazzos, and Italian courtyards provided much of the inspiration for the design of banks, universities, office structures, museums, city halls, court houses, and other public buildings. Movie-theater design partly drew upon these same images. The buildings of Lamb, Rapp & Rapp, Eberson, Crane, etc., borrowed directly from the Beaux Arts sources. However, the client's more stringent budget for each project affected the interpretation of styles.

Instead of making a single building within a normal time span, these architects erected as many as ten simultaneously on very tight schedules in different cities. In 1928 \$160

million (\$1.4 billion in today's value) was committed to new movie-theater construction.

## Facades and marquees

To perform within significant cost and time restraints, a different design approach was taken in the use of materials and lighting. Typical Beaux Arts exterior facing materials—limestone, granite and marble—were replaced by patterned brick, terra cotta, and an occasional application of thin stone veneer. While other community buildings were attempting to make grand impressions with full-front facades, movie facades became modest in dimension, frequently reduced to the width of a lobby (25 or 30 feet) to minimize the cost of materials and to maximize exposure of adjacent commercial revenue-generating space. Overwhelming all architecture was the marquee, a sign by day and a lighted beacon at night.



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## Plaster and artificial lighting

Major differences also distinguished interior design. While Beaux Arts architects could in the interior of a project employ quality materials—marble, terrazzo, imported mosaic tile, brass, bronze, hand-carved wood moldings, murals, large canvas paintings, sculpture and scores of decorative light fixtures—movie-palace architects achieved almost all their results from using plaster, paint and special lighting. Natural light as a design element was a traditional device but extensive use of artificial colored light in theater architecture was unprecedented. Many of the lighting applications employed were borrowed from stage-lighting techniques. Scenic devices were brought to the audience side of the proscenium. Red, amber and blue cove lighting adjacent to the proscenium, in the ceiling, under balcony domes, and in wall niches allowed the stage manager to manipulate the atmosphere by dimmers, making it warm or cool, or shifting gradually from one to the other. In this dimly lit auditorium, other carefully placed fixtures accentuated decorative plasterwork, making it appear three-dimensional. Paint colors, stencils and draperies were

selected for their appearance under these muted conditions.

Most of the theaters built in the early 1920s were covered with decoration: columns, niches, domes, alcoves, walls and ceilings. John Eberson's theaters showed a reduction of decoration, making the ceiling and upper sidewalls of smooth plaster. To animate these surfaces, special star-like lights and projected cloud images were installed. His designs were based on courtyards: the auditorium sidewalls became groupings of building elements; the ceiling and upper wall areas became the evening sky with stars. Other architects followed his initiative. Atmospheric theaters achieved large initial cost savings over their ornamented competition.

## Subsequent development

By 1930 the influence of "Modern Design," aided by Eberson's example forced a change in the design approach of the previous decade. The thirties relied less on identifiable historic reference and developed geometric and organic design patterns.

Fewer large theaters were constructed during the late thirties and forties. Government intervention in industry operations restructured the relationships among production, distribution and exhibition.

## Film theaters today

Emphasis today is on smaller theaters to allow for long runs of one film, reduced operating costs, and a shortage of the product (film). Attendance for 1979 was only 113.7 million people in the less than 10,000 theaters still showing films.

Movies began in a simple room with chairs, screen and projector. This could also describe today's successful shopping center cinema or multi-film theater. Contemporary exhibitors are not interested in the theater as a device to lure customers; today's requirements are nothing more than a simple neutral enclosure, similar in many ways to the turn-of-the-century nickelodeon.

## Footnote to history

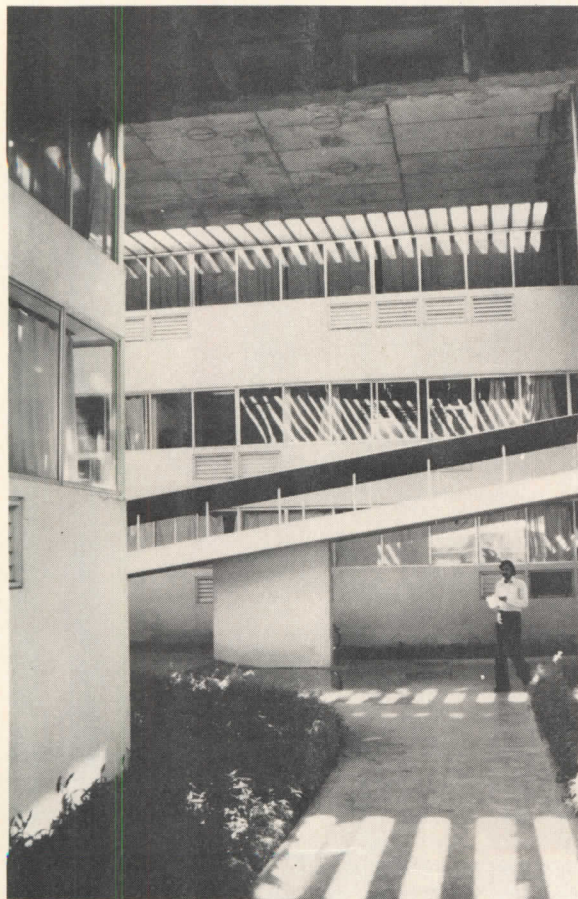
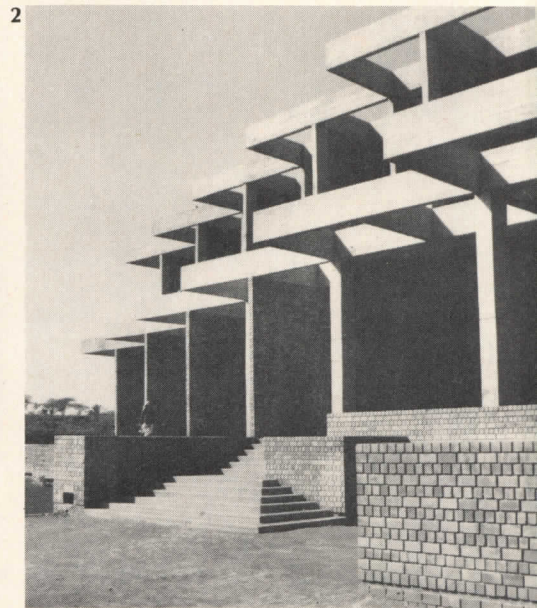
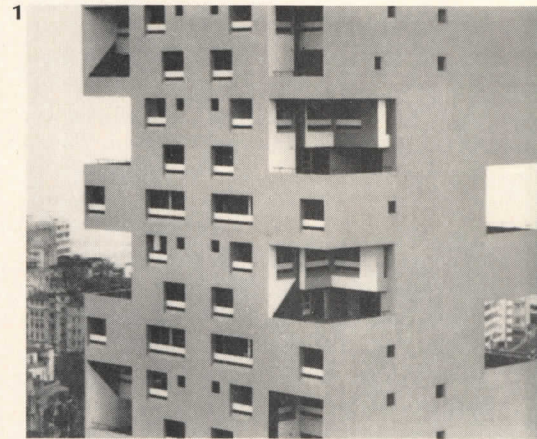
The idea of continued use for movie theaters is not new. It is a decade since the Ohio and Oakland Paramount were purchased for reuse. More is required than support from preservationists, listing on the National Register, the enthusiasm of a performing arts group or the occasional deficit financing by a community. If the remaining theaters are to survive as something more than nostalgia, they must have additional uses brought to them to become economically viable. Movie theaters must be considered in their context—as one supporting element in a commercial area—something their original architects and developers clearly understood.

*This article in part results from research compiled by the Eschweiler Graduate Research Studio at the University of Wisconsin—Milwaukee and a grant from the National Endowment for the Arts.*

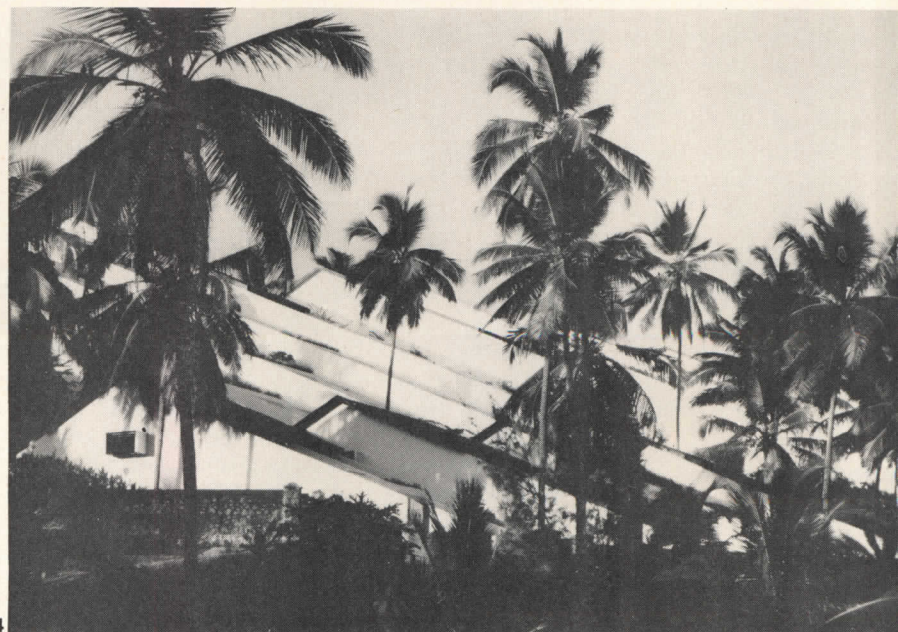
# A REPORT FROM INDIA

## Current work of C.M. Correa

The varied and innovative work (ranging the gamut from houses and apartments to hotels, museums, churches, factories, administration buildings) of Charles M. Correa has not only brought him to the fore among India's leading architects: it forms a reasoned, sensitive compendium of uses of passive, natural energy to control luminosity, air movement and temperature—and to generate the architectural forms—in his buildings. Adding inventiveness to a deep knowledge and respect for history, Correa offers some lessons for us all to ponder: "The energy crisis . . . might well be an opportunity for architects . . . (and I mean *especially* those concerned with the visual and sculptural aspects of their work) to turn again to that seminal progenitor of forms: climate." —Herbert L. Smith, Jr.

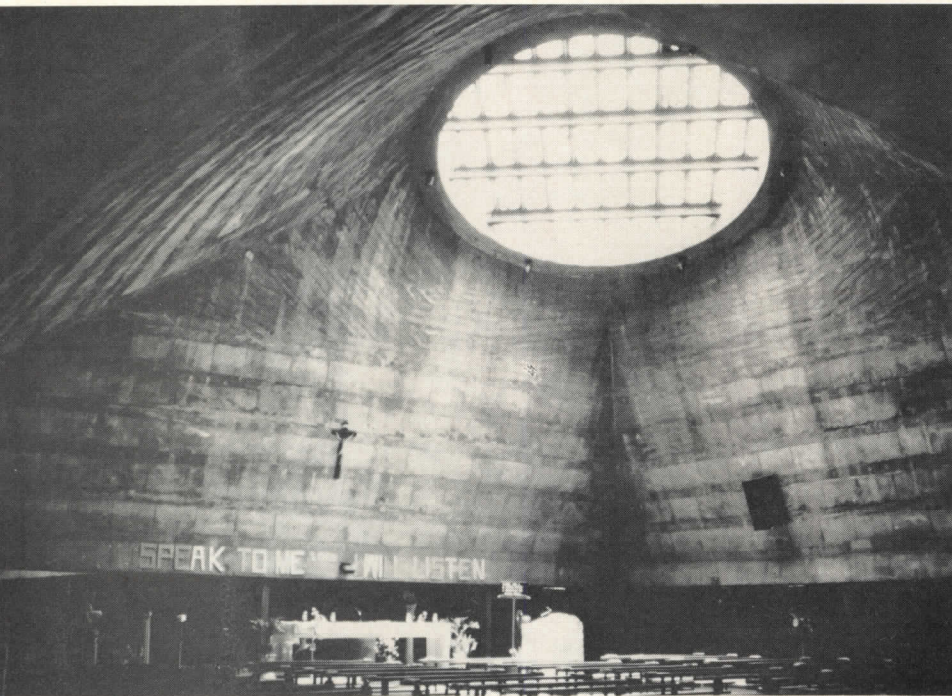
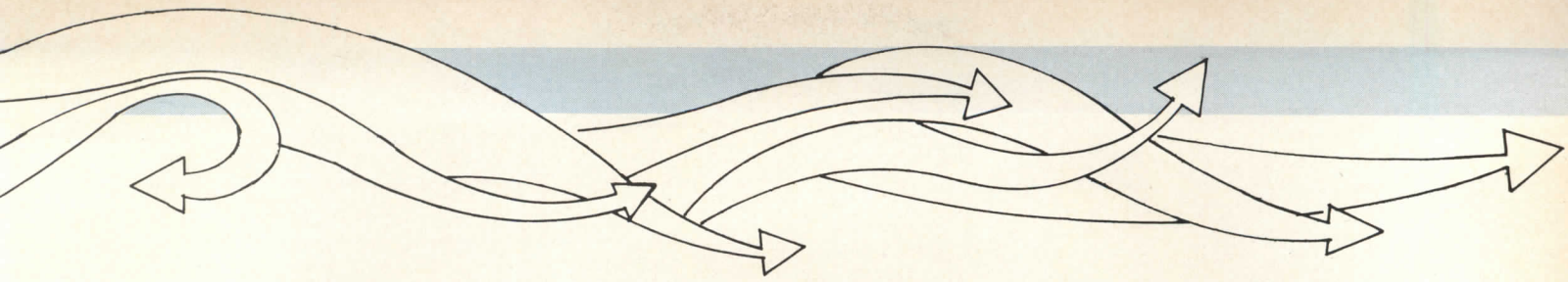


- 1 Kanchanjunga Apartments,
- 2 Tara Group Housing
- 3 Parekh House
- 4 Kovalam Beach Development
- 5 Salvacao Church
- 6 Administrative Complex, E.C.I.L.
- 7 Gandhi Smarak Sangrahalaya
- 8 Ramkrishna House

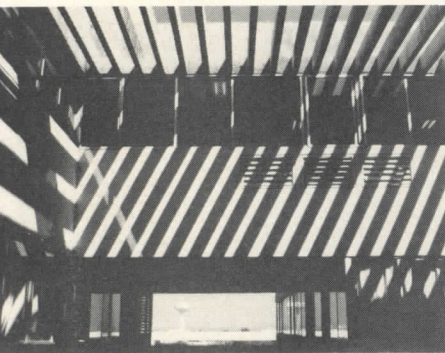


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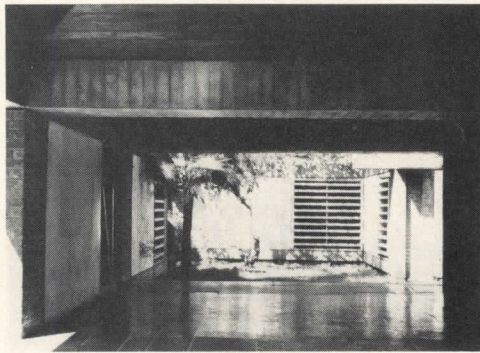
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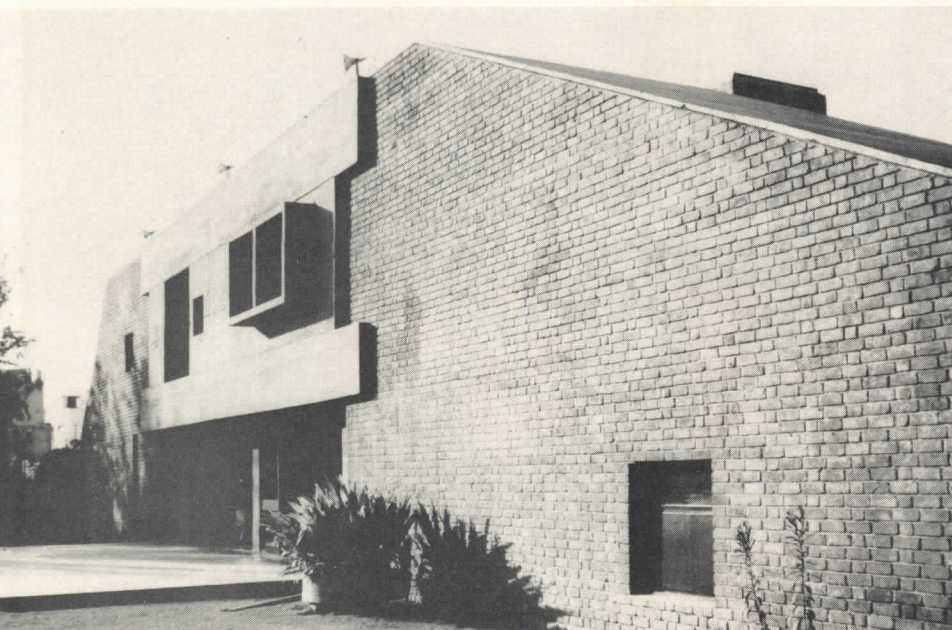
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## FORM FOLLOWS CLIMATE

by C.M. Correa

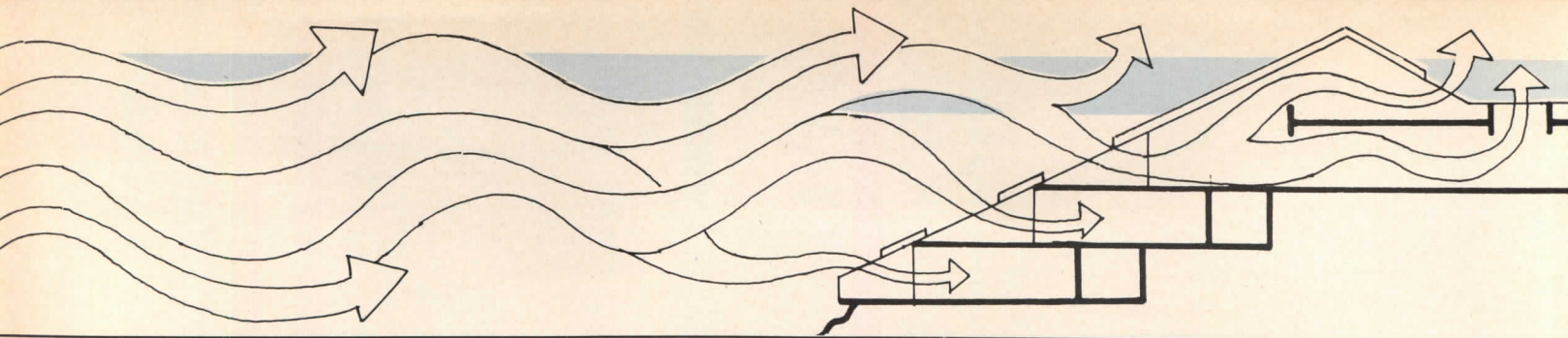
To live in the Third World is to respond to climate. We simply cannot afford to squander the kind of energy required to air condition a glass tower under a tropical sun. And this, of course, is an advantage. For it means that the building itself must, through its very form, create the "controls" the user needs.

This degree of climate control involves much more than just sun angles and louvers; it concerns the section, the plan, the shape and the heart of the building. The Emperor Akbar's magnificent capital complex at Fatehpur-Sikri is not just an attempt to create an architectural *tour de force* in the classic sense (scale, proportion, silhouette, materials); it also sets out to be at least 10 degrees cooler than the surrounding landscape. Hence the pattern of open pavilions, placed formally in the context of courtyards, inlaid with fountains and running water. Sensational as this architecture appears against the evening sky, it is only when you are within that you comprehend the fundamental impulse (the architectural deep-structure) that generates the form. It is the necessity to control luminosity, air movement and temperature; in short, to establish a micro-climate (and hence, as we shall see, a life-style) for its users.

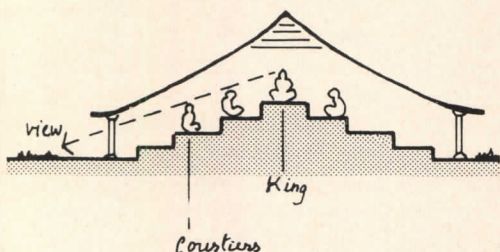
Seen from this viewpoint, the energy crisis could mean much more than just fiddling around with the thermostat. It might well be an Allah-sent opportunity for architects in the U.S. (and I mean *especially* those concerned with the visual and sculptural aspects of their work) to turn again to that seminal progenitor of form: climate.

As designers, we all want to see (and build) interesting—and exotic—form. But the "beautiful object" needn't be something which is developed in oppositions to the forces of nature around it. On the contrary. The extensive overhangs of Frank Lloyd Wright's Usonian houses, the baroque double-heights and giant *brise soleil* of Corbusier: all these great *sculptural* decisions were triggered off by a desire to modify the prevailing climate. Similar instances abound in the old architecture of most Third World countries, constituting, in effect, what could well be an invaluable technological transfer, in reverse!

For instance, at Trivandrum in the southern tip of India, there lies the thousand-year-old Padmanabapuram palace. It is a hot and humid area, and these palace buildings are indeed extraordinarily inventive in their response to the prevailing breezes and light;



response to the prevailing breezes and light; as witness this Royal pavilion, in which the slope of the tiled roof echoes the pyramidal form of the plinth:



The King sits on the top of the pyramid, with his courtiers on descending levels around him. The basic configuration of the building has two enormous advantages. First, it doesn't need any enclosing walls to keep out the hot sun and rain. Second, when you are within the pavilion, your line of vision is deflected downwards to the grass around: a cool fresh green which in itself is therapy on a hot day!

We have used this principle in many of our projects—as for instance, in the development of Kovalam, one of India's most beautiful beaches, just a few miles away from Padmanabapuram. This complex of resort facilities uses the local vernacular of tiled roofs and white plastered brick-bearing walls, with a natural hill slope providing the necessary plinth profile.

Cross-ventilation is essential in most of the hot-humid coastal region of India. In Bombay, for instance, the temperature is warm throughout the year, varying from about 70 degrees F to 100 degrees F. The humidity is often above 90 per cent. In this climate, and without air conditioning, the new Salvacao Church has to accommodate large congregations, of over 2,000 people at a time.

Now, the conventional church form, evolved in the relatively cold climate of Europe, is basically a closed box. Islam—the only religion involving congregational prayer which grew up in the East—uses a totally different configuration. Mosques in Pakistan and India (as for instance, the great Jumma Masjid in Delhi) are virtually just open-to-sky courtyards, defined by a colonnade all around. In other words just enough structure to make you feel you are in a "built environment"; in actual fact, of course, you are under the open sky.

Unfortunately, a church cannot, for liturgical reasons, be uncovered. (Though if Christianity, which started in the Near East, had remained there and not switched to Rome,

## Kovalam Beach Development, Kerala

Kovalam, one of India's most spectacularly beautiful beaches, is near Trivandrum along the Arabian Sea. The first phase of this project consists of hotels, cottages, and specialized centers for yoga, ayurvedic massage and water sports. In order to preserve the natural beauty of the site, the facilities are built into the hill slopes—every room getting its own private terrace for sunbathing and relaxing. The construction is in the traditional Kerala vernacular: white plastered brick

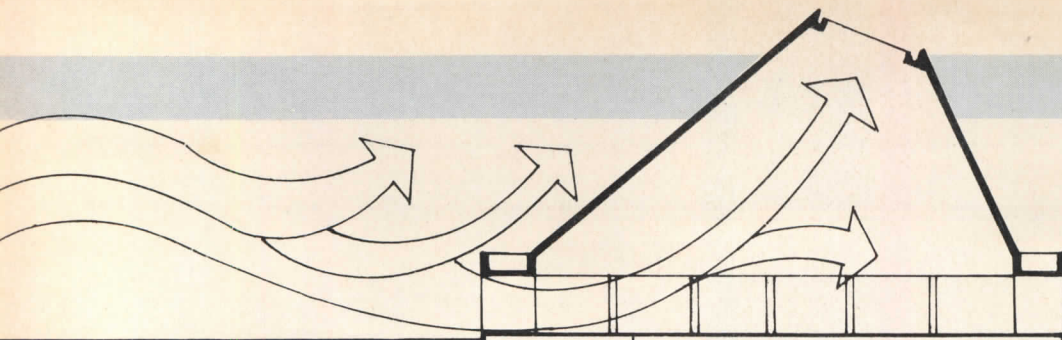
walls with red tiled roofs. The slopes of these roofs run generally parallel to the natural hillslopes to catch the prevailing breeze currents and also to deflect the eye away from the hot sky and down towards the palm-fringed beach.

Client: *India Tourism Development Corporation*. Structure, services, supervision: *Beacons*. Mechanical: *Maneck N. Dastur*. Electrical: *D.N. Purandare*. Constuction: *P.I. Isaac*.



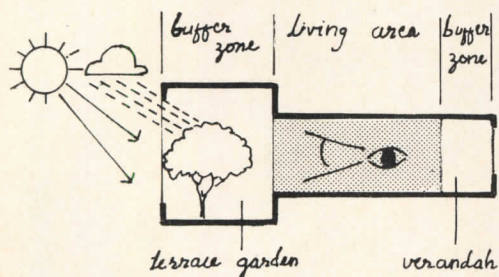






perhaps it would have had open-to-sky churches.) So, for the Salvacao Church in Bombay we created a series of interlocking courtyards and covered spaces, a pattern which allows any particular activity either to take place in the open or under cover—depending on the weather. These spaces are functionally differentiated in an analogue of Christ's life (see caption), and the covered ones, protected by concrete shells, act as giant flues: the hot air rising and exiting through a vent at the top, thus drawing in fresh air from the courtyards around. All the various areas, both indoor and outdoor, interconnect horizontally, so that the space—and the breeze—flows across the site.

Here, at the other extreme, is a high-rise example: the Kanchanjunga apartments in Bombay. The prevailing breezes come in from the Arabian Sea on the west—so the units had to face this way. But this is also the direction of some less desirable elements: like the hot afternoon sun, the monsoons, and so forth. In order to deal with this dichotomy, it was decided to create an intermediate zone between the dwelling unit and the outside—a large double-height terrace garden which would also (at appropriate times of the day) constitute a major living space:



In section, the apartments interlock so that each unit traverses the building, from east to west. This not only ensures cross-ventilation but also serves to "connect" the two principal views available in our city: the westward view out across the Arabian Sea, and the eastward view across the harbor to the mainland. The double-height terrace gardens form the focal point of each apartment—providing a dramatic platform from which one can overlook the city; each one a shaded, breeze-filled space.

In Bombay, where the high humidity precipitates an overnight dew, it is essential to provide a cover—at some level—to the terraces. But in the dry climate of northern and central India, sleeping out at night on roof terraces has been a tradition for many centu-

## Salvacao Church, Bombay

This church, completed in 1977, consists of a series of interlinked spaces, some covered, and others open to sky. The shell roofs are ventilated at the top, thus setting up continuous convection currents of air.

This church is based on the following concept:

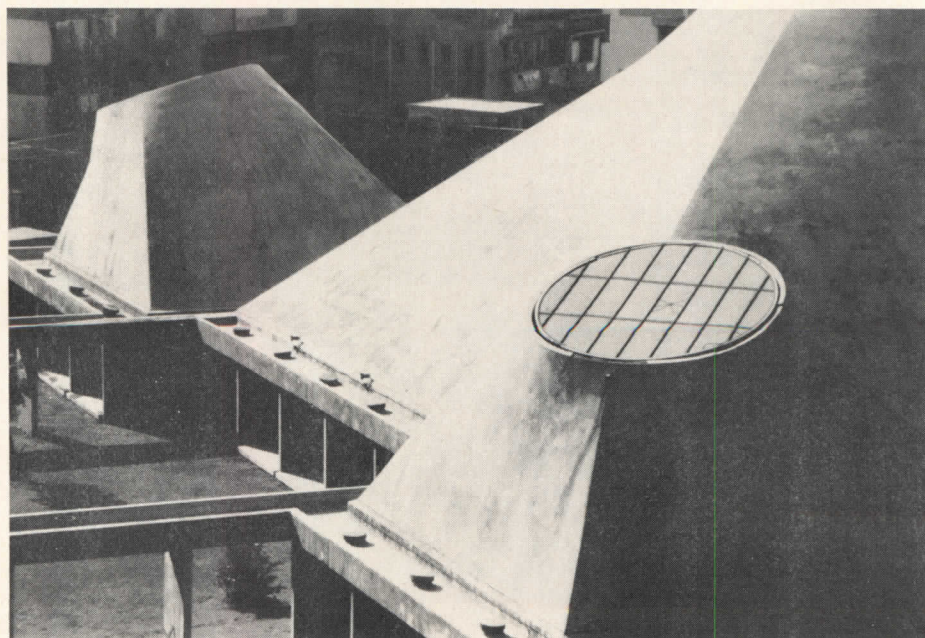
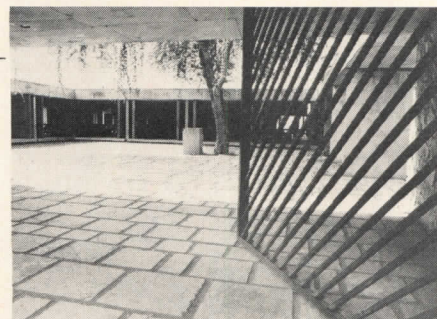
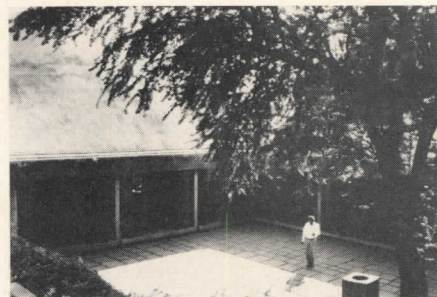
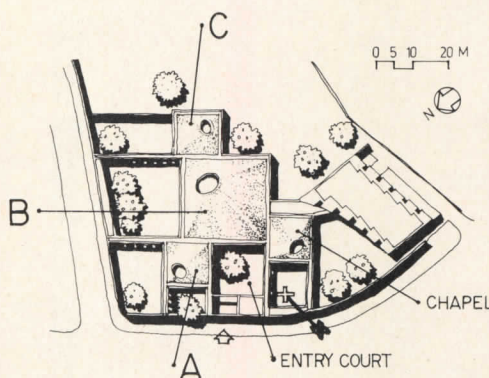
I. That there are three basic periods in the life of Christ: A. The Baptism; B. the public life; C. The Crucifixion.

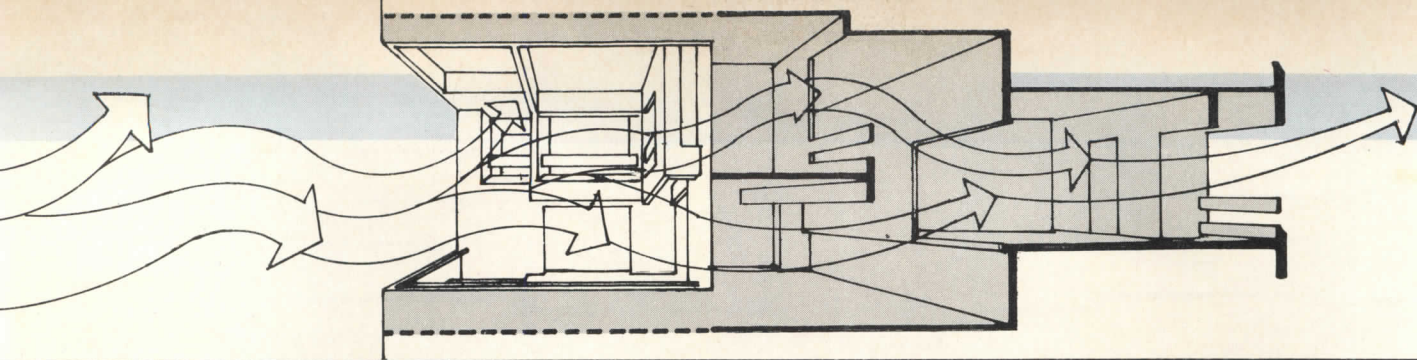
II. That theologically these three periods correspond to: A. Preparation B.

Instruction, i.e. enlightenment; C. The final sacrifice.

III. Furthermore, liturgically these find expression in: A. The baptismal font and confessionals; B. The pulpit and altar; C. The tabernacle.

Client: *The Archdiocese of Bombay.*  
 Structure: *Mahendra Raj.* Supervision: *Beacons.* Electrical: *Western India Engineering Corporation.* Lighting, sound: *Phillips India.* Construction: *New Consolidation Construction.*

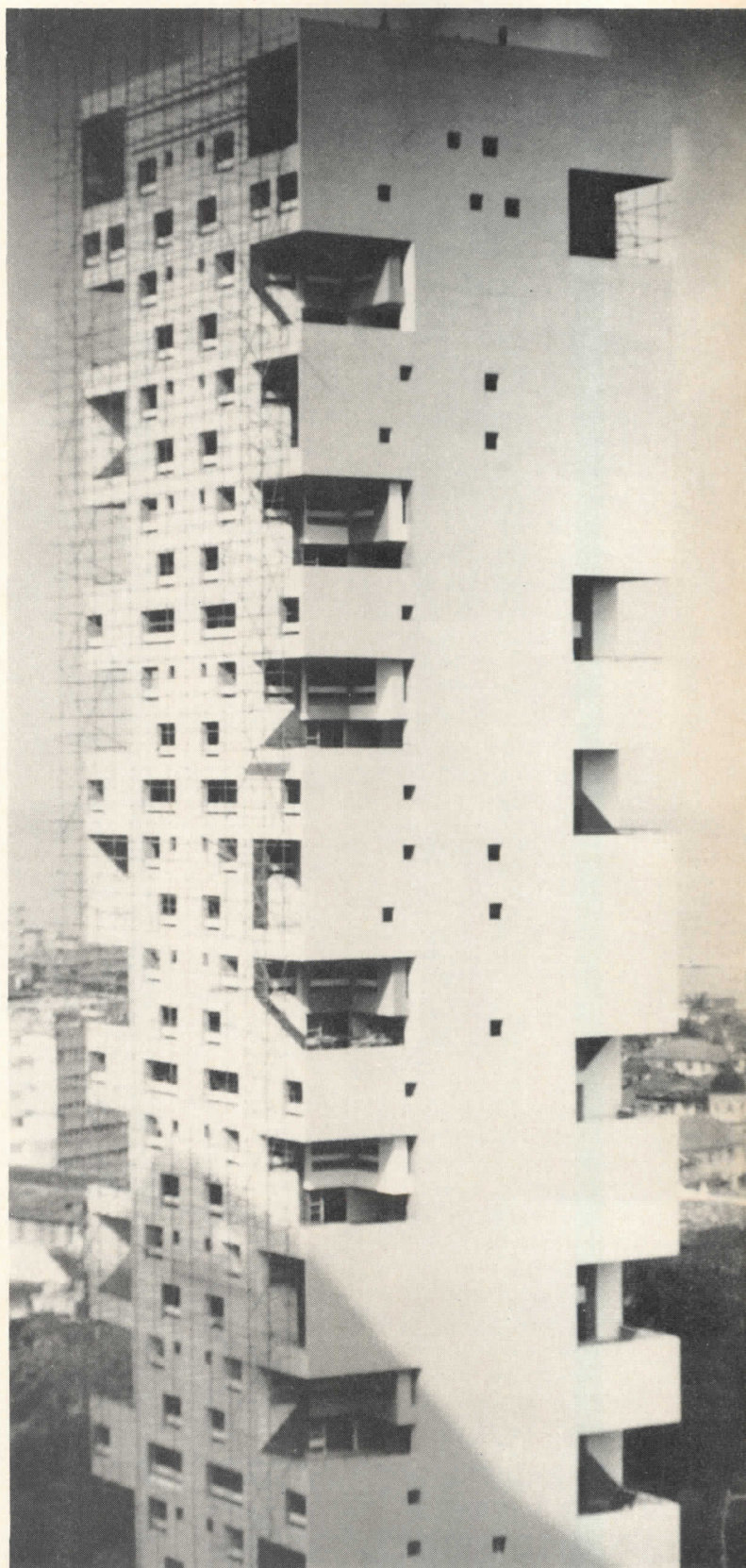
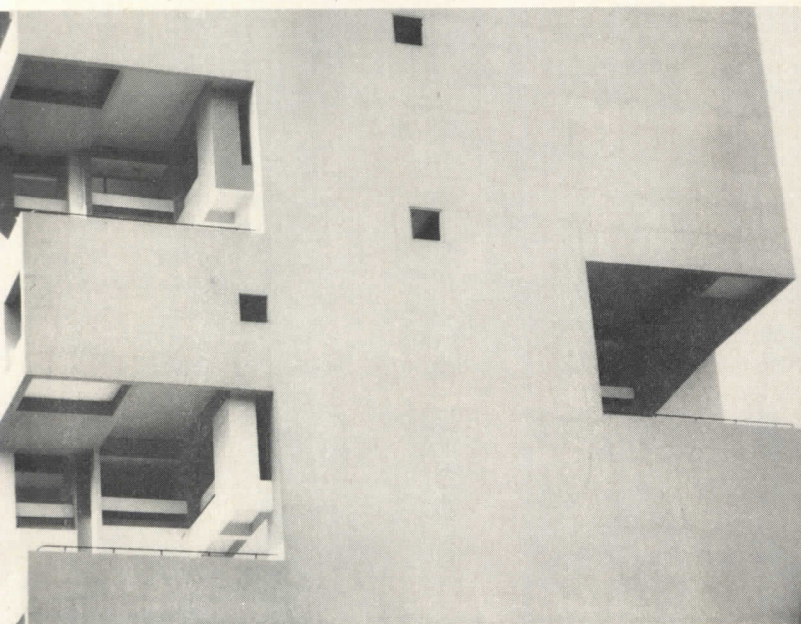


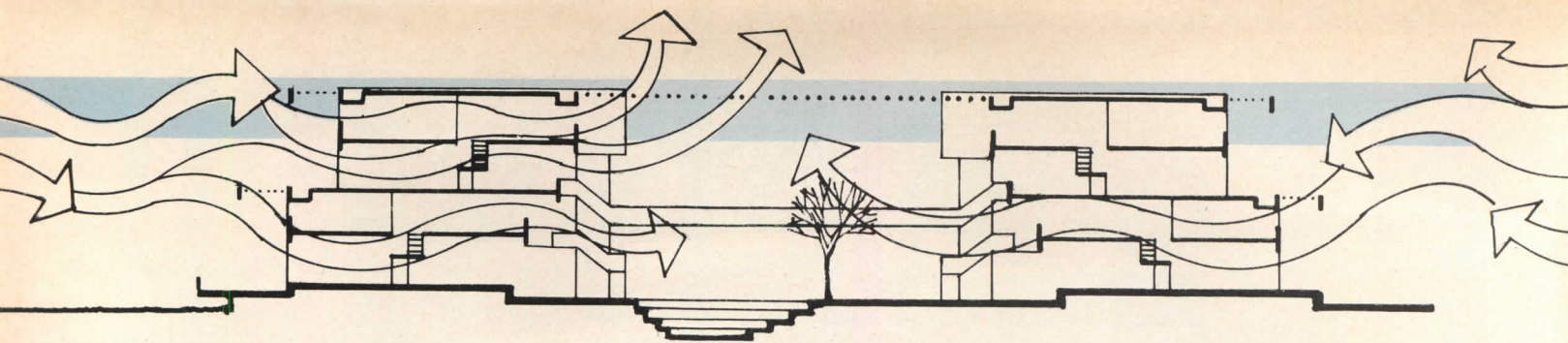


## Kanchanjunga Apartments, Bombay

This tower, 21 meters by 21 meters and 85 meters high, has interlocking apartments—each of which opens out on to a two-story terrace garden. These gardens are placed on the east and west where they can get the sun and rain they require: at the same time they form a buffer zone, protecting the main living spaces from these very elements. A typical apartment has three bedrooms; additional half-levels can be added so as to form up to six bedrooms. The sheer reinforced concrete walls on the sides of the tower are structurally necessary to support the cantilevered terraces; they also express the spatial organization of the various sized apartments within the building.

Client: *T.V. Patel*. Structure: *Shirish Patel & Associates*. Associate architect: *Pravina Mehta*. Mechanical: *Hydromechanical Services*. Electrical: *Oriental Electronics*. Construction: *Engineering Construction Company*.



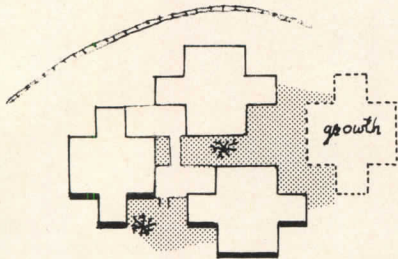


ries. These open terraces are also used during the sunny winter days, for sitting out, drying food grains, etc.

From this premise grew the design for the Tara Group Housing project, a low-rise high-density complex in Delhi. The narrow housing units have an open double-height terrace in front. They are arranged so as to create a central semi-covered community space, in which trees and fountains act as humidifying elements, essential in the dry heat.

The idea of creating a central zone with its own special micro-climate is also the departure point for an office building in Hyderabad—a city in the hot/dry region of the Deccan plateau. It is the administrative center for ECIL, a large electronics corporation in a fast-growing industry. Thus right from the beginning, the client insisted that the form be flexible so that the building could "grow" with time. Second, they wanted a building which would create its own climatic conditions, without recourse to mechanical ventilation and cooling systems.

With these two objectives in mind, the architectural form of the building evolved as a series of modules arranged around a central focus: the whole protected at roof level by slats and by a 100 millimeter layer of water (to reflect the heat and sunlight):



Because of the panoramic view of the factory and township to the west, it was decided to erect a large screen, away from the building, to provide sun protection: the whole contraction acting as a sieve, humidifying the breezes that pass through.

We now come to a project which, though small in scale, has been of crucial significance in the architecture we have developed over the last many years. This was a tube house, which in 1961 won the first prize in an all-India competition for low-income housing. The competition brief called for walk-up units, but we found that we could achieve the same density with these units, each 3.6 meters wide. The warm air rises along the sloping ceiling and escapes through a vent at the top: this in turn draws

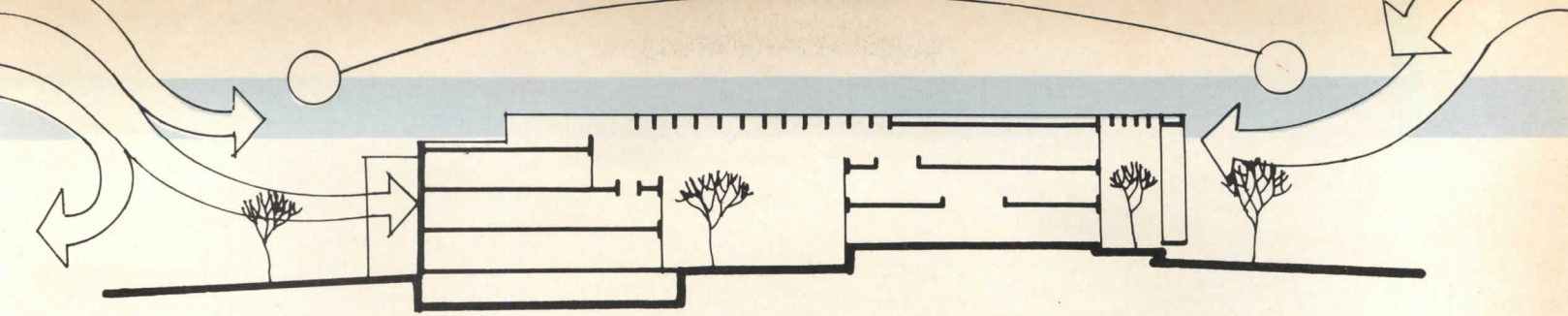
## Tara Group Housing, Delhi

This project, completed in 1979, is a low-rise high-density (525 persons per hectare) configuration of 2- and 3- bedroom units. Two tiers of narrow maisonettes, each 3 meters wide, 15 meters long, and two stories high, are arranged so that the roofs of the lower level of units form open-to-sky terraces for the upper level. This step-back arrangement also serves to form a central terraced gar-

den, partially covered by a pergola, which acts as a focus, replete with trees and fountains, for the whole community.

Client: *Tara Cooperative Group Housing Society*. Structure: *Mahendra Raj*. Associate architect: *Jasbir Sawhney*. Landscape: *Ravindra Bhan*. Mechanical: *S.G. Deolalikar*. Construction: *Ahluwalia Construction Co.*

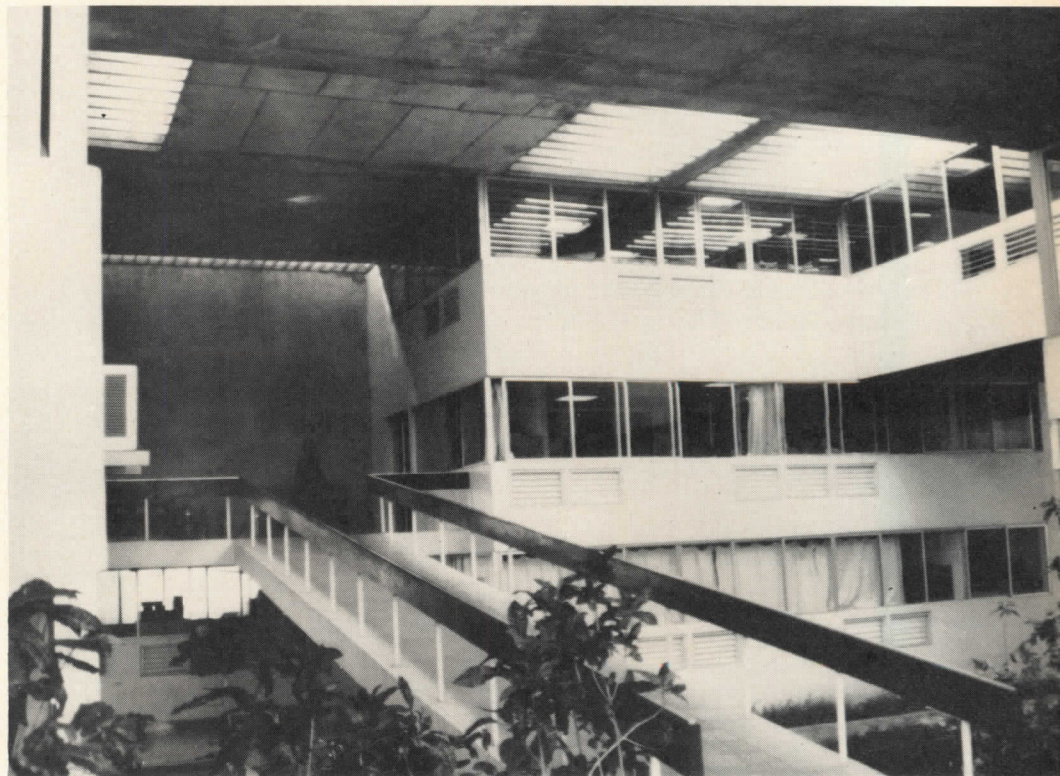
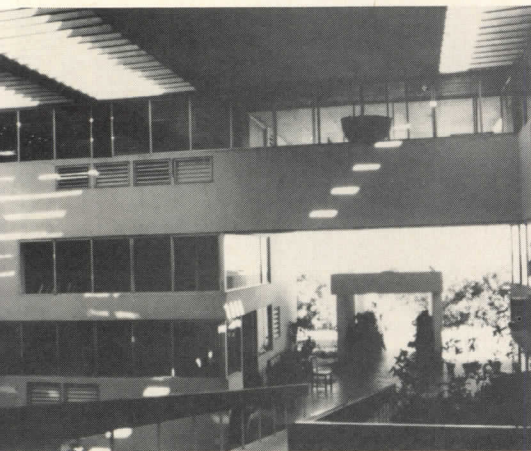
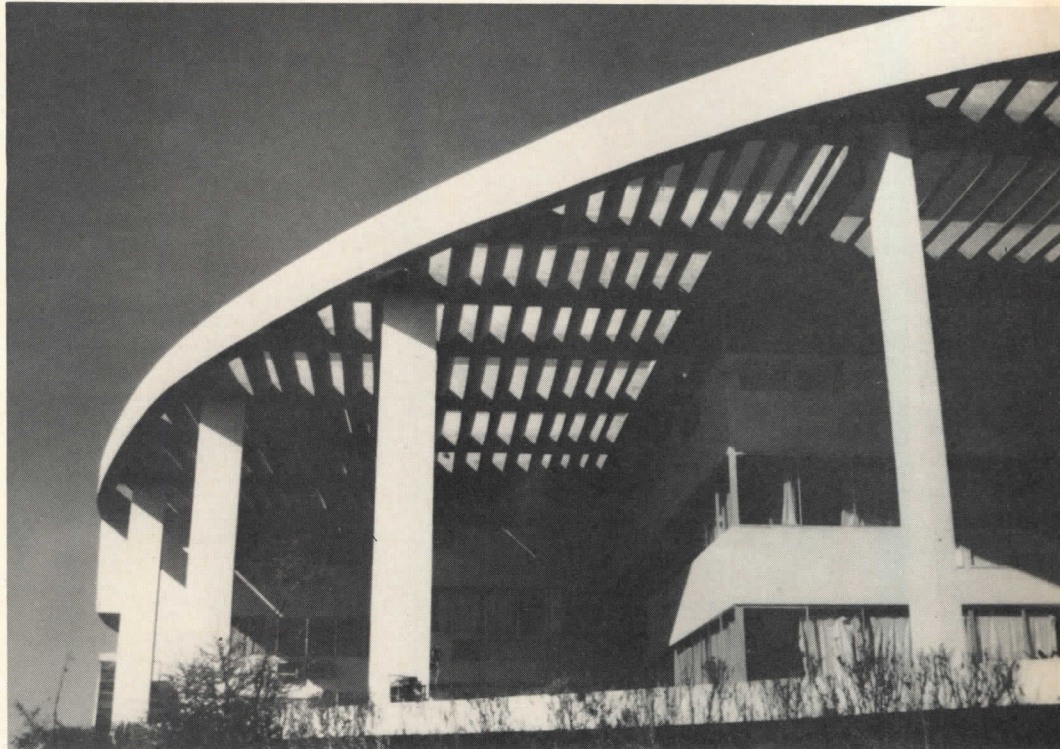


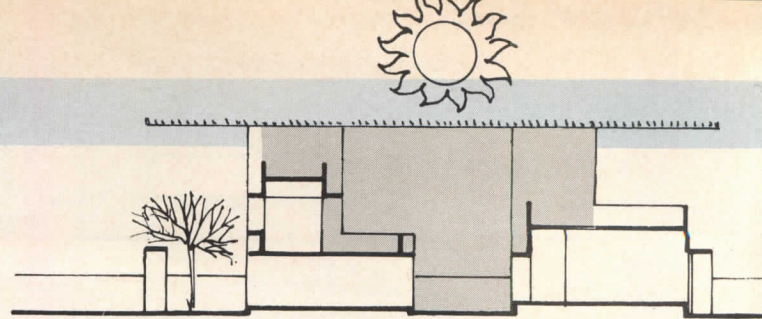
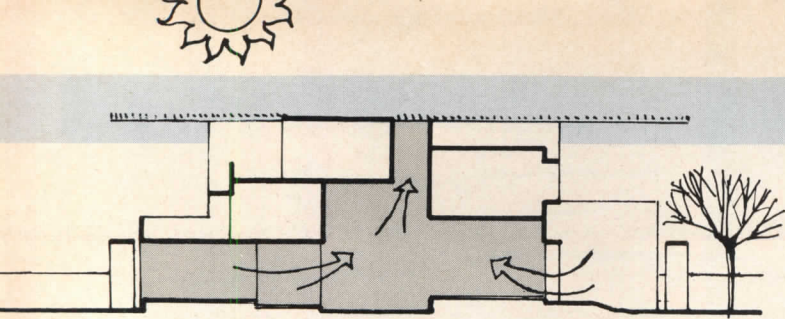


## Administrative Complex, E.C.I.L., Hyderabad

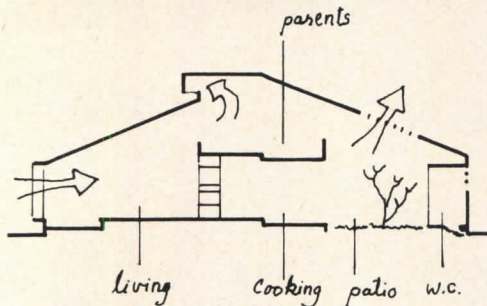
**A** The program stipulated that the building should be expandable; the architecture should create a special micro-climate which would obviate the necessity for air conditioning. Hence the configuration of the units—which can be added on to as growth occurs. The roof consists partly of slats and partly of a thin membrane of water, which reflects the sunlight back up to the sky. The central area has humidifying elements, creating a special micro-climate. Through it passes the main circulation ramp and the overhead bridges, connecting the different modules. The east faces of the building are blank to keep out the sun: continuous strip glazing runs along the other three facades, (protected on the west by a screen which, held away from the building, frames the landscape).

Client: *Electronics Corporation of India*. Structure: *Shirish Patel & Associates*. Lighting: *Philips India*. Construction, supervision: *Department of Engineering, E.C.I.L.*





fresh air through the window to replace it, thus setting up a natural convection current. By adjusting the position of louvers in the window, the rate of exchange of air within the house can be controlled:

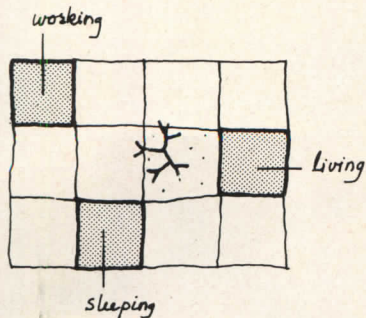


A year later, we used the same principle in the design of the Ramkrishna house, a large private residence belonging to one of the millowners of Ahmedabad. The idea was then further developed for an industrial township near Kota, Rajasthan, where there is an abundance of local sandstone, in lengths up to 3.5 meters long (for floor spans).

In designing these long narrow row-houses, we developed two basic sections. The first I call a "summer section." It creates a pyramidal interior space, closing off the sky: it is to be used in the hot afternoons. The other is the "winter section": a reverse pyramid, opening up to the sky. It is to be used in the cold season, and in the summer evenings.

The Parekh house, built in Ahmedabad around the same time, has the summer section down the middle of the house, sandwiched between the winter section on one side and a service bay on the other. Thus at different times of the day (or year) different areas of the house are used.

Which brings us to that fundamental principle, namely, the concept of fracturing a building program into a number of discrete, but mutually complementary, spaces:

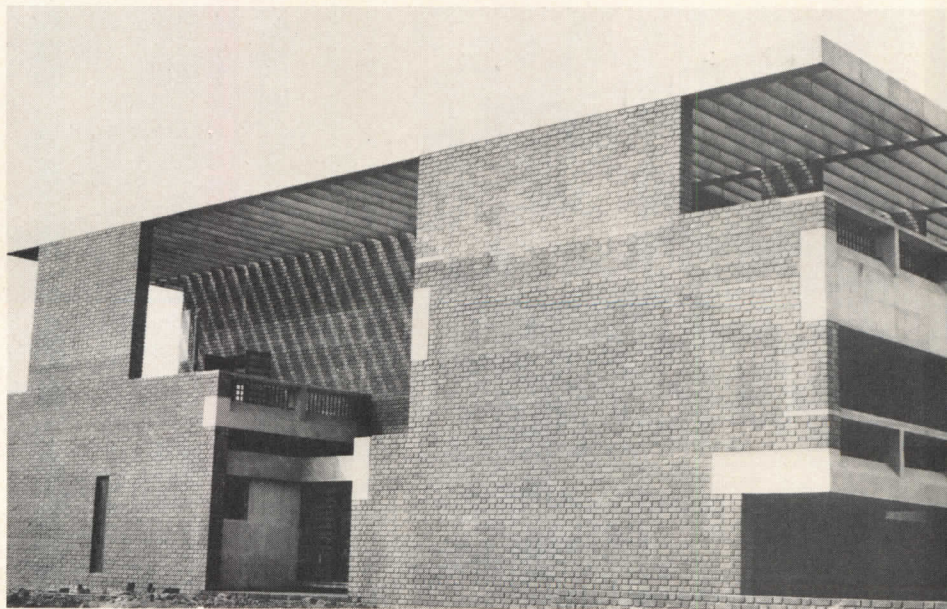


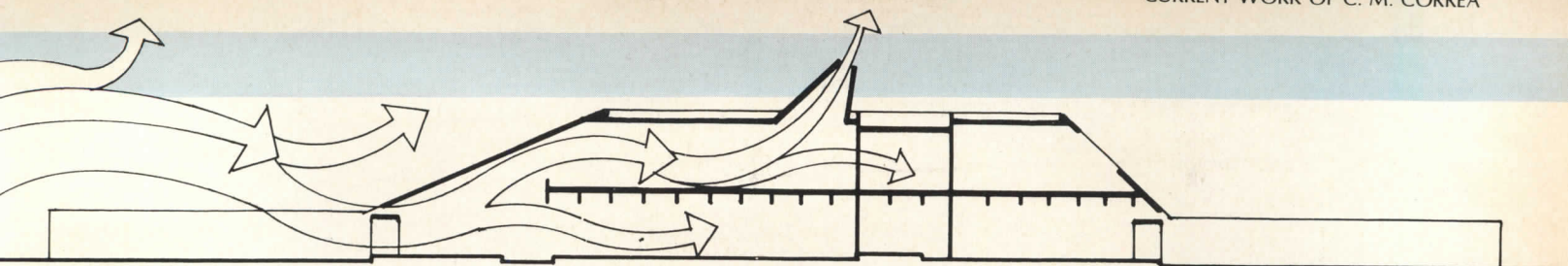
We have used this concept several times, notably in the Patwardhan houses in Poona, and in the Gandhi Memorial Museum at the Sabarmati Ashram in Ahmedabad. Warm cli-

## Parekh House, Ahmedabad

The plan of this house, built in 1968 in Ahmedabad, consists of brick-bearing walls which define three parallel bays: down the center runs the "summer section," a pyramidal interior space which closes off the sky, for protection during the hot afternoons; on the west side is the service bay which contains the circulation, toilets, kitchen, etc.; on the east is the "winter section," a reverse pyramid which opens to the sky, creating a series of terraces usable in the cold season, and during the summer evenings. As in the case of the Kanchanjunga apartments, the elevations of this house diagrammatically express the climatic concepts which underlie it.

Client: *Dilip Parekh*. Structure: *H.C. Shah*. Landscape: *Prabhakar Bhagwat*. Construction: *Gannon Dunkerley*.



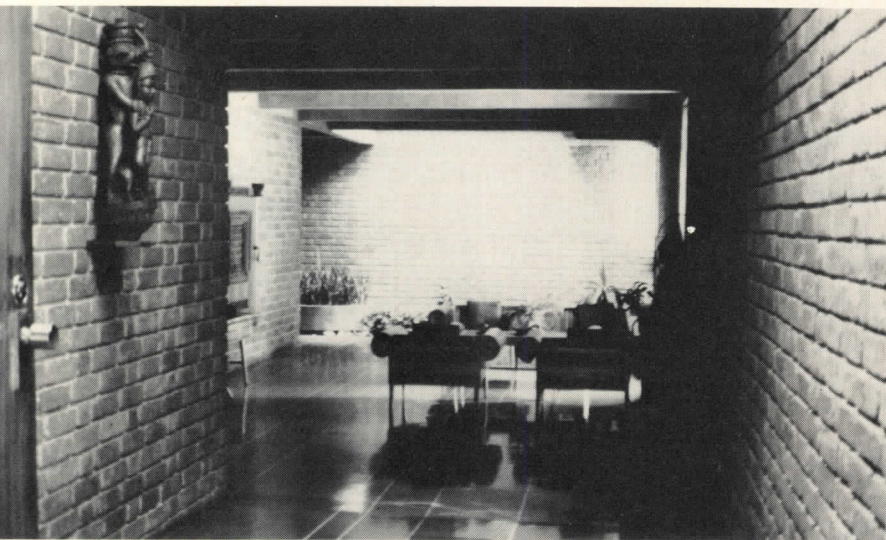
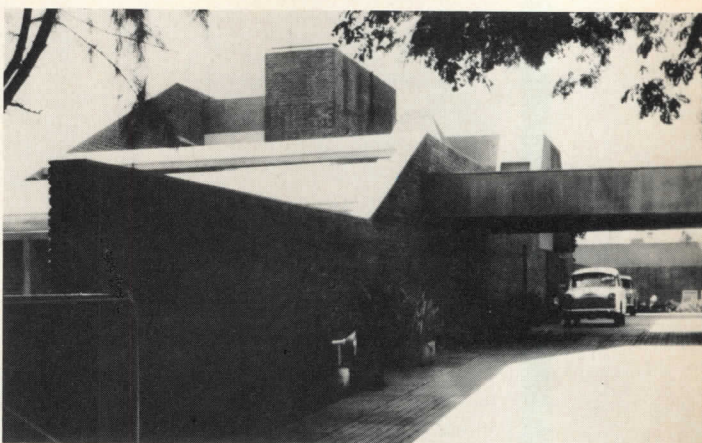
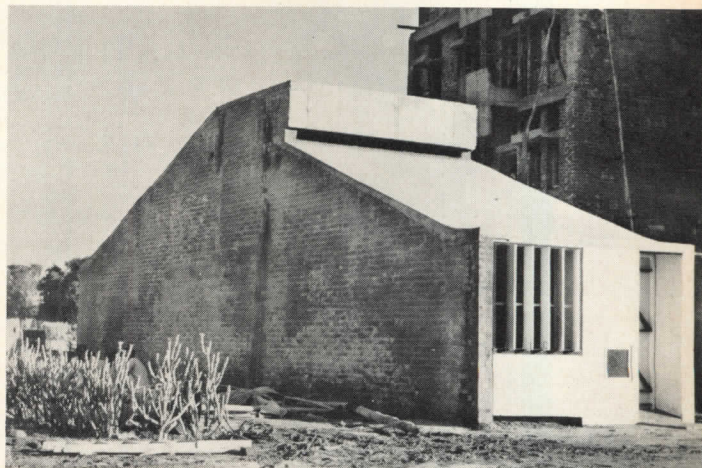


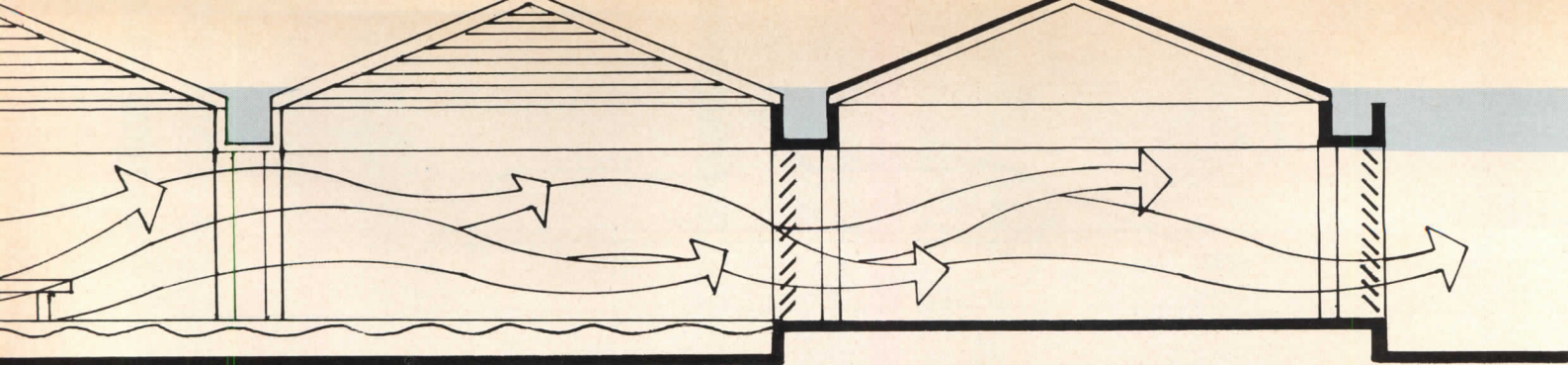
## Ramkrishna House, Ahmedabad

A large private residence, built in 1964-65, for one of the millowners of Ahmedabad. The plan is formed by a series of parallel bearing walls, creating a number of internal courtyards and climaxing in the main opening to the garden on the south. The section has a sloping profile which allows the hot air to rise and escape from vents at the top, drawing in fresh air to replace it, and thus setting up a con-

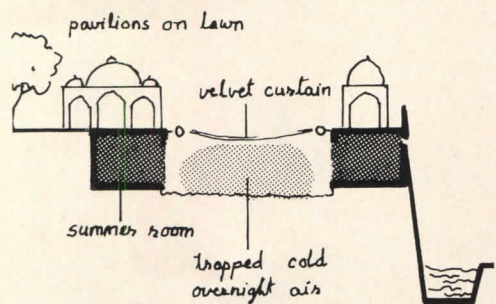
vection current of natural ventilation. It is an expanded version of the "tube" house, (right) a prize-winning low-income project, designed for the Gujarat Housing Board.

Client: *Ramkrishna Harivallabhdas.*  
 Structure: *Beacons.* Interiors: *Mody & Colgan.* Landscape: *National Institute of Design.* Construction: *Western India Construction.*





mates abound in examples of this kind of poly-centric planning, from the circle of mud huts in an African chieftain's house to the marble pavilions of the Mughals. They seek to control climate by creating a *nomadic* life-style for the occupants, particular spaces being used at particular times of day. And it is a pattern which can change with the seasons of the year. For instance, in the Agra fort, during the summer months a velvet curtain was stretched across the courtyards in the early morning, trapping the cold night air in the lower level of rooms:



In the evening, the purdah was removed and the Emperor came out on the cool pavilions and gardens of the terrace levels. In the cold (but sunny) winter, the pattern was reversed: the terrace garden being used during the day, and courts and lower levels at night.

Thus to be inventive about *climate* one has really to be inventive about *life-style*. To live in Fatehpur-Sikri, the Mughals created a pattern quite different—though equally royal—to that of Versailles. And in America, the owners of the plantation houses near New Orleans evolved configurations of spaces—and patterns of living—quite different from those they left behind in Europe.

All truly *new* architecture and planning, in the final analysis, concerns the conception of an alternate life-style. This is the real issue—and opportunity!—of the present energy crisis. To reduce a challenge as magnificent as architecture to a mere juggling of surfaces and textures is bathos indeed. It is a symptom of the crippling myopia that has affected the modern architect for the last decade or two; that is to say, ever since he handed over so much of his legitimate responsibilities to his mechanical engineers. It calls to mind Louis Sullivan's caveat, that a building is like a sentence: it cannot consist exclusively of adjectives and exclamation signs. It must have syntax. Climate—that perennial springboard of architectural invention—could well supply the deep-structure we need.

## Gandhi Smarak Sangrahalaya, Ahmedabad

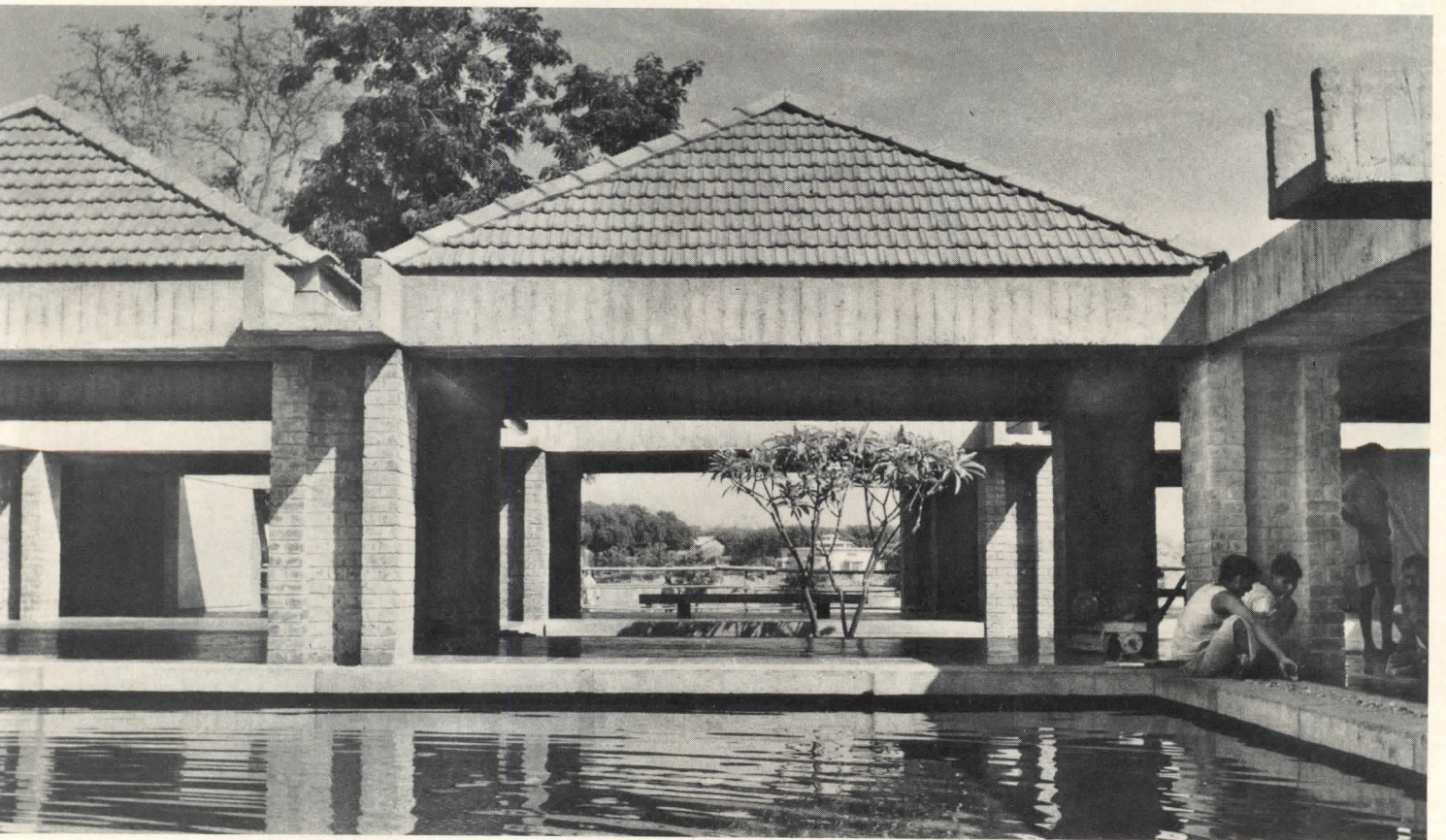
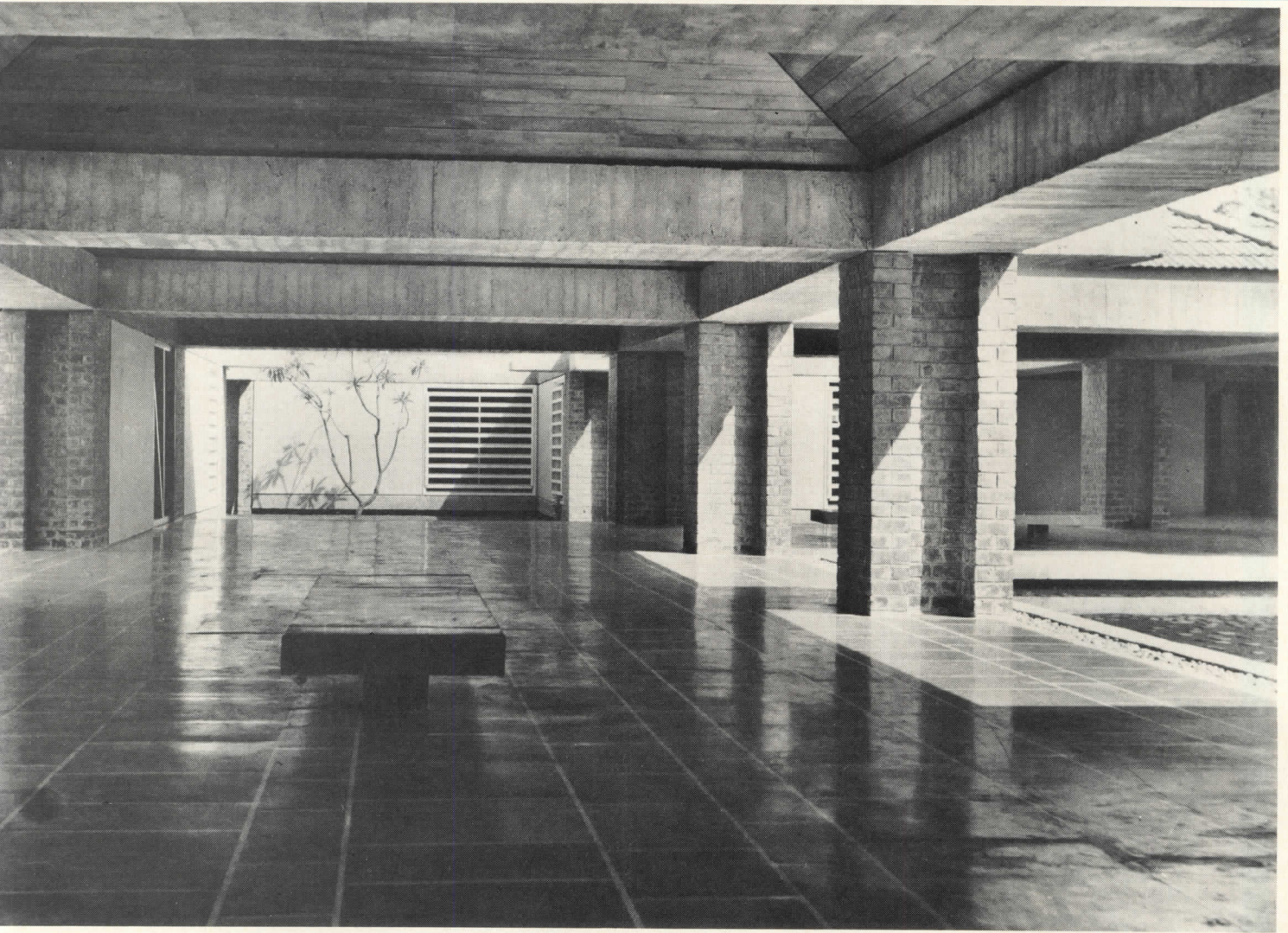
In the Sabarmati Ashram, built in the years 1959-62, the historic home of Gandhiji, is this memorial to the Mahatma—which also functions as a museum and as a center of Gandhian scholarship. The basic element of the design is a unit, 6 meters by 6 meters, grouped in a casual meandering pattern around courtyards and water pools. Some units are enclosed by walls; the various exhibition spaces so created are differentiated according to function and are counterpointed by areas of visual rest where the visitor can meditate. No glass is used

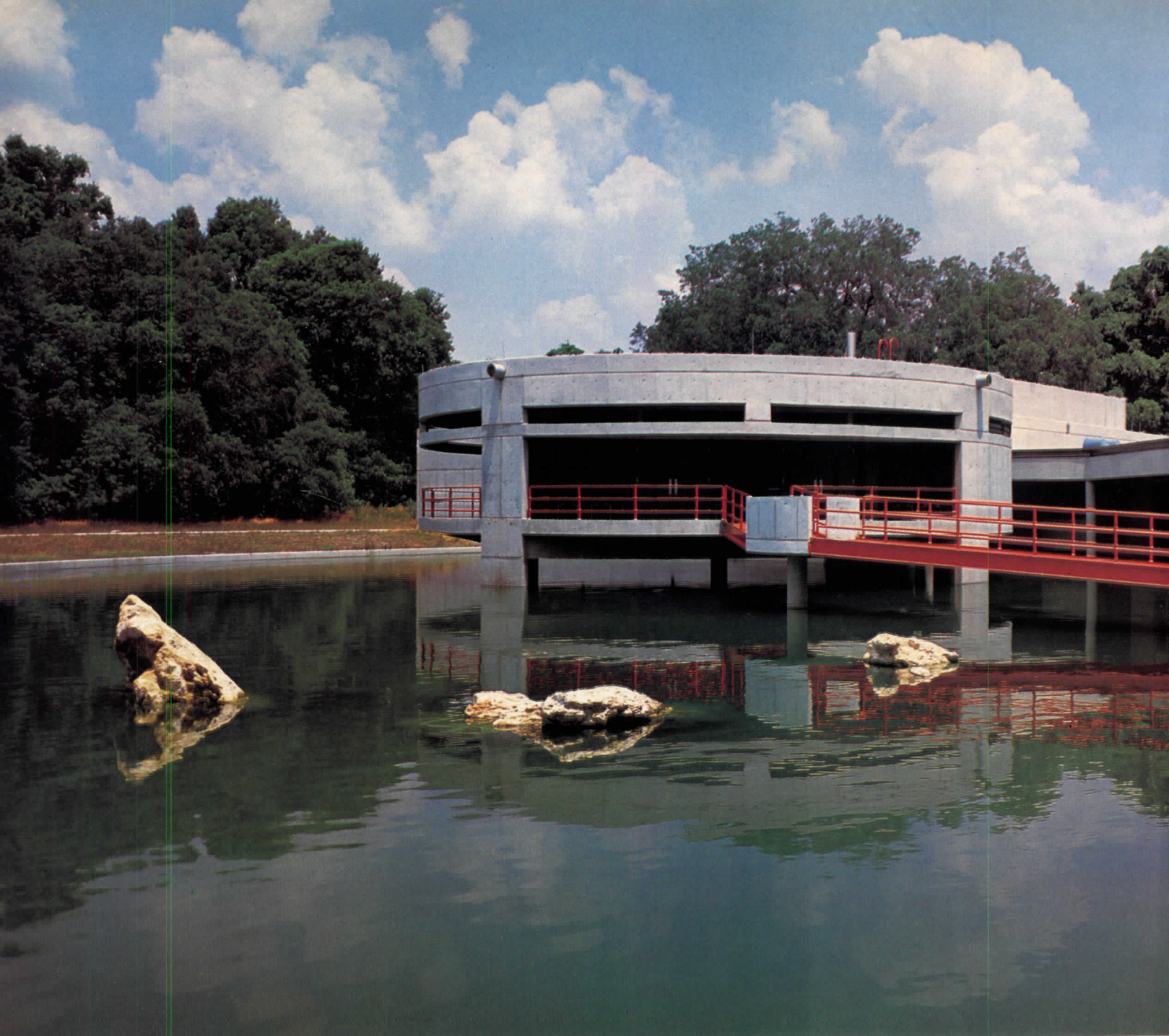
anywhere in the building: light and ventilation being provided by operable wooden louvers. The Sangrahalaya is a "living structure" which can grow. Recently some more units were added, extending the pattern. This process will continue, as more photographs, letters and other documents are collected—each generation making its contribution, and paying its homage, to the Mahatma.

Client: *Sabarmati Ashram Trust*. Structure: *Jal Bharucha*. Exhibits: *Abhijit Barua*. Construction: *D.V. Patel*.





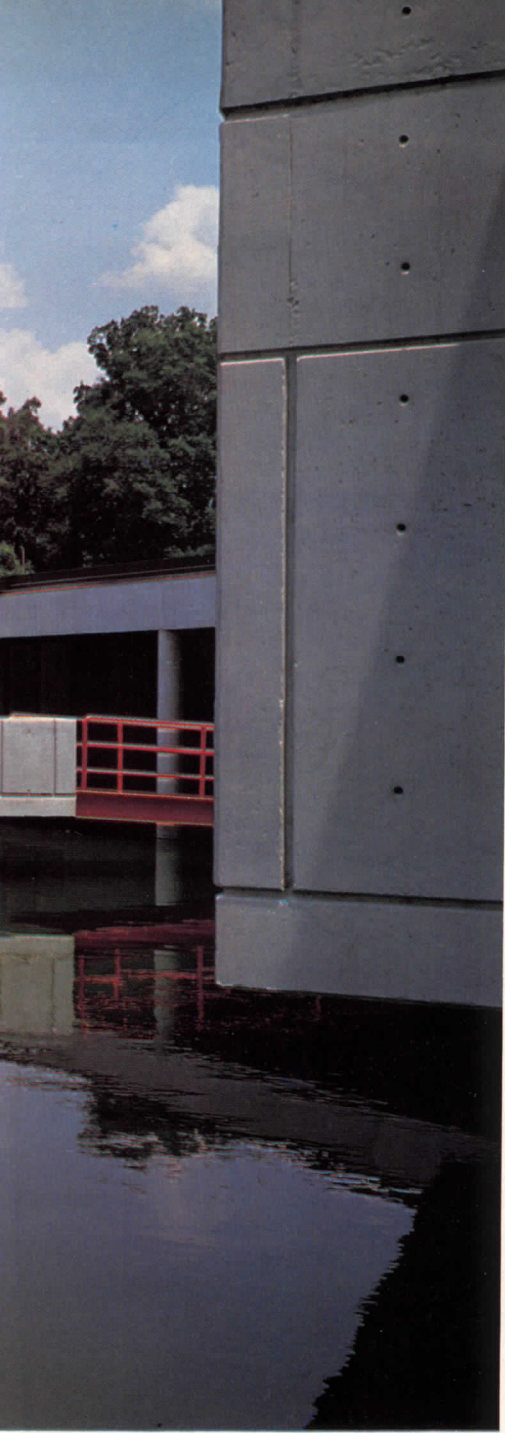




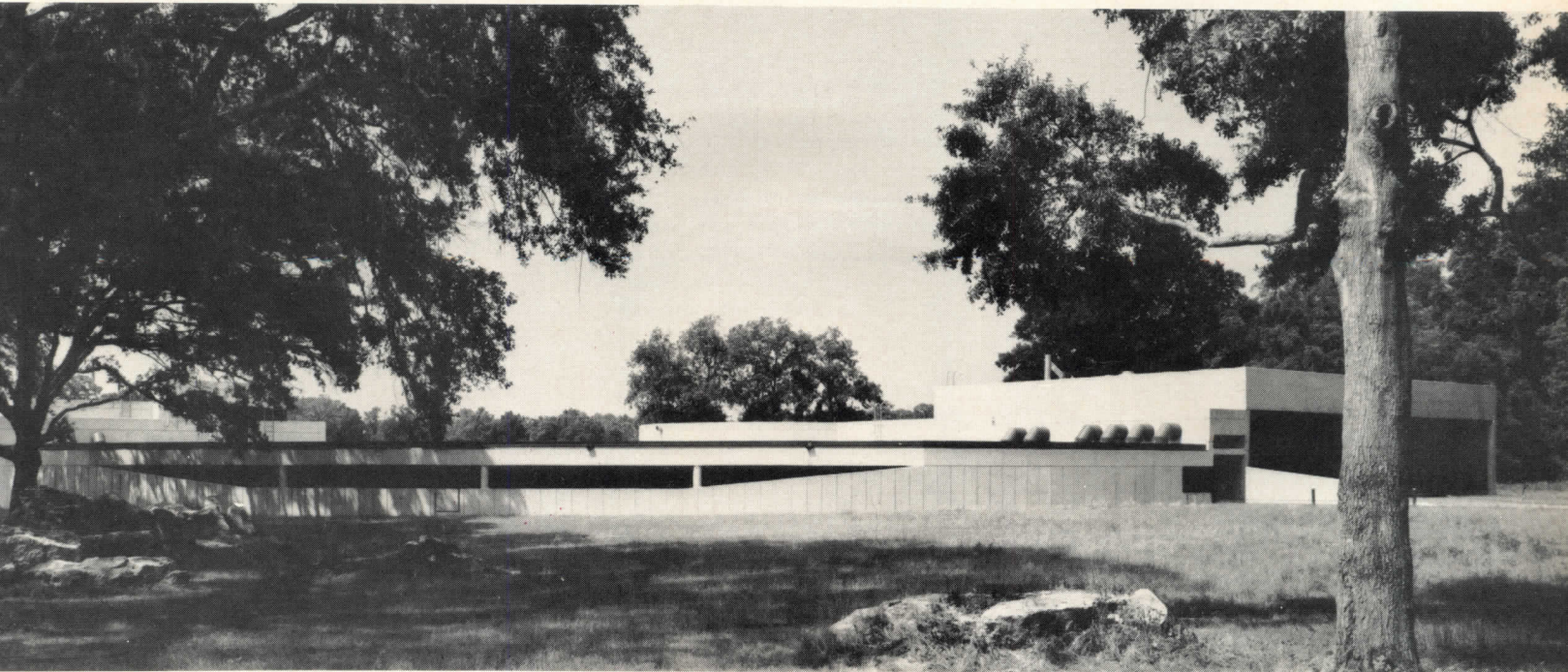
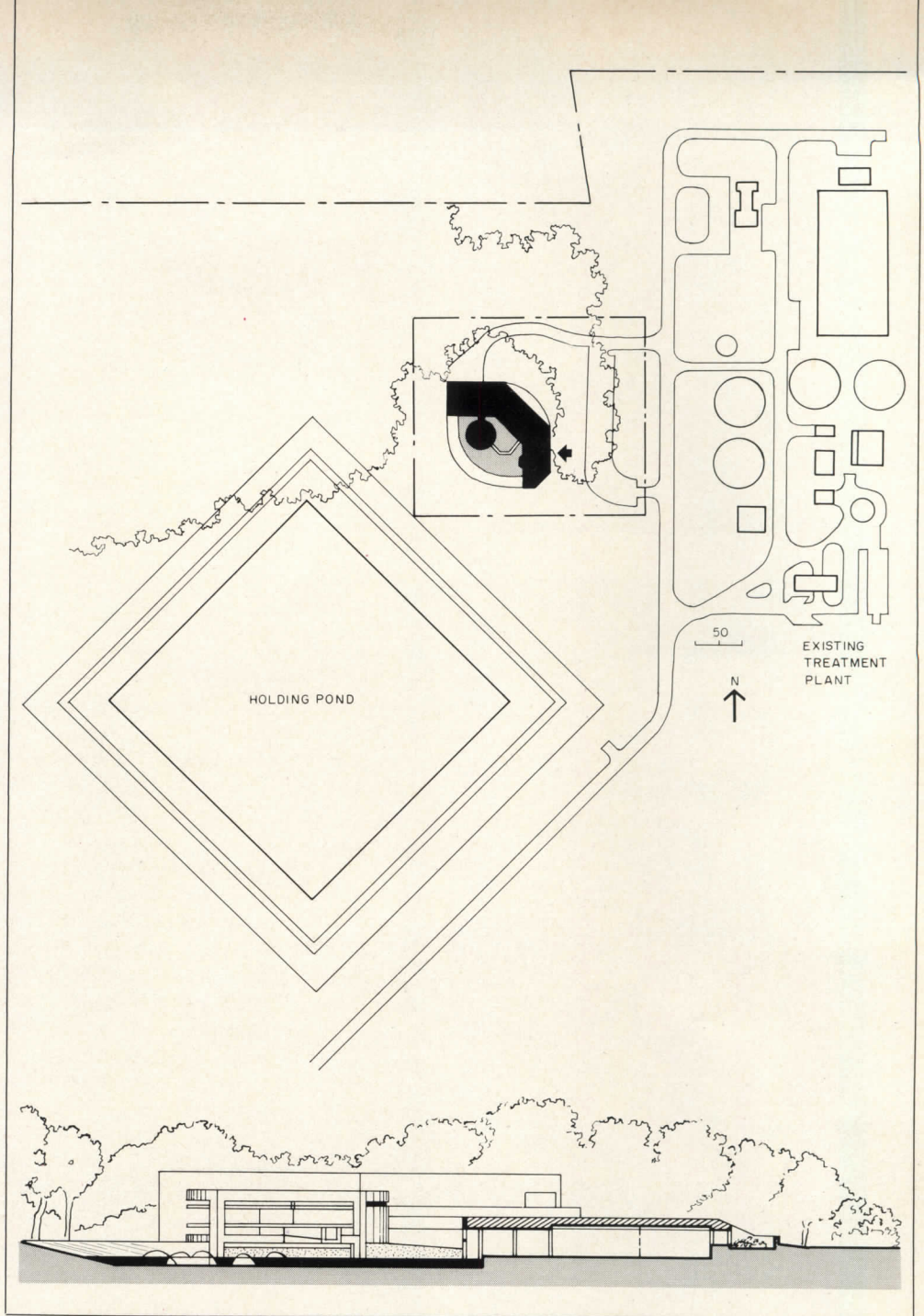
# TRAINING CENTER FOR SEWAGE ENGINEERS

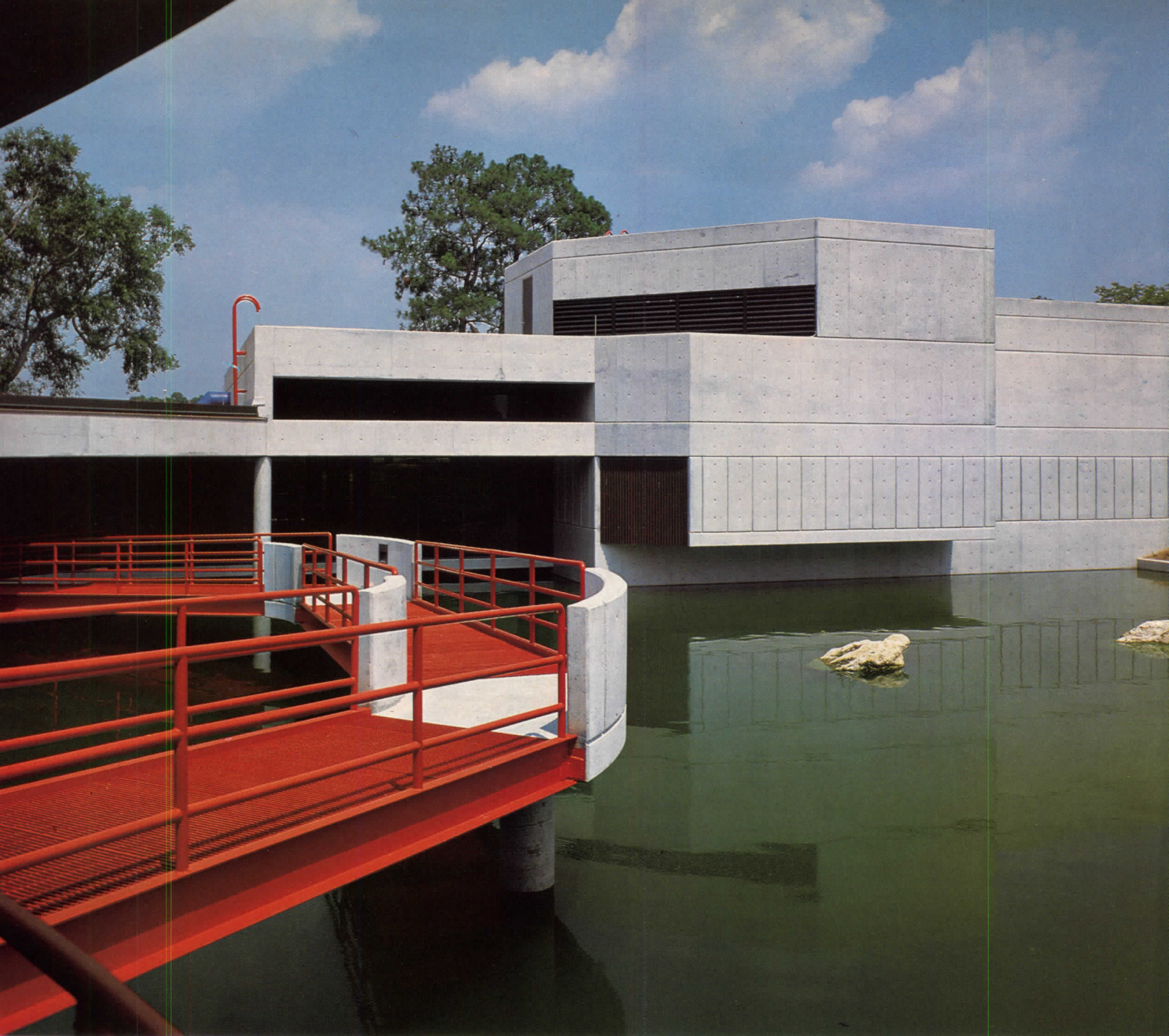
The Treatment Research Education for Environmental Occupations (T.R.E.E.O.) is the name of this University of Florida adult education facility in Gainesville. One of a few such facilities in the U.S., it has been designed by architects Clements/Rumpel/Associates as a "pilot" for what will surely be an expanding building type in the future. T.R.E.E.O. offers 3-week courses in new procedures and licensing requirements for the operators of water and sewage treatment facilities. The architects have designed a unique building that is oriented toward the pond over which the pavilion-like massing—despite its poured-concrete construction—seems to float (photo above). By contrast, the other side of the structure appears to nestle into the landscape when viewed from the surrounding countryside (photo right). The presence of the water offers an intimate esthetic contact with an

important part of the processes being studied. It is also a public gesture of confidence in the efficiency of the purification process. The pond is intermediate in the flow of effluent from the large regional sewage treatment plant across the road (right in site plan) to the main holding pond (located to the south of the new building at the bottom of plan). And such total involvement in the processes being studied is carried a step further. The building depends on the pond for its heating and cooling, accomplished through heat pumps which use the water for the energy it generates. In fact, the design conserves energy in more ways as well. It is open to prevailing breezes during good weather, and takes advantage of the earth's insulation value on the opposite side from the breezes, where the volume is partially depressed below grade (see section). The resulting standards



Bob Braun photos

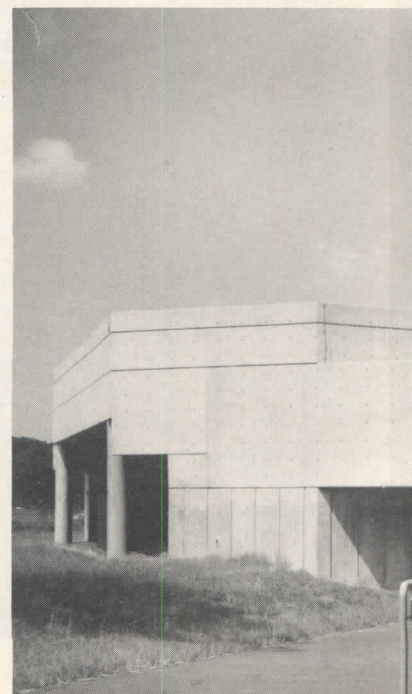


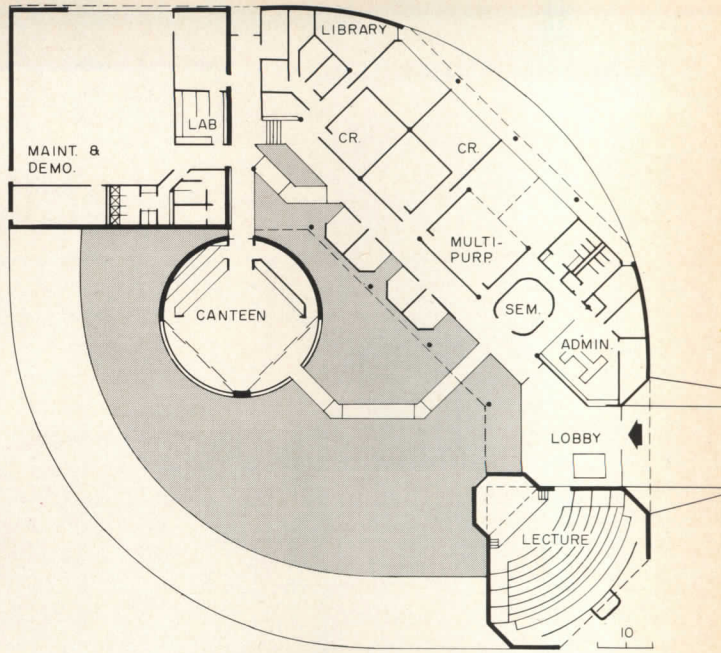
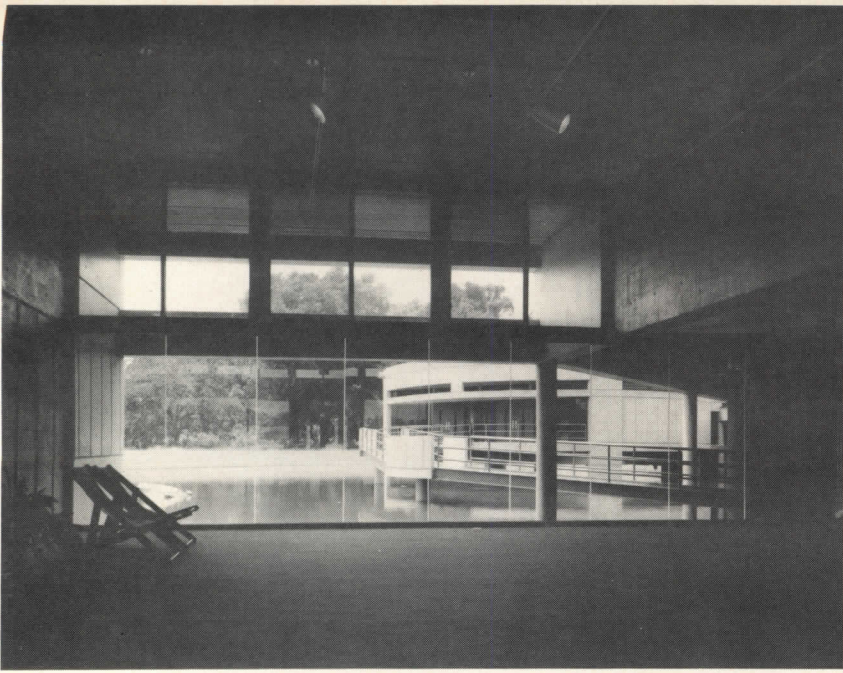


meet those of the Florida Life-Cycle Energy Evaluation Technique. The appearance of the building takes its cue from the older sewage treatment plant by using the same materials: poured-in-place concrete walls with metal infill panels and open steel decking for ramps over the water. But as architect Peter Rumpel states, "The massing and details go beyond utilization requirements to create a clear statement of purpose, symbolizing the emergence of new concepts and directions in environmental education." The interior spaces include a lobby (top photo, opposite page) which is large enough to serve as a display area. A canteen in the round central element is centrally placed, and doubles as a meeting room. The demonstration room allows for actual working models of treatment plants to be taken apart for analysis of malfunctions. The auditorium is located next

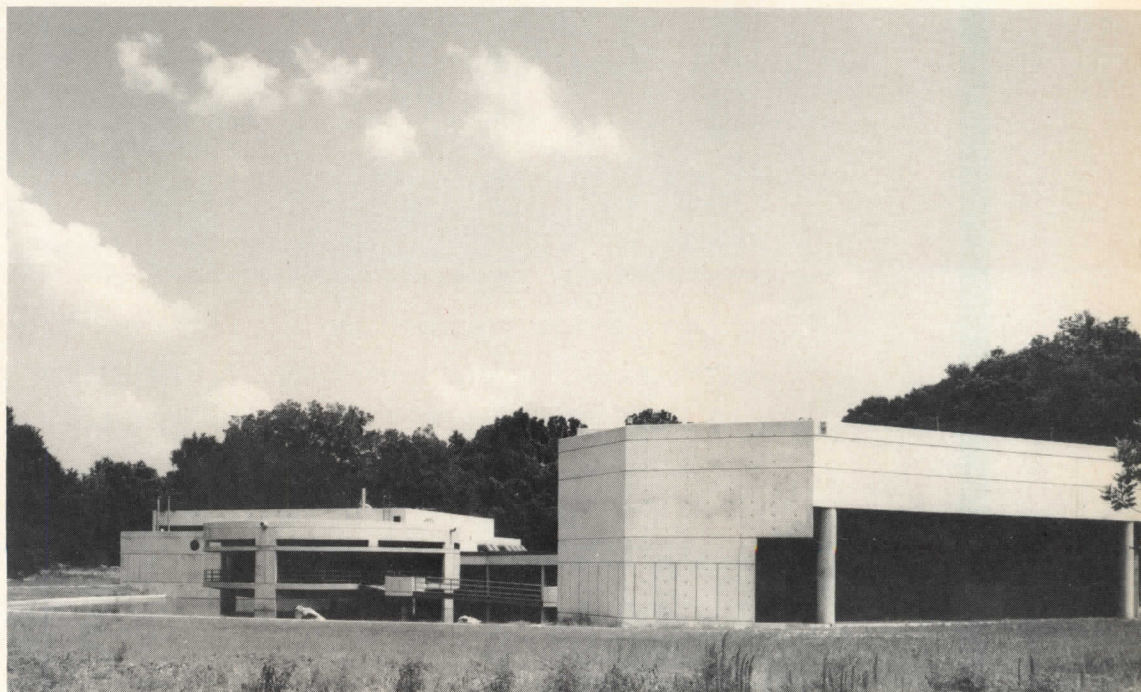
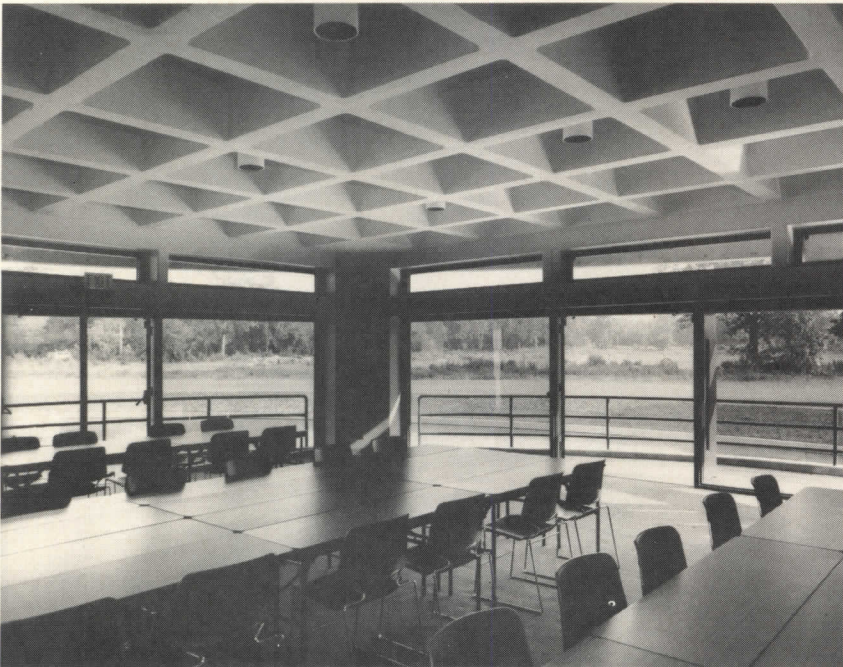
to the entrance, and holds 200 persons for lectures and demonstrations. Classrooms open to covered exterior corridors and the pond beyond (photo second from top, opposite page). Costs for the structure were \$51 per square foot. While the walls and basic structure including beams and columns have been cast in place, the joists and roof slabs are prestressed concrete.

TRAINING, RESEARCH AND EDUCATION FACILITY FOR ENVIRONMENTAL OCCUPATIONS, Gainesville, Florida. Owner: State of Florida, Department of General Services, University of Florida. Architects: Clements/Rumpel/Associates, Architects/Planners, Inc. — designer: Peter Rumpel. Engineers: H.W. Keister Associates (structural/ foundation/soils); Wilder Associates (mechanical/electrical). Acoustical consultant: Bertram Kinzey. General contractor: M.M. Parrish Construction Company.



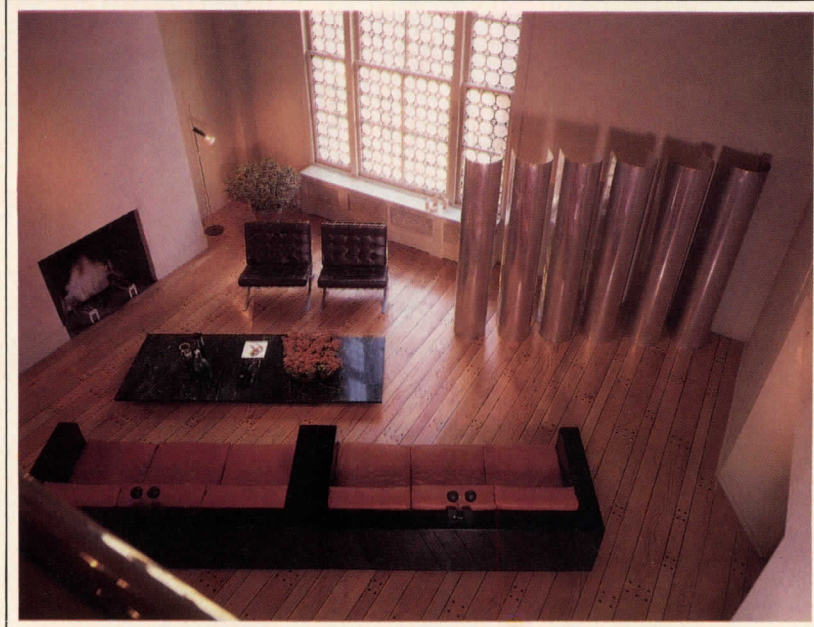


Exposed concrete shapes echo the industrial appearance of the older sewerage treatment plant across the access road. The new building, however, expresses another message by emphasizing through careful composition and detailing its educational purposes. In the photo at far left, open steel decking forms a ramp between the main building and the circular canteen in the center of the pond. Interior spaces gain interest through exposed prestressed concrete joists as seen in a typical classroom (photo left). The main entry through the wide low opening (below left) accentuates the drama of the high lobby inside and the view to the pond beyond (photo above). The auditorium is contained in a distinct block (foreground of photo below) that accentuates its importance.



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# CASA VIGNELLI: A SHOWCASE OF MODERN DESIGN



The apartment opens with a flourish. The front door, on the second floor of the duplex, leads onto a mezzanine overlooking the double-height living room with its high, arched, small-paned window. The Vignellis have played up the spectacular qualities of this echoing hall by cleansing the space, removing a partition on the lower floor and inserting a new staircase, tucked behind a cecilla-shaped wall. In this clear space, objects look brilliant. The Vignelli-designed Saratoga couches (1964), the Quattro Cilindi marble coffee table (1979), or the aluminum steel cylinders originally designed as book-shelf supports, but here used purely as forms (1965), become sculpture.

New York designers Massimo and Lella Vignelli have made their apartment both showroom and home. They have transformed a large duplex in a 1909 Upper East Side apartment building into a series of classic Modern rooms, furnished throughout with the objects and furniture for which they are famous. The result—a strongly stated, purposely unresolved dialectic of extroversion and intimacy—provides a frame for both dramatic and daily action. —*Eleni M. Constantine*



Just as one test of a design is "can you live with it?", so one test of a designer in his/her own home. Has he gutted the interior, uprooting walls to leave "spaces," or has he sheltered his privacy in conventional rooms? Does he furnish the place with those chairs he designed for Knoll, or does he go for the unimpeachable Barcelona? Does he drink from those cups with the ungraspable handles he designed for Heller, or does he serve those to his guests, himself sipping comfortably from a heavy, chipped china mug?

Many designers turn it all off so they can sleep at night, but Massimo and Lella Vignelli live with their designs round the clock. Their apartment illustrates their talent for composing carefully elaborated settings, frames for variegated action. Yet these interiors are flexible as well as fashionable; stylish, certainly, but not over-stylized.

Even at home, the Vignellis are always designers. They use the apartment for the various scales of entertainment crucial to their careers. Furnished with their designs, their apartment is showroom as well as home.

The design addresses this dual program by compartmentalizing functions. Clearly influenced by the Vignelli's experience in exhibition design, the design of their apartment treats each room as a separate installation, featuring an activity and their designs for it. The design is an analysis of a home, breaking down daily life into component episodes. It seeks to isolate, not integrate, these; to define the parts of this sequence, not to fuse them.

Public and private areas are carefully distinguished. Where the former are hard-edged spaces that preserve all their sharp right angles, the latter are softly outlined and the junction of vertical and horizontal in them is slightly blurred. Where the former clear space around focal objects (a table, a group of couches) the latter tend to push the objects to the edges, leaving the center to be filled by people. Where the public rooms are expanded by real or illusory vistas opened into adjoining spaces, the private rooms are contracted, turned inward, their windows and doors all but eliminated.

This clear definition of individual rooms, each with its own particular character, recognizes the context in which the Vignelli's intervention takes place. In stressing the idea of self-contained volumes, defined by strong walls, the Vignellis have elicited the expressive potential of the massive masonry apartment building. Walls are shown to be thick, ceilings demonstrably heavy. Doors and windows force-



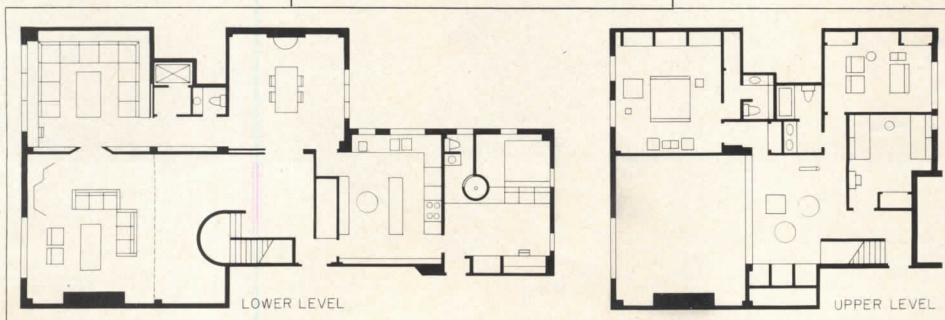
The jewel-like quality of the living room is sharply contrasted in the adjacent library (below). Entered through a narrowing slit of a door (above) that emphasizes the act of passage, the library is a warm, almost womb-like shelter. The Belgian linen which covers the couches, wall, windows and shelves envelops the tranquil, evenly lit room in a soft wrapping. Arranged in symmetrical pairs, standard light fixtures become geometric sculpture.







The dining room, which opens off the rear of the living room and, via a small passage, off the library, is a space whose austere bareness throws the objects it contains into sharper relief. Originally a plain box, with a small fireplace on one wall and the Vignelli's assemblable Quattro Cilindi table in the center, it has been transformed into an elegant dining hall by the insertion of two mirrors flanking the protruding fireplace. By elongating perceived space, the mirrors confer dignity on what is actually a relatively simple room, adding an element of sophisticated ambiguity and intrigue to the space (above, Massimo Vignelli in the dining room).



fully violate these dense, solid cases in punching through them. The emphasized weight of the shell plays it up as a "found object," an old carapace invested with new activity.

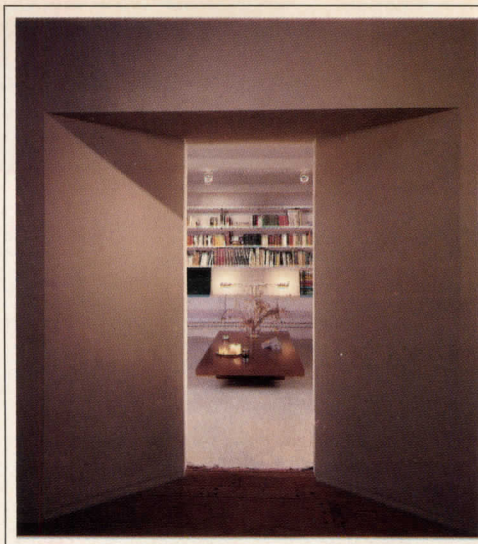
This evocation and transformation of the defining qualities of the existing building describes, in a subtle layering of contrasts and comparisons, both the modernity of the Vignelli's design and its simultaneous classicality. The light beige walls, naked save for baseboard and molding, the carpetless light wood floors, throw into high relief the pure geometry of the furniture (mostly the Vignelli's earlier, more severe work). At the same time, the sand finish of those walls and the parquet fitting of the floor, sanded so that every peg and plank shows, heightens the presence, the density of the structural divisions by emphasizing their texture.

Furnishings and furniture delve into the material of which they are made in a similar fashion. The library, for example, mines possible meanings of natural-colored Belgian linen in the seating, wall, and window coverings. The Quattro Cilindi table at its center takes wood as its subject; the door-sized plank lies on log-shaped cylinders—or can be fitted into their ends so that they become columns, the plank a roof. The object changes form in response to its context; the low table is sunk into the pillowy library, while the high version is erected amid the perpendicular planes of the dining room.

We, too, moving from room to room, respond to this alternation of hard and soft, open and closed, public and private, void and solid, positive and negative. The strictly maintained duality establishes, as it were, two axes in terms of which our motion is plotted and invited.

One of the Vignelli's early posters for the Museum of Modern Art, New York, states in two dimensions what their apartment states in four. In this poster, heavy black horizontal lines carry the information, while vertical separations group it into categories. Through the center, in gravity-defying stopped motion, leaps Fred Astaire, clicking his heels at the top of his hyperbolic trajectory. Human activity sparks geometry. In the Vignelli's apartment, as in their work, it is we (or the Vignellis) who activate the design by moving within it, providing the curve that gives the encompassing grid direction and meaning.

VIGNELLI APARTMENT, New York, New York. Architects: *Massimo and Lella Vignelli*. Lighting consultant: *Howard Brandston*. Contractor: *John LaBarca*.

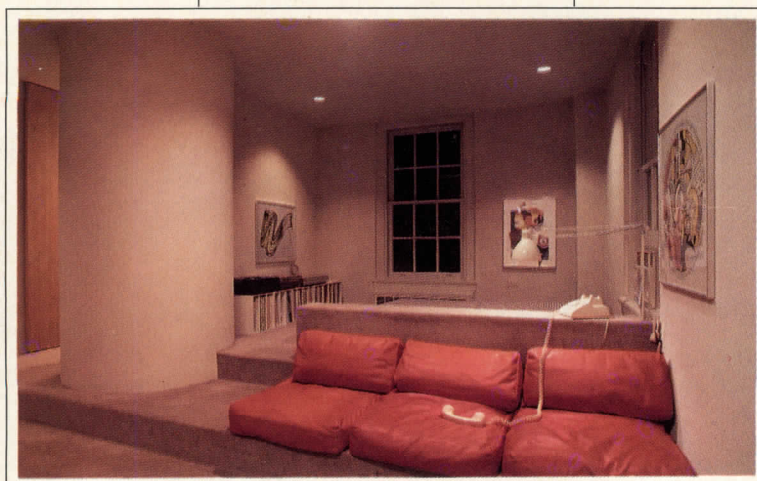


The intimacy of the library (above) is intensified in the master bedroom (below). Here Belgian linen pads even the ceiling, cabinets, and window (as a heavy drapery). A few crisp-edged black, Vignelli-designed objects—the Saratoga bed (1970), the Metaphora I table (1979) maintain the horizontal and vertical lines.





The guest room (above), a linen tent, was created out of a garret. In their son Luca's room (below) carpeted, stepped platforms forming sleeping and sitting areas are punctuated by a huge "column" anchoring the end of a partition. The cylinder, which marks the entrance to the bath, contains a shower.



# Four hotels: taken in context

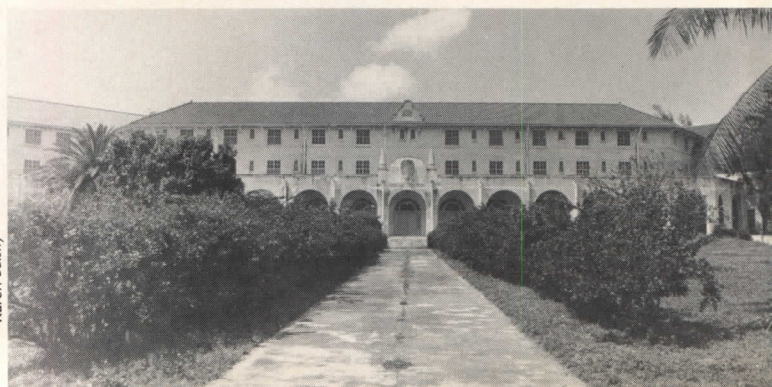
Whether or not resort hotels are unwelcome intruders in paradise is a question that will be debated long and hard. But as architects once again turn their attention to contextual, vernacular, and indigenous design, this building type provides a near prototypical case study—incorporating many of the more pressing issues now confronting the profession. Resort hotels are built in the midst of natural splendors, and success depends upon how well the design is integrated into the setting. No one wants to travel to an out-of-the-way place only to be cut off from the exotic environs by an anonymous structure that gives little clue to its locale. A good resort takes advantage of the landscape, optimizing the natural resources; a better resort responds not only to climate and topography but to the cultural history of its particular place. In each of the four hotels shown here, there has been a conscientious effort to design a facility that is not only responsive to site and region, but also assimilates the new construction into an established physical or cultural context—each project represents a different design challenge, common to most architectural commissions. The Florida and Arizona hotels are major additions to important architectural legacies, and the two Mid-Eastern hotels strive to incorporate the artifacts of an ancient tradition into new hotels that are strictly contemporary in function, scale, and massing.

—Charles K. Gande



John Zimmerman

## CASA MARINA INN KEY WEST, FLORIDA PETER GLUCK



Karen Seisky



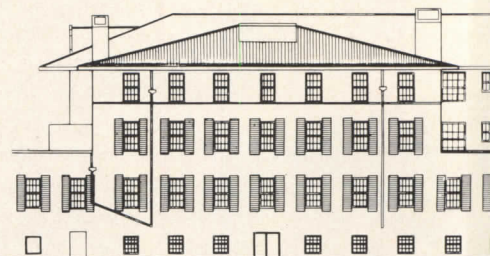
At the tip of Florida's southern archipelago, 150 miles from Miami, lies the once sleepy fishing village of Key West. In recent years, the former home to Hemingway has become the tropical playground for sun-seekers from the Northeast. Although the island's fledgling economy depends upon tourism, the throngs of vacationers threatened to overwhelm the facilities—the picturesque conch guest-houses could not absorb the island's newfound popularity and the demand was importunately met by rows of undistinguished chain motels that now blight Key West's palm-lined streets.

But flanking the Atlantic shore of Old Town, Key West, the abandoned Casa Marina Inn (photo left) stood as a reminder of more elegant and leisured days. Opened on New Year's Day, 1921, the hotel was built by railroad magnate Henry Flagler as the southernmost outpost for passengers on his Florida East Coast Railroad. Like Flagler's Breakers Hotel in Palm Beach, and Ponce de Leon Hotel in Saint Augustine, the Casa Marina belongs to the rich tradition of grand hotels, but like many fine old resorts, it has seen some hard

times. During World War II, the hotel was used to house Naval officers and during the Cuban Missile Crisis of 1962, the Army leased the space to house armaments. Since then the resort has served as Army barracks, training site for the Peace Corps, and temporary home to a group of Micronesian refugees. But fate—and the market—have once again smiled on Henry Flagler's endangered behemoth. New York architect Peter Gluck was commissioned to renovate and restore the original 250-room facility, and to design a 139-room addition that would incorporate a convention center. The renovation rescues an important local landmark, and the addition ensures its economic stability. Hard line preservationists would argue that the ideal commission would have been a careful restoration of the Flagler hotel—without the conference center or addition—but the economics of a winter resort hotel are grim for the summer months and convention business guarantees year-round solvency. As with so many market-motivated blends of old and new, the overriding theme seems to be *quid pro quo*.



photos by Steven Brooke except as noted



This is not Peter Gluck's first opportunity to explore the problem of juxtaposing a new guest wing with an "indigenous" hotel. In the Ojai Valley Inn project (RECORD, March, 1979), Gluck carved a 175-room addition into the side of a California hill and then masked the rooms behind trellises covered with flowering vines. The Key West project offered no such novel opportunity but architect Gluck has shown a comparable sensitivity to the context of both the 1921 hotel and bordering Seminole Street.

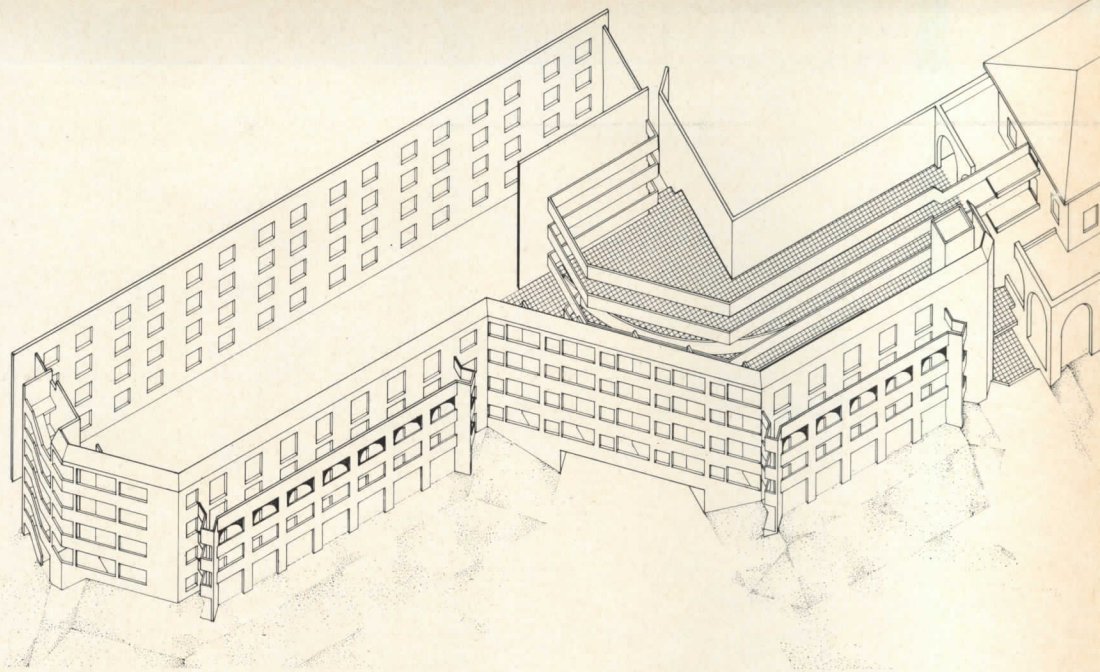
The addition is at first glance jarring—a striking counterpoint to Flagler's romantic blend of arches and shutters capped with a red tile roof. But this crisp division between the old and the new was precisely what Peter Gluck was after: "The intention of the new building was to leave the old building, not violate it, not try to ape it or mimic it, but to

exist next to it and independently of it so the old building can be seen in its entirety."

The triangular site and the orientation of the old hotel determined the placement of the addition. The architect regarded ocean views and a generous expanse of open lawn on the Atlantic primary considerations: to secure both, he has pushed the addition to the edge of the site, flush with tiny Seminole Street. In plan it takes on the guise of an oversized "extension" to one wing of the old hotel. But the combined width of the 500-foot-wide hotel and the 400-foot-wide addition threatened to overwhelm the site. To reduce the massing of the now 900-foot-wide structure, the addition has been layered back in three parts, and can be glimpsed only in sections as it recedes toward the street. And to make the new wing less rigid as it fronts the street, Gluck has used a facade

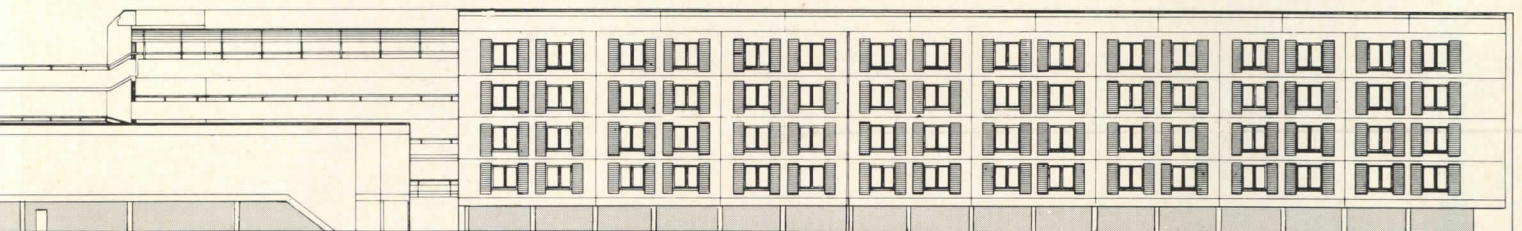
reminiscent of Aldo Rossi—sheer wall with seemingly endless rows of perfectly symmetrical windows framed by rows of traditional shutters. According to the program, each room was to be exactly the same; the fenestration serves to remind us of that continuity. Although the street facade is regimented, the shutters counter the severity—one is reminded of New Orleans perhaps.

The old hotel is solid concrete, 14- to 20-inches thick, and the addition is 1-inch stucco. To soften the massive effect of so large a masonry structure, Gluck has used detached screens for the two sections of the new wing that are most highly visible (photo above). The screens were to be built of wood—to distinguish them as *surface*—but that was one of the battles the architect lost with the owners, and the screens are now stucco as well; but even so, they serve to



John Zimmerman

The addition picks up the line and scale of the old hotel (photo right). For the future, a condominium is slated for the other side of the street, and when built will serve as a counterpart to the Casa Marina. The architect wanted the street facade to contain traditional elements appropriate for a small sidestreet. The shutters add an associative element to an otherwise *hard* structure. The elevation below shows the regimentation of windows and shutters, and the walkways that connect the three floor old hotel to the four floor addition. The conference center connects the two buildings at street level, and maintains the line of the street.



break up the mass, and the spaces between the building and the screens become private balconies. The owners also regarded arches as necessary to relate the new more literally to the old. Gluck has obliged by including lattice arches to frame the balconies on the third floor; like the screens, the arches help to offset the mass of masonry, and, like the shutters of the street facade, add another associative fragment.

Rather than abut the new building into the old, Gluck has left them separate, and they converge at a courtyard. The courtyard relates neither to the old building nor the new; it is instead the axis from which the two buildings pivot. The courtyard is neutral—almost early Modern in style—and according to Gluck serves as passage to modulate the transition from old to new.

The addition takes on a Y-shape as if to





enfold the courtyard. To prevent the feeling of enclosure, Gluck has placed an acrylic plastic awning over the fourth floor corridor (photo above) so when looking up from the interior courtyard, one sees not sheer wall, but rather the eye is naturally drawn at a slant over the fourth floor and through the transparent roof. The curved awning not only echoes the arches of the old hotel, but welcomes sunlight into the courtyard.

For the Flagler hotel, architect Gluck pared down the existing 250 rooms to a more generously proportioned 108. (Originally the rooms measured 8-feet 6-inches wide). The room enlargements necessitated a new system for aligning the unaltered windows. The new plan offers a diversity in room arrangements for the old hotel—a diversity not allowed in the program for the addition.

The commission for the Casa Marina

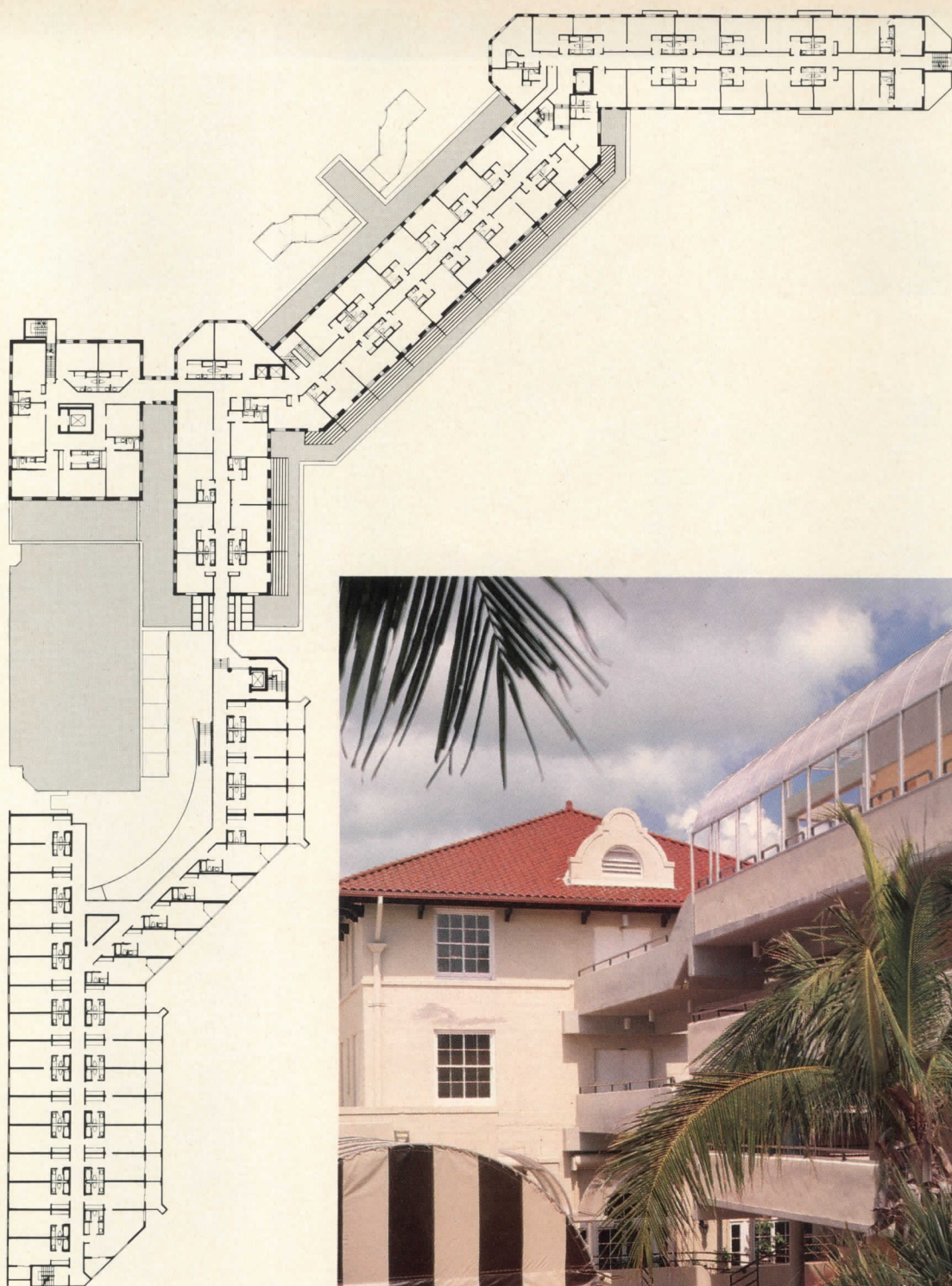
stipulated that the architect have no control over the hotel interiors—and it shows. It is unfortunate that the owners did not allow the same thoughtful design to invade the hotel; the lobby and the rooms are now filled with the standard "resort" bill-of-fare.

Within the restraints imposed by the program, budget, site, and client, architect Gluck has designed a facility that is responsive to each. But one wishes—and perhaps unrealistically—for fewer restraints.

MARRIOTT'S CASA MARINA INN, Key West, Florida. Owner: *Cayo Hueso Limited Partnership*. Architects: *Peter L. Gluck and Associates—Geoffrey L. Koper, project architect*. Engineers: *Geiger Berger Associates, P.C. (structural); Thomas A. Polise (mechanical/electrical)*. General contractor: *Jansen Co. of Florida*. Subcontractors: *Delta Contractors (mechanical/electrical/plumbing)*.



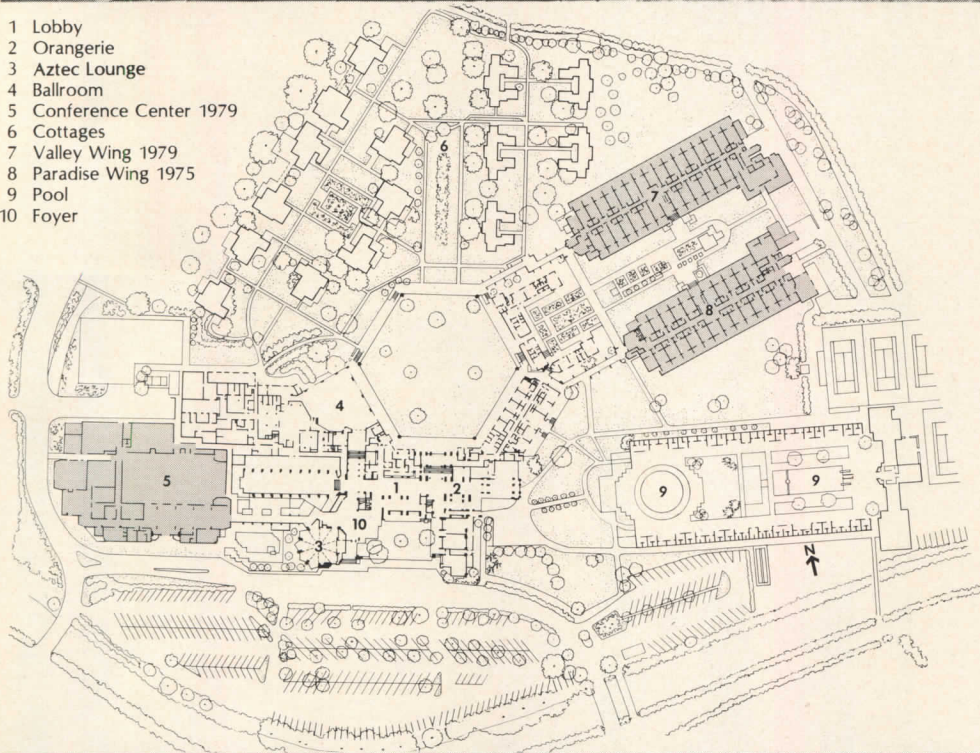




The relationship between the two buildings can be best capsulized in the architect's slicing of a new awning into an old arch (photo left); the new delicately penetrates the old with a sharp crisp symmetry. The courtyard (photo right) serves as "break-out" space for the adjacent conference center, and as neutral space to modulate the transition from old to new. The wide sweep of the curved wall creates a place for weary conventioners to lean. The fourth floor corridor (photos left and right), is covered by an acrylic plastic arched awning that echoes the arches of the old hotel and lets sunlight into the courtyard. The painted stucco of the addition blends comfortably with the thick masonry of the old hotel, and the pipe railing seems appropriate for this oceanside resort.



- 1 Lobby
- 2 Orangerie
- 3 Aztec Lounge
- 4 Ballroom
- 5 Conference Center 1979
- 6 Cottages
- 7 Valley Wing 1979
- 8 Paradise Wing 1975
- 9 Pool
- 10 Foyer



ARIZONA BILTMORE  
PHOENIX, ARIZONA  
FRANK LLOYD WRIGHT  
FOUNDATION

Neil Koppes



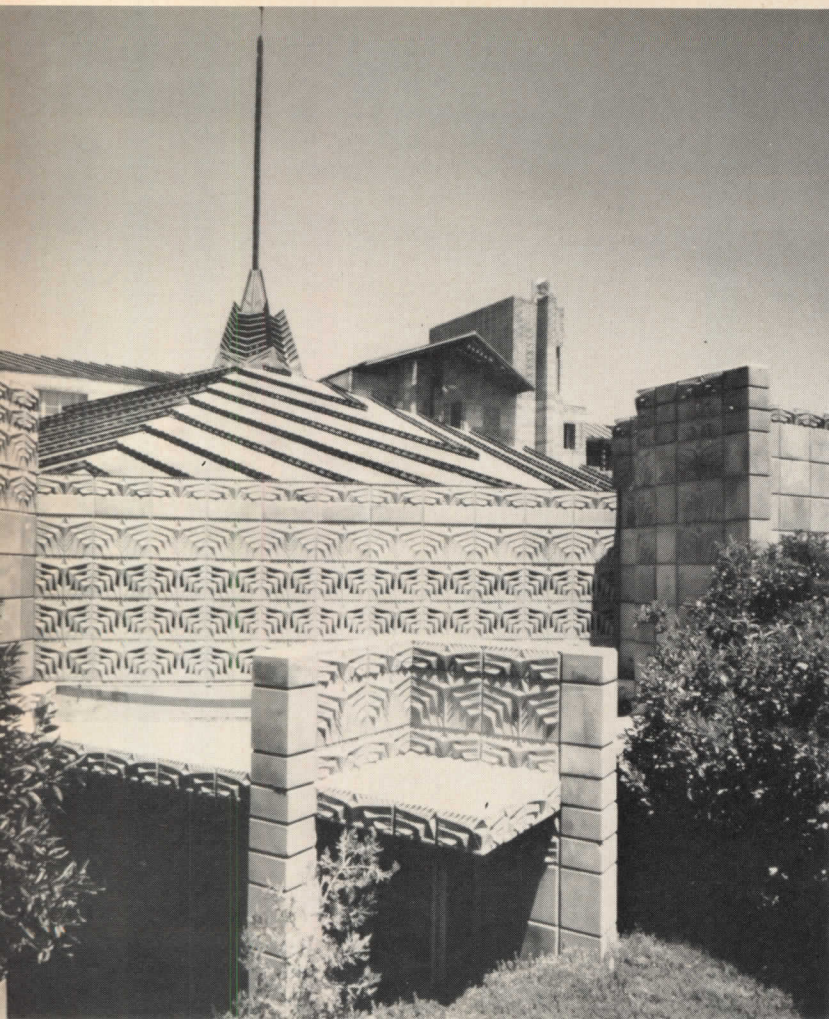
The 1929 June issue of *ARCHITECTURAL RECORD* credits Albert Chase McArthur as the architect for the Arizona Biltmore Hotel. But it comes as little surprise to discover that McArthur worked as a draftsman in the Oak Park Studio of Frank Lloyd Wright. When McArthur's two brothers conceived the idea for an elegant resort hotel, they naturally handed the job to their brother, and he in turn naturally requested the assistance of his former mentor. Though Wright must have balked at anything less than top billing, a resort complex in the midst of the Arizona desert would have been an irresistible opportunity to display his theory of "Organic Architecture." And, according to Olgivanna Lloyd Wright, "To spare the destruction of the landscape had in fact been my husband's lifelong thesis in relation to what is now termed environmental planning."

Wright's theories about an architecture synchronized with the landscape could have found no better proving ground than the Arizona Biltmore; the hotel rises discreetly from an arid mesa, and is composed of forms and materials that are clearly derived from the

desert terrain and the indigenous flora. In keeping with the spirit and texture of the desertscape, Wright used the humble concrete block as the primary interior and exterior building material. At the time, concrete block was considered the "vulgarian" of the construction industry, but Wright was determined to raise the lowly block to esthetic respectability. The blocks were all molded on site with exquisite details and patterns designed by McArthur and Wright.

The Biltmore opened in February of 1929 and crowned "Jewel of the Desert." Only a few months later the stock market crash brought the Depression and the hotel was purchased by chewing gum magnate William Wrigley, along with 1200 acres of adjacent land. Wrigley saw his role not only as owner, but benefactor—each year the hotel's operating deficit was paid off by a personal check.

Since the halcyon days of Wrigley and the leisure class, the Arizona Biltmore has undergone some dramatic alterations. But with the guidance of John Rattenbury of Taliesin West, Wright's only existing hotel retains its original splendor. —C.K.G.



The main building materials for the hotel—copper for the roof, gold for the ceiling, and sand for the concrete block—are all indigenous to Arizona. The Aztec Lounge (right) with its sharply attenuated roof (top) is adjacent to the hotel entrance. The main lobby (below) is reached after first passing through a foyer that contains a symbolic oasis and a 1927 mural by Wright (right). The mural is the architect's abstraction of the desert flora—using the T-square, triangle, and compass to achieve the design. The lighting system is integrated into the structure, as glass intermittently replaces concrete block.



Markow Photography



Neil Koppes



In June of 1973, the Wrigley family sold the Biltmore to Talley Industries; three weeks later, while workmen were updating the sprinkler system, a welder's torch ignited insulation material and a six-alarm fire completely destroyed the fourth floor of the hotel and gutted the interiors. The new owners were determined to reopen September 29, for the winter season, and a feverish reconstruction effort began.

After interviewing several firms, the new owners commissioned Taliesin Associated Architects of the Frank Lloyd Wright Foundation to oversee the construction. To ensure the authenticity of the project, the architects rallied to the cause with Wright's original drawings on linen from the Foundation's vaults. Concrete block was molded on-site using Arizona sand, duplicating the texture and patterns of the original (the 1929 alumi-

num molds were fortunately saved by the owners and fiberglass form liners were fabricated using the original aluminum molds as matrices). New carpets based on six of Wright's geometric patterns from the early 1920s were woven in Ireland, and two workmen from the 1929 construction job were called out of retirement to teach 15 young workers how to apply the more than 38,000-square-feet of gold leaf onto the "largest gold leaf ceiling in the world."

The copper roof posed an especially tricky problem: how to reproduce the patina created by 44 years of Arizona sun. In what must be the surest testimony of the new owner's commitment to the project, Talley Industries' research staff invented a chemical process to produce the desired patina. And after a miraculous 91 days, the hotel was again open for business.

Many of the designs used in the reconstruction were not from the original Biltmore project: the pattern for the lobby carpet was borrowed from the Imperial Hotel in Tokyo, and some of the furniture was designed by Wright in the 1950s. But it is all *bona fide* Wright—re-interpreted, re-colored, and re-applied for the Biltmore. Ironically, the hotel is more *Wrightian* after reconstruction, and the shared credits seem now to favor Wright over McArthur—even if posthumously.

In 1977, a Canadian investment group purchased the hotel, and with the new owners came a major expansion program. A 120-room addition, the Valley Wing, was built parallel to the 90-room Paradise Wing addition, dating from 1975 (photo top, next page). The two new guest wings have been pushed to the side, behind the original structure, and, as designed by the Taliesin archi-



Balthazar Korab



One of the new guest room additions (above) is joined to the original hotel by a covered walkway (top right). The Orangerie cafe/cabaret (below), with its stalactite chandeliers, flanks the main lobby and was added after the 1973 fire to replace a cocktail lounge. The large photo on the right makes evident the architects' painstaking attention to texture, form, and

detail. The concrete block, facing the flue of the fireplace, is perforated with glass inserts to expose flames shooting up the chimney. The furniture is casual, overstuffed, almost domestic, and makes a soothing counterpart to the intricate patterns molded into the concrete block. The carpets are patterned after six of Wright's geometric designs.

Balthazar Korab

Neil Koppes



Markow Photography

itects, are carefully deferential to the original buildings. Although the additions take their inspiration and materials from Wright, they seem less integrated into the landscape and less shaped by the terrain; instead, they provide a sympathetic backdrop.

Nowhere is the hand of Wright more evident than in the hotel interiors—especially the public spaces. A low concrete portico connects the driveway to a foyer that welcomes guests with a symbolic mini-oasis—a freestanding cluster of columns, plants and a waterfall (photo page 118).

Adjacent to the foyer, the circular Aztec Lounge creates the contextual drama for which Wright is famous. As light filters through the glass-filled perforations in the concrete block of the soffit onto the gold ceiling, the room takes on a spectacular aura.

The foyer opens onto a 260-foot-long

lobby that serves as the major circulation route for the hotel, leading into restaurants, gardens, and, on each side of the registration desk, to the guest rooms. But the lobby is also one of the more active social areas for the hotel; the scale of the elongated rectangle has been reduced by a mezzanine and small groupings of overstuffed furniture (designed by Wright in the 1950s for Heritage-Henredon, though never manufactured). The lighting system is carefully integrated into the structure, punctuating the columns with opal glass panels shielding metal fixtures on the same module as the concrete block.

All of the guest rooms have been completely refurbished, and each contains a triptych silkscreen adaptation of a Wright mural.

In the fall of last year, a 39,000-square-foot convention center was completed. The Taliesin architects again have designed a low-

profile structure that is clearly patterned after the pre-existing buildings.

Since the 1973 fire, \$25-million has been spent to expand, maintain, and improve the Arizona Biltmore. In every detail from menu design to staff uniforms, the hotel has received an unparalleled level of attention. The Biltmore remains a brilliant example of "Organic Architecture"—indigenous materials, molded by the landscape, and integrated into a unified complementary whole.

ARIZONA BILTMORE HOTEL, Phoenix, Arizona. Owner: Rostland Inc. Architect: Frank Lloyd Wright Foundation—project architect, John Rattenbury. Engineers: Magadini-Alagia Associates (structural); Sergeant Hauskins & Beckwith (foundation); Sullivan & Masson (mechanical/electrical). Consultants: Frank Lloyd Wright Foundation (interiors/landscape/graphics). Contractor: Kitchell Inc.





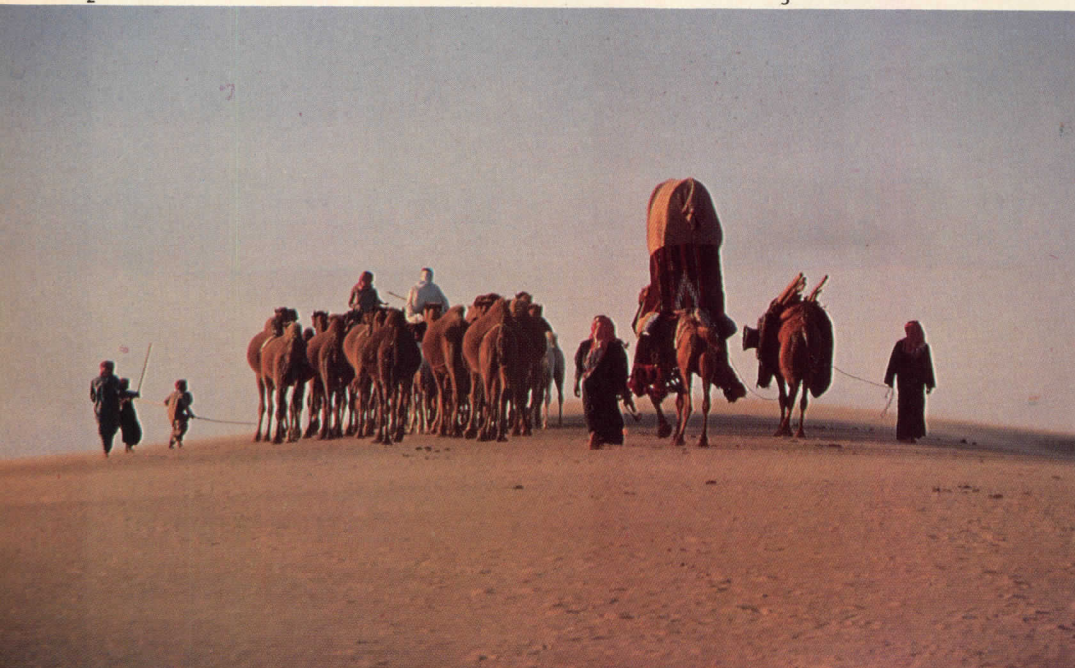
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2

PARADISE GARDENS  
AND OTHER  
ORNAMENTS:  
TWO MIDEAST  
HOTELS  
INSPIRED BY  
THE ARTS OF ISLAM





5



6

The Al Ain Hotel Inter-Continental (1) is being constructed within an oasis of palm trees (4) in Abu Dhabi located in the United Arab Emirates between Saudi Arabia and Oman. The orientation and contouring of the new hotel defer to the botanical assets of the site, and new gardens, pools and planted terraces will enhance them. The Abu Dhabi Hotel Inter-Continental (5), also in construction, occupies a coastal site. Because boating is the country's best loved sport, the architects conceived the hotel as a boat destination and designed it to enfold a huge crescent shaped marina.

Benjamin and Jane Thompson, who head Benjamin Thompson Associates (BTA), are devoted to aspects of design which are too often considered only secondary to architecture. Whenever the client has desired it (and they do their best to persuade him) they have designed and completely furnished the interiors of the college buildings, schools, libraries and dormitories they have built. They have also devised the decor of the public spaces as part of their restoration of Boston's Faneuil Hall Marketplace for the Rouse Company (RECORD, December 1977) and are completing another market, Harborplace, for Rouse in Baltimore.

Through the years they have researched America and Europe, present and past, for design motifs which they photograph, document and interpretatively adapt, or better yet, acquire and install. When they act as their own clients, they pull out all the stops. The two restaurants they own and manage—one in the Faneuil Hall Marketplace and the other near their office in Cambridge—are nests of New England folk art, crammed with polychromed wood figure-

heads and sternboards from whaling ships, weathervanes, shop and trade signs, decoys, scrimshaw and all the rest. Lately the Thompsons have extended their zestful research, documentation, and collecting to include the arts of Islam. Their slide files now include photos of Muslim pottery, metalwork, carpet weaving, carved stucco, calligraphy and faience tile. Kilim rugs have turned up in their office. It all began when the Inter-Continental Hotel Corporation invited them to design three major hotels in the Middle East—one in Cairo to be completed in 1982 (not shown) and two in Abu Dhabi in the United Arab Emirates—nearing completion and shown in model form above. The hotels were to be Western in form and had to meet the general criteria of Inter-Continental hotels worldwide. But they were also to be Islamic in quite specific ways including the importance of their gardens. The Thompsons began by studying the concept of the Paradise Garden, the Muslim art from which all the other arts derive. In the article which follows (overleaf), the Thompsons describe how they went on from there. —M.F.S.

The decor of the Abu Dhabi and Al Ain Inter-Continental has been adapted from familiar Islamic images . . .



7

The spirit of places unique to Islam—including Paradise Gardens (7) and mosques (10) has been sought by the Thompsons in their designs for the hotel gardens and places of public assembly. Arabic calligraphy, once a major art form in the Muslim world (9), has been adapted for tapestries, banners and wall paintings. An important source of color and pattern used throughout the hotel interiors has been the richly polychromed luster painting on Islamic pottery (8). Muslim ceramics, unlike the earlier Greek and Chinese Pottery, is noted for the precedence of surface decoration over shape. Thus it offers a wealth of motifs for contemporary adaptation as well as a splendid range of metallic colors in shades of red, yellow, turquoise, dull blue, light green, purple, violet, orange, flesh color and white. Large pottery vessels will be used throughout buildings and gardens. The Thompsons are also using polychrome faience in mosaic fragments and solid tiles in combination with ornamental stucco as in the Alhambra (11), as part of their effort to achieve varied and rich surface effects for walls, floors, terraces and paving.



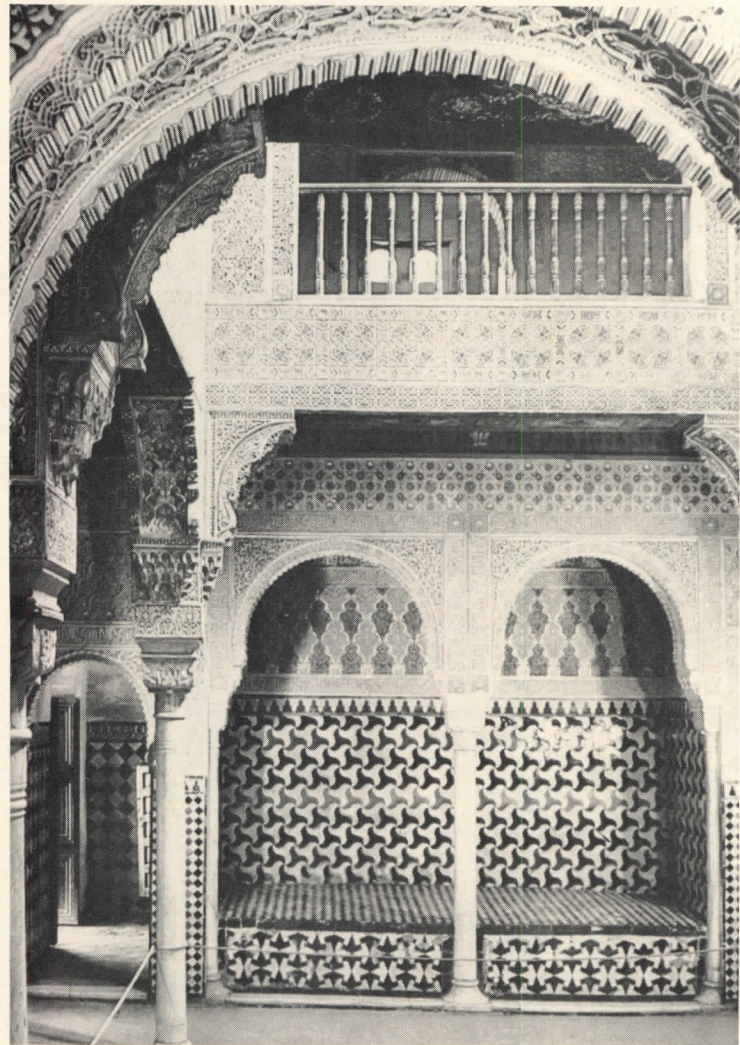
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11

An approach to design in the Islamic context

by Benjamin Thompson and Jane Thompson

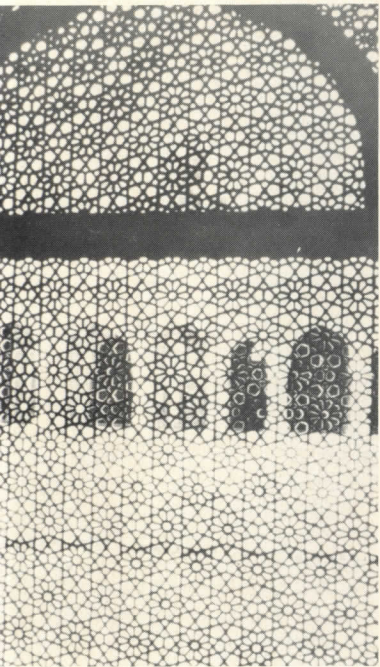
Benjamin Thompson Associates has designed three major Inter-Continental Hotel Corporation hotels in Islamic countries—two in Abu Dhabi, one in Cairo. The work of conceiving, constructing, and in two cases, furnishing these buildings has continued over seven years, which in retrospect seems a minimal time for understanding and assimilating the spirit of the people and the basis of their perceptions of the natural and man-made world.

To experience architecture, design, and art in Middle Eastern cultures from a wholly

Western background takes not only time but study, concentration, and will power. At first, the very nature and energy of Islamic creativity—however different among themselves—seems generally in opposition to our Western cultural training of the last 50 years. Our eyes, our senses, our imaginations are not prepared for the assault of color, patterns, ornament, opulence, and intricacy of Islamic tradition. The emphasis on symmetry seems limiting, and the iconography of linear ornament, derived from calligraphy and geometry, often seems flat, rambling, and unformed when confronted in purely abstract terms. The forms themselves, with inherently sacred meanings, cannot "speak" to us literally.

Short of our becoming students of the Arabic language, some of this symbolic vacuum is inescapable. We will see linear forms where Arabs see potent messages and natu-

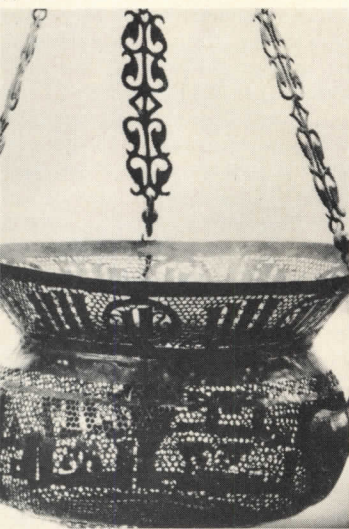
ral symbols transformed into pattern. But this need not arrest our penetration and appreciation of design and art forms. If we seek universal esthetic and sensual elements that lie within the tradition, we can gradually overcome our own cultural limitations and biases and learn to respond to the unified system of values that derives from history, climate, religion, and social ideals of Islamic nations. For instance, we can respond to many values we have in common: the working of materials (brick, tile, metal, textiles) in which the art of the hand is visible and beautiful; the symbolism of nature which is universal, and in particular the meaning of the Paradise Garden which has passed into our own cultural heritage; the expression in interior space of traditional functions and ceremonies based on gathering, audience, and entertainment; the power of color in enhancing ceremony and



12



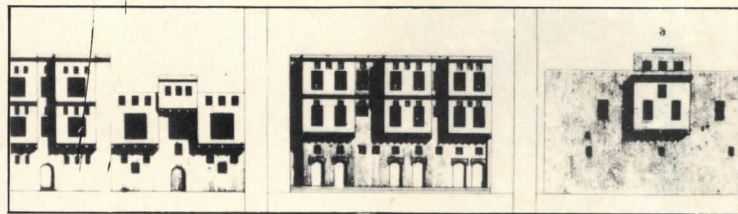
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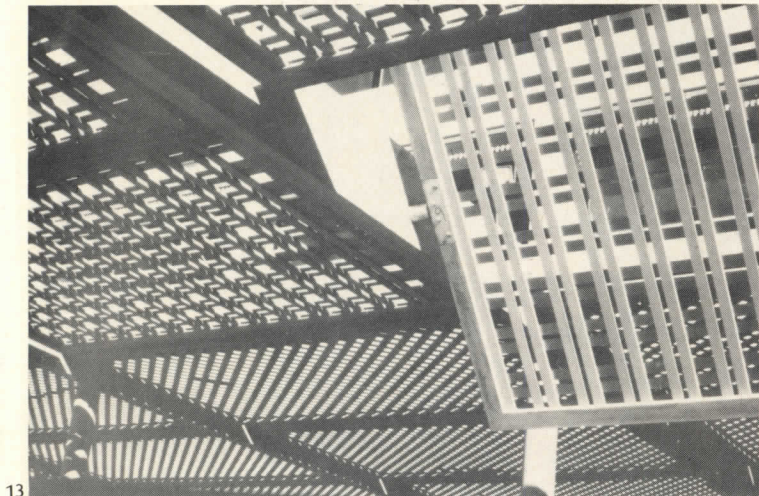
15

Muslim artists loved to filter light—muting the sun through the marble grille of a tomb at Fathpur-Sikri (12), or dappling the light of oil lamps or candles within a perforated bronze vessel, as in the 11th-century example (15). Light will be filtered at two new Inter-Continental by a number of means including Thompson designed lamps (14) made by contemporary craftsmen and wood lattices (13, 18). The lattice detail drawing and the sketch of the Abu Dhabi Rotisserie (16) show projecting screened balconies similar to those in the early 19th-century engraving (17) of house types in Egypt which allow the Muslim women to see without being seen. The chandeliers in the Rotisserie sketch will be similar to the huge clusters of silver and enameled glass lamps which softly light the shadowy mosques.

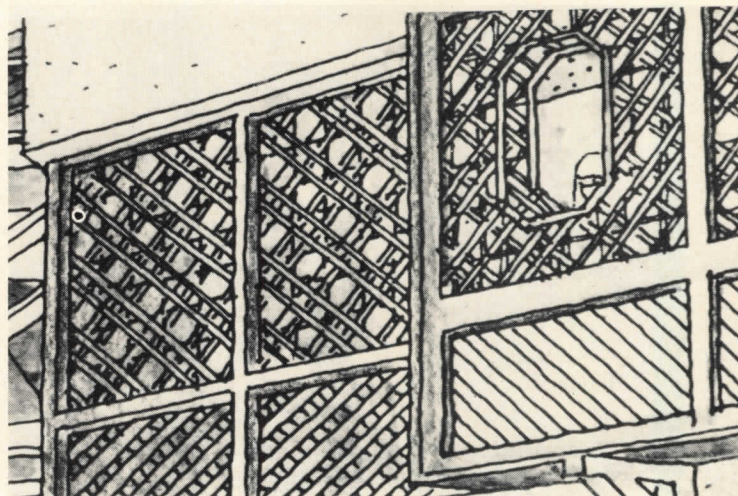
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13



18

ritual; the drama of mediated patterned light; the ritualistic power of water and growing things; the interplay of surface and ornament for expressive means and pure visual delight. These were among the traditional Islamic elements that became absorbed into our treatment of the buildings and the interiors.

The design of the hotels was programmatically circumscribed in terms of intricate technical and functional demands. The sheer weight of the requirement to design large buildings that could be built well in distant desert climates, with imported or native labor of unknown skills, in entirely imported materials, with perilously uncertain conditions of supervision, was enough to discourage efforts of imagination. The requirement to mesh the necessities of efficient hotel operation, functional traditions and personal needs of the Ruler and royal family as owners, and

the expectations of international visitors, added to the burden of practicality.

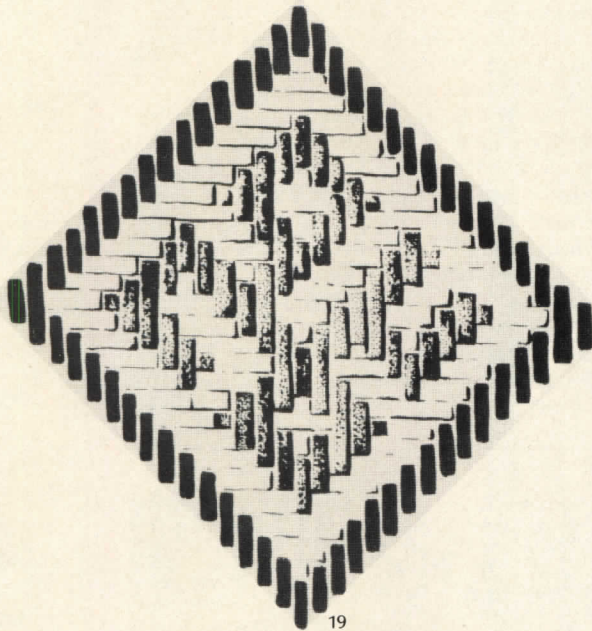
On the other hand, although an international hotel is a modern Western institution, these hotels—being closely bound to the aims, ideologies, and economy of the state and royal family—were also destined to be important *public buildings*, places of official gatherings and royal hospitality. Whereas most international hotels today are built to a pattern that could be dropped down anywhere in the world with a stylized nod to local tastes: we wanted these IHC hotels, each in its own way, to be *of its place and of its people*.

It was our belief that one doesn't approach another culture by trying to imitate literally or copy superficially, but rather by interpreting its salient aspects—spiritual, sensory, historic, environmental—in order to

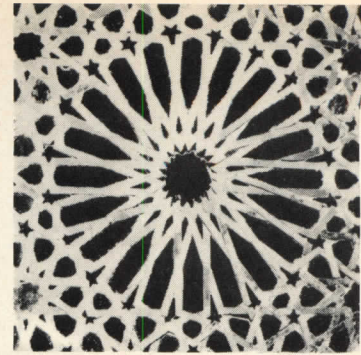
evolve something new that communicates a meaningful continuity with what is there. That continuity would come from interpretations on many levels—site use relationships, building forms and details, interior spaces, materials and surfaces, color and pattern, choice of decorative items and artwork. In each area, the result would incorporate appropriate traditions into modern technologies and forms.

In Abu Dhabi, first there was the site. The climate is hot and humid, the landscape flat, even at the water's edge. The capital city is a former mud flat that burgeoned into a new city in a short twenty years. In the early 1970s, it was in the midst of an oil-generated boom of buildings 10 to 15 stories high. Most of them could have been in Beirut, Singapore, or Dallas. The streets were boulevards; auto-laden, almost totally lacking in pedestrian activity or face to face encounters.

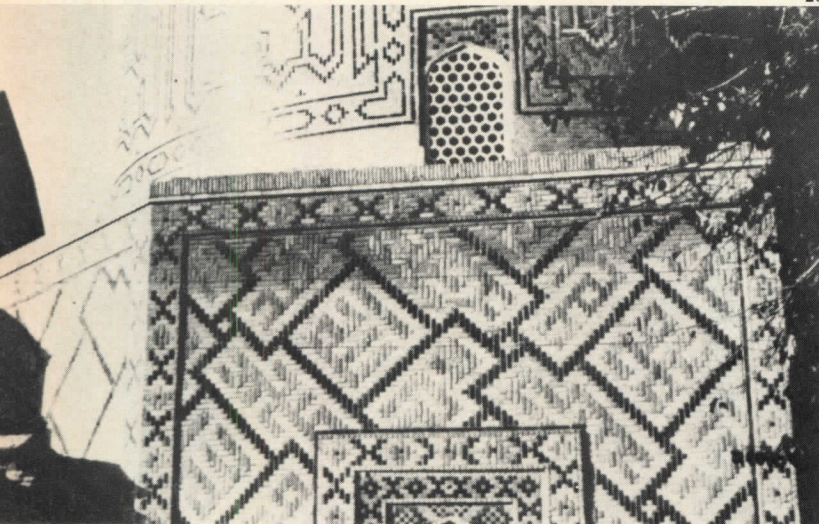
For the new hotels, early Islamic geometric, botanical and calligraphic motifs have been brought to life by traditional craft methods as well as by today's industrialized techniques . . .



The adapted, contemporary Muslim ornament has been cast or laid up in brick, glazed upon tile, carved in stucco, inlaid in wood or in marble as in the Abu Dhabi ballroom (23), forged or hammered in copper or bronze, handwoven, painted and/or embroidered on silk. The motifs have also been silk screened on 3- by 3-foot panels—one for each of the 332 guest rooms and suites in the Abu Dhabi Inter-Continental (25), printed on wallpaper (24) and machine-woven into modern carpets and bedspreads (28, 29). The bedspread pattern is based upon the pattern of an old Kilim (27) owned by the Thompsons. The architects have also proposed that the Abu Dhabi and Al Ain Inter-Continental display a few well chosen examples of antique Islamic art—the real thing—all the better to emphasize the wit and skill of the contemporary reinterpretations. Further, because 19th-century photographers recorded Islamic life in the marketplaces, bazaars and souks before the beginning of Westernization, and



their glass negatives still exist, the Thompsons have recommended that some be photographically enlarged and printed in sepia-toned panels to evoke long-vanished life and feeling. Early Islamic sources used by the Thompsons include the two scripts on the facade of the monastery of Natanz in Old Persia (21). The diagram (19) shows the pattern of bricks on the wall of Tamerlane's mausoleum in Samarqand in the Soviet Union (20). The pattern, a stylized Arabic script spells "Muhammad." The four tiles which together form the rosette (22) can be found in the Alhambra. This motif is the direct source of the tile pattern for the terrace of the Abu Dhabi pool (26).



Of course, being a country whose origins were nomadic, Abu Dhabi had no native tradition of building or of handcrafts, no local building materials. (Only scant crude remains of houses and souks in mud block and wood are found in Sharjah and Dubai). Unquestionably building technology and material had to come from abroad. Yet not one new building seemed to respond to, or take advantage of, the surrounding blue lagoon of the Arabian Gulf, or to the city's desperate need for greening of the landscape, or to the possible use of water to create growth, color and coolness as an escape from the incessant stifling heat of the desert summer.

Indeed, the climate and terrain seemed to spur fantasies of a compensating environment to which people could escape, not only for the momentary bodily comfort of air conditioning but for a spiritual comfort and

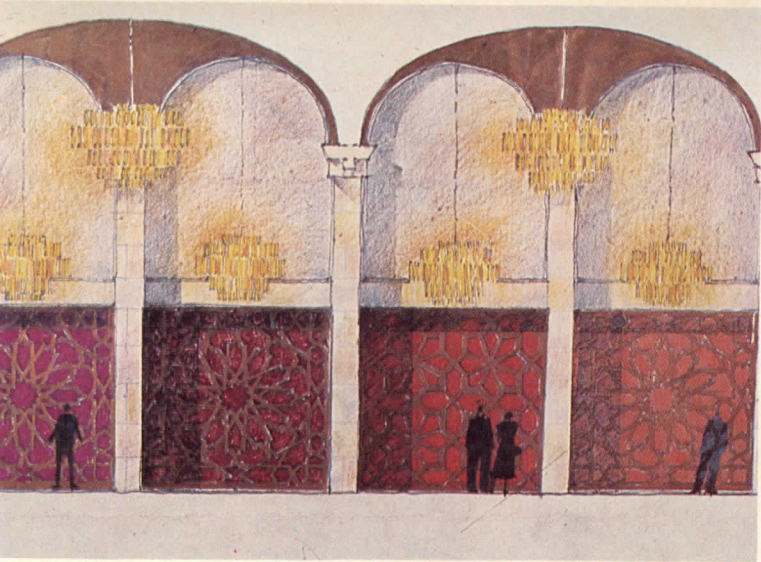
serenity akin to that of the Paradise Garden and the hospitality of a great ceremonial gathering place.

Thus, for the Abu Dhabi Inter-Continental we saw the opportunity to create a waterfront place, in touch with the harbor and sea, utilizing water as part of the experience of the building. In a culture focused on the meaning of water (even salt water, which is now the source of its fresh water), the creation of a private lagoon with recreational uses offered a design element with practical as well as symbolic value.

The Ruler wanted a high building, for visibility and prestige. Within that requirement, the building was positioned and shaped for human purposes: to give maximum exposure of guest rooms and public spaces to the primary views of open water; to create a lower interior scale on the first three floors, in

tune with the street scale of older buildings on the peninsula. There is a continuing landscape of level changes between the lobby, the pool level above, and the deck and cafe below, balancing the flatness of the site.

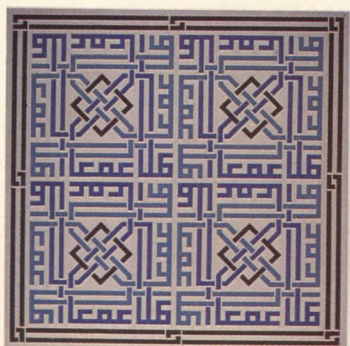
There is, in the original schemes, a garden brought indoors with a fountain and trees, a contemplative oasis, as well as the entry fountain and the palm garden extending toward the sea. In addition to these matters of conceptual rather than formal interpretation, shown and described above and on the preceding pages are some of the specific ways the Abu Dhabi hotel responds to Islamic traditions in new ways. We have dealt with each locale as part of the wide tradition of all Islam, from Spain to India, covering many periods in history, using the Abu Dhabi IHC as the most specific demonstration of the design ideas derived from Islamic art.



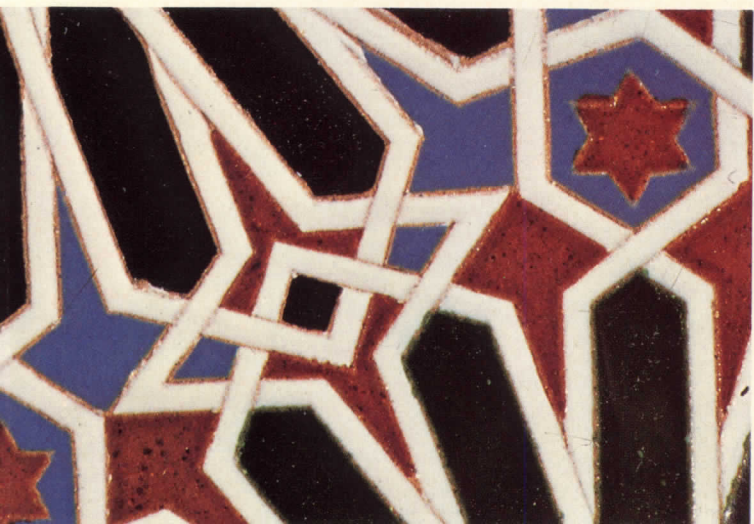
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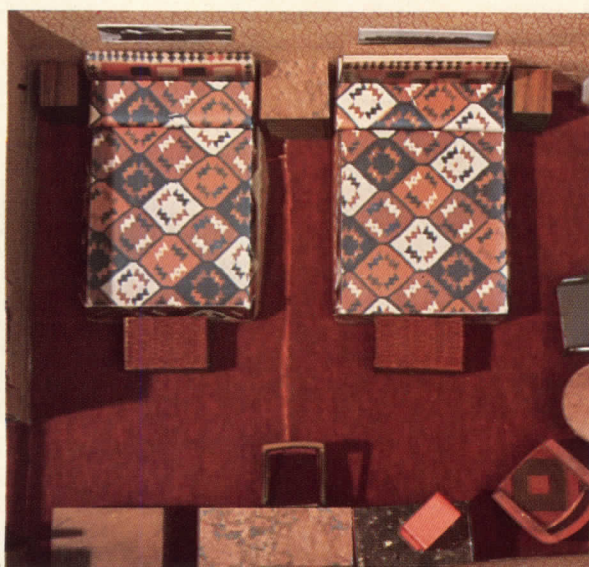


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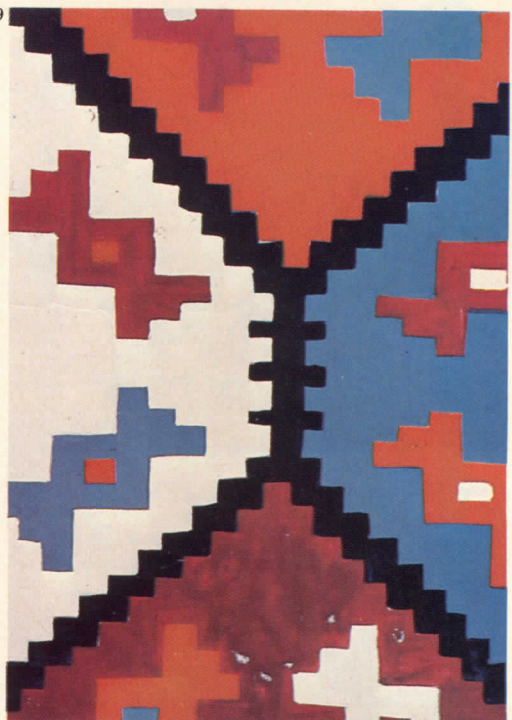


27

29



28



**OVERHEAD CONVEYORS** / A 10-page brochure details overhead enclosed-track power and free conveyor systems, illustrating industry applications, chain conveyor components and accessories. ■ Rapistan Inc., Grand Rapids, Mich.

circle 400 on inquiry card

**FABRIC TREATMENT** / Described as a total fabric care system, *Fiber-Seal* is an invisible chemical that is sprayed on any fabric, rug, upholstered furniture, etc., to form a protective seal around each fiber of the material. A brochure explains how the treatment does not alter the color, hand or flame retardancy of any fabric, natural or synthetic. The *Fiber-Seal* system includes professional care for problem spots without charge. ■ Fiber-Seal of New York, Inc., New York City.

circle 401 on inquiry card

**CEILING FANS** / Substantial savings in heating and cooling costs are claimed for the *Decorafan* home ceiling fan. A color brochure describes the advantages of interior air circulation, and illustrates 12 standard fan designs, offered in white, black or brown enamel colors as well as natural wood tones. UL-listed units have solid-state, infinite-speed motor controls. ■ Envirofan Systems, Inc., Buffalo, N.Y.

circle 402 on inquiry card



**CONTRACT CARPETS** / Each architectural sample folder for various *Walter* contract carpets comes with a photographic reproduction of the fabric on the cover for easy reference. ■ Walter Carpets, Div. West Point Pepperell Carpet and Rug Div., City of Industry, Calif.

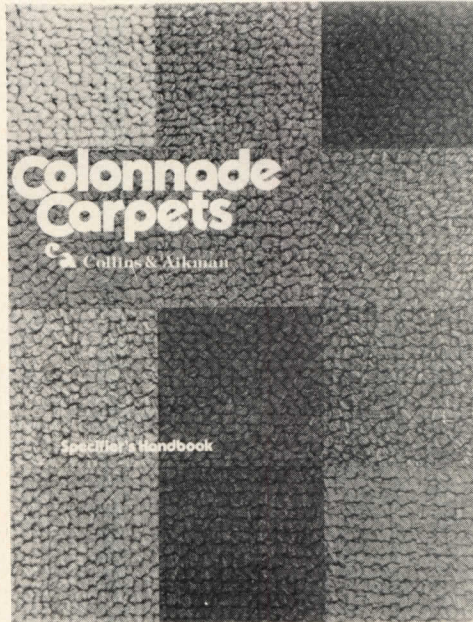
circle 403 on inquiry card

**GRAPHIC ARTS** / Brochure outlines the many applications of graphic arts cameras, light tables, exposing units and diffusion transfer processors for *engineering*, *drafting* and architectural firms. ■ nu-Arc Co., Inc., Chicago, Ill.

circle 404 on inquiry card

**CUSTOM HEADBOARD** / Round or square-shaped *Lunar* headboard frames come with a *removable, muslin-covered padded* panel. A color brochure shows how to attach your own fabric to the insert panel and secure it with clips, to produce a custom-made headboard. ■ Lorraine Furniture Co., Rockville, Md.

circle 405 on inquiry card



**BROADLOOM GUIDE** / A "Specifier's Handbook" gives complete product information for the *Colonnade* line of broadloom carpeting for contract applications. ■ Collins & Aikman, New York City.

circle 406 on inquiry card

**HEALTH CARE FLOORING** / A pocket-size guide to monolithic flooring systems summarizes specific flooring problems in such health care facilities as hospitals, nursing homes and life care villages, and lists epoxy, acrylic, terrazzo-type and waterproof membrane products. ■ Selby, Battersby & Co., Philadelphia, Pa.

circle 407 on inquiry card

**FLOORING ACCESSORIES** / Vinyl and rubber *Johnsonite* accessories are shown in an eight-page catalog. Products include cove base, stair treads, carpet edge guard, risers, mats, stair and carpet nosings, bumper guards and adhesives. ■ Johnson Rubber Co., Middlefield, Ohio.

circle 408 on inquiry card

**MOVABLE WALLS** / Partition installations for office, in-plant work areas and reception lobbies are illustrated in an eight-page color brochure on the "Quick Change" movable wall system. Vinyl and fabric panel finish options are shown for all partition and door configurations. ■ Glen O'Brien, Inc., Kansas City, Mo.

circle 409 on inquiry card

**OFFICE FURNITURE** / This maker's "Ruship" and "Rapid Ship" program promises shipment on selected office products within five and ten working days, respectively. A color folder illustrates the desks, credenzas, swivel chairs, tables, and lounge furniture available with this fast delivery guarantee. ■ Monarch Furniture, High Point, N.C.

circle 410 on inquiry card

**HOME APPLIANCES** / Directed to home builders and remodelers, a 20-page catalog features automatic washers and dryers; freestanding and tri-level gas and electric ranges; drop-in units; refrigerators and freezers; commercial laundry equipment, etc. The brochure includes dimensions, basic installation instructions and product features and delivery information. ■ White-Westinghouse Appliance Co., Pittsburgh, Pa.

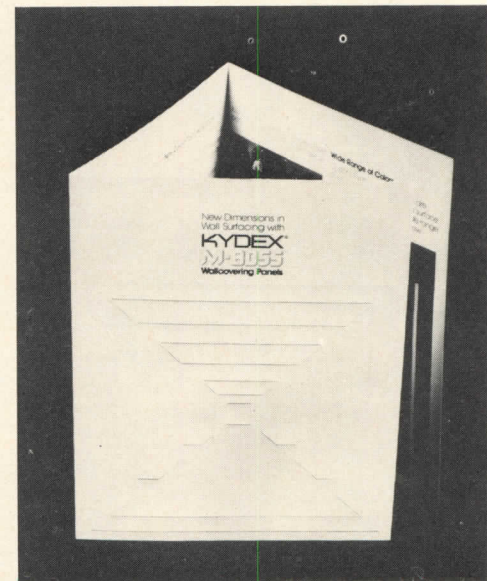
circle 411 on inquiry card

**ALUMINUM SWIMMING POOLS** / Color brochure shows welded aluminum pools in a variety of configurations in both in-ground and above grade installations, including roof top. Text describes the warranted leak-proof performance, seismic data, and the ease of installation of the lightweight, pre-fabricated pools. ■ Overly Mfg. Co., Greensburg, Pa.

circle 412 on inquiry card

**CERAMIC TILE HANDBOOK** / The 1980 edition of the "Handbook for Ceramic Tile Installation" simplifies and standardizes specifications, providing quick-reference details, outlines and charts that cover most installation methods and conditions. Additions to the 1980 manual include sound-rated wall and suspended ceiling details; modified epoxy emulsion mortars; and full coverage of expansion joints. Individual copies are available without charge. ■ Tile Council of America, Princeton, N.J.

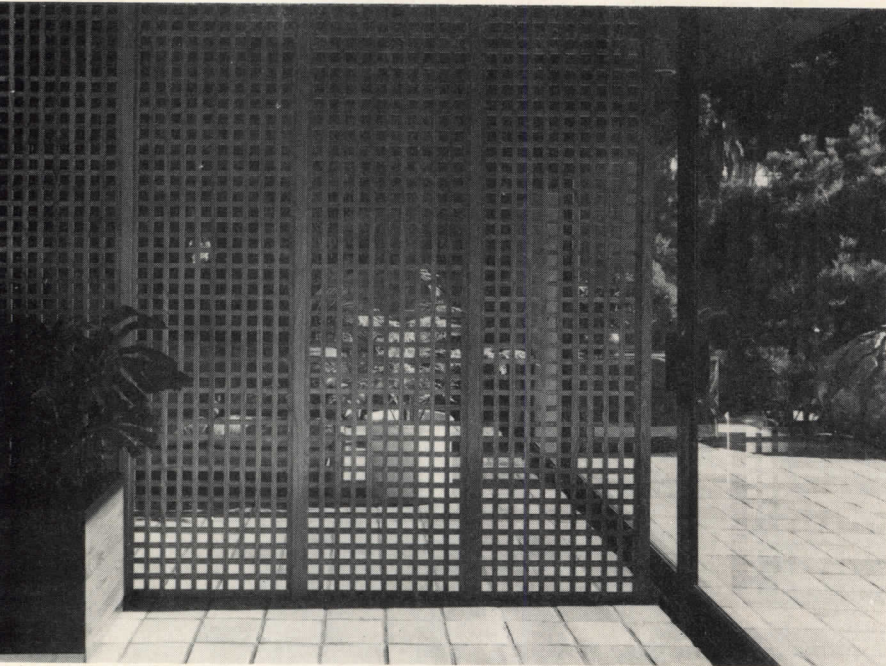
circle 413 on inquiry card



**EMBOSSED WALL TREATMENTS** / A customized wall-covering concept for commercial, institutional and retail establishments, the *Kydex M-Boss* panel system allows designers considerable latitude in creating unique embossed wall treatments using *Kydex* acrylic/pvc alloy sheet. A six-page brochure describes *M-Boss* applications, fire ratings, and performance characteristics. ■ Rohm and Haas, Philadelphia.

circle 414 on inquiry card

For more information, circle item numbers on Reader Service Inquiry Card, pages 181-182



### Wood grilles have flexible uses

"Interlok Grilles" are the most recent addition to this comprehensive collection of wood grilles, available for use as room dividers, walls and ceilings. "Interlock GR1000" (shown) is one of six designs

constructed of individual solid wood or wood veneer members. Grilles come in red oak, redwood and white fir. ■ Forms Surfaces, Santa Barbara, Calif.

circle 302 on inquiry card

### Office chair series is elegant addition to line

The "Hampton" chair series has various options, including the swivel-tilt model shown; a conference caster base; a non-tilting side chair and others with return swivel, free swivel or non-swivel bases. Offered

in all company-line upholstery materials, chair bases and arms come in polished aluminum or thermoset finishes. ■ Vecta Contract, Dallas.

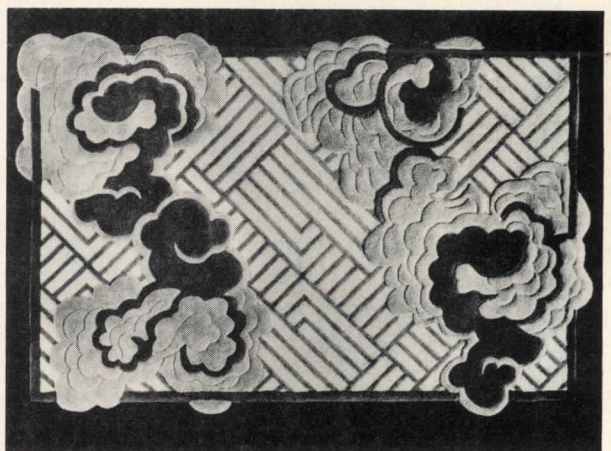
circle 301 on inquiry card



### Coordinated colors in cotton weaves for residential-use fabrics

Three textured cotton weaves—named Richwood Stripe, Newland Stripe and Richwood Square—are the newest introductions of this manufacturer. All are available in as many as 18 other colors. ■ Lee/Jofa, New York City.

circle 303 on inquiry card



### Custom area rug uses stylized Oriental motif

"China Skys" is a 100 per cent wool area rug with a Chinese fret ground, overlaid with an Oriental cloud motif which extends from the edges of the rug to create a sculptured effect. The wool rug coordi-

nates with "China Skys" wallpaper and fabric designed by Kirk-Brummel Studio. ■ Form III, North Vernon, Ind.

circle 304 on inquiry card  
more products on page 137



# Maximum light-Maximum savings MAXI-MISER™ II SYSTEMS

**General Electric's fluorescent lighting systems let you have the light you need and save energy, too.**

Now you can have the good lighting you need to help maintain worker productivity, safety and morale – and still reduce your lighting energy costs by as much as 21% with exclusive GE Maxi-Miser II Systems. For all three popular types of fluorescent lighting, GE offers a specially designed system of energy-saving lamps and high performance ballasts. Each designed as a system – tested as a system – to perform as a system that saves energy with no loss of light.

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produces more light in most fixtures than standard systems. The money-saving replacement for higher wattage, standard lamps and ballasts in offices, schools, stores.

**NEW F96 Slimline Maxi-Miser II System.** Two 8-foot Slimline Lite White Watt-Miser II lamps and a Maxi-Miser II high performance ballast. Reduces wattage by as much as 21% yet maintains the same light output as standard systems. Low cost, high performance lighting for stores and manufacturing areas.

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for lighting industrial areas.

Learn how these full light output energy-saving Maxi-Miser II Systems can help you save on lighting energy costs. Ask your GE lamp sales representative for our free Maxi-Miser II Systems brochure. Or call toll-free (800) 321-7170. In Ohio (800) 362-2750. General Electric Company, Dept. C-011/AR7, Nela Park, Cleveland, Ohio 44112.

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Maximum light with maximum savings is based on total owning and operating costs for new, medium or large installations, and is a function of the quality of fixtures, installation and wiring costs, and lifetime expenses. Other lamp/ballast combinations may individually provide greater energy savings but with some reduction in light.

**We bring good things to life.**

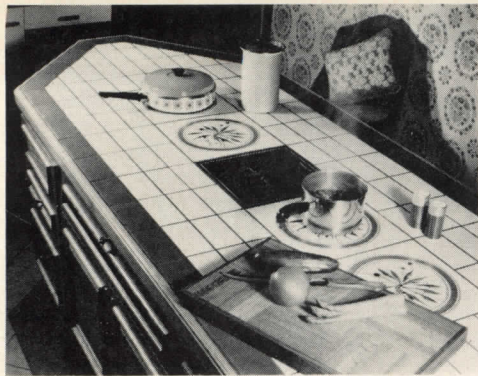
**GENERAL ELECTRIC**



Circle 53 on inquiry card

C-011



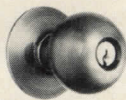


**MAGNETIC INDUCTION COOKTOP** / The *Fasar* range transfers electric energy magnetically from below the ceramic cooking tile surface into the cooking utensil. Electronic controls respond at a touch, providing any temperature from very hot, for pan broiling, to lukewarm. Food is said to brown and cook evenly, as temperature throughout the ferrous metal pan is constant. The cooktop itself never gets dangerously hot, and is easy to wipe clean as food spills will not burn on. ■ *Fasar* Systems Inc., Burbank, Calif.

circle 305 on inquiry card

**RESIDENTIAL LOCKSET**

/ A modern, contemporary design, the "Orbit" set is offered in this manufacturer's competitively priced "F" series residential locks. It is available in both keyed and non-keyed functions in a variety of finishes. ■ *Schlage*

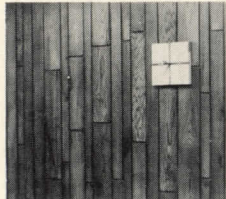


Lock Co., San Francisco.

circle 306 on inquiry card

**OAK WALL PLANKS**

/ *Townsend* "English Channel Oak" is solid hardwood offered in easy to install random width and length planks. For commercial and residential applications, the prefinished planks have square cut tongue-and-groove edges. ■ *Potlatch Corp.*, Stuttgart, Ark.



circle 307 on inquiry card



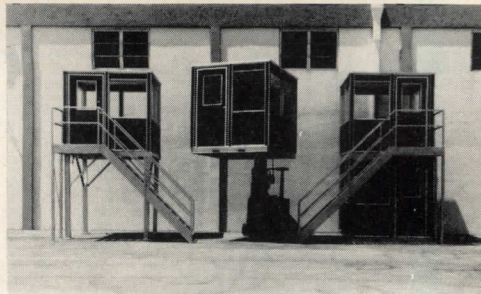
**CHROME PLANTERS** / Available in sizes ranging from seven- by seven-in. to 10- by 27-in., these chrome-finished interior planters have a self-pedestal base. ■ *Howard Products Co.*, Dallas, Texas.

circle 308 on inquiry card



**WOOD ROOFING FINISH** / *CWF* wood treatment will preserve the new look of natural wood shingles and shakes, and restore the moisture resistance of old, weathered shingles. A clear, penetrating sealer, *CWF* is applied by spray, brush or roller, and will not discolor the wood surface. ■ *The Flood Co.*, Hudson, Ohio.

circle 309 on inquiry card



**IN-PLANT OFFICES** / Set on a welded steel base with fork lift pockets, the *FLO* series of in-plant offices can be quickly moved from one spot to another as needed. Offices are available in two-story, standard and vision tower versions, all pre-wired. Options include sound-deadening and hvac equipment. ■ *National Partitions*, Hialeah, Fla.

circle 310 on inquiry card

more products on page 139



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The most highly insulated light transmitting material. Saving energy for 25 years.

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Circle 54 on inquiry card

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appealing  
...or just  
peeling?**

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It's mystifying...even today the majority of metal roofing, fascia, gravel stop and coping projects still specify: "GALVANIZED SHEET STEEL...FIELD OR SHOP PAINTED..."

You know what happens when painted galvanized is used. Every two to five years, attractive buildings end up looking like the one above: peeling, chipping, cracking and fading. Result? The project must then be scraped and repainted. Up go expenses, well above original costs.

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For the same initial cost, an original or replacement installation of **COLORKLAD** eliminates expensive repainting problems. It is a versatile **PREFINISHED** flat sheet architectural metal with a 20-year written warranty **AGAINST** peeling, chalking, fading and cracking.

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**COMPONENT WORK STATIONS** / "Group 55 Plus" preassembled work furniture is compatible with the design of the "Panel End" collection of oak, walnut or fabric office partitions. Important cost and space efficiencies are said to result from keeping functional components to a minimum, and by defining functional space with built-in conveniences, task and ambient lighting. ■ Lehigh-Leopold, Div. Litton Industries, Burlington, Iowa.

*circle 311 on inquiry card*

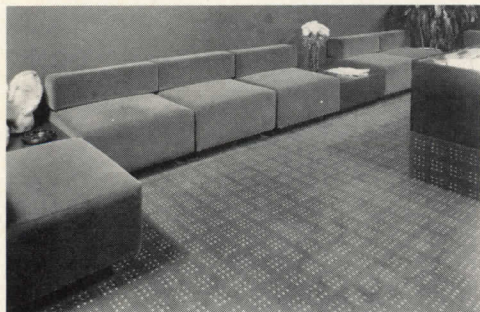
**KITCHEN STORAGE** / "American Contemporary Collection" cabinets from *Quaker Maid* feature a "visible storage" system: vinyl-coated steel racks that make stored items easy to see and reach. The tall cabinet shown here has slide-out adjustable height shelves, and a special lid rack for hard-

to-store pan tops. Style is the "Flair" book-matched oak cabinet line. ■ Quaker Maid, Div. Tappan, Leesport, Pa.

*circle 312 on inquiry card*

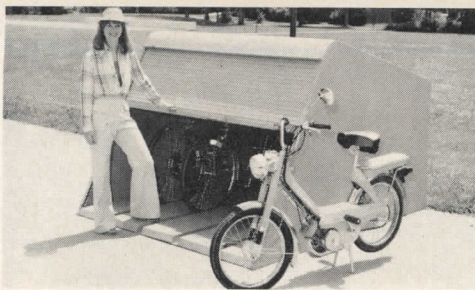
**TEMPLATE SET** / A set of three transparent plastic templates, 9¾-in.-wide by 6½-in. high, each with a different proportion and 12 frame sizes, has graphic art applications. Used to compose, position, crop and proportion photographic negatives, slides, proofs and prints, drawings, etc., the desired template is placed over the subject matter and the wanted pattern traced onto the photo. Price per set: \$7.00. ■ Green's Templates, Beverly Hills, Calif.

*circle 313 on inquiry card*



**CONTRACT CARPETING** / Woven in a dense ribbed texture of *Antron III* nylon, *Karapoint* broadloom combines bold colors with a graphic pattern of two-toned dots. It is available in 19 colorways, including burgundy, hunter green and mahogany. Furniture shown is from Lehigh-Leopold. ■ Karastan Rug Mills, New York City.

*circle 314 on inquiry card*



**BIKE GARAGE** / Providing secure protection against bicycle theft and weather, steel-clad "Bike Garages" met HUD requirements for bicycle storage facilities in inner city redevelopment plans. The spring-operated rolling front offers easy access, and can be operated from within or without. Model sizes range from two-bike to 10-bike capacities. ■ J. G. Wilson Corp., Norfolk, Va.

*circle 315 on inquiry card*



**CERAMIC SINK** / A flat-rim, built-in unit, the "Lagor" ceramic sink from Germany is available in five solid tile colors. Standard features include the hickory cutting board and dish basket designed to fit the sink's unusual shape, and a removable waste strainer made of enameled stainless steel. ■ Villeroy & Boch (U.S.A) Inc., Pine Brook, N.J.

*circle 316 on inquiry card  
more products on page 141*



## THIS IS AN EXIT DEVICE? THIS IS AN EXIT DEVICE!

Why have exit devices always been ugly, expensive, bulky, pipe-rack monstrosities? Darned if we know. We (Adams Rite Manufacturing Co.) believe that simplicity, not complexity, is the ultimate sophistication. We designed our exit device to complement the clean lines of narrow stile glass doors (and fit easily and securely into the same standard mortise cut-out as our M.S.<sup>®</sup> deadlock). We also designed it to release at a mere 8 lb. touch anywhere on the bar, which moves only one inch. This one inch is in the exit direction too, not the conventional but unnatural downward arc. Load the door up to the code-required 250 lbs. and release pressure still stays well under

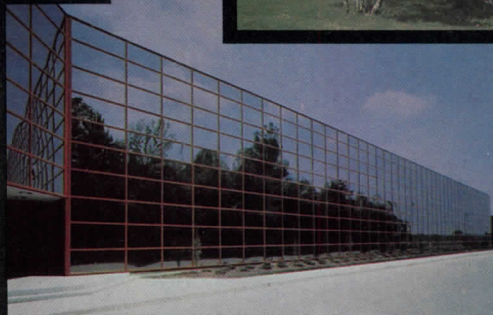
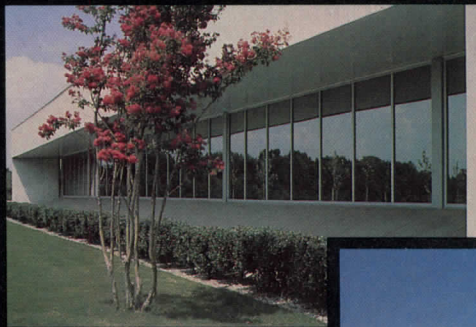
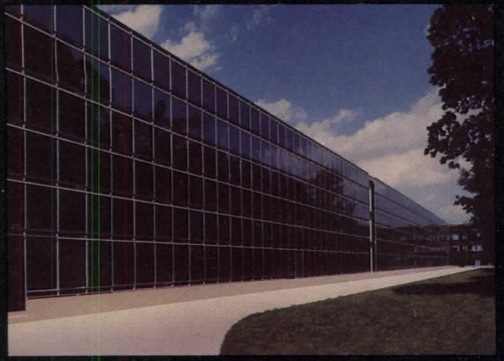
50 bs. anywhere on the bar. Yes, it's an exit device. It's also an exciting device. Some architects have indicated they're specifying it even where exit devices are not required by law. It's simply the neatest way to open a door they've seen. Who are we to argue? For details of the 8400 mortise device (shown) and its twin, the 8500 concealed vertical rod for paired doors, write:

**ADAMS  
RITE**  
MANUFACTURING CO.

CITY OF INDUSTRY  
CALIFORNIA 91749  
TEL: (213) 699-0511

*Circle 56 on inquiry card*

# Introducing Sunglas® Reflective, it blocks up to 65% of the sun's heat.



## New Sunglas Reflective blocks the heat to help reduce the high cost of air conditioning.

Installing Sunglas Reflective can, over the lifetime of your building, amount to a saving of thousands of dollars. Because it blocks up to 65% of the sun's heat, it can aid in cutting air-conditioning operating costs and may allow for the use of smaller air-conditioning units.

## A new concept – blocks the heat. Yet lets in the daylight.

While Sunglas blocks the sun's heat, it lets in more daylight than most other reflective glass products. This means reduced solar heat load while permitting the use of natural daylight for illumination – this

unique property presents another big saving potential. It also helps minimize hot spots so room temperatures remain more uniform and comfortable.

## Ford Sunglas Reflective for a natural color view of the outdoors.

Sunglas Reflective lets in the beauty of the outdoors without noticeably affecting its natural color. The neutral silver coating reflects the surrounding outside environment and provides a full-color view of colors throughout the day.

## New Computer Program shows you how to S.A.V.E.

Ford's new computerized S.A.V.E. program (Systems to Analyze Value and Energy) can help you determine your solar glass requirements and savings quickly. Find out more about the S.A.V.E. program and Sunglas Reflective so you can take the heat off you *and* your budget. Sunglas Reflective is available now and it can be

cut, tempered and fabricated locally. You'll find that choosing Ford Sunglas Reflective will be a nice reflection on you.

## Sunglas Reflective is backed by Ford experience and a 10-year warranty.

Before we ever marketed Sunglas Reflective, we field-tested more than 2,000,000 square feet of it. The result? When the heat was on, Sunglas Reflective performed very cool. For more information, send for our detailed product information kit including all the specifics of our warranty by writing: Ford Glass Division, 300 Renaissance Center, P.O. Box 43343, Detroit, Michigan 48243, or call toll free 1-800-521-6346.

Circle 57 on inquiry card

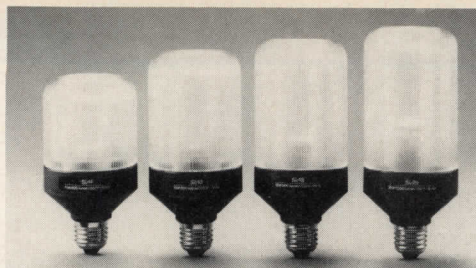


**GLASS DIVISION**



**GERMAN MODULARS** / An invisible clip mechanism holds these basic upholstered units together in a number of seating modules. Made in Germany, seating groups are available in elephant-grain or shiny leather in a variety of colors; suede; velour; printed velvet; wool; tweed; or COM. ■ Cy Mann Designs Ltd., New York City.

*circle 317 on inquiry card*



**ENERGY SAVING BULB** / Similar in size and shape to conventional incandescent bulbs, SL low pressure mercury/fluorescent type lamps draw 70 per cent less energy and last 5 to 10 times as long. They are currently available in four 220/240 volt versions: 11W, 13W, 18W, and 25W, designed to be direct replacements for standard 40W, 60W, 75W and 100W high voltage bulbs. ■ North American Philips Lighting Corp., Hightstown, N.J.

*circle 320 on inquiry card*



**HAND SHOWER** / The *Junko* series wall-mounted hand shower, with wall connection and flexible hose, is imported from Italy. Available in six bright enamel colors and polished chrome. ■ Watercolors, formerly Fearless Faucets, Garrison, N.Y.

*circle 321 on inquiry card*

*continued on page 147*



**FIRE SPRINKLER DESIGN** / The "HP4M" computer program for the design of fire sprinkler systems uses NFPA standards and meets UL requirements for the layout of grid, loop or Christmas tree systems. The program is operated on the economical *Radio Shack TRS-80* computer, and features automatic sizing and balancing to water overages generally less than one per cent. The "HP4M" provides a full printout of results in a form acceptable for direct presentation to the Underwriters, including a printed schematic layout of the system. ■ McClintock Corp., Miami, Fla.

*circle 318 on inquiry card*



**DANCE FLOOR** / *NorCore* plastic honeycomb panels provide a strong, translucent dance floor, allowing colored lights set beneath the surface to shine through the floor for a disco effect. The two-in.-thick panels were fabricated with clear plastic facing material on one side, and translucent white plastic on the other. *NorCore* panels have been load tested to 5,700 lb per sq ft. ■ Norfield Corp., Danbury, Conn.

*circle 319 on inquiry card*



## THE ULTIMATE AGGREGATE PANEL

Real stone, real beauty, and real tough, Sanspray panels give you the versatility and cost effectiveness the 80's will demand. These high quality panels combine natural stone, pure epoxy resins, and plywood or FRC substrates to give you masonry without masonry prices — as low as \$2.50 square foot installed. Panelized construction saves time, labor, mess, and headaches. Sanspray's regular panels weigh only 1.8 pounds /

square foot so carpenters can easily install them. And with Sanspray's complete matching trim and fastening accessories you receive a total "ready to go" system, with design possibilities you'll be proud of. Write today for details (and a free sample).

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## From the Kimball Museum to the kitchen, Naturalite is the Skylight source.

Skylights are playing an increasingly important role in today's energy conservation efforts. In summer, skylights reduce energy costs by lowering electric lighting heat gain, thus diminishing air-conditioning loads. In winter, skylights displace some of the need for electric lighting and admit free solar heat.

For **every** skylight application, Naturalite is your single source supplier.

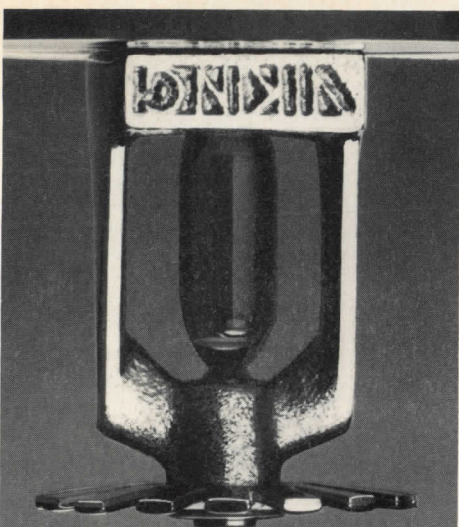
Naturalite manufactures a complete line of premium quality standard skylights, as well as custom products of virtually any size and configuration. The award-winning Kimball Museum is one example of Naturalite's custom skylight capabilities.

To discuss how Naturalite skylights will play an important role in your project's energy efficiency, call collect or write: Mr. James J. Wozniak, V.P. — Arch. Design, Naturalite, Inc., P.O. Box 28636, Dallas, TX 75228, (214) 278-1354.

**NATURALITE®**, INC.

America's largest manufacturer of skylights.

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## THE SPRINKLER YOU CAN LOOK UP TO

Most fire protection sprinklers aren't built with architects in mind, so they don't add much beauty to a ceiling.

That's why we've engineered our Decor® sprinkler line to be visually subtle, yet offer an attractive alternative to bulky solder-link or costly concealed sprinklers.

Decor® sprinklers are miniature sized and cleanly styled in satin or polished chrome; natural or polished brass. The glass bulbs are color coded for six temperature ratings.

Our new 2-piece adjustable recessed escutcheon allows Decor® sprinklers to be fitted prior to ceiling installation. This helps keep construction on schedule and provides for far lower installed costs than with competitive flush or concealed sprinklers.

Send for more detailed information on Decor® sprinklers and discover how easy they make it to look at a ceiling.



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Circle 63 on inquiry card

### ENTRANCE LOCKING SYSTEM /

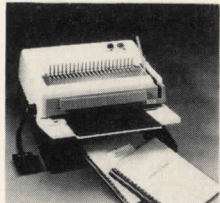


The *Controller* complies with model building codes which prohibit the use of manual flush bolts on paired entrance doors. With the *Controller*, it is impossible to leave one door leaf locked with the other leaf

unlocked, thereby allowing unhindered egress in an emergency situation. Security is assured by the two-stage *M.S.* deadlock. ■ Kawneer Architectural Products, Niles, Mich.

circle 322 on inquiry card

### BOOKLET BINDER /



The foot-pedal controlled "Electric Combo" power-punches and binds booklets up to 2-in. thick. It can handle presentation material of most any size and shape, from large computer printout reports and flipcharts to

pocket guides and albums. The compact, desk-top unit requires no special operator training to obtain professional results. ■ General Binding Corp., Northbrook, Ill.

circle 323 on inquiry card

### EXECUTIVE FURNITURE /



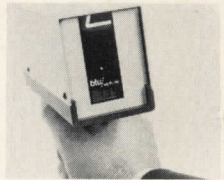
A traditional look is apparent in the "Taftville Collection" of fine wood furnishings for the office.

The "Executive I" group is distinguished by the case-like top of desk and credenza, shown here with a matching break-front storage unit.

Furniture is made of low luster, figured African Mahogany, with polished brass hardware; a range of other woods, finishes, sizes and leather insert tops may be specified. ■ Helikon Furniture Co., Inc., Taftville, Conn.

circle 324 on inquiry card

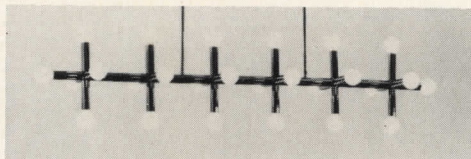
### DIGITAL RADIOMETER /



The *ThermoFlow* infrared radiometer rapidly locates defects in insulation without physical contact, and measures heat loss directly in Btus. The lightweight unit is simply pointed at a wall, or at

equipment being surveyed, and a digital display reads out Btus instantly. *ThermoFlow* radiometers are used to detect wasteful energy loss in homes, factories, and other structures. ■ Linear Laboratories, Los Altos, Calif.

circle 325 on inquiry card

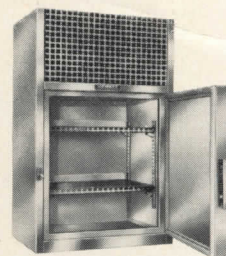


"Utretch" series lights are based on 1½-in.-diameter chrome plated brass tubular members, which serve as housing for G25 lamps. Many different fixture configurations—cubes, step-downs, vertical and multi-tiered—may be assembled using these standard components. ■ Habitat Inc., New York City.

circle 326 on inquiry card  
more products on page 149

# WE FIT IN

## STAINLESS STEEL WALL MOUNTED REFRIGERATORS, FREEZERS



**WM-CW\*** series eye-level, wall mounted refrigerators are offered in 4 sizes featuring cold wall cooling systems with push-button defrost and automatic reset. Two removable, adjustable stainless steel shelves are provided. Front mounted grille removes easily for servicing.

**WM-1-CW** Capacity—1.5 cu. ft. (45 ltr.)

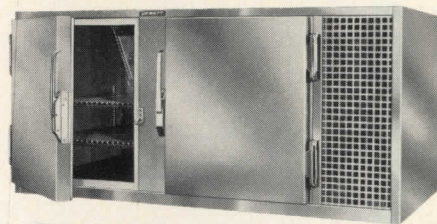
**WM-2-CW** Capacity—2.3 cu. ft. (65 ltr.)

**WM-3-CW** Capacity—3.2 cu. ft. (95 ltr.)

**WM-4-CW** Capacity—4.3 cu. ft. (125 ltr.)

**WM-3-F-CW** freezer is available only in a 3 cu. ft. (85 ltr.) capacity and has a manual hot gas defrost.

Capacity—3.0 cu. ft. (85 ltr.)



**WM-BC** series space saving, double-door, wall-mounted refrigerators are available in 2 sizes. Furnished with 4 stainless steel shelves, they have a blower-coil cooling system with automatic off-cycle defrost and a condensate evaporator. Condensing unit is easily serviced by removing front mounted clip-on grille.

**WM-7-BC** Capacity—6.6 cu. ft. (190 ltr.)

**WM-10-BC** Capacity—9.6 cu. ft. (275 ltr.)

\*With explosion proof interior.

Jewett also manufactures a complete line of blood bank, biological, and pharmaceutical refrigerators and freezers as well as morgue refrigerators and autopsy equipment for world wide distribution through its sales and service organization in over 100 countries.



**JEWETT REFRIGERATOR**  
2 LETCHWORTH ST.  
BUFFALO, N.Y. 14213

Refer to Sweet's Catalog 11.20/Jc for quick reference.

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# ENTER BESAM!



## Exit compromises in automatic door systems

Besam has been known around the world as the most experienced, most innovative, most uncompromising force in automatic door systems.

The Besam advantage is now available in doors manufactured in the USA. And as the demand for state of the art performance increases, Besam is responding with greater availability. Nearly 50 distributorships and two manufacturing plants throughout America stand behind our commitment to bring you the most advanced, trouble-free door systems.

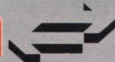
Besam's philosophy is unique. Each component is designed from ground zero, to perform its one intended function with an extra margin of capability and safety. And all without extra costs or compromised aesthetic considerations.

If you're wondering how one company can offer the ultimate in both selection and service, aesthetics and performance—consider this: Besam makes only automatic door systems, and is the world's largest maker.



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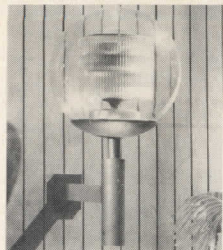
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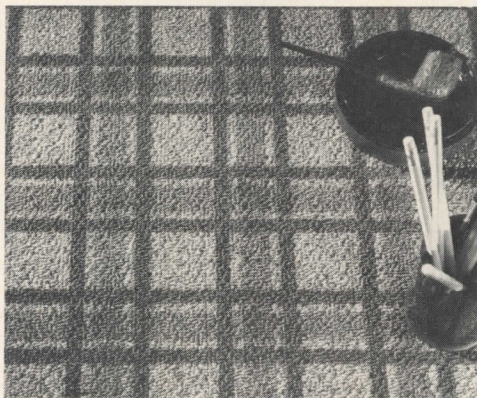
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## SITE LIGHTING / *Contra/Cline* lighting fixtures



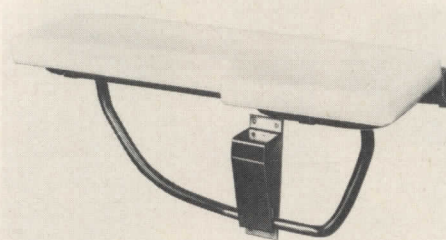
provide glare-free illumination in a wide range of geometric forms. The stacked, specular *Alzak* reflecting system ensures exacting control of light dispersion and cutoff; its 180 degree lateral beam spread allows extra-wide spacing capabilities. The "Clear Sphere" luminaire shown is available with wall or pole mountings. ■ Moldcast Lighting, Pine Brook, N.J.

circle 327 on inquiry card



**COMMERCIAL CARPET** / An addition to the "Artistron" line of heavy-duty carpets, "Great Glen" is a linear geometric in a stylized plaid. The scale of the plaid makes it suitable for use in business offices as well as for restaurants or lobbies. A textured loop surface lets the continuous filament nylon carpet hide subfloor irregularities. "Great Glen" is available in red, gold and brown colorways. ■ Armstrong Cork Co., Lancaster, Pa.

circle 328 on inquiry card



**SHOWER SEAT** / Fold-away shower seat is intended to make bathing comfortable and safe for the handicapped. The L-shaped seat is upholstered in cushioned white *Naugahyde* over marine plywood; tubing frame, support brace, piano hinge and bracket are stainless steel. ■ Bradley Corp., Menomonee Falls, Wisc.

circle 329 on inquiry card

## OUTDOOR LANTERNS



/ Lamp posts, standards and lanterns duplicate the street lamps of Victorian and Edwardian London. These English reproductions are made like the originals: copper canopies with cast iron posts and standards. ■ Decorative Designs, Inc., Elkhart, Ind.

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EHFS-8 Illustrated

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Start with Elkay's non-pressurized storage tank—a system that prevents flooding, if failure ever occurs, because *only* stored water is released.

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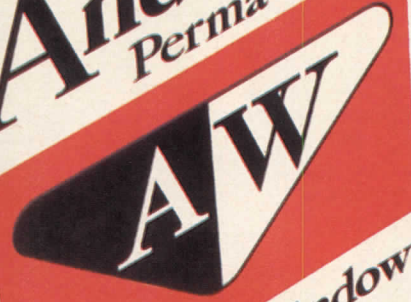
Elkay Manufacturing Company  
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Oak Brook, Illinois 60521



Circle 66 on inquiry card

**TERRATONE  
TOO.**

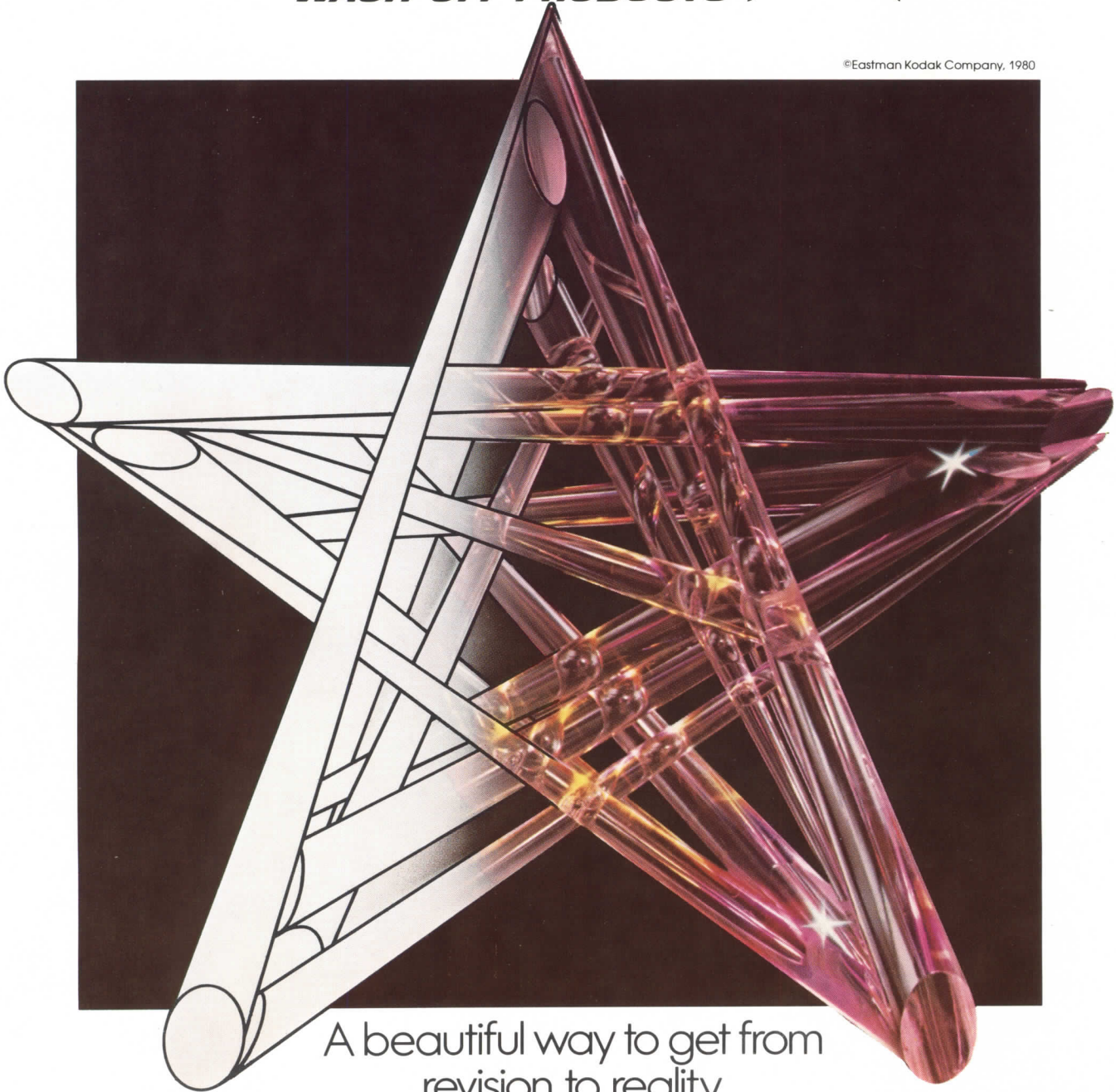
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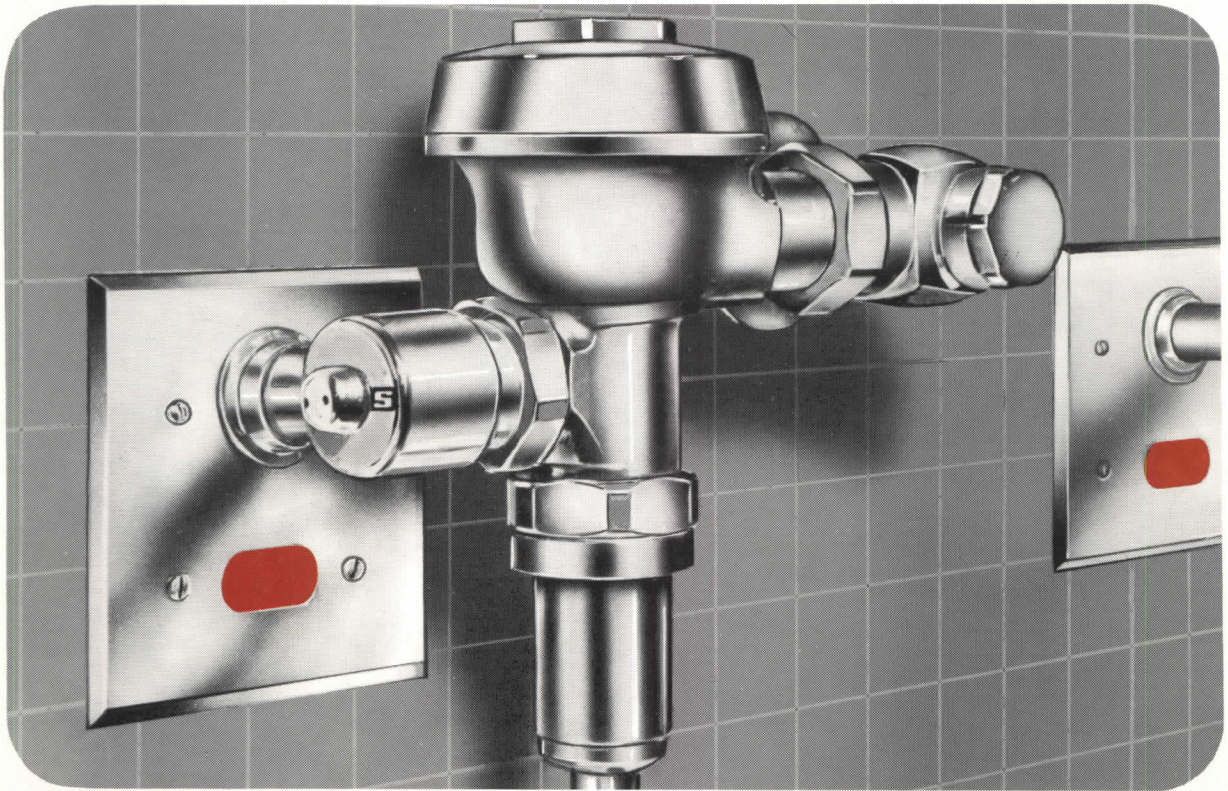
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It "sees" when to flush with an invisible, continuous light beam. When a user approaches the fixture, he reflects the beam back into the **OPTIMA's** scanner. The electronics take over and when the user steps away, the flush valve is tripped by a solenoid.

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